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PRODUCT LIABILITY IN A MORE CIRCULAR ECONOMY

A STUDY OF LIABILITY FOR ALTERNATIVE METHODS OF DISTRIBUTING AND PRODUCING CONSUMER GOODS

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Dissertation presented in partial fulfilment of the requirements for a joint degree of Doctor in Laws (PhD) awarded by Université de Lille and KU Leuven

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Glossary

anticipatory claim	A legal action to seek protection of an interest prior to an impending infringement, often seeking an injunction as a remedy (antonym 'curative claim').
causation	The necessary logical link between conduct that gives rise to liability, such as fault or strict liability, and the resulting damage for which one can be held liable.
compensation ('damages')	A type of reparation consisting of an obligation of the liable party to provide a payment in money through payment of money.
contributory fault ('fault of the injured party'; 'contributory/comparative negligence' in common law)	Conduct by the injured party that qualifies as a kind of fault which has contributed to the damage, that can bar liability altogether or lead to a reduction in liability. In common law, the former is called 'contributory negligence' and the latter 'comparative negligence'.
curative claim	A legal action to seek protection of an interest after it has been infringed, often seeking reparation as a remedy (antonym 'anticipatory claim').
damage	Injury to a legally protected interest.
design defect	A product is defective due to its intended design.
distribution (in this dissertation also 'distribution')	Any process aiming to let a product arrive at a (new) user.
extrinsic damage	In case of a product accident, other damage than the damage to the product itself and the directly resulting economic damage, such as personal injuries, death and damage to other goods (antonym of 'intrinsic damage').
fault liability ('fault-based liability' or 'liability for fault')	Types of civil liability that require a subjective component of fault, which relates to culpability, such as intentional or negligent conduct (antonym 'strict liability').
general product liability	General rules of extracontractual and contractual liability that apply unchanged to the specific context of product accidents (antonym 'specific product liability').
information defect	An absence of warnings or use instructions renders a product defective.

intrinsic damage	In case of a product accident, the material damage to the product itself and the directly resulting economic damage (antonym of 'extrinsic damage').
joint and several liability ('solidary liability')	A rule for situations of joint liability that allows the creditor to obtain a complete remedy from one debtor, which awards to the latter a recourse claim against all other co-debtors to the extent that he has provided remediation beyond his own internal share of liability and which also results in the discharge of the external liability of the other co-debtors vis à vis the creditor (antonym 'several liability').
manufacturing defect	A product is defective because it departs from its intended design.
material damage	Damage to movable or immovable goods in which a person has a legally protected interest, such as ownership, possession or a right to use.
non-economic damage ('non-pecuniary damage' or 'moral damage')	Damage that cannot be clearly quantified in monetary terms, which normally overlaps with the psychological and emotional aspects of 'personal injury' (e.g. pain, suffering, emotional distress or loss of companionship).
strict liability ('faultless liability' or 'no-fault liability')	Types of civil liability that do not require a subjective component of fault and attribute liability not based on culpability but rather more purely on objective considerations such as the fact that particular conduct or a particular risk occurred (antonym 'fault liability'). Sometimes and in particular in common law jurisdictions, 'strict liability' is used as a synonym rather than a sub-category.
personal injury	Damage to physical health or psychological and emotional well-being suffered by natural persons.
post-marketing liability	Liability for failing to take certain corrective measures to remedy an accident risk after a product has been placed on the market.
product accident	An accident that has as a direct cause the functioning or use of a physical, movable good and that results in extrinsic damage. Limited in this dissertation to consumer goods.
product liability	Any type of civil liability for damage resulting from a product accident, which is imposed on a person who has some connection to the product that caused the accident.
products liability	Synonym of 'product liability', today mostly used in the US.
Production (in this dissertation also '(re)production')	Any process aiming to create, recreate or modify a product on the basis of components and resources.
reparation ('remediation')	A remedy aiming to restore injuries to legally protected interests suffered by a person for which another person can be held

	liable and mostly consisting of either compensation or reparation in kind.
several liability	A rule for situations of joint liability that allows the creditor to only claim from each debtor according to his respective share of liability (antonym 'joint and several liability').
specific product liability	Types of product liability that have been specifically adopted or obtained special features derogating from general liability law, which are specific to the context of liability for product accidents (antonym 'general product liability').
strict liability	A type of strict liability that automatically attributes liability based on risk-related responsibility for a specific activity or position. Sometimes and in particular in common law jurisdictions used as a synonym for all types of 'strict liability' (other liability than 'fault liability')
strict product liability	Traditional term used in the field of product liability to refer to strict liability regimes, like US strict liability in tort and EU harmonised product liability, which are based on product defectiveness but which are perhaps only truly 'objective' or 'strict' with regards to manufacturing defects.

List of abbreviations and acronyms

A-G.	Advocate-General (European Union)
AG	Amtsgericht (Germany)
art.	article
arts.	articles
B2B	business-to-business
B2C	business-to-consumer
BGH	Bundesgerichtshof (Germany)
CA	Cour d'Appel (France)
cf.	<i>confer</i> ('compare')
CJEU	Court of Justice (European Union)
Cass. BE	Hof van Cassatie / Cour de Cassation (Belgium)
Cass. FR	Cour de Cassation (France)
ECHR	European Convention on Human Rights (Council of Europe)
ECtHR	European Court of Human Rights (Council of Europe)
ECU	european currency unit, replaced by EUR (European Union)
ed.	editor
edn.	edition
eds.	editors
e.g.	<i>exempli gratia</i> ('for example')
et al.	<i>et alia</i> or <i>et alii/aliae</i> ('and others')
et seq.	<i>et sequens</i> or <i>et sequentes/sequentia</i> ('and the (things) following')
EU	European Union
ibid.	<i>ibidem</i> ('in the same place'; used to refer to the last preceding source cited in the same or preceding footnote(s))
i.e.	<i>id est</i> ('that is' or 'in other words')
<i>in fine</i>	'at the end' (used to refer to the final part of long text sections, e.g. in legislation)
<i>juncto</i>	'in conjunction with'
KG	Kammergericht (Germany)
LG	Landgericht (Germany)
nr.	number (of paragraph)
nrs.	numbers (of paragraphs)
OLG	Oberlandesgericht (Germany)
P2B	Prosumer-to-business (elsewhere often called 'C2B', consumer-to-
P2P	peer-to-peer or prosumer-to-prosumer

PLDI	Applicable national legislative implementation of the Product Liability Directive 85/374/EEC
Rb.	Rechtbank van eerste aanleg / Tribunal de première instance (Bel-
Rb. Kh.	Rechtbank van Koophandel / Tribunal de Commerce (Belgium)
RG	Reichsgericht (Germany prior to 1945)
sic	‘thus’ or ‘in this manner’ (used to signal the literal citation of a potentially incorrect word or phrase)
Trib.	Tribunal de première instance / Rechtbank van eerste aanleg (Bel-
Trib. Com.	Tribunal de Commerce / Rechtbank van Koophandel (Belgium)
US	United States of America

List of frequently cited legislation, legislative proposals and model rules

AI Liability Directive Proposal	Commission, 'Proposal for a Parliament and Council Directive on adapting non-contractual civil liability rules to artificial intelligence' COM(2022) 496 final
Boek 6 Wetsvoorstel 2023 / Livre 6 Proposition 2023	Wetsvoorstel houdende boek 6 'Buitencontractuele aansprakelijkheid' van het Burgerlijk Wetboek, <i>Parl.St.</i> Kamer 2022-2023, nr. 3213/001 / Proposition de loi portant le livre 6 'La responsabilité extracontractuelle' du Code civil, <i>Doc.Parl.</i> Chambre 2022-2023, nr. 3213/001 (Belgium)
BGB	Bürgerliches Gesetzbuch, originally created on 18 August 1896 (Germany)
CC FR	Code Civil des Français, originally created on 21 March 1804 (France)
CC BE	Burgerlijk Wetboek / Code Civil, created by Law of 13 April 2019 (Belgium)
Code de Commerce	Code de commerce, originally created by Law of 15 September 1807 and reorganised for its legislative part by Law of 18 September 2000 (France)
Code de l'Environnement	Code de l'environnement, created by Law of 18 September 2000 (France)
Code de la Consommation	Code de la consommation, created by Law of 26 July 1993 (France)
Consumer Sales Directive 1999/44/EC	Parliament and Council Directive 1999/44/EC of 25 May 1999 on certain aspects of the sale of consumer goods and associated guarantees [1999] OJ L171/12
Consumer Sales Directive 2019/771	Parliament and Council Directive 2019/771/EU of 20 May 2019 on certain aspects concerning contracts for the sale of goods, amending Regulation (EU) 2017/2394 and Directive 2009/22/EC, and repealing Directive 1999/44/EC [2019] OJ L136/28
Digital Services Act	Parliament and Council Regulation 2022/2065/EU of 19 October 2022 on a Single Market For Digital Services and amending Directive 2000/31/EC (Digital Services Act) [2022] OJ L277/1

Ecodesign for Sustainable Products Regulation 2024	Parliament and Council Regulation 2024/.../EU of 13 June 2024 establishing a framework for the setting of ecodesign requirements for sustainable products, amending Directive (EU) 2020/1828 and Regulation (EU) 2023/1542 and repealing Directive 2009/125/EC, <i>forthcoming in OJ L</i> ; available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=consil%3APE_106_2023_REV_1
EEC Treaty	Belgique, République fédérale d'Allemagne, France, Italie, Luxembourg et Pays-Bas, 'Traité instituant la Communauté économique européenne (avec annexes et Protocoles), fait à Rome, 25 mars 1957', 294 <i>U.N. Treaty Series</i> , nr. 4300, 23 et seq.
Empowering Consumers for the Green Transition Directive 2024/825	Parliament and Council Directive 2024/825/EU of 28 February 2024 amending Directives 2005/29/EC and 2011/83/EU as regards empowering consumers for the green transition through better protection against unfair practices and through better information [2024] OJ L825
General Product Safety Directive 2001/95/EC	Parliament and Council Directive 2001/95/EC of 3 December 2001 on general product safety [2002] OJ L11/4 (as amended by Regulation 765/2008/EC of 9 July 2008 [2008] OJ L218/30 and by Regulation 569/2009/EC of 18 June 2009 [2009] OJ L188/14)
General Product Safety Regulation 2023/988/EU	Parliament and Council Regulation 2023/988/EU of 10 May 2023 on general product safety, amending Regulation (EU) No 1025/2012 of the European Parliament and of the Council and Directive (EU) 2020/1828 of the European Parliament and the Council, and repealing Directive 2001/95/EC of the European Parliament and of the Council and Council Directive 87/357/EEC [2023] OJ L135/1
Gerechtiglijk Wetboek / Code Judiciaire	Gerechtiglijk Wetboek / Code Judiciaire, created by Law of 10 October 1967 (Belgium).
Green Claims Proposal 2023	Commission, 'Proposal for a Directive of the European Parliament and of the Council on substantiation and communication of explicit environmental claims (Green Claims Directive)' COM(2023) 166 final
Old CC BE	Oud Burgerlijk Wetboek / Ancien Code Civil, originally created on 21 March 1804 (Belgium)
PLD	Council Directive 85/374/EEC of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products [1985] OJ L210/29 (as amended by Directive 1999/34/EC of 10 May 1999 [1999] L141/20)
PLD Explanatory Memorandum 1976	Commission, 'Explanatory Memorandum of the Proposal for a Council Directive relating to the approximation of the laws,

	regulations and administrative provisions of the Member States concerning liability for defective products' COM(76) 372
PLD Proposal 2022	Commission, 'Proposal for a Directive of the European Parliament and of the Council on liability for defective products' COM(2022) 495 final
PLDI	Applicable national legislative implementation of the 'PLD'
Product Liability Directive	See 'PLD'
Produkthaftungsgesetz	Gesetz über die Haftung für fehlerhafte Produkte vom 15 Dezember 1989, <i>BGBI. I</i> , 2198 (as last amended by Gesetz 17 Juli 2017, <i>BGBI. I</i> , 2421) (Germany)
Projet de réforme de la responsabilité civile (Garde des sceaux 2017)	Projet de réforme de la responsabilité civile Mars 2017, présenté le 13 mars 2017, par Jean-Jacques Urvoas, garde des sceaux, ministre de la justice, suite à la consultation publique menée d'avril à juillet 2017 (France)
Promoting Repair Directive 2024	Parliament and Council Directive 2024/.../EU of 13 June 2024 on common rules promoting the repair of goods and amending Regulation (EU) 2017/2394 and Directives (EU) 2019/771 and (EU) 2020/1828, <i>forthcoming in OJ L</i> , available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=consil%3APE_34_2024_REV_1
Proposition de réforme de la responsabilité civile (Sénat 2020)	Proposition de loi portant réforme de la responsabilité civile, Sénat n° 678, session extraordinaire 2019-2020, enregistré 29 juillet 2020 (France)
Restatement (Second) of Torts	Restatement (Second) of Torts (American Law Institute 1965) (USA)
Restatement (Third) of Torts: Products Liability'	Restatement (Third) of Torts: Products Liability (American Law Institute 1998) (USA)
TFEU	Consolidated version of the Treaty on the Functioning of the European Union - Protocols - Annexes - Declarations annexed to the Final Act of the Intergovernmental Conference which adopted the Treaty of Lisbon [2012] OJ C326/1
UCC	Uniform Commercial Code (Uniform Law Commission 1951, initial articles) (USA)
Unfair Commercial Practices Directive	Parliament and Council Directive 2005/29/EC of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market and amending Council Directive 84/450/EEC, Directives 97/7/EC, 98/27/EC and 2002/65/EC of the European Parliament and of the Council and Regulation (EC) No 2006/2004 of the European Parliament and of the Council [2005] OJ L149/22
Unfair Contract Terms Directive	Council Directive 93/13/EEC of 5 April 1993 on unfair terms in consumer contracts [1993] OJ L95/29 (as amended by Directive

	2011/83/EU of 25 October 2011 [2011] OJ L304/64 and by Directive 2019/2161/EU of 27 November 2019 [2019] OJ L328/7)
Uniform Commercial Code	See 'UCC'
Waste Framework Directive 2008/98	Parliament and Council Directive 2008/98/EC of 19 November 2008 on waste and repealing certain Directives [2008] OJ L312/3 (often amended)
Wet Productaansprakelijkheid / Loi Responsabilité Produits	Wet van 25 februari 1991 betreffende de aansprakelijkheid voor produkten met gebreken, <i>BS</i> 22 maart 1991, 5884 / Loi de 25 février 1991 relative à la responsabilité du fait des produits défectueux, <i>MB</i> 22 mars 1991, 5884 (Belgium)
Wetboek economisch recht / Code droit économique	Wetboek van economisch recht / Code de droit économique, created by Law of 28 February 2013 (Belgium)
ZPO	Zivilprozessordnung vom 5 Dezember 2005, <i>BGBI.</i> I, 3202 (as last amended by Gesetz vom 22 Februar 2023, <i>BGBI.</i> I, nr. 51) (Germany)

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Part I. Introduction

Chapter 1. General introduction to the research topic

1. CHANGES IN THE CONSUMER GOODS SECTOR, CHALLENGES FOR PRODUCT LIABILITY – A slow but unmistakable evolution is taking place in the sector of durable consumer goods. The traditional economic model where professionals sell in their own shops new products that are subsequently used only by the purchasing consumer and are then discarded, is no longer as dominant as in previous decades. Increasingly, it gets challenged by alternatives that can be seen as part of the ‘circular economy’ and the partially overlapping ‘collaborative’ and ‘functional’ economic models.

Fuelled by trends towards more sustainable consumption, social and economic developments, supporting regulations and new technologies, individuals start again to use products and components longer and to buy second-hand, repaired or refurbished products. While companies modify their ‘business-to-consumer’ (‘B2C’) models based on this evolving behaviour, consumers themselves also become increasingly active as ‘prosumers’ on a ‘peer-to-peer’ (‘P2P’) basis by reselling, repairing or even creating products themselves. Online platforms further enable these trends, which start to redefine product lifecycles and what it means to be a ‘consumer’, ‘trader’ or ‘producer’.

However, the rules on civil liability for accidents caused by consumer goods, commonly referred to as ‘product liability’, have been developed during past decades on the basis of a linear economic system. A lot of uncertainties and profound questions therefore surround their application to these alternative methods for distributing and producing consumer goods. Current legal sources relating to this topic are scarce, limited in scope and scattered. Recent research on product liability seems to generally focus on new or atypical products and technologies and largely ignores new or atypical distribution and production methods. This doctrinal legal research project, which will primarily focus on EU harmonised ‘strict’ product liability and which will also integrate insights from the economic analysis of law, attempts to change this.

Section A. A first look at circular economy in the consumer goods sector

2. CIRCULAR ECONOMY AND CIRCULAR CONSUMPTION – Sales of second-hand apparel items are estimated to have grown from 2016 to 2019 21 times faster than traditional retail.¹ Other consumer goods are also increasingly being resold on a B2C or P2P basis, like consumer electronics,² furniture,³ outdoor and sports equipment,⁴ home and garden tools,⁵ bikes and other vehicles⁶ or child and baby items.⁷ Some of these items are repaired, refurbished or reconditioned prior to sale.⁸ And when purchased products become defective, consumers increasingly and for more diverse products try to either repair those themselves, at home or in

¹ ThredUp, '2019 Resale Report' (2019) <https://cf-assets-tup.thredup.com/resale_report/2019/thredUP-resaleReport2019.pdf>.

² See, e.g., S. Gibbs, 'How to buy a secondhand smartphone – and what to look out for' *The Guardian* (2021) <www.theguardian.com/money/2021/aug/21/how-to-buy-a-secondhand-smartphone-and-what-to-look-out-for>; 'The rise of secondary markets in electronics' <www.ingwb.com/en/insights/circular-economy/the-rise-of-secondary-markets-in-electronics>.

³ See, e.g., H. Wolfowitz, 'Pourquoi acheter des meubles d'occasion est une nouvelle tendance?' *Bazaar & Compagne* (2020) <www.bazaaretcompagnie.com/3760/pourquoi-acheter-des-meubles-d-occasion-est-une-nouvelle-tendance/>; 'Buyback & Resell' <www.ikea.com/kr/en/customer-service/services/buy-back-resell/>; 'Kaiyo: You go-to for real finds' <<https://kaiyo.com/>>.

⁴ See, e.g., 'Used Gear' <www.rei.com/used/shop/gear>; 'Geef een tweede leven aan je sportmateriaal!' <www.decathlon.be/nl/landing/buyback/_/R-a-buyback>; 'Besoin de renouveler votre matériel de sport ? Des milliers d'articles de sport de seconde main' <www.sporteed.fr/>.

⁵ See, e.g., 'Bricolage' <www.reepeat.fr/produits/bricolage-et-jardin/bricolage>; 'Berlin-Werkzeughandel' <www.ebay-kleinanzeigen.de/pro/Berlin-Werkzeughandel>; 'Second hand gardening equipment' <www.grays.com/products/second-hand-gardening-equipment>.

⁶ See, e.g., 'Fietsen en Brommers' <www.2dehands.be/l/fietsen-en-brommers/>; 'Et si ça pouvait encore servir: Une seconde vie pour vos objets défectueux' <www.kapout.be/?category=transport>; 'Search bicycles' <newyork.craigslist.org/search/bia>.

⁷ See, e.g., 'Scharrelvos: circulaire kindwinkel' <www.scharrelvos.be/>; 'Trendy, pre-loved birth registries' <www.micmacminuscul.be/en>; 'Baby- und Kinderartikel Second Hand' <www.xn--trumelino-w2a.de/c/second-hand-1/baby-und-kinderartikel-second-hand>; 'Shop and sell used baby & kid items' <<https://goodbuygear.com/>>; 'Explore New Arrivals' <<https://us.rebelstork.com/>>.

⁸ See, e.g., 'Door gebruikte spullen een tweede leven te geven, dragen we zorg voor het milieu én creëren we sociale tewerkstelling' <www.dekringwinkel.be>; 'Hier wird Top Technik "Back" in einen erneuerten Zustand gebracht' <www.backmarket.de/de-de>; 'Refurbished Laptops, Desktops & Monitors' <www.dell.com/en-sg/outlet>; 'Refurbished design' <www.flinders.be/refurbished-design>; 'Refurbished Furniture' <<https://swyftthome.com/collections/certified-refurbished>>; 'Garden tools' <<https://atlas-refurb.co.uk/product-category/garden-tools/>>; 'Les équipements pour bébé en reconditionné et d'occasion' <www.reepeat.fr/produits/bebe-et-puericulture>.

a ‘repair café’,⁹ or use a repair service from the original manufacturer’s network¹⁰ or a third-party professional.¹¹

All these actions are examples of circular economy in the consumer goods sector (‘circular consumption’). ‘Circular economy’ can be best understood as the opposite of the ‘linear economy’, which is the now dominant economic value chain in which resources are continuously extracted for the mass production of new goods; these goods go once through a professional distribution chain to be sold to a consumer; who uses it exclusively and in many cases non-intensively until the good is disposed of, which often happens relatively quickly because of the prevalence of premature obsolescence and of the impetus for purchasing new consumer goods.¹² In contrast, the ‘circular economy’ can be defined as “*new technologies and business models designed to preserve wherever possible the value of resources and materials within the economy, to avoid waste, and to minimise the environmental impact of the resulting material cycles*”¹³ (see also *infra* nr. 56).

Circular economy is primarily driven by environmental concerns, but there are also economic and social arguments in favour of circular economy (see *infra* nrs. 61-63). It has therefore started to receive support from policymakers in many areas of the world, perhaps now most visibly at the level of the EU.¹⁴ It is possible to broadly distinguish four groups of circular consumption strategies for durable consumer goods, which can be supported through product design, specific business models and bottom-up initiatives.¹⁵ First, in the

⁹ See, e.g., S. McAllister, ‘10 Stories of Transition in the US: The Spread of Repair Cafes’ *Transition US* (2018) <www.transitionus.org/10-stories-of-transition-in-the-us-the-spread-of-repair-cafes/>; ‘Netzwerk Reparatur-Initiativen’ <www.reparatur-initiativen.de/>; ‘Visit one of our 2417 Repair Cafés’ <www.repaircafe.org/en/visit/>.

¹⁰ See, e.g., ‘Finden Sie hier einen Reparatur-Spezialisten in Ihrer Nähe!’ <www.meinmacher.de/>; ‘Apple Repair’ <<https://support.apple.com/repair>>; ‘Repair’ <www.mieleusa.com/c/repair-26.htm>; ‘Inspection et réparation’ <www.canyon.com/fr-fr/customer-service/help-center/inspection-repair.html>.

¹¹ See, e.g., ‘Reparatie indienen’ <www.quicksolutions.be/reparatie>; ‘Pushchair refurbishment packages’ <www.rascalbabies.co.uk/services/pushchair-refurbishment-packages/>; ‘Déposez votre appareil sans rendez-vous!’ <www.planetrepair.fr/>; ‘Restauration de meuble ancien, vintage, en bois’ <www.jesuisreparateur.fr/reparation/restauration-meuble>.

¹² See Ellen MacArthur Foundation, McKinsey & Company and World Economic Forum, *Towards the circular economy. Vol 3: Accelerating the scale-up across global supply chains* (2014), 12; M. Esposito, T. Tse and K. Soufani, ‘Introducing a Circular Economy: New Thinking with New Managerial and Policy Implications’ (2018) 60 *California Management Review* 5, 5; P. Lacy, J. Long and W. Spindler, *The Circular Economy Handbook: Realizing the Circular Advantage* (Palgrave Macmillan 2020) 5.

¹³ K. Van Acker et al., *Circular Economy* (KU Leuven 2016) 5.

¹⁴ See Commission, ‘Closing the loop – An EU action plan for the Circular Economy’ (Communication) COM(2015) 614 final; Commission, ‘A new Circular Economy Action Plan For a cleaner and more competitive Europe’ (Communication) COM(2020) 98 final.

¹⁵ See generally W.R. Stahel, ‘The circular economy’ (2016) 531 *Nature* 435, 435-436; P. Lacy, J. Long and W. Spindler, *The Circular Economy Handbook: Realizing the Circular Advantage* (Palgrave Macmillan 2020) 19-30; M. Pieroni, T. McAloone and D. Pigosso, ‘From theory to practice: systematising and testing business model archetypes for circular economy’ (2020) 162 *Resources, Conservation and Recycling* 105029, 3-11; P. Mhatre et al., ‘A systematic literature review on the circular economy initiatives in the European Union’ (2021) 26 *Sustainable Production and Consumption* 187, 194-198.

production stage it is possible to improve resource and energy efficiency and at the end-of-life stage it is possible to recover resources (recycling, upcycling, downcycling and energy recapture). Second, the lifespan of products and components can be extended through using them longer, repurposing, redistributing repairing, refurbishing or remanufacturing them. Third, products can be used more intensively through sharing them among users. And, fourth, incentives to apply the second and third strategies may be generated once consumer goods are offered as a service rather than being sold ('servitisation').

These last two strategies overlap with the concepts of collaborative and functional economy, which are discussed *infra* nrs. 67-68. Yet, it is important to continue to distinguish both these concepts from circular economy on which this dissertation will focus, since they are driven by different motifs.

Section B. Understanding product liability in its legal context

3. OVERVIEW: THE NATURE OF 'PRODUCT LIABILITY', ITS ALTERNATIVES AND ITS COMPLEMENTS – The previous Section introduced this dissertation's factual subject matter: the emergence of alternative methods for distributing and producing consumer products. This Section introduces this dissertation's legal subject matter: 'product liability'. It briefly explains its goals, main features and the different theories of liability on which it can potentially be based. Providing this theoretical context does not seem to be a redundant step, given that product liability is especially in Europe sometimes misunderstood and definitely not perceived as an independent legal field.¹⁶ The presentation below is not the only way how product liability can be analysed.¹⁷ Nevertheless, by focusing on common functions and general features from

¹⁶ US scholars have debated whether their 'products liability', which is more distinctive in nature and receives more attention than its European equivalent, should be considered as a separate legal field. The opposing viewpoint still has a strong case, since it is clear that product liability theories are derived from tort and contract law. The supporting viewpoint might, however, have become more persuasive over time. This is because modern US products liability has eventually developed its own theories, because products liability litigation has grown exponentially in US legal practice and because so many courts, practitioners and legislatures have simply started treating it as a distinct field. See Owen and Davis, *Products Liability*, 4th edn., nr. 1:4. See also A. Bernstein, 'How Can a Product Be Liable?' (1995) 45 *Duke Law Journal* 1, 81-83 (emphasizing sociocultural importance of products, calling for interdisciplinary study of product liability as a separate field); M. Reimann, 'Liability for Defective Products at the Beginning of the Twenty-First Century: Emergence of a Worldwide Standard' (2003) 51 *American Journal of Comparative Law* 751, 756-757 (discussing how product liability through either legislative action or growing consensus among scholars and practitioners has established itself in most of the developed world).

¹⁷ See, e.g., Borghetti, *La responsabilité du fait des produits*, 588 (discussing specifically the PLD-1985): "Il existe une grande diversité d'avis sinon sur la manière dont il faut analyser le régime de responsabilité du fait des produits, du moins sur ce qu'il devrait être."

a comparative perspective, this presentation is hopefully both elucidating for the uninitiated and defensible for the expert. Particular attention is devoted to the main alternatives or complements to product liability law, given their importance for understanding the operation of product liability in practice both from a positive and from a normative perspective (see in particular also *infra* nrs. 105-111 and 150-165).

§ 1. Prevention and reparation of product accidents

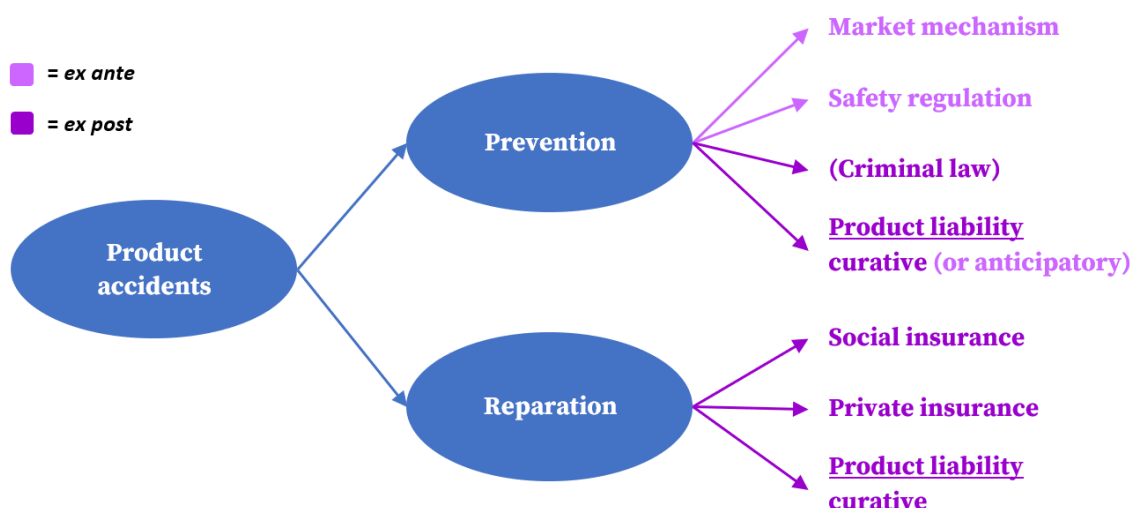


Figure 1: A first look at prevention and reparation mechanisms for product accidents.

4. ‘PRODUCT ACCIDENTS’, PREVENTION OR REPARATION GOALS AND ‘PRODUCT LIABILITY’ – Analysing product liability requires starting with the factual phenomenon of ‘product accidents’. These are understood in this dissertation as accidents that have as a direct cause the functioning or use of a movable good and that result in damage beyond damage to the product itself (see also *infra* nr. 5 on the concept of ‘extrinsic damage’). This dissertation focuses specifically on product accidents involving physical, movable and durable consumer goods (see *infra* nrs. 32-34). Product accidents lead each year in the EU and elsewhere to millions of serious injuries, many tens of thousands of premature deaths, major pain and suffering as well as significant material and economic damage (see the data cited *infra* nr. 41). Product accident risks are pervasive because consumer products are objects that we encounter and use on a daily basis. This is exacerbated by the sheer volume, variety and complexity of products that we as modern mass consumers acquire in an attempt to enrich our lives and make them more comfortable (see *infra* nrs. 13-14).¹⁸ It furthermore results from the intrinsically risky nature of certain consumer goods (e.g. vehicles and kitchen, DIY, garden or sports equipment) and

¹⁸ See also D.G. Owen, ‘Products Liability: Principles of Justice for the 21st Century’ (1990) 11 *Pace Law Review* 63, 64-66 (describing the many products which surround modern consumers in their daily lives); F. Trentmann, *Empire of Things: How We Became a World of Consumers, from the Fifteenth Century to the Twenty-First* (HarperCollins 2016) (painting a grand historical overview).

of the context in which they are used (e.g. baby and elderly care items, furniture or toys). Most modern legal systems try to deal with product accident risks in a two-pronged approach: a goal of prevention and a goal of reparation. For pursuing each of these goals, several mechanisms can be identified.¹⁹

The goal of ‘accident-prevention’ or ‘deterrence’ consists of limiting as much as possible the number and severity of occurring product accidents. Although more detailed distinctions are possible,²⁰ there are three main prevention mechanisms. Two of these mechanisms operate exclusively *ex ante*: the market mechanism, which operates among other things on the basis of consumer information about product accident risks, and product safety regulation, which imposes obligations on economic operators aiming to prevent product accidents. These mechanisms are further discussed *infra* nrs. 9-11. The third prevention mechanism is liability law, which primarily operates *ex post*.

In many legal systems, a plaintiff is theoretically entitled to file *ex ante* an anticipatory claim based on product liability.²¹ Such claims can directly contribute to accident-prevention, for example by resulting in an injunction to remediate a specific product accident risk, for example through a product recall.²² Nevertheless, product liability operates in current practice almost exclusively *ex post* by means of curative claims which seek reparation after an accident has occurred. This dissertation focuses primarily on these actions (see *infra* nr. 36). Curative product liability claims also contribute indirectly to accident-prevention. By imposing liability for the damage resulting from a product accident on actors who might have had some

¹⁹ The prevention and reparation (‘compensation’) goals as well as most mechanisms to pursue them, were already recognized by successive generations of doctrinal legal scholars. The comprehensive understanding presented in this paragraph is the result of insights developed in the economic analysis of product liability literature, which is further explored *infra* nrs. 103 et seq. See also Figure 9 *infra* nr. 150.

²⁰ See, e.g., S. Shavell, *Economic Analysis of Accident Law* (Harvard University Press 1987) 277-279 who identifies four possible approaches to the control of accident risks in general: (i) privately-initiated *ex ante* (injunctions); (ii) privately-initiated *ex post* (civil liability); (iii) state-initiated *ex ante* (safety regulation or corrective taxes); and (iv) state-initiated *ex post* (criminal and administrative liability for inflicted harms). Note that Shavell’s ‘privately-initiated’ approaches still rely on state law. This is in contrast to soft law and self-regulation, such as purely voluntary industry standards and certifications, which can be considered as manifestations of market forces. The threefold distinction used here and in Figure 9 *infra* nr. 150 (grouping *ex post* civil and criminal liability together) is chosen because it feels more intuitive for European lawyers and because it better represents the actually important mechanisms in current practice.

²¹ See for a comprehensive study of such anticipatory actions, focusing on Belgian law but integrating comparative elements P. Gillaerts, *De Belgische declaratoire vordering en het niet-vergoedende aansprakelijkheidsrecht* (Intersentia 2020). See also specific to the Belgian context art. 6.40 CC BE. This is a new general ground for anticipatory claims, although limited to preventing certain or seriously threatening violations of a specific legal rule requiring specific context. Such rule might be a product safety rule, yet see *infra* nr. 208.c.

²² This illustrates the similarity between anticipatory product liability actions and private enforcement of product safety regulation. Some legal systems allow both or hybrid combinations, others only one or none of them. E.g., under Belgian law, an anticipatory product liability action would be most likely based on general extracontractual fault liability combined with (an imminent violation of) product safety provisions as so-called ‘rules requiring specific conduct’ (see *infra* nrs. 208.c and 214).

control over its causes, such actors are incentivized to exercise more care in order to try to prevent such accidents from occurring (see *infra* nrs. 108-109 for a more rigorous economic analysis). Sometimes, relevant conduct determining product accident risks qualifies on the basis of criminal law.²³ Yet general criminal law provisions, outside specific criminal sanctions which enforce *ex ante* product safety regulation, are generally ill-suited to the product accident context and the mostly unintentional conduct underlying product accidents is generally not a priority for most, resource-constrained public prosecutors (see also *infra* nr. 157). The more significant method to pursue *ex post* liability for product accidents is based on civil liability, which depends for its enforcement on injured private parties who seek reparation. This last specific domain is called in the US, where it was first recognized as a separate legal field, ‘products liability’, and in Europe in most cases ‘product liability’. It is defined broadly for the purposes of this dissertation as any form of civil liability for damage resulting from a product accident, especially other damage than to the product itself, which is imposed on a person who has some connection to the product that caused the accident.²⁴

The goal of ‘reparation’, which is later renamed more accurately as risk-allocation (see *infra* nrs. 105-106), focuses on protecting individuals injured by a product accident through remediating the damage suffered by them. This can be done on the basis of reparation in kind. But the more popular and sometimes the only possible reparation remedy consists of monetary ‘compensation’ or ‘damages’. Again, three main reparation mechanisms can be identified in the product accident context, which given their reparatory function all operate *ex post* an intervening accident. Social insurance consists of state-organized and mandatory reparation institutions like public health care, social security and certain sectoral funds, which provide compensation and sometimes also reparation in kind. Private insurance consists of individual and voluntary contracts providing first-party or third-party insurance coverage, which generally provide compensation. Both mechanisms, which operate as alternatives and as complements to product liability, are further discussed *infra* nr. 11. The third mechanism consists of the aforementioned curative claims on the basis of rules of civil ‘product liability’. These allow parties injured by a product accident to claim reparation, most often compensation, from one or more individual actors who have some connection with the product that caused the accident.

²³ See, e.g., for potential qualifications of product accidents under Belgian criminal law P. Traest, ‘Strafrechtelijke aspecten’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 773-782, 787-802, 804-805; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 321-332.

²⁴ Cf. Howells, *Comparative Product Liability*, 1; S. Wesch, *Die Produzentenhaftung im internationalen Rechtsvergleich* (Mohr Siebeck 1994) 5-10; Kötz and Wagner, *Deliktsrecht*, nr. 605; Frumer, Friedman and Sklaren, *Products Liability*, nr. 1.01. These traditional definitions can be considered as being more instructive for traditional product liability practice, because they identify the economic actors who are traditionally subject to product liability and they already specify to some extent the most relevant liability conditions. However, this dissertation employs a more neutral and broader definition because of its subject matter and comparative approach. The focus on non-traditional product distribution and production patterns further necessitates an approach that is not too restrictive from the outset (see also *infra* nrs. 28 et seq. and 97 et seq.).

The preceding discussion makes clear that, although there is more than one alternative to product liability for both prevention and reparation purposes, product liability is the only mechanism that can serve both goals. Additionally, it is important to understand that prevention and reparation mechanisms interact with each other in several ways (see *infra* nrs. 9-11 and Part III more generally) and that they are more correctly understood as complementary means to pursue the same two core societal goals.²⁵

§ 2. Product liability

5. CONTRACTUAL OR EXTRACTIONAL PRODUCT LIABILITY, ‘EXTRINSIC DAMAGE’ AND DISTINGUISHING BETWEEN ‘VERTICAL’, ‘HORIZONTAL’ AND ‘DIAGONAL’ RELATIONSHIPS – Although the development and traits of product liability rules differ between legal systems, it generally straddles the divide between contractual liability and extracontractual liability (see also *infra* nr. 172 regarding the PLD).

As a starting point, contractual liability (understood broadly, including breach of warranty in common law) can seem straightforward, because products have normally been distributed on a contractual basis and a lack of safety may violate contractual obligations. Nevertheless, the underlying logic²⁶ of contractual liability and in many instances its remedies²⁷ are essentially geared towards protecting the economic value of the transaction itself (contractual performance), which in the product distribution and production context mostly consists of remediating material damage to the supplied good and the resulting economic damage (‘intrinsic damage’), and less towards safety and protecting the parties’ broader interests, like preventing or compensating physical injuries and damage to other goods (‘extrinsic

²⁵ See, e.g., S. Shavell, ‘A Model of the Optimal Use of Liability and Safety Regulation’ (1984) 15 *RAND Journal of Economics* 271; P. Burrows, ‘Consumer safety under products liability and duty to disclose’ (1992) 12 *International review of law and economics* 457, 458; Artigot-Golobardes, ‘Beyond European Product Liability’, 320, 324, 335; J.J. Ganuza, F. Gomez and M. Robles, ‘Product Liability versus Reputation’ (2016) 32 *Journal of Law, Economics, and Organization* 213, 221-227.

²⁶ E.g., the concept of product defect in specific product liability regimes such as EU harmonised product liability or US strict liability in tort, which focuses on safety aspects, is narrower than general contractual conformity concepts, which also relate to other considerations of functionality and agreed specifications. See regarding the PLDI *infra* nr. 179.

²⁷ E.g., the guarantee of hidden defects in sales law, which through Roman law has a historical presence in all civil law systems and is for example still clearly present in FRANCE and BELGIUM, primarily aims to restore or compensate the value of the delivered good (art. 1644 CC FR; art. 1644 Old CC BE). Reparation of additional (extrinsic) damages remains restricted to situations where the seller (is presumed to have) had knowledge about the hidden defect (art. 1645-1646 CC FR; arts. 1645-1646 Old CC BE). See also Tilleman and Van Den Abeele (collab.), *Gevolgen van de koop*, 436, 439-441 (discussing the guarantee of hidden defects in Belgian and comparatively also French sales law; mentioning historical focus on value of sold good; nevertheless rejecting the distinction between intrinsic and extrinsic damage in favour of more nuanced psychological criterion for determining damage that can be compensated based on either arts. 1645 or 1646 Old CC BE). But see also *infra* nr. 215 on an alternative theory in Belgian scholarship that considers the *action directe* for reparation of extrinsic damage as being no longer based on the hidden defects guarantee.

damage’).²⁸ In German law, these different rationales are referred to as the *Äquivalenzinteresse* and the *Integritätsinteresse*, respectively.²⁹ In the context of product accidents, it is of paramount importance to prevent and repair extrinsic damage and intrinsic damage is often merely an afterthought. This distinguishes product liability from traditional contractual performance disputes and this is why this dissertation primarily focuses on extrinsic damage or the *Integritätsinteresse* (see also *supra* nr. 4). However, the fact that contractual liability is primarily concerned with remediating intrinsic damage, does not prevent it from additionally enabling the reparation of extrinsic damage.³⁰ Traditional contractual liability can therefore still be an integral part of product liability law *sensu lato*.

Across the examined legal systems,³¹ a more fundamental obstacle to the broad application of contractual liability in case of product accidents is what US scholars have called product liability’s ‘privity problem’.³² On the one hand, harmed consumers may want to claim against

²⁸ See Cousy, *Problemen van produktenaansprakelijkheid*, 365-367; H.C. Taschner, ‘Die künftige Produzentenhaftung in Deutschland’ (1986) *Neue Juristische Wochenschrift* 611, 614; Borghetti, *La responsabilité du fait des produits*, 7-8; B. Markesinis, H. Unberath and A. Johnston, *The German Law of Contract: A Comparative Treatise* (Hart 2006) 446 (comparing generally civil law with common law systems); Stöhr, ‘Haftung aus § 823 Abs. 1 BGB’, § 1525, 8-9; Delforge, ‘Le défaut de sécurité au sens de la loi du 25 février 1991’, 298. See also on the historical origin of the distinction between ‘intrinsic’ and ‘extrinsic damage’ and its role Belgian contract law albeit in a comparative perspective B. Verkempinck, *Schadevergoeding wegens wanprestatie in Europees perspectief* (die Keure 2017) 115-134.

²⁹ See also E. Van Gool, ‘Overview of German product liability law’ (2024) <<https://ssrn.com/abstract=4824956>> nrs. 1.a.c.

³⁰ However, the inverse is not necessarily true. E.g., EU harmonised product liability excludes reparation of intrinsic damage, by excluding damage to the defective product itself from its scope of application (art. 9(b) PLD-1985; art. 6(1)b(i) PLD-2024). See *infra* nr. 190.

³¹ See G. Viney, ‘La responsabilité civile du fabricant en droit français’ in C. Gavalda (ed.), *La responsabilité des fabricants et distributeurs* (Economica 1975) 69-73; Cousy, *Problemen van produktenaansprakelijkheid*, 254, 286; Howells, *Comparative Product Liability*, 108, 202-206; Borghetti, *La responsabilité du fait des produits*, 8, 25-26, 101-113, 200-203; J. Hermes, *Wechselwirkungen zwischen Produktsicherheitsrecht und Produkthaftungsrecht* (Verlag Dr. Kovac 2009) 12-13; B. Pfister, ‘Überblick über die verschiedenen Lösungsmodelle’ in H.-J. Kullmann and others (eds.), *Produzentenhaftung, Band 2* (ESV, looseleaf 2020 update) § 1330, 4; Frumer, Friedman and Sklaren, *Products Liability*, nr. 1.02; Owen and Davis, *Products Liability*, 4th edn., nrs. 1.9-1.11.

³² ‘Privity’ is “[t]he connection or relationship between two parties, each having a legally recognized interest in the same subject matter” and ‘privity of contract’ is “[t]he relationship between the parties to a contract, allowing them to sue each other but preventing a third party from doing so.” (‘Privity’ in B.A. Garner (ed.) *Black’s Law Dictionary* (11th edn, Westlaw 2019 update)). Privity of contract is therefore akin to the principle of contractual relativity in civil law. Civil law readers should, however, be mindful that lack of privity was originally also an obstacle for product liability claims outside contractual relationships based on negligence, until this defence after being weakened was ultimately abandoned in negligence cases (in US law most decisively in the leading case *MacPherson v. Buick Motor Co.*, 217 N.Y. 382, 111 N.E. 1050 (1916)). This first major development should be distinguished from the subsequent weakening of the privity defence for warranty-based claims in vertical, horizontal and diagonal relationships and from the ultimate adoption of strict liability in tort which is available to a claimant entirely outside of privity. See for a famous overview of these developments in US products liability law W.L. Prosser, ‘The Assault upon the Citadel (Strict Liability to the Consumer)’ (1960) 69 *Yale Law Journal* 1099; W.L. Prosser, ‘The Fall of the Citadel (Strict Liability to the Consumer)’ (1966) 50 *Minnesota Law Review* 791.

other actors in the product's distribution chain who are not their direct contractual counterparts ('vertical' privity problem). The most notable target is the producer, who is often best positioned to prevent certain product accident risks, might be more easy to identify after an accident than a distributor and might be more likely to remain solvent. On the other hand, third parties, especially pure bystanders who are not family members of the consumer, may in case of an accident want to claim against the consumer who owned or had some control over the product ('horizontal' privity problem). Alternatively, these third parties might also want to claim against the product's producer or its distributor ('diagonal' privity problem).³³ These possible vertical, horizontal and diagonal claims lack a (direct) contractual basis and necessitate some form of extracontractual or hybrid liability, which can be seen as one of the main reasons for the development of modern, often stricter 'specific product liability' rules (see *infra* nrs. 6 and 14, d-e).

This dissertation employs the terminological distinction between 'vertical', 'horizontal' and 'diagonal' relationships, which can correspond with possible product liability claims. These terms offer some clarity because they are visually structured along a constant in product liability: the product's distribution chain and its use context (see also *infra* nr. 74). Because contractual liability claims are in some legal systems allowed across multiple links in a product's distribution chain and because in other legal systems extracontractual liability claims are allowed between direct contractual parties, the term 'vertical relationship' is used here indiscriminately to refer to all claims along a product's distribution chain.

Note that 'horizontal' claims by injured third parties against the product user are often seen as not being part of the core of product liability law, in contrast to vertical and diagonal claims. This can be explained through two connected reasons. First of all, the more 'specific' product liability theories focused on the product accident context, like EU harmonised product liability, tend to fixate on (commercial) producers and distributors as defendants (see *infra* nr. 74), which means that they do not cover the 'horizontal' relationship. Second, characteristic of the common understanding of 'product liability' is that liability of a person is appreciated through the prism of the technical features of a product (produced or distributed by the defendant) (see also *infra* nrs. 18 and 101.c). This 'product-mediated' nature of product liability is less present in horizontal claims, where the product's user own conduct is directly evaluated in the product accident setting.

³³ See, e.g., on vertical, horizontal and diagonal 'non-privity' as concepts in US case law and literature Szajna v. General Motors Corp., 115 Ill. 2d 294, 305, 104 Ill. Dec. 898, 903, 503 N.E.2d 760, 765 (1986); Dalton v. Stanley Solar & Stove, Inc., 137 N.H. 467, 470, 629 A.2d 794, 796-97 (1993); Hyundai Motor America, Inc. v. Goodin, 822 N.E.2d 947, 952 (Ind. 2005); E. Emroch, 'Statutory Elimination of Privity Requirement in Products Liability Cases' (1962) 48 *Virginia Law Review* 982, 985-986; M. Franklin, 'When Worlds Collide: Liability Theories and Disclaimers in Defective-Product Cases' (1966) 18 *Stanford Law Review* 974, 998, 1014-1015; Owen and Davis, *Products Liability*, 4th edn., nrs. 4:23-4:25. See also Cousy, *Problemen van produktenaansprakelijkheid*, 11.

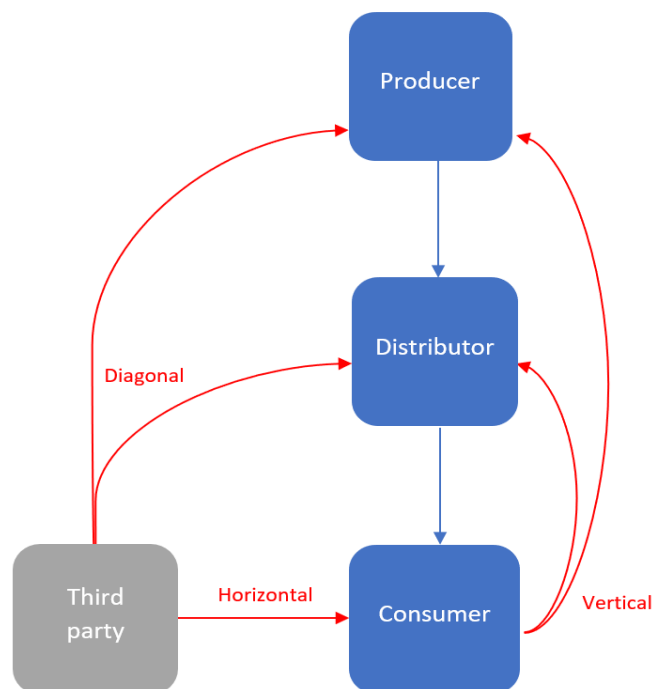


Figure 2: Vertical, horizontal and diagonal product liability claims.

6. A BRIEF OVERVIEW OF ‘SPECIFIC’ AND ‘GENERAL’ PRODUCT LIABILITY THEORIES – Along this basic factual disposition, different legal systems recognize different theories of liability. Notwithstanding the comparative complexity of these variations, it is possible to broadly identify some major liability categories that are the most important theories of product liability in practice and that are generally comparable across legal systems.

To the extent that these civil liability theories have been specifically adopted or obtained special features that are specific to the context of liability for product accidents, these can be identified as theories of ‘specific product liability’, like EU harmonised product liability, German *Produzentenhaftung* case law or the Belgian-French ‘objective fault’ consisting of putting a defective product on the market,³⁴ as discussed below. In most jurisdictions, unchanged general rules of extracontractual and contractual liability law continue to also remain applicable in product accident settings. These can then be identified as ‘general product liability’ law. *Infra* nr. 74, it is highlighted that specific product liability theories tend to be limited to vertical and diagonal claims and impose liability on actors involved in product distribution and production. Conversely, horizontal claims relating to the usage of a product seem to be exclusively governed by general and traditionally exclusively extracontractual product liability theories.

- a. As a first potential product liability theory, there is contractual liability or its functional equivalents like breach of warranties in US law. When available, this offers in most jurisdictions clear benefits to plaintiffs but is often also significantly limited. Above all,

³⁴ The latter now seems to violate EU product liability maximum harmonisation, as recognised very recently in at least Belgian law (Cass. BE 14 March 2024, C.23.0100.N, ECLI:BE:CASS:2024:ARR.20240314.1N.2, *Juportal*). See in more detail *infra* nrs. 208-213.

contractual liability is oriented less towards claims for reparation of extrinsic damage and it encounters the threefold ‘privity problem’, as discussed *supra* nr. 5.

The Belgian-French hidden defects guarantee can appear as a specific product liability theory, given the strong protection it offers to injured parties against specialized or professional sellers and producers³⁵ and given the usefulness in modern product accident settings of the *action directe* (see *infra* nrs. 6.b and 215). Moreover, the domain of product liability has likely played an important role in its historical development (see also *infra* nr. 14). Nevertheless, the hidden defects guarantee is also applicable outside the context of product accidents and can therefore still be more appropriately qualified as a general product liability theory.

- b. Second, the most widespread and broadly applicable answer to the issue of product liability is extracontractual fault-based liability like the general liability for fault in continental systems and the tort of negligence in US law. However, a traditional, subjective conception of fault is considered difficult to prove in product liability claims against a manufacturer or distributor, given the injured party’s lack of general expertise and knowledge about a particular product’s production and distribution process.³⁶ This is why some jurisdictions have extended the strong protection they offer to consumers on the basis of contractual liability to vertical relationships along the product’s distribution chain, like Belgian and French law by means of the *action directe* based on the guarantee of hidden defects.³⁷ A main underlying reason for the choice in both systems to primarily develop product liability on a contractual basis, is the *non-cumul* rule that in French and until recently in Belgian law³⁸ prohibited victims of product accidents to claim on an extracontractual basis against contractual counterparties or even against parties higher up in a sales-based distribution chain.³⁹

³⁵ Precisely this ‘strict’ extension of the hidden defects guarantee may also violate EU product liability maximum harmonisation. See *infra* nr. 216.

³⁶ See Borghetti, *La responsabilité du fait des produits*, 208; E. Büyüksagis, *La notion de défaut dans la responsabilité du fait des produits* (Schulthess 2005) 194-197; H. Bocken, ‘Buitencontractuele aansprakelijkheid voor gebrekkige producten’ in X. (ed.), *Bijzondere overeenkomsten*. PUC W. Delva nr. 34 (Kluwer 2008) 346; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 301, 303; Hager, Staudinger, ‘BGB § 823 E-I’, nr. F1. See also BGH 26 November 1968, VI ZR 212/66, BGHZ 51, 91, NJW 1969, 269, *Juris*, nrs. 37-38. But see Fox, ‘Questioning the Social Desirability of Product Liability Claims’, 211-219 (arguing in the context of English and Scots law that negligence is not always difficult to prove and that causation presents in product liability cases a more significant evidentiary challenge).

³⁷ See *infra* nr. 215 and *infra* footnote 978.

³⁸ See now art. 6.3 CC BE. See also *infra* nr. 208.d on how this can further expand the prominence of extracontractual liability in Belgian product liability law *sensu lato*.

³⁹ See on this last, far-reaching ‘colonisation’ by contract law of the indirect vertical (traditionally extracontractual) product liability relationship BELGIUM: Cass. BE 2 October 2020, C.20.0005.N, *Jur.Prat.* 2023, 177, note J. Romain, *TBBR* 2021, 188, note M. Higny, *TBH* 2020, 939 (this decision now seems to be no longer valid due to the abrogation of the *non-cumul* principle in art. 6.3, §1, first section CC BE). FRANCE: Cass. FR (1^e Ch.) 13 November 1984, nr. 83-13.020, *Bull.civ.* 1984, I, nr. 303; Cass. FR (2^e Ch.) 30 November 1988, nr. 86-14.325, *Bull.civ.* 1988, II, nr. 240; Cass. FR (2^e Ch.) 29 April 2004, nr. 01-17.321, *D.* 2004, 1430, *Gaz.Pal.* 2004, 2522.

However, a more common approach is to facilitate extracontractual fault-based product liability claims, for example through the reversal of the burden of proof in German *Produzentenhaftung* on the basis of § 823 (I) BGB or the use of *res ipsa loquitur* doctrine in US negligence cases. In French and to a lesser extent Belgian law, a far-reaching solution was afforded to injured third parties who could claim diagonally on the basis of an ‘objective’ extracontractual liability for fault that automatically qualified as a fault the act of placing a defective product on the market, but this now seems to violate the EU product liability maximum harmonisation.⁴⁰ German *Produzentenhaftung* and the more objective Belgian-French fault-based liability for producing and sometimes selling a defective product, can be categorized as specific product liability theories since they are limited to product accident settings.

Fault-based extracontractual liability seems generally suited to claims in the horizontal relationship between consumers or sometimes PSS-providers, on the one hand, and injured third parties, on the other hand. But it is worth noting that some systems provide interesting alternatives like the slightly more strict (objective) French and Belgian *responsabilité du fait des choses*,⁴¹ which is a general liability theory that is often overlooked in product liability literature (see *infra* nr. 74 for a possible explanation).

- c. Third, US products liability law has in the 1960’s developed strict liability in tort, a specific product liability that protects both consumers and third parties regardless of privity and that imposes a strict liability on professional sellers of products, which includes producers. It requires that the plaintiff only proves damage, causation and a defect in the product, which is at least for manufacturing defects distinct from a requirement of fault (see *infra* nr. 7). The EU eventually followed this example by adopting Product Liability Directive 85/374/EEC (‘PLD-1985’), which will now be updated by a new Directive on which a political compromise has been reached at the time of writing between the Council and Parliament (‘PLD-2024’).⁴² It aims to also protect both consumers and third parties through a comparable ‘extracontractual’ liability that is somewhat misleadingly described as ‘strict’ (see *infra* nrs. 172-173). Yet, it has to a large extent restricted this strict product liability theory to professional producers, importers and a few more so-called ‘primary liable’ defendants (see *infra* nrs. 176 and 178). The EU Directive’s model has in turn become itself a successful legal export product and has in

⁴⁰ See *supra* footnote 34 and *infra* nrs. 208-213.

⁴¹ BELGIUM: art. 6.16 CC BE. FRANCE: art. 1242, 1st section CC FR.

⁴² See also *infra* nr. 167.

recent decades been copied across the world.⁴³ Nevertheless, its impact on the ‘law in action’ both within and outside Europe should not be overestimated.⁴⁴

Note that the development of US strict products liability, its reception in German literature and the subsequent development of *Produzentenhaftung* based on § 823(1) BGB, are often seen as the primary sources of inspiration of the Strasbourg Convention⁴⁵ and ultimately the PLD-1985.⁴⁶

The theoretical model of ‘strict’ product liability offers a potentially strong protection to both injured consumers and third parties. And also the economic analysis of law literature considered it during many decades as in the aggregate more efficient for purposes of deterrence and reparation than the alternative rules of fault-based or no liability, at least when strict liability is combined with a defence of contributory fault.⁴⁷ Economic arguments in favour of strict liability remain still relatively convincing when considering the protection of third parties and when focusing on common circumstances, like strong risk-aversion and misinformation among consumers. This is discussed in more detail *infra* nrs. 135-137.

⁴³ See M. Reimann, ‘Liability for Defective Products at the Beginning of the Twenty-First Century: Emergence of a Worldwide Standard’ (2003) 51 *American Journal of Comparative Law* 751, 761-809, 837-838; J. Kellam and L. Nottage, ‘Europeanisation of Product Liability in the Asia-Pacific Region: A Preliminary Empirical Benchmark’ (2008) 31 *Journal of Consumer Policy* 217; G. Howells and D.G. Owen, ‘Products liability law in America and Europe’ in P. Giliker (ed.), *Research Handbook on EU Tort Law* (Edward Elgar 2017) 238-239.

⁴⁴ See M. Reimann, ‘Product Liability in a Global Context: the Hollow Victory of the European Model’ (2003) *European Review of Private Law* 128 (reporting in 2003 that, although many countries around the world had adopted the ‘blackletter’ rules of the EU strict liability model, this had at the time only a limited impact on the ‘law in action’ in most of these countries). See on the impact in the EU itself *infra* nr. 45.

⁴⁵ Council of Europe, ‘European Convention of 27 January 1977 on Products Liability in regard to Personal Injury and Death’, *European Treaty Series* nr. 91. This Convention has never entered into force due to a lack of ratifications. See regarding its impact on the PLD-1985 Markovits, *La Directive C.E.E. du 25 juillet 1985*, 32-77; Taschner and Frietsch, *Kommentar*, 95-100; Fairgrieve et al., ‘Product Liability Directive’, 19-21.

⁴⁶ See Borghetti, *La responsabilité du fait des produits*, 13, 93, 96-97, 193, 430, 432-436; U. Magnus, ‘Product Liability in Germany’ in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 241.

⁴⁷ See generally G. Calabresi, ‘Some Thoughts on Risk Distribution and the Law of Torts’ (1961) 70 *Yale Law Journal* 499, 500-534; G. Calabresi, *The Costs of Accidents: A Legal and Economic Analysis* (Yale University Press 1970) 244-308; M. Polinsky and W. Rogerson, ‘Products Liability, Consumer Misperceptions, and Market Power’ (1983) 14 *Bell Journal of Economics* 581, 585-589; W.M. Landes and R.A. Posner, ‘A Positive Economic Analysis of Products Liability’ (1985) 14 *Journal of Legal Studies* 535, 539-547; S. Shavell, *Economic Analysis of Accident Law* (Harvard University Press 1987) 7-32, 47-64, 206-215, 262-264. These authors of the so-called first and second waves of law and economics already identified some circumstances where a fault-based liability rule (negligence) is more efficient. More recent scholarship has found additional arguments in favour of fault liability and first-party insurance. This creates a much more nuanced overall picture. See in particular *infra* nrs. 135-136.

7. UNDERSTANDING ‘STRICT’ PRODUCT LIABILITY IN LIGHT OF PRODUCT DEFECT TYPES – Current US law generally limits truly ‘strict’ products liability to ‘manufacturing defects’ (i.e. a product is defective because it departs from its intended design).⁴⁸ With regards to ‘design defects’ (i.e. a product is defective due to its intended design)⁴⁹ and ‘information defects’ (i.e. an absence of warnings or use instructions renders a product defective),⁵⁰ many if not most courts and scholars acknowledge implicitly or explicitly that so-called strict products liability actually operates on the basis of negligence principles, which in the eyes of many corresponds with a ‘risk-utility’ calculus rather than an objective ‘consumer expectations’ test.⁵¹ The fourth type, ‘post-marketing liability’ (i.e. liability for failing to take certain corrective measures to remedy an accident risk after a product has been placed on the market),⁵² is in the US always explicitly

⁴⁸ See on ‘manufacturing defects’ UNITED STATES: § 2 (a) Restatement (Third) of Torts: Products Liability. See also, e.g., Ohio Rev. Code Ann. § 2307.74; N.J. Stat. Ann. § 2A:58 (C) (2); Miss. Code Ann. § 11-1-63; Wash. Rev. Code Ann. § 7.72.030 (2) (a); Caterpillar Tractor Co. v. Beck, 593 P.2d 871, 881 (Alaska 1979); Banks v. ICI Americas, Inc., 450 S.E.2d 671, 673 (Ga. 1994); Singleton v. International Harvester Co., 685 F.2d 112, 115 (4th Cir. 1981) (applying Maryland law). GERMANY: A similar concept (*Fabrikationsfehler*) is used in German *Produzentenhaftung*. See also BGH 26 November 1968, VI ZR 212/66, BGHZ 51, 91, *Juris*, nrs. 19-20; BGH 24 November 1976, VIII ZR 137/75, BGHZ 67, 359, *Juris*, nrs. 22-23; E. Van Gool, ‘Overview of German product liability law’ (2024) <<https://ssrn.com/abstract=4824956>>, nr. 3.b.

⁴⁹ See on ‘design defects’ UNITED STATES: § 2 (b) Restatement (Third) of Torts: Products Liability; § 2, comment d) *ibid.*; Owen and Davis, *Products Liability*, 4th edn., nr. 8:1. GERMANY: A similar concept (*Konstruktionsfehler*) is used in German *Produzentenhaftung*. See also BGH 17 October 1989, VI ZR 258/88, NJW 1990, 906, *Juris*, nrs. 15-24; BGH 16 June 2009, VI ZR 107/08, BGHZ 181, 253, *Juris*, nr. 15; E. Van Gool, ‘Overview of German product liability law’ (2024) <<https://ssrn.com/abstract=4824956>>, nr. 3.a.

⁵⁰ UNITED STATES: Often, the more specific terms ‘instruction defect’ or ‘warning defect’ are used. See § 2(c) Restatement (Third) of Torts: Products Liability; S.M. Madden, ‘The Duty to Warn in Products Liability: Contours and Criticism’ (1987) 89 *West Virginia Law Review* 221, 221; M. Geistfeld, *Principles of Products Liability* (3rd edn., Foundation Press 2020) 145. GERMANY: A similar concept (*Instruktionsfehler*) is used in German *Produzentenhaftung*. See also BGH 16 June 2009, VI ZR 107/08, BGHZ 181, 253, *Juris*, nr. 23; E. Van Gool, ‘Overview of German product liability law’ (2024) <<https://ssrn.com/abstract=4824956>>, nr. 3.c.

⁵¹ See § 2 Restatement (Third) of Torts: Products Liability; G. Schwartz, ‘The Vitality of Negligence and the Ethics of Strict Liability’ (1980) 15 *Georgia Law Review* 963; J. Henderson and A. Twerski, ‘Doctrinal Collapse in Products Liability: The Empty Shell of Failure to Warn’ (1990) 65 *N.Y.U. Law Review* 265; G. Schwartz, ‘The Beginning and End of the Rise of American Tort Law’ (1991) 26 *Georgia Law Review* 601; J. Henderson and A. Twerski, ‘Achieving Consensus on Defective Product Design’ (1998) 83 *Cornell Law Review* 867; M.S. Shapo, *Principles of Tort Law* (4th edn., West Academic 2016) 284-287; Owen and Davis, *Products Liability*, 4th edn., nrs. 5.31-5.37. See also M. Geistfeld, *Principles of Products Liability* (3rd edn., Foundation Press 2020) 29-37; Frumer, Friedman and Sklare, *Products Liability*, Chapters 8, 11, 12.

⁵² UNITED STATES: Often, the term ‘post-sale duty’ is used. See §§ 10(a) and 11 Restatement (Third) of Torts: Products Liability; La. Rev. Stat. Ann. § 9:2800.57 (c); Ohio Rev. Code Ann. § 2307.76(A)(2); Wash. Rev. Code § 7.72.030(1)(c); K. Ross and D. Prince, ‘Post-Sale Duties: The Most Expansive Theory in Products Liability’ (2009) 74 *Brooklyn Law Review* 963. GERMANY: The term *Produktbeobachtungspflicht* is used in German *Produzentenhaftung*. See also BGH 17 March 1981, VI ZR 286/78, BGHZ 80, 199, NJW 1981, 1606; E. Van Gool, ‘Overview of German product liability law’ (2024) <<https://ssrn.com/abstract=4824956>>, nr. 3.e. BELGIUM: See S. Van Camp, ‘Productveiligheid en Product Recall’ (2010) *Tijdschrift voor Belgisch Handelsrecht* 451, 483-484; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 351-654.

based on negligence to the extent that it is recognized at all.⁵³ Curiously, also the EU Product Liability Directive is considered by many expert observers to not establish, at least for design and information defects, a truly strict liability either and can be better described as a ‘quasi-strict’ liability (see *infra* nrs. 173-174). Liability for post-marketing failures falls, however, entirely outside the scope of the PLD and is traditionally subject to national, fault-based extracontractual liability (see also *infra* nrs. 10.d and 184).

It is therefore more correct to describe both US strict products liability and the EU harmonised product liability in a general manner as forms of ‘semi-faultless’ or ‘quasi-strict’ but not as a purely ‘strict’ liability, at least when talking about design and information defects. In these cases, there are no subjective elements of culpability but liability remains largely based on the defendant’s conduct and several possible defences echo fault-based considerations. Notwithstanding these observations, this dissertation continues to generally employ the term ‘strict liability’ to refer to not only US strict liability in tort but also EU harmonised product liability or, rather, its implementation in the applicable law of a Member State (‘PLDI’). This seems necessary to maintain consistency with almost all relevant sources and to avoid confusion with other civil liability regimes. Additionally, also outside the product liability context the term ‘strict liability’ is often used for comparative purposes in a relatively broad manner which includes hybrid regimes halfway between fault and truly strict (‘absolute’ or ‘risk-based’) liability.⁵⁴

8. DISTINGUISHING ‘PRODUCT LIABILITY’ (*SENSU LATO*) FROM ‘STRICT PRODUCT LIABILITY’ (*SENSU STRICTO*) – A lot of European sources and especially Belgian and French authors and courts, uses the term ‘product liability’ (*responsabilité du fait des produits (défectueux)* in French and *productaansprakelijkheid* in Dutch) to refer only to the strict liability regime of EU origin.

This is probably because other, national civil liability regimes are older and have a broader scope of application than the product accident context. Indeed, most other product liability theories than the PLDI in Belgian and French law can be categorized as ‘general product liability’, although the more objective fault-based liability for placing a defective product on the

⁵³ See § 10 Restatement (Third) of Torts: Products Liability (see in particular the reference to negligence in comment b) and the extensive case law cited in the reporters’ notes); V. Schwartz, ‘The Post-Sale Duty to Warn: Two Unfortunate Forks in the Road to a Reasonable Doctrine’ (1983) 58 *NYU Law Review* 892; Owen and Davis, *Products Liability*, 4th edn., nrs.10:23-10:25.

⁵⁴ See, e.g., B.A. Koch and H. Koziol, ‘Comparative Conclusions’ in B.A. Koch and H. Koziol (eds.), *Unification of Tort Law: Strict Liability* (Kluwer Law International 2002) 395: “[...] it nevertheless turns out that all jurisdictions covered show a more or less broad spectrum of actions which – while still founded upon the idea of fault – provide for stricter liability than under the traditional concept, e.g. by shifting the burden of proof or by increasing the standards of due care. For the purpose of this report, we therefore deem it necessary to address those kinds of liability as well since there seems to be no consistent clear-cut borderline between the two opposing concepts (fault and strict liability respectively). [...] In some instances of liability there is even hardly any requirement other than causation. These are commonly categorized as cases of ‘absolute liability’. For the purpose of this comparative analysis, we do not consider it necessary to abide by such separate labelling for the latter kind of cases, however.” See also M. Cappelletti, *Justifying Strict Liability: A Comparative Analysis in Legal Reasoning* (OUP 2022) 3 (using ‘strict liability’ as an umbrella term for all other liabilities than liability based on traditional fault or negligence in both civil and common law jurisdictions).

market and perhaps also the hidden defects guarantee are somewhat ‘specific’ to product liability (see *supra* nr. 6 and *infra* nrs. 207-218 on consequences relating to the PLD’s scope of harmonisation). Another reason might simply be that no other terms were clearly established in these languages to distinguish between the PLDI (‘product liability *sensu stricto*’) and product liability in general (‘product liability *sensu lato*’).⁵⁵

Nevertheless, the term ‘product liability’ without further specifications is only used in this dissertation to refer to the latter: the overall application of civil liability in the context of product accidents. This broader concept reflects the central role that is still played by national contractual and extracontractual liability regimes in current European product liability practice (see *infra* nr. 171). It also invites internal comparisons between product liability theories *sensu lato*, which are otherwise perhaps too often analysed in an isolated, general manner, unconnected with the specificities of product accidents and product liability. It may furthermore also facilitate external comparisons, such as with US products liability law, which both in theory and in practice encompasses various other theories of liability than strict liability *in tort*.⁵⁶

However, the EU and US ‘strict’ product liability regimes distinguish themselves by their more exclusive focus on protecting against extrinsic damage, provide a generally strong protection to injured parties (although see *supra* nr. 7) and are the most clearly ‘specific’ product liability theories (see *supra* nr. 6). They can therefore be considered to lie at the very heart of this dissertation’s understanding of ‘product liability’ (see *supra* nrs. 4-5). This helps to explain why this research project, which is dedicated to the European context, focuses primarily on EU harmonised product liability (see *infra* nr. 37).

§ 3. Alternatives and complements to product liability

9. PREVENTION: THE MARKET MECHANISM – When consumers purchase or otherwise transact regarding a product, they consider to some extent information available to them concerning the specific product’s expected accident risks. In economic terms, consumers add costs of estimated accident risks to a product’s price. And to the extent that consumers have perfect information about a product’s expected accident risks, or if they only slightly underestimate or they overestimate those, consumers will buy on average less unsafe products (see *infra* nr. 108.a-b for a more detailed economic analysis). This explains why the market mechanism can

⁵⁵ In contrast, German literature sometimes distinguishes between *Produzentenhaftung* based on § 823(I) BGB and *Produkthaftung* based on the German PLDI, although both terms are also used to refer to product liability *sensu lato*. More significantly, German literature and case law often uses terms to identify the national regimes, while still identifying them as types of product liability, like *deliktische Produkthaftung* and *vertragliche Produkthaftung*. When existing French and Belgian sources refer to *la responsabilité du fait des produits (défectueux)* or *productaansprakelijkheid*, they almost always refer to their PLDI.

⁵⁶ See, e.g., leading handbooks on US products liability which devote substantial attention to other theories of liability Shapo, *Law of Products Liability*, 7th edn.; American Law of Products Liability, 3rd edn.; Owen and Davis, *Products Liability*, 4th edn.; Frumer, Friedman and Sklaren, *Products Liability*.

serve as an alternative to product liability for accident-prevention purposes,⁵⁷ but note that the market mechanism can like product liability also fulfil an additional ‘price-signalling’ function (see *infra* nr. 110.a).

Information available to consumers relating to product accident risks is of course complex, scattered and often not sufficiently noteworthy and salient.⁵⁸ Moreover, there are clear cognitive and behavioural limitations to the ability of consumers to collect, process and act on such information (see *infra* nr. 105 on how consumers tend to generally underestimate product risks). And product safety is naturally far from the only concern of consumers when they make consumption decisions.

Nevertheless, it is important to realize that there are several ways for consumers to become directly or indirectly informed about product accident risks, even in a not fully competitive market,⁵⁹ such as media, product reviews, product labels, consumer reports and, importantly, the reputation and corresponding value of brands.⁶⁰ Even more crucial, especially in a circular or collaborative economy context, are the observable condition of a particular product as well as the identity and reputation of a transactional counterpart (but see *infra* nr. 158). Additionally, legal rules impose various information obligations on suppliers of products, in particular in B2C relationships in the EU and, as we will see (e.g. *infra* nrs. 252 and 394), this is increasingly true for certain aspects pertinent to circular economy strategies, like product durability and repairability. Yet, the most significant information on product accident risks which is made available to consumers, is precisely as a result of product safety regulation and product liability law, which to some extent allow making products safer through warnings, use instructions and the like (but see *infra* nrs. 182, 236, 288 and 380-384 relating to the PLD-1985).⁶¹

Ex ante accident-prevention through market forces can be weakened to some extent by the availability of *ex post* reparation mechanisms. After all, consumers can be expected to pay on average more attention to product accident risk information when they can expect no,

⁵⁷ See already on this basic, always existing alternative to product liability, which CALABRESI called the ‘general deterrence approach’ G. Calabresi, *The Costs of Accidents: A Legal and Economic Analysis* (Yale University Press 1970) 68-94.

⁵⁸ There are often innumerable products on the market in a given product category, product accidents are so numerous but often lead to relatively small, not widely reported damage and products are over time relatively quickly replaced by new versions and innovations. See M. Geistfeld, ‘Products liability’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.6.

⁵⁹ See J. Dana Jr. and Y.-F. Fong, ‘Product Quality, Reputation, and Market Structure’ (2011) 52 *International Economic Review* 1059; Y. Chen and X. Hua, ‘Competition, Product Safety, and Product Liability’ (2017) 33 *Journal of Law, Economics, and Organization* 237.

⁶⁰ Ibid., nr. 11.6; M. Polinsky and S. Shavell, ‘The Uneasy Case for Product Liability’ (2010) 123 *Harvard Law Review* 1437, 1443-1449. See also on quality signals in product markets J. Riley, ‘Silver Signals: Twenty-Five Years of Screening and Signaling’ (2001) 39 *Journal of Economic Literature* 432; L. Price and N. Dawar, ‘The joint effects of brands and warranties in signaling new product quality’ (2002) 23 *Journal of economic psychology* 165. See also on the increasingly more complex economic understanding of brand value and reputation W. Rogerson, ‘Reputation and Product Quality’ (1983) 14 *The Bell Journal of Economics* 508; S. Board and M. Meyer-ter-Vehn, ‘Reputation for Quality’ (2013) 81 *Econometrica* 2381.

⁶¹ Artigot-Golobardes, ‘Beyond European Product Liability’, 319.

uncertain or insufficient reparation through liability or insurance in the event of an accident.⁶² This is part of the ‘moral hazard’ risk which results from reparation mechanisms in general (see *infra* nr. 11.d) and which necessitates a contributory fault defence to product liability (see *infra* nrs. 109 and 273-276).

Second, the other two accident-prevention mechanisms can further enable the market mechanism. Cases of product safety enforcement and product liability litigation are often reported in media or discussed by word of mouth, given their salience to the general public or to fellow consumers. This further disseminates among the public sometimes in individual cases imprecise but in the aggregate effective information about product accident risks.⁶³ More importantly, product safety regulation and product liability indirectly compel producers, importers and distributors to provide warnings, use instructions and other information, as discussed above. Additionally, when a market is less competitive, product liability (and product safety regulation) can complement the relative loss in effectiveness of the market mechanism.⁶⁴

Third, the market mechanism operates not only as a complement but also as an alternative to the other two prevention mechanisms. To the extent that consumers would have perfect information about accident risks, markets are competitive and consumers act rationally, there would theoretically no longer be a need for product liability law or product safety regulation (see *infra* nr. 108.b). Such perfect consumer information, perfectly rational consumer conduct and sufficiently competitive markets of course never completely exist,⁶⁵ which makes the market mechanism only a partial alternative which is in some circumstances relatively strong and in others weaker. This dissertation examines *infra* nr. 158 how the market mechanism is in the context of circular consumption strategies overall a weaker instrument for preventing product accidents than the traditional, linear economic model.

Finally, it is worth pointing out that the economic understanding of how both product liability and product safety regulation themselves prevent accidents, actually depends indirectly on market forces. Producers and other actors subject to these rules, at least those who are not ‘judgement-proof’ (see *infra* nr. 140), are forced to add their expected civil, administrative or criminal liability costs to the product price. This makes the proportionally more dangerous products less attractive to customers on the product market. In turn, those producers and

⁶² However, when accident risks involve serious bodily injuries or death, there might no longer be a substantial difference in the amount of attention consumers pay to product accident information based on the extent to which they or their inheritors would enjoy reparation. Additionally, certain behavioural biases may further undermine the negative effect of *ex post* product accident reparation on *ex ante* prevention through the market mechanism.

⁶³ See M. Polinsky and S. Shavell, ‘The Uneasy Case for Product Liability’ (2010) 123 *Harvard Law Review* 1437, 1454-1455. See also J.J. Ganuza, F. Gomez and M. Robles, ‘Product Liability versus Reputation’ (2016) 32 *Journal of Law, Economics, and Organization* 213, 221-227.

⁶⁴ Y. Chen and X. Hua, ‘Competition, Product Safety, and Product Liability’ (2017) 33 *Journal of Law, Economics, and Organization* 237.

⁶⁵ See V. Goldberg, ‘The Economics of Product Safety and Imperfect Information’ (1974) 5 *Bell Journal of Economics and Management Science* 683; M. Geistfeld, ‘Products liability’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) 290-295. See also *infra* nr. 108.b.

other economic actors are incentivized to reduce their liability risk or improve their regulatory compliance in order to avoid such costs (see *infra* nr. 108.a).

10. PREVENTION: PRODUCT SAFETY REGULATION – Product safety regulation strives to prevent product accidents by imposing relevant obligations on producers and distributors and by tasking public authorities with exercising market surveillance⁶⁶ and enforcing compliance through administrative and criminal penalties and measures. It is therefore generally recognised as an alternative (see also *infra* nr. 151) but also as a complement to product liability for purposes of accident-prevention, which operates *ex ante* from the perspective of potential accidents, while product liability's deterrent effect relies on imposing liability *ex post* an eventual accident.⁶⁷ Product consumption taxes can be seen as an alternative, *ex ante* regulatory instrument to reduce accident risks, but it remains limited to products which are by their nature generally unsafe like alcohol and tobacco. In contrast to product safety regulation, taxes which identically apply to a complete product category do not reduce the accident risks at the centre of this dissertation, which are limited to individual, allegedly 'defective' products within a broader product category.

In addition to accident-prevention, product safety regulation may also deliver a 'price-signalling' benefit. Yet, if existing, it is very small⁶⁸ and this function of product liability law is not further discussed in this introductory Part.

The effectiveness in practice of product safety regulation primarily depends on the regulatory efforts and the public resources invested in issuing regulation and standards and in applying market surveillance and enforcement,⁶⁹ which differs from the other two prevention mechanisms which operate primarily through private actors. Additionally, there is also a risk of 'regulatory capture', where through various methods of lobbying, revolving doors and outright corruption a regulator is overly influenced by the industry it is supposed to regulate.

- a. In the EU, the most important product safety law is the General Product Safety Regulation 2023/988/EU, which has recently been adopted and will replace on 13 December 2024 the largely similar regulatory framework of the General Product Safety Directive

⁶⁶ See in the EU especially Parliament and Council Regulation 2019/1020/EU of 20 June 2019 on market surveillance and compliance of products and amending Directive 2004/42/EC and Regulations (EC) No 765/2008 and (EU) No 305/2011 [2019] OJ L169/1.

⁶⁷ See S. Shavell, 'A Model of the Optimal Use of Liability and Safety Regulation' (1984) 15 *RAND Journal of Economics* 271 ("neither liability nor regulation is necessarily better than the other, and as is stressed, their joint use is generally advantageous"); Y. Hiriart, D. Martimort and J. Pouyet, 'On the optimal use of ex ante regulation and ex post liability' (2004) 84 *Economics Letters* 231. See also D. Wittman, 'Prior Regulation versus Post Liability: The Choice between Input and Output Monitoring' (1977) 6 *Journal of Legal Studies* 193.

⁶⁸ See *infra* nr. 110.b and *infra* footnote 880.

⁶⁹ G. Howells, 'Introduction' in G. Howells (ed.), *The Law of Product Liability* (2nd edn., Butterworths 2007) 19-20. See also, e.g., L. Nottage, 'Product safety regulation' in G. Howells and others (eds.), *Handbook of Research on International Consumer Law* (1st edn., Edward Elgar 2010) 270-277, 290-291; Civic Consulting, *Study to support the preparation of an evaluation of the General Product Safety Directive as well as of an impact assessment on its potential revision: Final report - Part 2: Impact assessment* (2021) 24-67.

2001/95/EC.⁷⁰ It imposes on manufacturers and importers a general obligation to only put safe products on the market as well as certain information and notification obligations. More limited obligations are imposed on distributors and some other actors. EU general product safety regulation moreover requires different ‘economic operators’ to take preventive and corrective measures in the post-marketing stage, such as monitoring products, informing users, ‘recalling’ unsafe products or cooperating with these measures.⁷¹ Importantly, the General Product Safety Regulation 2023/988/EU and its progenitors only provide a residual safety net for consumer products and a vast web of more specific, sectoral product (safety) laws exists in the EU.⁷² As part of the ‘New Approach’ since 1985 and the ‘New Legislative Framework’ since 2008 in EU product regulation,⁷³ the General Product Safety Regulation 2023/988/EU merely provides limited essential requirements, for which the means of compliance are in principle left to the responsible economic actors yet more detailed harmonised standards that provide a presumption of compliance with the essential requirements are developed by official standardization bodies.⁷⁴ Additionally, the EU Commission and Member State authorities operate Safety Gate, previously known as ‘RAPEX’, a publicly accessible online platform for exchanging information on serious product risks and on implemented preventive and corrective measures.⁷⁵

- b. In the US, although there is some limited additional federal and in some instances state legislation, product safety of not food-, biomedical- or transport-related consumer goods is primarily provided by the federal Consumer Product Safety Act of 1972⁷⁶ and the Consumer Product Safety Commission it created. The latter has only issued a limited number of mandatory standards and mainly relies on voluntary standards, which have no particular legal effect and are developed by industry itself primarily to control the

⁷⁰ In turn, this instrument has replaced the preceding Council Directive 92/59/EEC of 29 June 1992 on general product safety [1992] OJ L228/24.

⁷¹ See generally but with regards to the largely similar General Product Safety Directive 2001/95/EC 2001/95 C. Hodges, *European Regulation of Consumer Product Safety* (Oxford University Press 2005) 85-202; G. Raymond, ‘Sécurité des produits: Transposition de la directive n° 2001/95/CE du Parlement européen et du Conseil du 3 décembre 2001 relative à la sécurité générale des produits’ (2005) *Contrats Concurrency Consommation* étude 2; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 365-682; T. Klindt, *Produktsicherheitsgesetz: Kommentar* (3rd edn., Beck 2021) §§ 3-6.

⁷² Art. 1(2) General Product Safety Directive 2001/95/EC 2001/95; art. 2(1) General Product Safety Regulation 2023/988/EU.

⁷³ See for the origin of the New Approach Council Resolution of 7 May 1985 on a new approach to technical harmonization and standards [1985] OJ C136/1. See for an overview of the current New Legislative Framework ‘New legislative framework’ <https://single-market-economy.ec.europa.eu/single-market/goods/new-legislative-framework_en>.

⁷⁴ Art. 7(1)a General Product Safety Regulation 2023/988/EU. See also for products already on the market art. 3(2) General Product Safety Directive 2001/95/EC 2001/95.

⁷⁵ ‘Safety Gate: the EU rapid alert system for dangerous non-food products’ <<https://ec.europa.eu/safety-gate-alerts/screen/webReport>>.

⁷⁶ Consumer Product Safety Act 15 U.S.C. 47 §§ 2051-2090. See for an overview Frumer, Friedman and Sklaren, *Products Liability*, nr. 1.08.

product liability risk.⁷⁷ The Commission can also immediately prohibit and seize ‘imminently dangerous’ products and order warnings or recalls.⁷⁸ And product suppliers are subject to some notification requirements relating to non-compliant products and safety risks.⁷⁹ Bans, recalls, unsafe product reports and additional product safety information can be consulted online.⁸⁰

- c. As a first interaction with other mechanisms, product safety regulation clearly acts as a full alternative for purposes of accident-prevention.⁸¹ It can be effective in preventing many product accidents, which reduces the added value of product liability and the market mechanism (but see *infra* nrs. 151-156 specifically in the context of circular economy). As a result, the comprehensive nature and importance in practice of EU product safety regulation is considered to be one of the main reasons why product liability litigation has a comparatively smaller role in Europe than in the US.⁸²
- d. Product safety regulation at the same time serves as a synergistic complement to the operation of product liability in practice.⁸³

On the one hand, a violation of a product safety obligation can sometimes directly and in other cases potentially indirectly give rise to product liability, on the basis of different

⁷⁷ G. Howells, ‘The Relationship Between Product Liability and Product Safety: Understanding a Necessary Element in European Product Liability Through a Comparison with the U.S. Position’ (2000) 39 *Washburn Law Journal* 305v, 309-310. See also Consumer Product Safety Act 15 U.S.C. 47 §§ 2056, 2058.

⁷⁸ Consumer Product Safety Act 15 U.S.C. 47 §§ 2057, 2061, 2064.

⁷⁹ See, e.g., Consumer Product Safety Act 15 U.S.C. 47 §§ 2056-2056d.

⁸⁰ ‘CPSC Recalls’ <<https://www.recalls.gov/cpsc.html>>; ‘CPSC Recalls’ <<https://www.recalls.gov/cpsc.html>>.

⁸¹ See already in this sense G. Calabresi, *The Costs of Accidents: A Legal and Economic Analysis* (Yale University Press 1970) 95-129 (calling product safety regulation a ‘specific deterrence’ approach, in contrast to the ‘general deterrence’ of the market mechanism); M. Spence, ‘Consumer Misperceptions, Product Failure and Producer Liability’ (1977) 44 *Review of Economic Studies* 561, 561.

⁸² See G. Howells, ‘The Relationship Between Product Liability and Product Safety: Understanding a Necessary Element in European Product Liability Through a Comparison with the U.S. Position’ (2000) 39 *Washburn Law Journal* 305; C. Busch, ‘Rethinking Product Liability Rules for Online Marketplaces: A Comparative Perspective’ (2021) *TPRC49: 49th Research Conference on Communication, Information and Internet Policy*, 27-30. See also A. Cavaliere, ‘Product Liability in the European Union: Compensation and Deterrence Issues’ (2004) 18 *European Journal of Law and Economics* 299, 310-312; Artigot-Golobardes, ‘Beyond European Product Liability’, 258-327.

⁸³ See also *supra* footnote 67.

potential product liability theories *sensu lato*.⁸⁴ Proving such a violation is easiest when enforcement action has been taken by public authorities, but a product liability plaintiff may also independently invoke a relevant breach of product safety obligations, such as information or recall obligations, the general obligation to only put safety products on the market or safety requirements from specific product regulations. A non-compliance with harmonised European standards or national safety rules, which benefit from a presumption of safety, or with secondary criteria from the general product safety assessment,⁸⁵ can of course provide evidence in support of a product liability claim. In the context of EU harmonised product liability, art. 7(1) PLD-2024 now considers a violation of a product safety rule as automatically resulting in product defectiveness.⁸⁶ On the other hand, proving compliance with one or more applicable product safety obligations may sometimes help an actor to successfully defend against a product liability claim, such as by proving in certain circumstances the absence of fault, the absence of a product defect or a contributory fault. However, with the exception of the specific ‘compliance defence’ of arts. 7(d) PLD-1985 and 11(1)d PLD-2024⁸⁷ and similar ‘public

⁸⁴ See BELGIUM: E. Causin, ‘La responsabilité aquilienne du vendeur professionnel de produits dangereux ou insatisfaisants’ (1976) *Revue Générale des Assurances et des Responsabilités* 9628, nr. 10; Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’, 176-180; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 310-314, 619-620. With regards to extracontractual fault-based liability, a key question is whether the conduct required by a violated product safety provision is ‘sufficiently specific’ to automatically qualify as a fault. If not, a fault may still be proven on the basis of a violation of the general standard of care. See *infra* nrs. 208 and 214. FRANCE: Borghetti, *La responsabilité du fait des produits*, 211, 225-228; Viney, Jourdain and Carval, *Les conditions de la responsabilité*, 4th edn., 451-454; Brun, *Responsabilité civile extracontractuelle*, 5th edn., 219-220; Le Tourneau et al., *Droit de la responsabilité et des contrats*, 13th edn., 837. But see Cass. FR civ. (1^{re} Ch.) 9 September 2020, nr. 19-11.882, *RTD Civ.* 2020, 890, note P. Jourdain, *CCC* 2020, 154, note L. Leveneur (overruling previous decisions that based an autonomous “*obligation de sécurité de résultat*” directly on the general product safety provision of art. L421-3 Code de la Consommation). See also arts. 1233, 2nd section and 1241 Proposition de réforme de la responsabilité civile (Sénat 2020). GERMANY: Foerste, ‘2. Deliktische Haftung’, 397-398, 711-730; Graf von Westphalen, ‘1. Vertragliche Haftung’, 26; T. Lenz, ‘Die Schutzgesetze des Produktsicherheitsgesetzes’ in H.-J. Kullmann and others (eds.), *Produzentenhaftung*, Band 2 (ESV, looseleaf 2020 update) § 2440; Wagner, *MüKo BGB*, ‘§ 823’, nrs. 497-504, 958-961, 1028-1033; Ackermann, ‘823 BGB’, 286, 289, 310-311. EU PRODUCT LIABILITY: Howells, ‘strict liability’, 360; Fairgrieve et al., ‘Product Liability Directive’, 101; Wagner, *MüKo BGB*, ‘Produkthaftungsgesetz’, § 3 ProdHaftG, nrs. 28-29; J. Taeger, ‘§ 3 ProdHaftG’ in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) 175, 183-185. UNITED STATES: §§ 288B Restatement (Second) of Torts; § 4 (a) Restatement (Third) of Torts: Products Liability; C.S. D’Angelo, ‘Effect of Compliance or Noncompliance with Applicable Governmental Product Safety Regulation on a Determination of Product Defect’ (1995) 36 *Southern Texas Law Review* 453, 468-478; Owen and Davis, *Products Liability*, 4th edn., nrs. 2:16-2:19, 6:9. With regards to the tort of negligence, this is called the doctrine of negligence *per se*.

⁸⁵ See arts. 6-7 General Product Safety Regulation 2023/988/EU. See also art. 3 General Product Safety Directive 2001/95/EC 2001/95.

⁸⁶ This was not necessarily the case under the PLD-1985. See *infra* nrs. 179-180.

⁸⁷ See regarding this defence *infra* nr. 198.

command' defences, product safety compliance generally provides merely indirect, limited evidence and not a complete defence.⁸⁸

Finally, not every product safety requirement has potential relevance for every product liability theory. EU harmonised strict liability and contractual product liability are generally limited to the moment when a product is placed on the market or a product is transferred. This means that post-marketing product safety obligations, like preventive monitoring or corrective warnings and recalls, are irrelevant to these theories (see *infra* nrs. 184 and 195 regarding the PLD). Nevertheless, for extracontractual product liability theories, these post-marketing regulatory obligations are particularly relevant and often form the bedrock of national extracontractual post-marketing liability.⁸⁹

- e. Product liability litigation may in turn also influence product safety regulation. A court decision finding an economic actor liable for an accident caused by a product although he was compliant with applicable regulatory standards, may for example lead to product safety requirements being strengthened.⁹⁰ If such a decision establishes a violation of product safety regulation which had been in place but was not complied with, a result might be that regulatory enforcement is strengthened.⁹¹ And court decisions rejecting liability based on one or more product liability theories in spite of non-compliance with

⁸⁸ See BELGIUM: E. Causin, 'La responsabilité aquilienne du vendeur professionnel de produits dangereux ou insatisfaisants' (1976) *Revue Générale des Assurances et des Responsabilités* 9628, nr. 11; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 309-310, 620-643. FRANCE: Viney, Jourdain and Carval, *Les conditions de la responsabilité*, 4th edn., 648-649; Brun, *Responsabilité civile extracontractuelle*, 5th edn., 232-233; Le Tourneau et al., *Droit de la responsabilité et des contrats*, 13th edn., 749-750, 2660-2661. GERMANY: BGH 18 May 1999, VI ZR 192/98, nr. 17, NJW 1999, 2815, VersR 1999, 1464; Foerste, '2. Deliktische Haftung', 398-399, 425; Wagner, MüKo BGB, '§ 823', nrs. 498-499, 959-961; Ackermann, '823 BGB', 289. EU PRODUCT LIABILITY: See Borghetti, *La responsabilité du fait des produits*, 438; S. Lierman, *Voorzorg, preventie en aansprakelijkheid* (Intersentia 2004) 396-398; Howells, 'strict liability', 359-360; Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 3 ProdHaftG, nr. 27. See also art. 17 General Product Safety Directive 2001/95/EC 2001/95; art. 43 General Product Safety Regulation 2023/988/EU. UNITED STATES: § 288C Restatement (Second) of Torts; § 4 (b) Restatement (Third) of Torts: Products Liability; C.S. D'Angelo, 'Effect of Compliance or Noncompliance with Applicable Governmental Product Safety Regulation on a Determination of Product Defect' (1995) 36 *Southern Texas Law Review* 453, 455-468; R.C. Ausness et al., 'Providing a Safe Harbor for Those Who Play by the Rules: The Case for a Strong Regulatory Compliance Defense' (2008) *Utah Law Review* 115, 116-132; Owen and Davis, *Products Liability*, 4th edn., nrs. 2:25, 14:6-14:9. The federal nature of a lot of product safety regulation in the US and state nature of most product liability law, results in the related but theoretically different question of 'federal preemption' (art. VI, paragraph 2 US Constitution).

⁸⁹ See BELGIUM: S. Van Camp, 'Productveiligheid en Product Recall' (2010) *Tijdschrift voor Belgisch Handelsrecht* 451, 483; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 619-620.

⁹⁰ See Howells, 'strict liability', 360-361; J. Goldberg and B. Zipursky, 'The Easy Case for Products Liability Law: A Response to Professors Polinsky and Shavell' (2010) 123 *Harvard Law Review* 1919, 1930-1931. Admittedly, public outcry regarding widely reported product accidents is more likely to steer regulatory action than the judicial decisions themselves that result from corresponding product liability litigation.

⁹¹ See M. Polinsky and S. Shavell, 'The Uneasy Case for Product Liability' (2010) 123 *Harvard Law Review* 1437, 1454-1455; M.I. Krauss, *Principles of Products Liability* (3rd edn., West Academic 2019) 6.

product safety requirements, may provide a symbolic signal that over time contributes to a less stringent enforcement or revision of those regulatory standards.⁹²

11. REPARATION: SOCIAL AND PRIVATE INSURANCE – As mentioned *supra* nr. 4, social insurance (social security and public healthcare) as well as private accident insurance can act as alternatives to product liability law for its function of repairing the damage suffered by injured parties. The summary below focuses on the main features of these mechanisms and how they interact with product liability law in the context of accidents caused by general consumer goods, although some of these features reappear in the more detailed economic analysis of product liability in Part III. Specific social and (mandatory) private insurance solutions for product accidents which occur in the workplace or are caused by motor vehicles, are not discussed (see also *infra* nrs. 33-34).

- a. After industrialization and especially in the post-War period, when the development of product liability was simultaneously in full swing (see *infra* nr. 14), countries started to also develop various social security institutions. Especially where they are comprehensive such as in Western Europe, social security mechanisms like public healthcare, illness or invalidity insurance, workers' compensation schemes, survivors' pensions, care services and the social assistance system provide significant although generally incomplete reparation for the most serious extrinsic damage resulting from product accidents such as personal injuries and deaths (see also *infra* nrs. 106.d, 113 and 162).⁹³ Their expansion may perhaps have reached at least in Western Europe for the time being a zenith,⁹⁴ but these forms of social insurance are sticky and their current impact on the reparation of general consumer product accidents is significant. Victim compensation funds,⁹⁵ which are (partially) funded by risk-generating industries, have also been

⁹² Again, from a socio-legal perspective, these product safety regulatory changes (as well as the product liability court decisions) are probably underpinned most of all by a lack of public concern about these accident risks, a lack of attribution of responsibility by the general public and/or successful lobbying efforts.

⁹³ See BELGIUM: H. Cousy and D. Droshout, 'The Impact of Social Security on Tort Law in Belgium' in U. Magnus (ed.), *The Impact of Social Security Law on Tort Law* (Springer 2003) nrs. 6-11, 17, 19, 26; I. Boone, *Verhaal van derde-betalers op de aansprakelijke* (Intersentia 2009) 24-26; H. Bocken, I. Boone and M. Kruihof, *Inleiding tot het schadevergoedingsrecht. Buitencontractueel aansprakelijkheidsrecht en andere schadevergoedingsstelsels* (2nd edn., Die Keure 2014) 14-15. FRANCE: S. Carval, 'The Impact of Social Security Law on Tort Law in France' in U. Magnus (ed.), *The Impact of Social Security Law on Tort Law* (Springer 2003) nrs. 2-3, 6, 14; G. Viney, *Introduction à la responsabilité* (3rd edn., LGDJ 2008) 47-48. GERMANY: J. Fedtke and U. Magnus, 'The Impact of Social Security Law on Tort Law in Germany' in U. Magnus (ed.), *The Impact of Social Security Law on Tort Law* (Springer 2003) nrs. 6-11, 15, 29-30; Wagner, MüKo BGB, 'Vorbemerkung (Vor § 823)', nrs. 30-31; Kötz and Wagner, *Deliktsrecht*, nr. 35-47. SEE ALSO: Fox, 'Questioning the Social Desirability of Product Liability Claims', 47-49 (listing social welfare compensations for product accidents in the UK, labelling those as "the bare minimum").

⁹⁴ See Artigot-Golobardes, 'Beyond European Product Liability', 360; Kötz and Wagner, *Deliktsrecht*, nr. 48-51.

⁹⁵ Victim compensation funds provide a complete alternative to civil liability. In contrast, so-called guarantee funds are rather complements to civil liability, since they only compensate when a liable party is unable to do so. See I. Boone, *Verhaal van derde-betalers op de aansprakelijke* (Intersentia 2009) 27.

developed. Nevertheless, these seem less relevant in Europe and the US for general consumer product accidents and were only developed for very specific product risks like those relating to asbestos, medical injuries and motor vehicles or for different risks like violent crimes and natural disasters.⁹⁶ Finally, it is theoretically possible to further expand the social insurance solution in the domain of product accidents and let it generally replace liability for personal injuries and deaths, which is how the New Zealand Accident Compensation scheme can be characterized.⁹⁷

- b. During the last century, private third-party liability insurance ('liability insurance') became also increasingly prevalent. The rapid spread and popularity of liability insurance might, especially in the US, not only have enabled reparation of injured parties but also have had a major impact on the continued expansion of civil (mainly tort or extracontractual) liability law. This might have in turn further boosted the adoption of liability insurance and hence created a positive feedback loop.⁹⁸ But the growth of liability insurance may also in European practice have influenced liability law.⁹⁹ For example, several French scholars emphasize a connection with the historical expansion of strict liability in their system,¹⁰⁰ while certain German scholars have expressed beliefs that

⁹⁶ But see regarding past suggestions in France to create a compensation fund for parties injured by product accidents who are unable to receive reparation on the basis of the French PLDI or to create a general compensation fund for personal injuries resulting from accidents C. Radé, 'Plaidoyer en faveur d'une réforme de la responsabilité civile' (2003) *Recueil Dalloz* 2247, nrs. 31, 33-35; G. Viney, *Introduction à la responsabilité* (3rd edn., LGDJ 2008) 60.

⁹⁷ Accident Compensation Act 2001 (2001 nr. 49), as amended by Acts in 2003, 2005, 2007, 2008 and 2010. The initial system was created by Accident Compensation Act 1972 (1972 nr. 43). See also Howells, *Comparative Product Liability*, 291-306; P. Schuck, 'Tort Reform, Kiwi-Style' (2008) 27 *Yale Law and Policy Review* 187. Finally, although less comprehensive in scope than New Zealand, Scandinavian countries have also developed social and mandatory private insurance solutions in ways that overlap with more product accidents than the traditional sectors of workplace and motor vehicle accidents.

⁹⁸ See D. Dobbs, P. Hayden and E. Bublick, *Dobb's Law of Torts* (Westlaw 2022 update) nr. 27; K. Abraham and E. White, 'Rethinking the Development of Modern Tort Liability' (2021) 101 *Boston University Law Review* 1289, 1302-1345. See also on how strongly liability insurance has influenced US tort law F. James, 'Accident Liability Reconsidered: The Impact of Liability Insurance' (1948) 57 *Yale Law Journal* 549; E. White, *Tort Law in America: An Intellectual History* (Oxford University Press 1980) 147-153; T. Baker, 'The View of an American Insurance Law Scholar: Six Ways that Liability Insurance Shapes Tort Law' in G. Wagner (ed.), *Tort Law and Liability Insurance* (Springer 2005) nrs. 8-55.

⁹⁹ See C. Lahnstein, 'The View of a Reinsurer: Relationship between Liability Insurance and Tort Law' in G. Wagner (ed.), *Tort Law and Liability Insurance* (Springer 2005) nrs. 5-17; C. Grare, *Recherches sur la cohérence de la responsabilité délictuelle* (Dalloz 2005) 34, 137-140; G. Viney, *Introduction à la responsabilité* (3rd edn., LGDJ 2008) 42-45, 61-65; H. Bocken, I. Boone and M. Kruithof, *Inleiding tot het schadevergoedingsrecht. Buitencontractueel aansprakelijkheidsrecht en andere schadevergoedingsstelsels* (2nd edn., Die Keure 2014) 10-12, 13-14, 217-229; Kötz and Wagner, *Deliktsrecht*, nr. 52-55; Viney, Jourdain and Carval, *Les régimes spéciaux et l'assurance*, 4th edn., 503-504.

¹⁰⁰ See G. Viney, *Le déclin de la responsabilité individuelle* (LGDJ 1965); A. Tunc, 'Responsabilité civile et assurance' in X. (ed.), *Hommage à René Dekkers - Hulde aan René Dekkers* (Bruylant 1982) 346; C. Grare, *Recherches sur la cohérence de la responsabilité délictuelle* (Dalloz 2005) 34-39, 138-140; G. Viney, *Introduction à la responsabilité* (3rd edn., LGDJ 2008) 40-41. See also Borghetti, *La responsabilité du fait des produits*, 592 (suggesting that this might also hold true to various degrees for other legal systems).

liability insurance subtly steers courts to more easily find fault liability in spite of the theoretical separation between liability and insurance.¹⁰¹ Specifically for product liability, it has now become common in Europe and even more in the US for entities who are likely to be subject to liability claims for consumer product accidents such as industrial manufacturers and professional retailers, to take out specific ‘product liability insurance’.¹⁰²

- c. At the same time, private first-party accident insurance (‘accident insurance’) has also become increasingly widespread. Like the forms of social insurance mentioned above, it provides an alternative to product liability for repairing the damage resulting from product accidents. Civil liability rules generally provide a more comprehensive compensation or reparation in kind after an accident than first-party accident insurance or the social security system.¹⁰³ However, the liability system of course only provides reparation after another person has been found liable, which often does not happen and, if it does, can require a long and costly process.¹⁰⁴ Moreover, even after such a decision, the injured party continues to bear the risk of the defendant’s insolvency until he has fully received an awarded reparation (see also *infra* nr. 140 on the ‘judgement-proof’ problem). These differences help to further explain the importance of social security and accident insurance for parties injured by product accidents.
- d. Finally, the preventive function of liability law can theoretically be distorted by the reparation provided through social security and private insurance, since double

¹⁰¹ See C. von Bar, ‘Das "Trennungsprinzip" und die Geschichte des Wandels der Haftpflichtversicherung’ (1981) 181 *Archiv für die civilistische Praxis* 289; 293; M. Fuchs, ‘Versicherungsschutz und Versicherbarkeit als Argumente bei der Schadensverteilung’ (1991) 191 *Archiv für die civilistische Praxis* 318, 326; C. Katzenmeier, ‘Überlagerungen des Schadensersatzrechts durch das Versicherungsrecht’ (2002) *Versicherungsrecht* 1449, 1451; C. Lahnstein, ‘The View of a Reinsurer: Relationship between Liability Insurance and Tort Law’ in G. Wagner (ed.), *Tort Law and Liability Insurance* (Springer 2005) nrs. 25-26. But see G. Wagner, ‘The development of product liability in Germany’ in S. Whittaker (ed.), *The Development of Product Liability: Volume 1* (Cambridge UP 2010) 149-150 (stating regarding the general argument that implicit motives for judgements cannot be proven with certainty; arguing that due to historical and technical reasons liability insurance did not play a major role in the development of specifically product liability in Germany).

¹⁰² See, e.g., UNITED STATES: R. Henderson, ‘Insurance Protection for Products Liability and Completed Operations: What Every Lawyer Should Know’ (1971) 50 *Nebraska Law Review* 415; Frumer, Friedman and Sklaren, *Products Liability*, nrs. 58.01-58.02; L. Bass and T. Redick, *Products Liability: Design & Manufacturing Defects* (Westlaw 2022 update) nrs. 22.1-22.8. EUROPE: J. Birds, ‘Product liability insurance’ in G. Howells (ed.), *The Law of Product Liability* (2nd edn., Butterworths 2007) 814; S. Mühlbauer, ‘5. Teil - Produkthaftpflicht-Versicherung’ in U. Foerste and F. Graf von Westphalen (eds.), *Produkthaftungshandbuch* (3rd edn., Beck 2012); Eisenberg et al., *Produkthaftung*, 185-192; D. Schilbach, *Die Haftung des Produzenten bei Fehlverdacht: Produkthaftung und Verhältnis von Produkthaftpflicht- und Rückrufkostenversicherung* (Fachmedien 2019) 253-290.

¹⁰³ Artigot-Golobardes, ‘Beyond European Product Liability’, 350.

¹⁰⁴ See J.-S. Borghetti, ‘Taking EU Product Liability Law Seriously: How Can the Product Liability Directive Effectively Contribute to Consumer Protection?’ (2023) 1 *French Journal of Legal Policy* 136, 154-155.

compensation of the same damage is generally prohibited in Europe^{105, 106} and in most cases practically prevented in the US through subrogation or limitations to the ‘collateral source rule’.¹⁰⁷ Economists call this issue of persons taking insufficient care because they can externalize the potential accident costs based on their private or social insurance coverage, a ‘moral hazard’. Nevertheless, even where this moral hazard risk relating to product liability law’s preventive function exists, it remains limited in various ways. First, the damage covered by social security and private insurance are subject to often significant limitations, such as exclusion of non-economic damage. This allows liability law to still operate independently outside this scope. Second, private liability insurers can to some extent adapt premiums and use deductibles and/or coinsurance to try to counter this moral hazard risk,¹⁰⁸ which the insured, potentially liable party might experience with a reduced risk of liability claims as a result of private and social insurance. The same is true for accident insurers, which allows them to limit the risk of a contributory fault by their insured, injured party. Third, accident insurers and social security institutions generally enjoy, on the basis of statutory or contractual provisions, rights of substitution in the rights of a compensated insured person or they have their own right of recourse against parties liable for an accident, while liability insurers

¹⁰⁵ See BELGIUM: art. 6.35 CC BE; A. Van Oevelen et al., ‘Overzicht van rechtspraak. Onrechtmatige daad: schade en schadeloosstelling (1993-2006)’ (2007) *Tijdschrift voor Privaatrecht* 933, 1386-1404, 1435-1446, 1470; B. Fosséprez and P. Colson, ‘Le dommage et sa réparation’ in F. George and R. Jafferali (eds.), *Manuel de droit de la responsabilité civile* (Anthemis 2022) 255-258. FRANCE: M. Bacache-Gibeili, *La responsabilité civile extracontractuelle* (3rd edn., Economica 2016) 727-739; G. Viney, J. Patrice and S. Carval, *Les effets de la responsabilité* (4th edn., LGDJ 2017) 209-210, 358-414. See also art. 1258 Proposition de réforme de la responsabilité civile (Sénat 2020). GERMANY: In Germany, there seem to be more possibilities for double reparation in case of certain types of insurance, but this is not systematic and the *Trennungsprinzip* generally bars direct claims by an injured party against the liability insurer. See F. Pardey, ‘9. Vorteilsausgleich’ in R. Geigel and K. Haag (eds.), *Der Haftpflichtprozess* (28th edn., Beck 2020) 23, 29-38, 58; W. Schneider, ‘13. Rechtsverhältnis zwischen Versicherungsnehmer, Versicherer und Geschädigtem beim Haftpflichtversicherungsvertrag’ in R. Geigel and K. Haag (eds.), *Der Haftpflichtprozess* (28th edn., Beck 2020) nrs. 1-3, 19, 35-36; Wagner, MüKo BGB, ‘Vorbemerkung (Vor § 823)’, nrs. 31-32.

¹⁰⁶ There are in all three examined European jurisdictions exceptions that allow cumulating reparation (e.g. because a specific social insurance compensation is considered being based on an independent cause). Nevertheless, one can wonder to what degree such compensation of already repaired damage is effectively pursued in practice through the civil liability system.

¹⁰⁷ The ‘collateral source rule’ theoretically allows injured parties to receive double compensation of the same damage from liable defendants and from an insurer. Nevertheless, tort reform limits the rule in various ways and statutory provisions and common clauses in insurance contracts relating to subrogation allow the insurer to recover from the insured party compensation that has already been paid by the defendant or to claim directly against the defendant. See T. Ulen, ‘The View from Abroad: Tort Law and Liability Insurance in the United States’ in G. Wagner (ed.), *Tort Law and Liability Insurance* (Springer 2005) nrs. 31-45; A.G. Todd, ‘An Enduring Oddity: The Collateral Source Rule in the Face of Tort Reform, the Affordable Care Act, and Increased Subrogation’ (2012) 43 *McGeorge Law Review* 965; J.R. Plitt et al., *Couch on Insurance Law* (3rd edn., Westlaw 2022 update) nrs. 222:1-226:136.

¹⁰⁸ G. Wagner, ‘Tort Law and Liability Insurance’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) 391-392; M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 60-62.

sometimes have limited rights of recourse as well against their own insured customer or against other liable parties.¹⁰⁹ This allows them to still pursue claims against parties who are potentially liable for an accident. On the one hand, this helps to fund the social security system and makes private insurance more affordable. On the other hand, such rights of substitution or recourse help to retain liability law's accident-prevention potential, by ensuring that individuals do not escape liability simply because the injured party has obtained reparation elsewhere. Finally, to the extent that private insurance and social security would still undermine the preventive function of product liability law, product safety regulation, criminal law and market information can still operate to sufficiently deter product accidents (see Figure 1 *supra* nr. 4 and *supra* 9-10).

Section C. The coevolution of modern product liability law with linear economy and mass consumption

12. A BRIEF HISTORICAL PERSPECTIVE – To understand the possible tension between the current understanding of product liability law (*supra* nrs. 3-7) and circular economy, it is useful to briefly adopt a historical perspective. This is because modern product liability law *sensu lato* (encompassing general but in particular also specific product liability) developed concurrently with the same societal developments that have also led to the now dominant linear

¹⁰⁹ See BELGIUM: A. Van Oevelen et al., 'Overzicht van rechtspraak. Onrechtmatige daad: schade en schadeloosstelling (1993-2006)' (2007) *Tijdschrift voor Privaatrecht* 933, 1404-1421, 1446-1467, 1469-1476, 1479-1482; I. Boone, *Verhaal van derde-betalers op de aansprakelijke* (Intersentia 2009) 267-424; 390-395; B. Fosséprez and P. Colson, 'Le dommage et sa réparation' in F. George and R. Jafferali (eds.), *Manuel de droit de la responsabilité civile* (Anthemis 2022) 256; P. Colle, *Algemene beginselen van het Belgische verzekeringsrecht* (8th edn., Intersentia 2022) 172-180, 241-254. FRANCE: G. Viney, J. Patrice and S. Carval, *Les effets de la responsabilité* (4th edn., LGDJ 2017) 358-385; Viney, Jourdain and Carval, *Les régimes spéciaux et l'assurance*, 4th edn., 651-659; Le Tourneau et al., *Droit de la responsabilité et des contrats*, 13th edn., 2433-2438, 2482-2500. See also arts. 1276 and 1279, section 2 Proposition de réforme de la responsabilité civile (Sénat 2020). GERMANY: Kötz and Wagner, *Deliktsrecht*, nrs. 45-47, 55; H. Plagemann and C. Haidn, '30. Regress der Sozialleistungsträger und des Dienstherrn gem. §§ 116 ff. SGB X, 179 Abs. 1 a SGB VI, 76 BBG' in R. Geigel and K. Haag (eds.), *Der Haftpflichtprozess* (28th edn., Beck 2020); W. Wellner, '32. Haftung des Unternehmers und anderer in der Ersatzpflicht beschränkter Personen gegenüber den Trägern der Sozialversicherung' in R. Geigel and K. Haag (eds.), *Der Haftpflichtprozess* (28th edn., Beck 2020); Wagner, MüKo BGB, 'Vorbemerkung (Vor § 823)', nrs. 32-34. EU PRODUCT LIABILITY: art. 5(2)(a) PLD-2024. UNITED STATES: T. Ulen, 'The View from Abroad: Tort Law and Liability Insurance in the United States' in G. Wagner (ed.), *Tort Law and Liability Insurance* (Springer 2005) nrs. 37-44; J.R. Plitt et al., *Couch on Insurance Law* (3rd edn., Westlaw 2022 update) nrs. 222:1-226:136.

economic model for distributing and producing consumer goods. This relationship is labelled here as a ‘coevolution’¹¹⁰ to describe how both historical processes are intertwined.

13. THE RISE OF THE LINEAR ECONOMIC MODEL ... – The selling, bartering and donating of second-hand goods, repair and refurbishment activities, self-producing goods and sharing of property appears to have been common in pre-industrial times. Furthermore, a large part of the public was active on the supply side of these different economic activities, albeit typically only on an occasional basis which today might be labelled as a ‘prosumer’ activity. Specifically for the core circular economy strategies that are central to this research project, this historical perspective is further explored and documented *infra* nr. 57. This discussion demonstrates that circular methods for distributing and producing consumer products already existed in the past, although without the current enablement by a growing regulatory support framework, the internet, contemporary environmental, social and economic factors. It is therefore only in more recent, modern history that circular economy has been pushed to the economic system’s margins, although this is something that is often overlooked in contemporary discourse, especially legal discourse about circular economy.

Historical research reveals that the so-called ‘consumer revolution’, the transition from a traditional society of scarcity to one of modern mass consumption,¹¹¹ was a protracted process with a long build-up.¹¹² The Netherlands and England in the 17th and 18th centuries can be highlighted as significant pioneering settings in the early modern period, where relatively open and innovative economies, social mobility, higher standards of living, pressures towards more productivity, increased urbanization, colonization and intensifying global trade resulted in remarkable increases in the quantity, diversity and relative affordability of

¹¹⁰ ‘Coevolution’ is defined in the field of ecology as “*the reciprocal evolutionary change in a set of interacting populations over time resulting from the interactions between those populations*”, where it is also used in a broader sense, for example when referring to “*the coevolution between humankind and the biosphere*” (C.D. Eaton, ‘Coevolutionary Research’ in S.E. Jørgensen and B.D. Fath (eds.), *Encyclopedia of Ecology* (Academic Press 2008) 659-660).

¹¹¹ C. Fairchild, ‘Consumption in Early Modern Europe. A Review Article.’ (1993) 35 *Comparative Studies in Society and History* 850, 851.

¹¹² E.g., a notable precursor was Renaissance Italy. See R.A. Goldthwaite, ‘The Empire of Things: Consumer demand in Renaissance Italy’ in F. Kent (ed.), *Patronage, art and society in Renaissance Italy* (Clarendon Press 1987) 153-175; R.A. Goldthwaite, *The Economy of Renaissance Florence* (Johns Hopkins University Press 2009) 377-407, 546-582; B. Blondé and W. Ryckbosch, ‘In ‘splendid isolation’. A comparative perspective on the historiographies of the ‘material renaissance’ and the ‘consumer revolution’ (2015) 1 *History of Retailing and Consumption* 105; F. Trentmann, *Empire of Things: How We Became a World of Consumers, from the Fifteenth Century to the Twenty-First* (HarperCollins 2016) 40-51.

available consumer goods. A growing part of the population could now acquire new products and they did so, by purchasing them with increasing frequency.¹¹³

Then came the 'industrial revolution', a gradual and still ongoing process that allowed people to design new consumer products, mass manufacture and more easily deliver them from across the world.¹¹⁴ In combination with an intensification of some of the aforementioned economic dynamics, this resulted in greater productivity, economic growth and, over time, especially after social and economic reform, also higher standards of living for the general public.¹¹⁵ Eventually, more people became able to buy new consumer products more frequently, which ultimately culminated in the post-War 'mass consumption society'.¹¹⁶ This can be defined as a society where a majority of households enjoys the benefits of growing productivity and constantly expands their range of consumer goods.¹¹⁷

New in this world of industrial production and mass consumption was the increasing volume and diversity of consumer goods that were being acquired and used by the general

¹¹³ See S. Schama, *The Embarrassment of Riches. An Interpretation of Dutch Culture in the Golden Age* (University of California Press 1987) 289-372; C. Fairchild, 'Consumption in Early Modern Europe. A Review Article.' (1993) 35 *Comparative Studies in Society and History* 850, 852-855; P.N. Stearns, 'Stages of Consumerism: Recent Work on the Issues of Periodization' (1997) 69 *Journal of Modern History* 102, 106-109; M. Berg, 'In Pursuit of Luxury: Global History and British Consumer Goods in the Eighteenth Century' (2004) *Past & Present* 85, 92-118, 132-142; F. Trentmann, *Empire of Things: How We Became a World of Consumers, from the Fifteenth Century to the Twenty-First* (HarperCollins 2016) 67-91, 103-108. See also R. Cameron, *A Concise Economic History of the World* (Oxford University Press 1989) 93-127.

¹¹⁴ See R.C. Allen, *Global Economic History: A Very Short Introduction* (Oxford University Press 2011) 27-28, 32-39; S. Broadberry, R. Fremdling and P. Solar, 'Industry' in S. Broadberry and K.H. O'Rourke (eds.), *The Cambridge Economic History of Modern Europe - Volume 1: 1700-1870* (Cambridge UP 2011) 165-186. See also R. Cameron, *A Concise Economic History of the World* (Oxford University Press 1989) 161-188.

¹¹⁵ See R. Cameron, *A Concise Economic History of the World* (Oxford University Press 1989) 185-188, 214-300; S. Pamuk and J.-L. van Zanden, 'Standards of living' in S. Broadberry and K.H. O'Rourke (eds.), *The Cambridge Economic History of Modern Europe - Volume 1: 1700-1870* (Cambridge UP 2011) 218-234; A. Carreras and C. Josephson, 'Aggregate growth, 1870-1914: growing at the production frontier' in S. Broadberry and K.H. O'Rourke (eds.), *The Cambridge Economic History of Modern Europe - Volume 2: 1870 to the Present* (Cambridge UP 2011) 34-56; C. Leonard and J. Ljungberg, 'Population and living standards: 1870-1914' in S. Broadberry and K.H. O'Rourke (eds.), *The Cambridge Economic History of Modern Europe - Volume 2: 1870 to the Present* (Cambridge UP 2011) 112-113, 118-125; R. Millward and J. Baten, 'Population and living standards, 1914-1945' in S. Broadberry and K.H. O'Rourke (eds.), *The Cambridge Economic History of Modern Europe - Volume 2: 1870 to the Present* (Cambridge UP 2011) 233-242, 253-263; D. Baines, N. Cummins and M.-S. Schulze, 'Population and living standards, 1945-2005' in S. Broadberry and K.H. O'Rourke (eds.), *The Cambridge Economic History of Modern Europe - Volume 2: 1870 to the Present* (Cambridge UP 2011) 391, 399-410.

¹¹⁶ See generally P. Kramper, *From Economic Convergence to Convergence in Affluence? Income Growth, Household Expenditure and the Rise of Mass Consumption in Britain and West Germany, 1950-1974* (2000); K. Matsuyama, 'The Rise of Mass Consumption Societies' (2002) 110 *Journal of Political Economy* 1035; M.-E. Chessel, *Histoire de la consommation* (La Découverte 2012) 11-44. See also R. Oldenziel and M. Hard, *Consumers, Tinkerers, Rebels: The People Who Shaped Europe* (Palgrave Macmillan 2013) 13-234, 273-316.

¹¹⁷ K. Matsuyama, 'The Rise of Mass Consumption Societies' (2002) 110 *Journal of Political Economy* 1035, 1035-1036.

public.¹¹⁸ But equally new was the hegemony of one particular production and distribution method. Past generations not only used and bought fewer goods, but if they did, they regularly bought second-hand or purchased directly from artisans and they frequently repaired, shared, rented or self-produced goods. In contrast, today almost all consumer products are industrially manufactured, sold once as new by a professional retailer and disposed of by the purchasing consumer, often after a quite brief period of mostly exclusive and non-intensive use.¹¹⁹ This is the now dominant linear economic model of the consumer goods sector. As illustrated *supra* nr. 2 and further discussed in Part II, its dominance has only recently started to get challenged again in earnest as a result of technological, social, environmental and economic developments.

14. ... LED TO THE DEVELOPMENT OF MODERN PRODUCT LIABILITY LAW – Scholars have documented how civil liability law in general and product liability in particular developed in response to the societal changes brought by industrialisation and new consumption patterns. At the most general level, it can be seen as a gradual process that departed from a general extracontractual liability based on subjective fault (culpability), which had become dominant in modern times and which had replaced stricter civil liabilities for specific conduct that had

¹¹⁸ See also P.N. Stearns, 'Stages of Consumerism: Recent Work on the Issues of Periodization' (1997) 69 *Journal of Modern History* 102, 109-114; F. Trentmann, *Empire of Things: How We Became a World of Consumers, from the Fifteenth Century to the Twenty-First* (HarperCollins 2016) 217-234, 250-256, 287-288, 377-446.

¹¹⁹ See *supra* footnote 12. See also J.-C. Daumas, 'Consommation de masse et grande distribution. Une révolution permanente (1957-2005)' (2006) 91 *Vingtième Siècle. Revue d'histoire* 57; F. Trentmann, *Empire of Things: How We Became a World of Consumers, from the Fifteenth Century to the Twenty-First* (HarperCollins 2016) 214-220.

been prevalent in earlier centuries.¹²⁰ Slowly but surely, traditional fault-based liability started showing limitations in a technologically and socially changing context and new, again more strict types of liability were (once more) adopted with an aim to better control new

¹²⁰ BELGIUM, FRANCE AND GERMANY: At least in civil law systems, pre-modern extracontractual liability was generally more objective (strict) and punitive in nature, more scattered by focusing on specific actions and more oriented towards the collective. General fault-based extracontractual liability developed in the (early) modern period as a result of growing individualism, the influence of canon law and modern natural law scholars (e.g. Grotius, Domat and Pufendorf). See N. Jansen, *Die Struktur des Haftungsrechts: Geschichte, Theorie und Dogmatik ausservertraglicher Ansprüche auf Schadenersatz* (Mohr Siebeck 2003) 185-360; G. Etier, *Du risque à la faute: Evolution de la responsabilité civile pour le risque du droit romain au droit commun* (Bruylant 2006) 55-368; J. Hallebeek, 'Buitencontractuele aansprakelijkheid aan de vooravond van de moderne samenleving' in B. Debaenst and B. Delbecke (eds.), *Vangnet of springplank? Het buitencontractuele aansprakelijkheidsrecht in een moderne samenleving (1804-heden)* (die Keure 2014) 15-25; Wagner, MüKo BGB, 'Vorbemerkung (Vor § 823)', nrs. 2-6, 17; O. Descamps, 'L'histoire de la responsabilité: un essai de synthèse' (2021) 63 *Archives de philosophie du droit* 3, 5-22; P. Jourdain, *Les principes de la responsabilité civile* (10th edn., Dalloz 2021) 7-9. UNITED STATES: The evolution in common law is more debated. Yet strict types of tort liability were present in pre-modern times and the tort of negligence expanded and gained popularity in the late 19th century US. See R. Rabin, 'The Historical Development of the Fault Principle: A Reinterpretation' (1981) 15 *Georgia Law Review* 925; K. Hylton, *Tort Law: A Modern Perspective* (Cambridge University Press 2016) 32-47; L. Friedman, *A History of American Law* (Oxford University Press 2019) 283-287, 443-461; D. Dobbs, P. Hayden and E. Bublick, *Dobb's Law of Torts* (Westlaw 2022 update) nr. 17. See also G. Schwartz, 'The Character of Early American Tort Law' (1989) 36 *UCLA Law Review* 641 (finding that negligence developed naturally in the 19th century, rejecting the 'subsidy thesis' and arguing that there was not a clear, pre-existing dominance of strict liability).

accident risks.¹²¹ This happened both inside and outside the specific context of consumer product accidents (see also *supra* nr. 6 and *infra* nr. 167 et seq.). Although this intricate socio-legal process differed from one legal system to the other, some common features can be broadly identified.

The industrial revolution and new modern technologies increased the amount of potentially dangerous objects that people came into contact with in their daily lives. Meanwhile, tolerance gradually decreased for leaving people unprotected against such accident risks.¹²² From the end of the 19th century onwards, this led in many countries to the adoption of workers'

¹²¹ See generally BELGIUM: H. Bocken, 'Van fout naar risico: een overzicht van de objectieve aansprakelijkheidsregelingen naar Belgisch recht' (1984) 21 *Tijdschrift voor Privaatrecht* 329; J. van Meerbeeck, 'Le juge, la responsabilité civile et l'assurance : alea iacta est' in Y. Cartuyvels (ed.), *Les ambivalences du risque, regards croisés en sciences sociales* (FUSL 2008) nrs. 6-14; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 11-14; F. George, 'Introduction' in F. George and R. Jafferali (eds.), *Manuel de droit de la responsabilité civile* (Anthemis 2022) 34-37. See also R. Dalcq, *Traité de la Responsabilité Civile, Volume I - Les causes de responsabilité* (Larcier 1967) 110, 146-168, 631-689; V. Vervliet, *Buitencontractuele aansprakelijkheid bij professionele risico's* (Intersentia 2007) 11-566. FRANCE: C. Grare, *Recherches sur la cohérence de la responsabilité délictuelle* (Dalloz 2005) 13-121 (emphasizing also the importance of growing insurance coverage and the expansion of criminal law); G. Etier, *Du risque à la faute: Evolution de la responsabilité civile pour le risque du droit romain au droit commun* (Bruylant 2006) 9-24; G. Viney, *Introduction à la responsabilité* (3rd edn., LGDJ 2008) 75-122; M.-F. Steinlé-Feuerbach, 'Vers une objectivation de la responsabilité civile dans l'intérêt des victimes' (2015) 25 *Histoire de la justice* 63; P. Jourdain, *Les principes de la responsabilité civile* (10th edn., Dalloz 2021) 9-11, 17-21. See also *infra* footnotes 586-587 on the early development of the 'théorie du risque' by SAINCTELETTE, JOSSERAND and SALEILLES. But see C. Radé, 'L'impossible divorce de faute et de la responsabilité civile' (1998) *Recueil Dalloz* 301 (discussing the lasting dominance of fault as general theoretical foundation of French civil liability law). GERMANY: N. Jansen, *Die Struktur des Haftungsrechts: Geschichte, Theorie und Dogmatik ausservertraglicher Ansprüche auf Schadenersatz* (Mohr Siebeck 2003) 369-384; G. Brüggemeier, 'Gefährdungshaftung, Unternehmenschaftung, Verschuldenschaftung: Überlegungen zu den Grundlagen des Haftungsrechts' in J. Stamm (ed.), *Festschrift für Helmut Rüßmann* (Juris 2013) nr. IV; Kötz and Wagner, *Deliktsrecht*, nrs. 21-31; Wagner, MüKo BGB, 'Vorbemerkung (Vor § 823)', nrs. 17-18. But see J. Knetsch, 'Les faits générateurs de responsabilité dans les projets français et belge. Faute ou risque? Point de vue de droit allemand' in B. Dubuisson (ed.), *La réforme du droit de la responsabilité en France et en Belgique* (Bruylant 2020) 302-304 (discussing how the conceptual framework of fault-based liability remains comparatively more important in German law than in France and Belgium). UNITED STATES: E. Emroch, 'Caveat Emptor to Strict Liability: One Hundred Years of Products Liability Law' (1970) 4 *University of Richmond Law Review* 155; H.C. Klemme, 'The Enterprise Liability Theory of Torts' (1976) 47 *University of Colorado Law Review* 153, 153-156; L. Friedman, *A History of American Law* (Oxford University Press 2019) 443-461, 667-673. But see G. Schwartz, 'The Beginning and End of the Rise of American Tort Law' (1991) 26 *Georgia Law Review* 601 (affirming the expansion of liability in US tort law until the 1980's but considering negligence-principles and not a more truly strict 'enterprise liability' as having been the driving force, including for products liability). SEE ALSO: J. Bell, 'The Development of Tort Law' in H. Koziol and B. Steininger (eds.), *European Tort Law 2007* (Springer 2007) 3-5.

¹²² Howells, *Comparative Product Liability*, 5; B. Pfister, 'Einleitung und Problematik' in H.-J. Kullmann and others (eds.), *Produzentenhaftung, Band 2* (ESV, looseleaf 2020 update) § 1310, 4; P. Jourdain, *Les principes de la responsabilité civile* (10th edn., Dalloz 2021) 11. The fact that other, major injury risks like diseases gradually decreased might have further contributed to the perceived need to address these new technological risks (Borghetti, *La responsabilité du fait des produits*, 6, footnote 20).

compensation laws,¹²³ liability and mandatory insurance rules for operators of motor vehicles and other transport systems¹²⁴ as well as more objective liability rules for abnormally dangerous activities.¹²⁵ However, beyond these specific settings, there was a more general need to facilitate liability claims by persons injured by consumer goods. On the one hand, this converged with broader developments in existing, general extracontractual and contractual liability law. On the other hand, some specific product liability rules were also developed across pathways dependent on each legal system (see generally *supra* nrs. 5-6). At a general level, several underlying reasons can be identified for this impetus to provide stronger legal protection through civil liability law to consumers injured in product accidents.

- a. First and foremost, this seems to have been caused by the dramatic surge in the number and variety of consumer goods that almost all members of the public started to purchase and use.¹²⁶ The fact that now more people operated and encountered on a daily basis more products of different types, seems to have increased the statistical probability of product accidents.
- b. Second, the introduction of mass manufacturing expanded the scale of individual accident risks, because a design, information or warning defect might also be present in other objects that are part of the same product type or manufacturing series.¹²⁷

¹²³ See generally A.C. Williams, *An International Comparison of Workers' Compensation* (Springer 1991) 57-197.

¹²⁴ These liability and insurance rules are in the EU now partially harmonised. See Council Regulation 2027/97/EC of 9 October 1997 on air carrier liability in the event of accidents [1997] OJ L285/1 (as amended by Parliament and Council Regulation 889/2002/EC [2002] OJ L140/2); Parliament and Council Directive 2009/103/EC of 16 September 2009 relating to insurance against civil liability in respect of the use of motor vehicles, and the enforcement of the obligation to insure against such liability [2009] OJ L263/11; Parliament and Council Regulation 2021/782/EU of 29 April 2021 on rail passengers' rights and obligations (recast) [2021] OJ L172/1. See also regarding motor vehicle liability law C.v. Bar, *The Common European Law of Torts: Volume Two* (Oxford University Press 1998) 402-391; K. Abraham, *The Forms and Functions of Tort Law* (3rd edn., Foundation Press 2007) 254-260.

¹²⁵ E.g., §§ 519-520 Restatement (Second) of Torts; §20 Restatement of the Law Third: Torts - Liability for Physical and Emotional Harm (American Law Institute, 2010). The US case law reflected by these Restatements originates from the famous decision of the English House of Lords *Rylands v Fletcher* (1868) LR 3 HL 330. See also G. Schamps, *La mise en danger: un concept fondateur d'un principe général de responsabilité - Analyse de droit comparé* (Bruylant 1998).

¹²⁶ See *supra* footnote 18; J.-S. Borghetti, 'The development of product liability in France' in S. Whittaker (ed.), *The Development of Product Liability: Volume 1* (Cambridge UP 2010) 91; Kötz and Wagner, *Deliktsrecht*, nr. 13; M.I. Krauss, *Principles of Products Liability* (3rd edn., West Academic 2019) 7-8.

¹²⁷ See Markovits, *La Directive C.E.E. du 25 juillet 1985*, 42; B. Pfister, 'Einleitung und Problematik' in H.-J. Kullmann and others (eds.), *Produzentenhaftung, Band 2* (ESV, looseleaf 2020 update) § 1310, 3. See also recital 2 PLD-1985; CJEU 5 March 2015, C-503/13-C-504/13, *Boston Scientific*, ECLI:EU:C:2015:148, nrs. 41-43; Borghetti, *La responsabilité du fait des produits*, 96 (mentioning the Thalidomide tragedy and the first widespread recalls by automobile manufacturers which received at least in Germany a lot of media attention in the 1960's and 1970's); G. Howells, 'Product liability' in J.M. Smits (ed.), *Elgar Encyclopedia of Comparative Law* (2nd edn., Edward Elgar 2014) 716-718 (mentioning mass manufacturing as trigger for product liability development and, specifically in Europe, the Thalidomide tragedy).

- c. Third, another cause might have been the more technically complex, less predictable and inherently more dangerous nature of many new consumer products,¹²⁸ which involve elements like moving parts, combustion processes, gasses, hazardous substances, the potential to accelerate and electric circuits. This factor is for consumer goods to some extent debatable, because technological advances can also make products safer.¹²⁹ Moreover, craft production in pre-modern times might actually have resulted in less trustworthy products than modern mass manufacturing, so the perception of increasingly dangerous consumer goods might be incorrect. It is additionally worth noting that the new objects that probably created the biggest increases in serious injuries, first industrial installations and later motor vehicles, have been addressed separately by specific worker's compensation, liability and mandatory insurance rules, as mentioned above. Nevertheless, the motor vehicle rules in particular were generally adopted much later in the course of the 20th century¹³⁰ and are not everywhere as strict or comprehensive.¹³¹ And countless other, new consumer goods have been brought on the market in past decades that indeed are arguably inherently dangerous, ranging from DIY- and garden equipment like drills and lawnmowers, over other personal vehicles than cars to certain sports equipment, toys and baby items. It therefore seems fair to conclude that also these more risky goods have to various degrees influenced the overall development of liability law.¹³²

Additionally, when focusing on other, more mundane consumer products, one has to realize that it is actually not necessary for new products to be more dangerous than

¹²⁸ See Howells, *Comparative Product Liability*, 4; S. Wesch, *Die Produzentenhaftung im internationalen Rechtsvergleich* (Mohr Siebeck 1994) 2; J.-L. Fagnart, *La responsabilité du fait des choses* (Kluwer 2017) 9-10. See also D.G. Gifford, 'Technological Triggers to Tort Revolutions: Steam Locomotives, Autonomous Vehicles, and Accident Compensation' (2018) 11 *Journal of Tort Law* 71, 86-89, 110-118, 123-128.

¹²⁹ Borghetti, *La responsabilité du fait des produits*, 7, footnote 24 (pointing out that technological progress has also helped in making many products safer; concluding that, while the impact of technological development on product accident risks is unclear in the absence of dedicated research, it certainly has contributed less than the exponential increase in the number of circulating products).

¹³⁰ The notable exception among the countries studied in this dissertation is Germany, which adopted already in 1908 a strict liability of the holder of motor vehicles (§7 Gesetz über den Verkehr mit Kraftfahrzeugen vom 3 Mai 1909, *RGBl* 1909, nr. 3608, 437, current §7 Straßenverkehrsgesetz). French and Belgian courts had of course at that time already started to develop their versions of the more generally applicable *responsabilité du fait des choses* (see *infra* nr. 217), which provided an important theory of liability in case of road accidents prior to the adoption decades later of insurance and liability rules specific to motor vehicles.

¹³¹ See, e.g., in the US N. Freeman Engstrom, 'An Alternative Explanation for No-Fault's Demise' (2012) 61 *DePaul Law Review* 303, 306 (reporting that, notwithstanding initial success and popularity, no new state beyond the initial adopters has enacted a no-fault mandatory insurance regime for motor vehicle accidents since 1976 and some states have even repealed their no-fault legislation). See also T. Ulen, 'The View from Abroad: Tort Law and Liability Insurance in the United States' in G. Wagner (ed.), *Tort Law and Liability Insurance* (Springer 2005) nrs. 26-29.

¹³² See, e.g., again with regards to US law N. Freeman Engstrom, 'When Cars Crash: The Automobile's Tort Law Legacy' (2018) 53 *Wake Forest Law Review* 293; D.G. Gifford, 'Technological Triggers to Tort Revolutions: Steam Locomotives, Autonomous Vehicles, and Accident Compensation' (2018) 11 *Journal of Tort Law* 71.

earlier products to spark a call to facilitate liability claims for cases of accidents. From a socio-legal perspective, it can suffice that such modern goods were simply perceived by the public to be more dangerous and/or that the social tolerance of being unprotected against these accident risks decreased.

- d. The result of all three aforementioned factors is that they increased especially for third parties like bystanders the need to be able to hold other parties liable when they would happen to get injured in a product accident. Such third parties originally often faced serious difficulties in successfully claiming in the diagonal extracontractual relationship (see *supra* nr. 5) against a harmful product's seller or producer.¹³³ In the horizontal relationship, it was often even more difficult to prove a fault committed by the consumer when the accident was clearly caused by the inherently defective nature of a consumer product rather than the user's conduct. Targeting someone else than the seller or producer seemed generally undesirable in these cases of consumer product accidents. This is also why the French and Belgian liability for the custody of defective goods (*responsabilité du fait des choses*), a stricter extracontractual liability that arose at the turn of the 20th century to primarily target employers and other operators of dangerous installations and that can be used to claim against consumers as custodians of defective products, did not become widely successful in the general product liability context.¹³⁴
- e. The final and perhaps most important reason contributing to the need for more plaintiff-friendly product liability rules that were often of an extracontractual nature, was the emergence of more complex, professionalised product distribution chains.¹³⁵ These increased difficulties for third parties to make the aforementioned 'diagonal' claims. But these also greatly challenged injured consumers. To the extent that a product was not anonymous, injured consumers could attempt to hold their own supplier liable on a contractual basis. Although these suppliers were more consistently larger professional traders than in past times, the fundamental change was that they were no longer the actual producers of a product. They therefore had often little control over the

¹³³ See Kötz and Wagner, *Deliktsrecht*, nr. 607. In the US, negligence claims were originally even entirely barred outside of privity of contract (see *supra* footnote 32).

¹³⁴ See Borghetti, *La responsabilité du fait des produits*, 7, 215. Increased control of producers and distributors over 'smart', digitally connected goods and use- and result-oriented PSS 'servitisation' business models, might today offer more factual possibilities for traditional vertical and diagonal claims for product accidents based on this extracontractual liability for custody of defective goods. However, questions arise to what extent this violates EU product liability maximum harmonisation. See *infra* nrs. 217-218.

¹³⁵ See Cousy, *Problemen van produktenaansprakelijkheid*, 11; Taschner and Frietsch, *Kommentar*, 18, 24; K. Abraham, *The Forms and Functions of Tort Law* (3rd edn., Foundation Press 2007) 193; G. Wagner, 'The development of product liability in Germany' in S. Whittaker (ed.), *The Development of Product Liability: Volume 1* (Cambridge UP 2010) 114; B. Pfister, 'Einleitung und Problematik' in H.-J. Kullmann and others (eds.), *Produzentenhaftung, Band 2* (ESV, looseleaf 2020 update) § 1310, 3.

product accident risks.¹³⁶ Alternatively, injured consumers could try to claim in the aforementioned vertical relationship on an extracontractual basis against the actual producer up in the distribution chain (like the diagonal claims of injured third parties). However, such claims were sometimes impossible, such as initially in the US due to the privity barrier,¹³⁷ and often more difficult to prove than contractual liability claims. This is due to the fault and causation requirements in combination with the injured consumer's lack of information about the product, its production and distribution history as well as relevant sectoral standards.

These pressures have over time resulted in the adoption of various specific product liability rules, such as German *Produzentenhaftung*, Belgian-French more objective fault for professionals who place a defective product on the market, US strict liability in tort and ultimately the PLD-1985. Simultaneously, the legal questions on product liability (see also *supra* nrs. 4-5) fuelled by rising industrial production and mass consumption, have also co-determined the broader evolution of the grounds of civil liability that now operate as general product liability theories, such as the hidden defects guarantee, traditional extracontractual fault-based liability or the aforementioned *responsabilité du fait des choses*.

Section D. The challenge circular economy poses to product liability law

15. OVERVIEW – Applying contemporary, in particular ‘specific’ product liability theories like the PLD to circular economic methods for distributing and producing consumer goods, is far from self-evident. The preceding Section already offered a historical reason why: product liability in general and in particular specific product liability rules coevolved with the now dominant economic model from which circular economy diverges. This Section aims to provide a preliminary overview of the precise features of this potential conflict between current product liability law and circular economy. Insights from this problem statement can guide the formulation of the research hypothesis and the rest of the research design *infra* nrs. 28 et seq.

§ 1. Increased heterogeneity resulting from circular economy

16. PROSUMERS (RE)DISTRIBUTING AND (RE)PRODUCING CONSUMER GOODS – ‘Prosumers’ are a neologism, referring to natural persons, consumers, who on an occasional basis also offer

¹³⁶ B. Pfister, ‘Einleitung und Problematik’ in H.-J. Kullmann and others (eds.), *Produzentenhaftung*, Band 2 (ESV, looseleaf 2020 update) § 1310, 3.

¹³⁷ See *supra* footnote 32.

products and services. Many circular strategies, like resales of second-hand goods and repairs are increasingly performed by such prosumers (see *supra* nrs. 2 and 68). They are the central actors in the so-called ‘collaborative’ or ‘peer-to-peer economy’, which partially overlaps with circular economy in the consumer goods sector (see also *infra* nrs. 68 and 70). A general problem is that specific product liability rules, which were developed in the past to tackle the challenges posed by general consumer product accidents, tend to mainly facilitate claims against professional, sometimes specialized, commercial actors.

Hence, an important question is to which extent a party injured in a product accident can still claim on the basis of special product liability theory against a ‘prosumer’ who has on an occasional basis (re)distributed or (re)produced a harmful product in a collaborative and circular context. Second, if an injured party cannot avail himself of the protection of the aforementioned special product liability regimes, does he still benefit from sufficient protection based on other theories of liability? And third, the fact that product liability defendants might increasingly become prosumers, potentially risks to increase the so-called ‘judgement-proof problem’. This concept, studied extensively in the economic analysis of law, points to the risk of insolvency or other reasons why a plaintiff cannot recover from a liable party and the resulting risk of losing liability law’s reparatory and preventive functions.¹³⁸

17. EXTRA ACTORS INVOLVED IN MORE COMPLEX PRODUCT LIFECYCLES – The central circular approach of extending product lifetimes (see also *supra* nr. 2) also increases complexity and heterogeneity in terms of potential product liability defendants. This is because it accumulates the number of consecutive (re)production, (re)distribution and use phases (see *infra* nr. 18) with different actors being involved.

On the one hand, parties who resell or otherwise redistribute products can on the basis of various product liability theories be held liable for product accidents. In traditionally linear product distribution, injured persons could already claim against the producer, the initial distributor and, if they are a third party, the product’s user. Redistribution opens up the possibility of additional claims against a subsequent redistributor and in some cases even against a previous user of a product. Misusing a product, reselling a potentially dangerous device, failing to convey specific use or maintenance instructions are all factual elements that can be assessed through theories of product liability.

¹³⁸ See generally J. Summers, ‘The Case of the Disappearing Defendant: An Economic Analysis’ (1983) 132 *University of Pennsylvania Law Review* 145; S. Shavell, ‘The Judgement Proof Problem’ (1986) 6 *International Review of Law and Economics* 45; G. Dari-Mattiacci and F. Parisi, ‘The cost of delegated control: vicarious liability, secondary liability and mandatory insurance’ (2003) 23 *International Review of Law and Economics* 453; T. Miceli and K. Segerson, ‘A note on optimal care by wealth-constrained injurers’ (2003) 23 *International Review of Law and Economics* 273; S. Shavell, ‘Minimum Asset Requirements and Compulsory Liability Insurance as Solutions to the Judgment-Proof Problem’ (2005) 36 *RAND Journal of Economics* 63; G. Dari-Mattiacci and G. De Geest, ‘When will judgment proof injurers take too much precaution?’ (2006) 26 *International Review of Law and Economics* 336; T. Friehe, ‘A note on judgment proofness and risk aversion’ (2007) 24 *European Journal of Law and Economics* 109; G. Dari-Mattiacci and B. Mangan, ‘Disappearing Defendants versus Judgment-Proof Injurers’ (2008) 75 *Economica* 749; C. Kim and P. Koh, ‘Minimum Asset Requirements and Compulsory Liability Insurance as Solutions to the Judgment-Proof Problem’ (2019) 60 *Hitotsubashi Journal of Economics* 141.

On the other hand, repair, refurbishing and remanufacturing activities provide an additional basis to claim against persons who conduct such activities that can precede a product accident. Depending on the circumstances and liability theory, these actors might theoretically be qualified as service-providers, suppliers of spare parts or producers of new products. A repair, refurbishment or remanufacturing can be implemented improperly, use defective spare parts or follow incorrect repair information. Both persons injured by a subsequent accident and persons injured during an attempted repair, refurbishing or remanufacturing may theoretically also sue original manufacturers and perhaps even the initial distributors or consumers for an unsafely repairable product or a lack of instructions or warnings.

All these possibilities raise in a context of growing circular consumption fundamental questions about how different theories of product liability can be correctly applied to these extra actors). However, as the repair example already illustrated, liability of industrial manufacturers and initial distributors does not suddenly become excluded. One can therefore also wonder whether claims will in practice continue to be channelled towards linear economic producers and distributors in the product's original distribution chain, notwithstanding the fact that the same products have subsequently been redistributed or repaired. This might be persistent because the linear economic model is engrained so much in modern product liability law (see also *supra* nrs. 13-14). But it might also be persistent because initial producers or distributors are more likely to be large, professional actors with 'deep pockets', while subsequent redistributors and repairers are more often non-professional 'prosumers', who are at least from the injured party's perspective less attractive defendants.

18. PRODUCT LIABILITY, THE PRODUCT LIFECYCLE PERSPECTIVE AND CIRCULAR ECONOMY – Although liability is ultimately imputed to persons, the central linchpin in 'product liability' is the product that ends up causing a product accident (see also *infra* nr. 101.c). Product liability theories can therefore be analysed and compared on the basis of how they relate to one or more phases of a product's lifecycle: production, distribution, use and end-of-life (see also *infra* nr. 74). This lifecycle perspective is actually implied in existing product liability legislation, case law and literature, which focus on elements like 'manufacturing', 'product', 'product component', 'bringing into circulation', 'supplying'/'selling', 'using' or 'discarding'.¹³⁹ These concepts are often considered as relatively straightforward to interpret and implement. However, such a view is based on the assumption of a linear model of product distribution and production. The previous two sections summarised already what happens at the level of product liability's personal scope when this assumption is abandoned. This section aims to draw attention to what happens with the nature of products themselves and, consequently, our understanding of their lifecycles when we seriously consider the impact of

¹³⁹ It should be noted that most legal sources, whether legislation, case law or literature, including comparative scholarship, structure discussions of product liability according to applicable theories of liability, subdivided by an abstract analysis of each theory's theoretical requirements. Only at this secondary level do factual aspects relating to a product's lifecycle appear. In US literature, the theory of liability is more frequently no longer the main superstructure of an analysis and factual aspects more often determine the structure of an analysis that integrates different liability theories and requirements. *E.g.*, Owen and Davis, *Products Liability*, 4th edn., nrs. 17:1-20:11.

circular methods of consumer good (re)production and (re)distribution (see also *supra* nr. 2 and *infra* nrs. 58-59).

- a. First, circular economy strategies like upcycling, general recycling and remanufacturing merge the production and end-of-life stages of consumer products and product components. Should persons conducting such activities simply be considered as equivalent to traditional producers who manufacture and ‘put on the market’ new products made from virgin resources? In other words, is this simply a new consumer good’s production phase? This question is crucial in light of the harmonised product liability regime, which primarily fixates liability on ‘manufacturers’.¹⁴⁰ Moreover, how to interpret in this context rules like the PLD-1985’s liability of ‘quasi-manufacturers’,¹⁴¹ a rule developed for a context of linear distribution but which might apply to many circular activities? A second set of questions relates to the producers of the original products and product components that are used in upcycling, remanufacturing and other circular processes. Do they fully escape liability or are they considered as equivalent to component manufacturers who supply producers in traditional linear, industrial production and who can on the basis of some product liability theories be held directly liable? And how to interpret in this context potential liability of those actors based on ‘post-marketing obligations’?¹⁴² The answer to all the preceding questions may for some theories of product liability partially depend on the professional or commercial nature of the circular activity (see also *supra* nr. 16). More fundamental might be the extent to which the activity physically modifies existing products and product components, uses them for new purposes or changes use instructions and warnings.
- b. Second, repairing and refurbishing consumer goods often also involves product modifications and the introduction of spare parts (see *infra* nrs. 88-89 on distinguishing these different circular strategies). Repairs and refurbishments can therefore be seen as blurring the use and (re)production phases of a product’s lifecycle in a similar way as the circular strategies discussed above. Nevertheless, elements of product (re)distribution often play a role here as well. Minor repairs and refurbishments are frequently conducted by parties who subsequently resell such consumer goods. Are these actions to be qualified, in particular in strict product liability regimes, as producing new goods (‘placing on the market’ in EU product regulation terminology) or merely redistributing (‘making available’) existing ones? And to what extent can original producers invoke certain defences, like the posteriority or component defences?¹⁴³ Questions also arise

¹⁴⁰ Art. 8(1) PLD-2024. See also arts. 1 and 3 PLD-1985 (the old Directive refers to ‘producer’, which will now be replaced by the less ambiguous ‘manufacturer’ concept that is also used in current EU product regulation).

¹⁴¹ Art. 4(10)a PLD-2024; art. 3 (1) PLD-1985. See *infra* nr. 176.b and 304-306.

¹⁴² See generally P. Haberland, *Die Produkthaftung im deutschen und US-amerikanischen Recht - Unter besonderer Berücksichtigung der Produktbeobachtungspflicht* (Peter Lang 2016); Verhoeven, *Productaansprakelijkheid en productveiligheid*, 351-654.

¹⁴³ See arts. 7 (b), (f) PLD-1985; art. 11(1)c,f PLD-2024. Comparable formal defences or factual arguments are present as well in other product liability regimes.

when spare parts are used in a repair context, even when it is a pure repair service without a subsequent redistribution.

- c. Third, circular strategies where products are merely used longer ('reused'), used for a new purpose ('repurposed') or distributed to new users as second-hand ('redistributed') seem at first sight to cause fewer difficulties since products are not modified physically. Reuse can be seen as an extension of a product's use phase by postponing its end-of-life (see *infra* nr. 83). Nevertheless, even here some interference with the production phase can be found, because 'repurposing' or using a product beyond its standard lifespan deviate from the original producer's intention when he placed a product on the market. Redistribution is a reiteration of a product's initial distribution phase and separates successive use phases. This can make it more likely that, at the time of redistribution, a product has become physically defective or that pertinent product information has been lost, which may ultimately contribute to a subsequent accident. Liability claims against the original producer, for example relating to durability, might still be possible in such an event. Yet, in comparison with linear distribution, it perhaps becomes more opportune to (also) claim against the redistributor. The latter might be held liable based on the fact that he was aware of a particular accident risk or should have become based on a duty to inspect or even test second-hand goods prior to redistributing them. At the same time, the second-hand nature of a product, implicating all risks of a preceding use and an additional distribution phase, might also mean that redistributors should not be subject to the same standards as distributors of new goods. As a reference, US courts are split on the question whether to impose strict liability on professional sellers of second-hand goods.¹⁴⁴

The above overview demonstrates that circular (re)production and (re)distribution methods cannot be boiled down to simply increasing the number of persons who may be held liable based on traditional product liability rationales. By changing a product's lifecycle, they also change the product itself. Inevitably, this has implications for the potential liability of the different actors who are involved in both the original and the new product lifecycle phases.

§ 2. Product liability's theoretical foundation: a fresh look

19. SPECIFIC PRODUCT LIABILITY LAW'S 'RISK-SPREADING', 'ACCIDENT-PREVENTION', 'RISK-INTERNALISATION' AND 'COST-MINIMIZATION' RATIONALES – Scholars at both sides of the Atlantic have sought after a common theoretical foundation which underpins modern product liability law,

¹⁴⁴ See the case law cited and policy arguments in § 8 Liability of Commercial Seller or Distributor of Defective Used Products, Reporters' note a) Restatement (Third) of Torts: Products Liability; *American Law of Products Liability*, 3rd edn., nr. 5:34; D.B. Goodwin, 'Protecting the Buyer of Used Products: Is Strict Liability for Commercial Sellers Desirable?' (1981) 33 *Stanford Law Review* 535; K.A. Boedecker and F.W. Morgan, 'Strict Liability for Sellers of Used Products: A Conceptual Rationale and Current Status' (1993) 12 *Journal of Public Policy & Marketing* 178.

in particular the stricter rules of ‘specific product liability’ on the basis of the PLD-1985 in Europe and strict liability in tort in the US (see *supra* nr. 6.c). This is perhaps unsurprising, given that these rules have been developed to pursue similar goals in the same emerging context of industrialization and mass consumption, as discussed *supra* nrs. 9-14. However, the precise features of this common theoretical foundation are debated¹⁴⁵ and arguably some rationales have been more influential for the development of particular product liability rules in different jurisdictions at specific points in time. Hence, it is presented below by summarizing what can be seen as the four most important, largely competing principles. These are the ‘risk-spreading’, ‘risk-internalisation’ and ‘cost-minimization’ principles examined by BORGHETTI in his seminal study.¹⁴⁶ A fourth ‘accident-prevention’ principle is added, because this has from the outset of this thesis been recognized as a key societal function of product liability (see Figure 1 *supra* nr. 4) and because prevention will also fulfil an important role in the normative framework which Part III of this dissertation develops.¹⁴⁷

At this still introductory stage, no view is expressed on which principle is preferred as a theoretical foundation (see regarding this *infra* nr. 128). A more comprehensive groundwork will first be laid in Part III, before articulating this dissertation’s normative understanding of product liability. From a descriptive perspective, which interests us in this Chapter the most, it seems fair to say that at least all four principles describe to some extent how current product liability law operates and what has driven its adoption. At the same time, all four principles

¹⁴⁵ See, e.g., G. Calabresi, *The Costs of Accidents: A Legal and Economic Analysis* (Yale University Press 1970); H. Cousy, ‘Produktaansprakelijkheid: Proeve van een juridisch-economische analyse’ (1976) 13 *Tijdschrift voor Privaatrecht* 995; A. Schwartz, ‘Products Liability and Judicial Wealth Redistributions’ (1976) 51 *Indiana Law Journal* 558; R. Epstein, ‘Products Liability as an Insurance Market’ (1985) 14 *Journal of Legal Studies* 645; D. Owen, ‘The Intellectual Development of Modern Products Liability Law: A Comment on Priest’s View of the Cathedral’s Foundations’ (1985) 14 *Journal of Legal Studies* 529; G. Priest, ‘The Invention of Enterprise Liability: A Critical History of the Intellectual Foundations of Modern Tort Law’ (1985) 14 *Journal of Legal Studies* 461; Howells, *Comparative Product Liability*, 311-322; Markovits, *La Directive C.E.E. du 25 juillet 1985*, 79-94; D.G. Owen, ‘The Moral Foundations of Products Liability Law: Toward First Principles’ (1993) 68 *Notre Dame Law Review* 427; G. Keating, ‘The Idea of Fairness in the Law of Enterprise Liability’ (1997) 95 *Michigan Law Review* 1266; Borghetti, *La responsabilité du fait des produits*, 590-601; Fox, ‘Questioning the Social Desirability of Product Liability Claims’, 37-56.

¹⁴⁶ Borghetti, *La responsabilité du fait des produits*, 590-601. The summary in this paragraph largely follows BORGHETTI’s synthesis. See also, e.g., N. Jansen, *Die Struktur des Haftungsrechts: Geschichte, Theorie und Dogmatik ausservertraglicher Ansprüche auf Schadenersatz* (Mohr Siebeck 2003), 626-628 (motivating choice for strict ‘enterprise liability’ as one of extracontractual liability law’s basic principles on the basis of arguments amounting to the ‘risk-spreading’, ‘risk-internalisation’ and ‘accident-prevention’ rationales; collecting references to German literature).

¹⁴⁷ See also, e.g., how accident-prevention features among the policy rationales of purely strict liability identified by CAPPELLETTI (in a study limited to such strict liability but more expansive than product liability): ‘risk’; ‘accident avoidance’; ‘deep pockets’; ‘loss spreading’; ‘victim protection’; ‘reduction in administrative costs’; and ‘individual responsibility’ (M. Cappelletti, *Justifying Strict Liability: A Comparative Analysis in Legal Reasoning* (OUP 2022) 67-292).

are also intertwined with and partially overlap each other.¹⁴⁸ To introduce the first three principles, excerpts are quoted from what is arguably also in a comparative perspective the most influential judicial opinion in the history of product liability law, Justice Traynor's concurrence in the 1944 California Supreme Court decision *Escola v. Coca Cola Bottling Co. of Fresno*. This opinion foreshadowed the adoption in the US of strict products liability which later spread around the world. However, it is necessary to emphasize that the four principles discussed below can actually be applied to any 'specific' product liability theory and are not exclusive to 'strict' EU harmonised product liability (cf. *supra* nrs. 6-8).

20. SPECIFIC PRODUCT LIABILITY LAW'S 'RISK-SPREADING' RATIONALE – “*Those who suffer injury from defective products are unprepared to meet its consequences. The cost of an injury and the loss of time or health may be an overwhelming misfortune to the person injured, and a needless one, for the risk of injury can be insured by the manufacturer and distributed among the public as a cost of doing business.*”¹⁴⁹ This is the principle of 'risk-spreading' or 'loss-spreading'. It highlights first of all that the costs of an individual product accident are generally smaller for a producer or other commercial defendant than for the injured person ('deep pocket' argument), which is not entirely convincing when considering that defendants also face a proportionally greater risk of being confronted with claims and that, especially in the context of collaborative economy, certain defendants may have limited assets.¹⁵⁰ Secondly, a more nuanced, economic understanding of this principle in the product liability context is based on the premise that the defendant can generally spread these costs across all consumers of the same product through its price (see *infra* nr. 106.a).¹⁵¹ And, if necessary, the producer can take out liability insurance to better manage this risk-spreading (see *supra* 11.b).

The risk-spreading principle is mostly related with 'distributive justice', but it indirectly hides also an element of 'corrective justice' (see *infra* nr. 128.a).

Naturally, social security and first-party accident insurance can also spread accident risks. Economic analysts of law, who examine the effects in terms of risk-allocation of liability and insurance mechanisms, often argue that such private and social insurance solutions do this more efficiently, although these mechanisms also have limitations and disadvantages compared to product liability (see also *supra* nr. 11.d and *infra* nrs. 106.d and 110.c).

21. SPECIFIC PRODUCT LIABILITY LAW'S 'ACCIDENT-PREVENTION' RATIONALE – “*Even if there is no negligence, [...], public policy demands that responsibility be fixed wherever it will most effectively*

¹⁴⁸ Claiming that one principle most accurately describes current product liability law in general, therefore requires a nuanced approach which recognizes the overlaps with other principles and which to some extent integrates those. See, e.g., Borghetti, *La responsabilité du fait des produits*, 598-599 (ultimately arguing persuasively that a comprehensive understanding of the theory of risk-internalisation best represents current product liability law's theoretical foundation).

¹⁴⁹ *Escola v. Coca Cola Bottling Co. of Fresno*, 24 Cal. 2d 453, 462, 150 P.2d 436, 441 (Cal. 1944).

¹⁵⁰ See also *infra* nr. 106.b on evidence indicating that companies are often also 'risk-averse', although generally indeed to a lesser extent than consumers.

¹⁵¹ CAPPELLETTI examines i.a. the 'deep-pockets' and 'risk-spreading' arguments separately, but notes that the former blends into the latter when the defendant is a firm who can spread the liability (M. Cappelletti, *Justifying Strict Liability: A Comparative Analysis in Legal Reasoning* (OUP 2022) 155).

reduce the hazards to life and health inherent in defective products that reach the market. It is evident that the manufacturer can anticipate some hazards and guard against the recurrence of others, as the public cannot.”¹⁵² This is the aim of accident-prevention, which is also somewhat implied in the risk-internalisation principle, discussed next, but stated here more clearly as an autonomous goal evaluated in light of whether a rule can ‘efficiently’ prevent the societal harm of product accidents from occurring *a priori*. As such, it can be seen as pursuing more a goal of ‘distributive’ than ‘corrective justice’ (see *infra* nr. 128.b).

Economic analysis of law often considers a product liability rule’s potential for accident-prevention as very important in determining its efficiency, because they mostly consider private and social insurance as more efficient alternatives for allocating risk (see *infra* nrs. 106.d, 108-109 and 162). However, product liability of course also has alternatives for accident-prevention purposes, namely the market mechanism and product safety regulation (see *supra* nrs. 9-10).

22. SPECIFIC PRODUCT LIABILITY LAW’S ‘RISK-INTERNALISATION’ RATIONALE – “If such products nevertheless find their way into the market it is to the public interest to place the responsibility for whatever injury they may cause upon the manufacturer, who, even if he is not negligent in the manufacture of the product, is responsible for its reaching the market.”¹⁵³ This refers to the principle of ‘risk-internalisation’, which consists of the idea that liability for accident risk should be imposed, if necessary regardless of fault, on the actors who generate the risk as a result of their economic activities and who profit from those activities. However, liability is not imposed for every accident risk, but only those which are considered ‘abnormal’ and not part of the ordinary risks of (economic) life. In EU harmonised product liability, this is for example reflected in the requirements of a product defect, causation and the posteriority defence, which ensure that the defendant is only held liable for abnormal risks which directly originate from his ‘sphere of responsibility’.¹⁵⁴

In the US, risk-internalisation is sometimes referred to as ‘enterprise liability’,¹⁵⁵ even though this term is also used to encompass the risk-spreading principle, discussed above, as well as to encompass all the economic justifications for stricter product liability, as discussed next. Enterprise liability is considered by some as the most important force in the

¹⁵² *Escola v. Coca Cola Bottling Co. of Fresno*, 24 Cal.2d 453, 462, 150 P.2d 436, 440-41 (Cal. 1944). See also for an accessible introduction to the economic analysis of product liability which, among others, dissects Justice Traynor’s famous *Escola* opinion and challenges some of its arguments M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 2-4, 113-122.

¹⁵³ *Ibid.*

¹⁵⁴ See Borghetti, *La responsabilité du fait des produits*, 601-610.

¹⁵⁵ H.C. Klemme, ‘The Enterprise Liability Theory of Torts’ (1976) 47 *University of Colorado Law Review* 153, 158: “In its broadest terms the theory of enterprise liability in torts is that losses to society created or caused by an enterprise or, more simply, by an activity, ought to be borne by that enterprise or activity. Stated somewhat more precisely, the theory contemplates that losses historically recognized as compensable when caused by an enterprise, or activity, such as producing, distributing and using auto mobiles, ought to be borne by those persons who have some logical relationship with that enterprise or activity.”

development of modern US tort law¹⁵⁶ and it is often equated with strict liability although it is now accepted that it has actually influenced the application and development of the tort of negligence as well.¹⁵⁷ This risk-internalisation principle is equally present in extracontractual liability law in Western European countries, which gradually evolved since the late 19th century towards a bigger role for more objective, no-fault liability regimes, as exemplified by the *théorie du risque* in France and Belgium and the *Gefährdungshaftung* in Germany.¹⁵⁸ BORGHETTI argues in his dissertation that risk-internalisation best reflects the actual underlying theory and operation in practice of current product liability law (see also *infra* nr. 128).¹⁵⁹

Risk-internalisation clearly has some overlap with its risk-spreading and accident-prevention cousins, which hints at an association with ‘distributive justice’. Yet, risk-internalisation’s main idea, reflected in the age-old adages *ubi emolumentum, ibi onus* and *cuius commoda, eius et incommoda*, is actually at least equally strongly a reflection of ‘corrective justice’ (see *infra* nr. 128.c).

23. SPECIFIC PRODUCT LIABILITY LAW’S ‘COST-MINIMIZATION’ RATIONALE – Arguments of economic efficiency were implicitly present throughout the development of modern, ‘specific’ product liability law, as the preceding principles also intuitively touch upon such considerations. Yet, it is only from the 1960’s onwards that the emerging economic analysis of law or ‘law & economics’ literature started to analyse them in a rigorous manner. Economic efficiency can be understood in terms of minimizing costs as much as possible so that social welfare as a whole is the highest, which can subsequently be redistributed to the extent needed (see *infra* nrs. 103-104). ‘Cost-minimization’ or referring to a ‘cheapest cost-avoider’ are therefore the terms with which doctrinal scholars mostly refer to this economic perspective. These terms originate from the very influential but now admittedly dated work of CALABRESI, who was the main pioneer the economic analysis of product liability and of

¹⁵⁶ See, e.g., G. Priest, ‘The Invention of Enterprise Liability: A Critical History of the Intellectual Foundations of Modern Tort Law’ (1985) 14 *Journal of Legal Studies* 461, 461-464; R. Rabin, ‘Some Thoughts on the Ideology of Enterprise Liability’ (1996) 55 *Maryland Law Review* 1190, 1192-1193. See also K. Wantzen, *Unternehmenshaftung und Enterprise Liability: Zur Idee unternehmensbezogener Schadenshaftung als Quasi-Versicherung* (Mohr Siebeck 2007) 33-182. See also the sources cited *supra* footnote 121.

¹⁵⁷ See G. Schwartz, ‘The Beginning and End of the Rise of American Tort Law’ (1991) 26 *Georgia Law Review* 601, 638-647; R. Rabin, ‘Some Thoughts on the Ideology of Enterprise Liability’ (1996) 55 *Maryland Law Review* 1190, 1193-1203; G. Keating, ‘The Theory of Enterprise Liability and Common Law Strict Liability’ (2001) 54 *Vanderbilt Law Review* 1285, 1332-1335. In US products liability law, the theories of negligence and strict liability have converged. See, e.g., the recognition of negligence as the theory behind ‘strict liability’ for design and information defects in § 2(b)(c) Restatement (Third) of Torts: Products Liability.

¹⁵⁸ See Borghetti, *La responsabilité du fait des produits*, 599-600 (collecting references to sources relating to i.a. French, German, Italian and Spanish law). See also *supra* footnote 121 and *infra* nr. 100.

¹⁵⁹ Borghetti, *La responsabilité du fait des produits*, 587-636.

accident law in general, by conceptualizing a framework focused on ‘primary’, ‘secondary’ and ‘tertiary accident costs’.¹⁶⁰

The reduction of ‘primary accident costs’ corresponds with the ‘accident-prevention’ goal discussed *supra* nr. 19 and *infra* nr. 108. ‘Secondary accident costs’ are the extent that the risk of having to pay for primary and tertiary costs is problematic for a person. Reducing them therefore corresponds with the ‘risk-spreading’ rationale discussed *supra* nr. 19. The ‘tertiary accident costs’ have not yet been mentioned, since they refer to the ‘administrative costs’ of installing and operating a system of product liability law, such as attorney and bailiff fees, the costs of the judiciary and of courthouses, time and energy spent, as well as opportunity costs (see *infra* nr. 111). Those administrative costs mostly provide an argument against any liability rule. This is mainly because alternatives to liability law generally have lower administrative costs (cf. *supra* nrs. 9-11 and *infra* nr. 111).

CALABRESI and the ensuing economic analysis of product liability law largely confirmed the legal system’s evolution towards more objective (‘strict’) product liability as relatively efficient compared to fault-based or no liability alternatives.¹⁶¹ Nevertheless, later research adopted a more refined view and challenged some of the early scholarship’s assumptions. Given that the principle of fault-based liability has overall retained or reclaimed a prominent place in product liability law *sensu lato* (see *supra* nrs. 6-7 but see also in terms of EU product liability maximum harmonisation *infra* nrs. 208-214), the insights offered by economic analysis therefore seem to by and large justify the current make-up of product liability law. At least, this seems to be the case for the purposes of dealing with the linear economic model of consumer good distribution and production, on which this literature is based.¹⁶²

The thinking in terms of economic efficiency underpinning the ‘cost-minimization’ principle, is very clearly part of a ‘distributive justice’ conception of specific product liability’s normative foundation (see *infra* nrs. 100 et seq.).

¹⁶⁰ Ideas developed by CALABRESI in a series of preceding articles were ultimately brought together in the seminal book G. Calabresi, *The Costs of Accidents: A Legal and Economic Analysis* (Yale University Press 1970). See also G. Calabresi, ‘Some Thoughts on Risk Distribution and the Law of Torts’ (1961) 70 *Yale Law Journal* 499; G. Calabresi, ‘The Decision for Accidents: An Approach to Nonfault Allocation of Costs’ (1965) 78 *Harvard Law Review* 713; G. Calabresi, ‘Does The Fault System Optimally Control Primary Accident Costs?’ (1968) 33 *Law and Contemporary Problems* 429.

¹⁶¹ See *supra* footnote 47.

¹⁶² This of course matches with POSNER’s famous thesis about the general efficiency of the (common law) legal system (see most recently R. Posner, *Economic Analysis of Law* (9th edn., Wolters Kluwer 2014) 324-328). See also the conclusion of GEISTFELD in M. Geistfeld, ‘Products liability’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) 320: “The rule of strict products liability was firmly entrenched in the US by the mid-1970s, with courts relying on consumer informational problems and insurance considerations to justify the imposition of tort liability on product sellers. By contrast, the state of economic analysis was lagging far behind. Economists were still studying the market behavior of perfectly informed, completely rational actors, and the economics of insurance was not well understood. Matters have changed considerably since then, with economists now regularly addressing the types of problems that courts have long had to confront without the aid of economic analysis. Viewed from this perspective, the performance of the legal system is much more impressive than it might otherwise seem. There is still considerable room for improvement, but unlike in the past, legal decisionmakers can now rely on a substantial and growing body of economic literature.”

24. WHAT THIS MIGHT MEAN IN A MORE CIRCULAR CONSUMER GOODS SECTOR – Even more than for other aspects discussed in this section, it seems premature to attempt to foretell the impact that circular economic strategies might have on the rationale underpinning product liability law. Yet the preceding at least suggests at least that the current threefold theoretical basis may be stirred up. Certain principles perhaps become more prominent and provide better guidance than others for applying and evaluating product liability law within this context of alternative distribution and production methods. This is further examined in Part III.

In a context of circular economic activities, the risk-internalisation principle is perhaps better positioned to continue playing a prominent role. But this would at first sight require that the domain of risks for which actors engaged in these activities are considered to be liable is not interpreted too broadly. On average, there are in circular economy likely more circumstances that could argue in favour of a finding of no fault or no defect, that could provide a liability defence or that might indicate a lack of legal causation. Consequently, it might be expected that these will more often than in a traditional, linear economic setting lead to a conclusion that a particular accident risk was not ‘abnormal’ or not part of the economic actor’s ‘sphere of responsibility’ (see *supra* nr. 22). At the same time, the risk internalisation principle may also provide an argument *de lege ferenda* to impose liability on actors who might now perhaps insufficiently ‘internalise’ the risks they generate, like actors engaging in product life extension activities who potentially profit from a channelling of liability towards original producers and distributors (see *supra* nr. 17).

Finally, the economic analysis of product liability law has become quite refined and comprehensive in recent decades but has not yet had, at least in Europe, a significant direct influence on the interpretation and evolution of this field of law. Now it might be able to bring a valuable interdisciplinary perspective to questions relating to product liability in the context of alternative consumer good distribution and production methods, for interpretations *de lege lata* but especially for evaluations *de lege ferenda*. Economic analysis can provide insights on efficiency in accident-prevention, risk-allocation, administrative costs, impacts on consumption levels and furthermore uncover certain redistributive effects (see *infra* nrs. 103 et seq.). However, what it fails to do is to value outcomes of corrective justice, for which the risk internalisation and risk-spreading principles are better equipped. Hence, this study will try in Part III to combine these different perspectives.

Section E. State of the art

25. THE STATE OF THE ART – The previous Sections of this Chapter have introduced this study’s factual subject matter, presented the essential features of positive product liability law and considered how the former may theoretically clash with the latter. The question now is to what extent have legal sources such as legislation, case law, policy preparation and legal literature already looked into the domain of product liability law for circular economic methods of product (re)distribution and (re)production. What has preceded may have already hinted that sources directly relating to both the factual and legal subject of this dissertation

are extremely scarce. Yet it is necessary to explicitly take stock of existing sources, before being able to formulate this research project's design and potential added value in the following Chapter.¹⁶³

- a. In the European countries examined in this dissertation, comparatively fewer sources exist than in the US that relate to product liability law in general. Germany perhaps stands out as still having a relatively substantial, specialized literature and case law relating to the *deliktische Produkthaftung* based on § 823(1) BGB and to a lesser extent relating to the German PLDI. Consequently, in these European sources there are only very limited discussions of specific topics of product liability law that are relevant to the peculiarities of circular economy in the consumer goods sector. To this day, there exists no comprehensive study of product liability law in the increasingly important context of circular economy that brings all relevant elements together and critically examines them. Hence, a significant gap exists in the literature.
- b. Specifically at the EU level, there is currently an interesting duality. On the one hand, harmonised product liability seems firmly based on assumptions of a linear economic model of consumer good production and distribution.¹⁶⁴ And case law or even literature relating to the PLD that discuss alternative production and distribution methods seem to be virtually non-existent. An exception on a topic that is related to circular economy, is product liability in the context of online platforms, a topic on which several European scholars have recently published exploratory studies, inspired by developments in US products liability and regulatory developments at the EU level.¹⁶⁵ There have been over the years a number of publications on the relationship between

¹⁶³ See on the role of orientation within the state of the art for doctrinal legal research R. van Gestel et al., 'Rechtswetenschappelijke artikelen: Naar criteria voor methodologische verantwoording' (2007) *Nederlands Juristenblad* 1448, 1455; N. Hoekx, K. Vanhove and A.-L. Verbeke, 'Yes we care! Bedenkingen over de (methode der) rechtswetenschap' (2008) *Rechtskundig Weekblad* 1785, 1787-1788; M. Snel and J. de Moraes, *Doing a systematic literature review in legal scholarship* (Eleven 2018) 13-26; I. Bhat, *Idea and Methods of Legal Research* (Oxford University Press 2019) 101-121; T. Hutchinson, *Researching and Writing in Law* (4th edn., Thomson Reuters 2018) 219-234.

¹⁶⁴ See for statements that the PLD-1985 is based on a linear (not circular) economic model P. Brun, 'La responsabilité civile des producteurs du fait des déchets recyclés' (2022) *Revue Juridique de l'Environnement* 59, 63; V. Ulfbeck, 'From Linear to Circular Value Chains: A Role for Tort Liability in Recycling Practices?' (2022) 13 *European Journal of Risk Regulation* 603, 603.

¹⁶⁵ E.g., A. Bertolini, *Liability of online platforms* (2021); C. Busch, 'Rethinking Product Liability Rules for Online Marketplaces: A Comparative Perspective' (2021) *TPRC49: 49th Research Conference on Communication, Information and Internet Policy*, <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3897602>; E. Büyüksagis, 'Extension of Strict Liability to E-Retailers' (2022) 13 *Journal of European Tort Law* 64; A. Fortunato, 'Responsabilité des plateformes du fait des fournisseurs tiers: pourquoi le déréférencement de 'Wish' marque un tournant' (2022) 5 *Revue Juridique de l'Economie Collaborative et des Plateformes* 19; P. Verbruggen and V. Ulfbeck, 'Online Marketplaces and Product Liability: Back to Where We Started?' (2022) 30 *European Review of Private Law* 975, forthcoming; D. Fairgrieve et al., 'Product Liability and Online Marketplaces: Comparison and Reform' (2024) 73 *International and Comparative Law Quarterly* 477. See also BEUC, *Online marketplaces must be included in the Product Liability Directive* (2022).

EU harmonised product liability, recycling and the regulation of waste in general,¹⁶⁶ which are accidentally also the less efficient ‘outer loop’ circular strategies that have until now generally received most attention (see also *infra* nr. 66). Very recently, some very brief, merely exploratory publications have been published on the application of the PLD to some other circular strategies like using products longer or repairing them.¹⁶⁷ However, there has not yet been any comprehensive study on the various implications of circular economy for EU harmonised product liability law.

On the other hand, as discussed *infra* nrs. 65, 251 and 393, recent EU policymaking pays considerable attention to circular economy. And the same holds true for online platform regulation. This led the Commission to integrate at the last minute both aspects in the Commission’s review and consultation process for updating the PLD-1985,¹⁶⁸ which started in 2018 and has mostly been dominated by questions relating to the application of the EU liability regime to ‘emerging digital technologies’, such as smart devices and AI-systems.¹⁶⁹ A large amount of scholarly literature has meanwhile been published in the margins of the PLD-1985 review process, but these numerous sources focus almost exclusively on how to apply or amend the Directive and national liability law in the context of digital technologies, in particular AI-systems and to a lesser extent the Internet

¹⁶⁶ See, e.g., F. Graf von Westphalen, ‘Produkthaftung beim Einsatz von Sekundärrohstoffen’ (2012) *Abfallrecht* 18; P. Brun, ‘La responsabilité civile des producteurs du fait des déchets recyclés’ (2022) *Revue Juridique de l'Environnement* 59; V. Ulfbeck, ‘From Linear to Circular Value Chains: A Role for Tort Liability in Recycling Practices?’ (2022) 13 *European Journal of Risk Regulation* 603.

¹⁶⁷ See V. Ulfbeck, ‘From Linear to Circular Value Chains: A Role for Tort Liability in Recycling Practices?’ (2022) 13 *European Journal of Risk Regulation* 603; P. Verbruggen and J. van Vliet, ‘Duurzaamheid in het buitencontractueel aansprakelijkheidsrecht: De belofte van drie Europese wetgevingsvoorstellen’ (2023) 7407 *Weekblad voor Privaatrecht, Notariaat en Registratie* 276.

¹⁶⁸ See Commission, ‘Inception Impact Assessment_ Adapting liability rules to the digital age and circular economy’, 30 June 2021, Ares(2021)4266516. See also the somewhat cryptic references to sustainability, circular economy and the acknowledgement of uncertainty on how to apply the PLD-1985 to reused, repaired or refurbished goods that were already present in Commission, ‘Report on the Application of the Council Directive on the approximation of the laws, regulations, and administrative provisions of the Member States concerning liability for defective products (85/374/EEC)’ COM(2018) 246 final, 2, 8, 9.

¹⁶⁹ See Commission, ‘Liability for emerging digital technologies’, SWD (2018) 137 final; Commission, ‘Report on the Application of the Council Directive on the approximation of the laws, regulations, and administrative provisions of the Member States concerning liability for defective products (85/374/EEC)’ COM(2018) 246 final; Expert Group on Liability and New Technologies (New Technologies Formation), *Liability for Artificial Intelligence and Other Emerging Digital Technologies* (2019); Commission, ‘Report on the safety and liability implications of Artificial Intelligence, the Internet of Things and Robotics’, COM(2020) 64 final; BEUC, *Product Liability 2.0: How to make EU rules fit for consumers in the digital age* (2020).

of Things and 3D printing.¹⁷⁰ Therefore, at the time of writing, the noteworthy gap in the European product liability literature with regards to circular economy continues to persist.

- c. Although the initial plan was to only issue guidelines on the application of the PLD-1985 regime,¹⁷¹ the Commission published on 28 September 2022 a Proposal for a new Directive on liability for defective products ('PLD Proposal 2022'). The proposed changes in comparison with the PLD-1985 appear mostly driven by the goal of making the strict

¹⁷⁰ See, e.g., G. Howells and C. Willett, '3D Printing: The Limits of Contract and Challenges for Tort' in R. Schulze and D. Staudenmayer (eds.), *Digital Revolution: Challenges for Contract Law in Practice* (Nomos 2016); P. Machnikowski (ed.) *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016); R.H. Weber, 'Liability in the Internet of Things' (2017) *Journal of European Consumer and Market Law* 207; C. Schmon, 'Product Liability of Emerging Digital Technologies: A Fitness Check of the 1985 Product Liability Directive' (2018) *Zeitschrift für Internationales Wirtschaftsrecht* 254; J.-S. Borghetti, 'Civil Liability for Artificial Intelligence: What Should its Basis Be?' (2019) 17 *La Revue des Juristes de Sciences Po* 94; A. De Franceschi and R. Schulze (eds.), *Digital Revolution: New Challenges for Law* (München 2019) 169-244; C. de Meeus, 'The Product Liability Directive at the Age of the Digital Industrial Revolution: Fit for Innovation?' (2019) *Journal of European Consumer and Market Law* 149; S. Lohsse, R. Schulze and D. Staudenmayer (eds.), *Liability for Artificial Intelligence and the Internet of Things* (Nomos 2019); J. Pouget, *La réparation du dommage impliquant une intelligence artificielle* (PhD, Université Aix Marseille 2019); H. Zech, 'Künstliche Intelligenz und Haftungsfragen' (2019) *Zeitschrift für die gesamte Privatrechtswissenschaft* 198; A. Bertolini, *Artificial Intelligence and Civil Liability: Legal Affairs* (European Parliament 2020); T.S. Cabral, 'Liability and artificial intelligence in the EU: Assessing the adequacy of the current Product Liability Directive' (2020) 27 *Maastricht Journal of European and Comparative Law* 615; F. Giovannella, 'Can 'things' be defective products? The applicability of the Product Liability Directive to the Internet of Things (IoT)' (2020) *Revue Européenne de Droit de la Consommation / Journal of European Consumer Law* 589; R. Janal, 'Extra-Contractual Liability for Wrongs Committed by Autonomous Systems' in M. Ebers and S. Navas (eds.), *Algorithms and Law* (Cambridge University Press 2020); B.A. Koch, 'Liability for Emerging Digital Technologies: An Overview' (2020) 11 *Journal of European Tort Law* 115; J. Luzak, 'A Broken Notion: Impact of Modern Technologies on Product Liability' (2020) 11 *European Journal of Risk Regulation* 630; P. Machnikowski, 'Producers' Liability in the EC Expert Group Report on Liability for AI' (2020) 11 *Journal of European Tort Law* 137; A. Seehafer and J. Kohler, 'Künstliche Intelligenz: Updates für das Produkthaftungsrecht?' (2020) *Europäische Zeitschrift für Wirtschaftsrecht* 213; E. Van Gool, 'Développements européens et belges en matière de responsabilité face aux technologies numériques émergentes' (2020) *Droit de la Consommation / Consumentenrecht (DCCR)* 93; C. Wendehorst, 'Strict Liability for AI and other Emerging Technologies' (2020) 11 *Journal of European Tort Law* 150; B. Beierle, *Die Produkthaftung im Zeitalter des Internet of Things* (Nomos 2021); T. de Graaf and G. Veldt, 'Productveiligheid en aansprakelijkheid voor AI' (2021) *Nederlands Juristenblad* 3534; J. De Bruyne, E. Van Gool and A. Boes, 'Wat bracht 2022 en wat brengt de toekomst op het vlak van artificiële intelligentie en buitencontractuele aansprakelijkheid?' in T. Vansweevelt and B. Weyts (eds.), *Recente ontwikkelingen in het aansprakelijkheids- en verzekeringsrecht (ICAV IV)* (Intersentia 2022) 191-254; L. DiMatteo, C. Poncibò and M. Cannarsa (eds.), *The Cambridge Handbook of Artificial Intelligence: Global Perspectives on Law and Ethics* (Cambridge University Press 2022) 87-160; P. Kreutz, '3D-Druck' und Produkt- und Produzentenhaftung' (2022) *Juristische Rundschau* 155.

¹⁷¹ See J.-S. Borghetti, 'Taking EU Product Liability Law Seriously: How Can the Product Liability Directive Effectively Contribute to Consumer Protection?' (2023) 1 *French Journal of Legal Policy* 136, 140. See also the sources cited *supra* footnote 169.

liability regime fit for the digital age and seem at first sight to contribute little to the transition towards a more circular economy.¹⁷² Nevertheless, the PLD Proposal 2022 created several novel rules that are particularly relevant to this dissertation's particular subject matter. Meanwhile negotiators of Parliament and Council have reached a political deal regarding a final text of the new Directive ('PLD-2024'), which has been adopted by the Parliament on 12 March 2024.¹⁷³ The final adoption by the Council is at the time of writing expected soon (see also *infra* nr. 167). The aforementioned novelties pursue the PLD-2024's stated aims of reconciling the PLD-1985 with EU general product safety regulation, as well as making the harmonised product liability regime fit for a more circular economy and for increased product distribution through online platforms and webshops.¹⁷⁴

For example, the PLD-2024 introduces a rule where a person who modifies 'outside the manufacturer's control' and in a substantial manner in light of applicable product safety regulation a product that has already been placed on the market, should be qualified as that product's manufacturer and therefore be subject to potential liability (see *infra* nrs. 442 et seq.). Substantial product modifications occurring 'within the manufacturer's control' tend to lead to a renewal of the liability of existing defendants. Among others, this seems to significantly clarify the relationship between harmonised product and repairing and refurbishing or potentially even remanufacturing products, although whether this brand new novel rule is the right solution has never been properly examined.

Furthermore, the PLD-2024 introduces a few new concepts and also provides definitions and sometimes even renames several concepts already present in the PLD-1985 (see e.g. *infra* nrs. 178 and 180). This is driven by a goal of harmonising the concepts used in EU product liability with technically more detailed concepts that have been developed in recent years in EU product regulation and that have most recently been brought together in the General Product Safety Regulation 2023/988/EU.¹⁷⁵ Given the novelty of these proposed changes, it is yet uncertain how well these slightly tweaked and in some cases novel concepts and definitions from *ex ante* product safety regulation mesh with *ex post* product liability. The challenging context of alternative product

¹⁷² P. Verbruggen and J. van Vliet, 'Duurzaamheid in het buitencontractueel aansprakelijkheidsrecht: De belofte van drie Europese wetgevingsvoorstellen' (2023) 7407 *Weekblad voor Privaatrecht, Notariaat en Registratie* 276, 285, 288 (noticing the gap between the PLD Proposal 2022 and the EU's aim of achieving a more circular economy).

¹⁷³ EU Parliament, 'Legislative resolution of 12 March 2024 on the proposal for a directive of the European Parliament and of the Council on liability for defective products' P9_TA(2024)0132.

¹⁷⁴ See recitals 3-28 PLD-2024.

¹⁷⁵ See art. 3 General Product Safety Regulation 2023/988/EU. See also art. 2 Parliament and Council Regulation 2008/765/EC of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products and repealing Regulation (EEC) No 339/93 [2008] OJ L218/30; art. 3 Parliament and Council Regulation 2019/1020/EU of 20 June 2019 on market surveillance and compliance of products and amending Directive 2004/42/EC and Regulations (EC) No 765/2008 and (EU) No 305/2011 [2019] OJ L169/1.

distribution and production methods presents itself as a proper ‘stress-test’ for these proposed new concepts and definitions in EU harmonised product liability law.

- d. Finally, a substantial body of literature on the economic analysis of product liability law has over the years accrued.¹⁷⁶ These interdisciplinary insights may prove very valuable to analyse and especially to evaluate product liability rules in the context of more circular economy in the consumer goods sector. However, although some studies seem particularly apt for this purpose,¹⁷⁷ no economic analysis literature apparently exists that specifically focuses on one or more of the alternative distribution and production methods that are central to this dissertation.

26. CONCLUSION: GAPS IN THE STATE OF THE ART – The preceding discussion demonstrates that the present ‘state of the art’ has significant gaps in relation to this dissertation’s subject matter. The new PLD-2024 touches on some of these issues. Yet, due to the general lack of knowledge on product liability for alternative distribution and production methods, it is wholly uncertain whether this intervention provides desirable outcomes just for the harmonised product liability regime, let alone for product liability law in general.

The breadth and depth of these gaps in the ‘state of the art’ is striking, but the fact that they exist is not surprising. After all, current specific product liability law is firmly established on the basis of the linear economic model of traditional production and distribution (see *supra* nrs. 16-24). This pattern is also historically entrenched (see *supra* nrs. 12-14). As a result, legal practitioners, scholars and policymakers have so far continued to almost exclusively think about product liability within this context. Instead, this dissertation aims to bring change by focusing decisively on the so far generally ignored but increasingly pertinent questions of product liability for circular consumer good distribution and production methods. Given the relatively broad nature of these questions, the fact that they have until today been neglected and the fact that so much attention is today devoted to ‘new products’ compared to ‘new distribution or production methods’, it seems fitting to describe this dissertation’s research focus as the ‘soft underbelly’ of current product liability law.

¹⁷⁶ See sources cited *infra* nrs. 103 et seq.

¹⁷⁷ See, e.g., the economic analysis of law literature relating to limitation and extinction periods or the judgement-proof problem cited *supra* 140-141; H. Bruce and K.E. Spier, ‘Manufacturer Liability for Harms Caused by Consumers to Others’ (2005) 95 *The American Economic Review* 1700.

Chapter 2. Conceptual research design

27. RESEARCH PROJECT DESIGN – The conceptual design of a research project “*determines what, why and how much we are going to study*”.¹⁷⁸ An essential first step of it consists of understanding the research context, which is the existing body of knowledge in which the research is embedded and which it aims to complement. Hence, the preceding Chapter has aimed to introduce the topic in a manner that also outlines the essential elements of its broader context. An attempt is made in this Chapter to explicitly articulate the remainder of the conceptual research design, pursuant to best practices identified in the literature on doctrinal legal research methodology:¹⁷⁹ the research hypothesis, research objectives, research scope, research questions and the dissertation’s relevance.

Explicitly discussing and justifying methodological choices can also bring clear benefits to doctrinal legal research. On the one hand, by triggering critical reflection and holding the researcher to his own motivated choices, methodological explicitness may help to reduce biases, improve focus and feasibility and avoid certain mistakes in argumentation.¹⁸⁰ On the other hand, methodological explicitness helps readers to better verify and evaluate this dissertation’s research findings, which makes it ultimately more transparent and practically useful but also more ‘scientific’¹⁸¹ in accordance with KARL POPPER’s principle of

¹⁷⁸ P. Verschuren and H. Doorewaard, *Designing a Research Project* (2nd edn., Eleven 2010) 16. See also I. Bhat, *Idea and Methods of Legal Research* (Oxford University Press 2019) 111-112.

¹⁷⁹ See, e.g., M. Salter and J. Mason, *Writing Law Dissertations: An Introduction and Guide to the Conduct of Legal Research* (Pearson 2007); T. Hutchinson, *Researching and Writing in Law* (4th edn., Thomson Reuters 2018); L. Kestemont, *Handbook on Legal Methodology: From Objective to Method* (Intersentia 2018); I. Bhat, *Idea and Methods of Legal Research* (Oxford University Press 2019). See also the open-access journal ‘Law and Method’. The best practices and terminology discussed in this literature are largely inspired by methodological insights derived from the social sciences and humanities.

¹⁸⁰ See R. van Gestel et al., ‘Rechtswetenschappelijke artikelen: Naar criteria voor methodologische verantwoording’ (2007) *Nederlands Juristenblad* 1448, 1460; L. Kestemont, *Handbook on Legal Methodology: From Objective to Method* (Intersentia 2018) 2-3.

¹⁸¹ This dissertation does not intend to involve itself in the fascinating debate on the extent to which doctrinal legal research is or can become ‘scientific’. Yet it believes that methodological best practices exist that can help it to improve its quality, regardless of one’s definition what it ultimately means to be scientific.

falsification.¹⁸² In short, explicitly discussing and motivating methodological choices enables the critical assessment necessary for better legal research.

Section A. Research hypothesis

28. RESEARCH HYPOTHESIS: THE LIMITS OF ‘SPECIFIC’ AND IN PARTICULAR PRODUCT LIABILITY LAW – This dissertation departs from the hypothesis¹⁸³ that the specific rules that modern product liability law developed for dealing with product accident risks in a world of industrial production and mass consumption encounter serious limitations when applied to circular methods of consumer good distribution and production. In the broadest possible version of this formulated hypothesis, this relates to all rules of ‘specific’ product liability law developed in past decades to better protect persons injured by product accidents through civil liability law (see *supra* nrs. 4-8 and 12-14). In Belgium and France, these are today commonly understood to be the hidden defects guarantee and an objective interpretation of fault liability for placing defective products on the market. In Germany, this is primarily the *deliktische Produkthaftung* based on § 823(1) BGB. Most importantly, in the EU as a whole, this is currently the ‘strict’ harmonised product liability regime. As further motivated *infra* nr. 37, this dissertation will mostly limit itself to falsifying this hypothesis for only the last theory, consisting of the PLD-1985 and now also the PLD-2024. This research hypothesis is based on the previous Chapter’s problem statement:

- a. Harmonised product liability is a prime example of a theory that, at least at first sight, seems to limit itself to professional and commercial defendants, which contrasts with the growing participation by prosumers in circular and more collaborative methods of consumer good (re)distribution and (re)production (see *supra* nr. 16).

¹⁸² See on how making methodological choices explicit and justifying them can be seen as the cardinal rule of scholarly research design B. Vangeebergen and D. Van Daele, ‘Is de studie van het recht een wetenschap en wie kan het wat schelen?’ (2009) *Rechtskundig Weekblad* 986, 992-993 (referring to Popper’s writings); R. van Gestel, H.-W. Micklitz and L.M. Poiares Pessoa Maduro, *Methodology in the New Legal World* (EUI Working Paper, 2012) 22; L. Kestemont, *Handbook on Legal Methodology: From Objective to Method* (Intersentia 2018) 1-3. See on the principle of falsification in Karl Popper’s philosophy of science K. Popper, *The Logic of Scientific Discovery* (first published 1935, Routledge Classics 2005) 17-20, 66-67, 72-73. See also M.M. Siems, ‘Legal Originality’ (2008) 28 *Oxford Journal of Legal Studies* 147, 156-157 (discussing criticisms from the philosophy of science tradition against Popper’s falsification principle); J. Wendt, *De methode der rechtswetenschap vanuit kritisch-rationeel perspectief* (PhD, Erasmus Universiteit Rotterdam 2008) (ultimately arguing in favour of implementing Popper’s approach in legal research).

¹⁸³ See on research hypotheses in doctrinal legal research B. Vangeebergen and D. Van Daele, ‘Is de studie van het recht een wetenschap en wie kan het wat schelen?’ (2009) *Rechtskundig Weekblad* 986, 988 (referring to Karl Popper’s writings); I. Bhat, *Idea and Methods of Legal Research* (Oxford University Press 2019) 121-135.

- b. Harmonised product liability also tries to ‘channel’ liability towards mainly original manufacturers or importers of a product, which might no longer work in the more heterogeneous context of circular economy (see *supra* nr. 17).
- c. Harmonised product liability seems at first sight to be necessarily structured along a linear production and distribution chain of a single product with a corresponding linear product lifecycle. Hence, it can be expected to struggle when the physical nature of products that have already been placed on the market changes and when successive use phases are intersected with instances of (re)distribution and (re)production as a result of product life extension strategies (see *supra* nr. 18).
- d. Finally, the ‘theoretical foundation of product liability’ that might be challenged or re-configured in the context of circular consumer good (re)distribution and (re)production methods (see *supra* nrs. 28-29), is precisely the common normative rationale that is offered for EU harmonised product liability law in particular.

Nevertheless, explicitly formulating a research hypothesis is not enough; this dissertation should actively strive to falsify it.¹⁸⁴ If it fails to do so and the hypothesis is eventually confirmed, readers might still be conscious of the implicit bias signalled by its statement.

Section B. Research objectives

29. MAIN RESEARCH OBJECTIVE – This dissertation’s main objective relates to either confirming or falsifying the research hypothesis stated in the previous section. The aim is to uncover whether and to what extent specific rules of harmonised product liability law struggle with alternative methods of product distribution and production.

The initial reasons for pursuing this particular research objective have been outlined in the problem statement and the state of the art overview *supra* nrs. 15-26 and are complemented by the look at the broader societal and academic relevance *infra* nrs. 39-44. In short, while the importance of circular methods of product distribution and production is growing in practice, modern product liability rules seem to have been modelled on the traditional system of linear industrial manufacturing, a one-way professional product distribution chain and often short-term use by passive consumers. Applying product liability law to this emerging context therefore raises questions corresponding with a substantial gap of knowledge in the current literature and in the apparent focus of EU product liability lawmakers (see *supra* nr. 25).

Moreover, because circular economic methods challenge the linear economic paradigm that seems to underly current ‘specific’ product liability theories and harmonised product liability in particular, studying this topic may also – beyond circular economy – learn us a lot about product liability in general in terms of its fundamental goals and features (see also *infra* nr. 44.d).

¹⁸⁴ See K. Popper, *The Logic of Scientific Discovery* (first published 1935, Routledge Classics 2005) 17-20, 66-67, 72-73.

The overall aim of the dissertation is therefore to conduct a critical descriptive analysis and to clearly formulate an explicit normative understanding of (EU harmonised) product liability law, which can help to also interpret possible unclear aspects of applying this theory to circular strategies. Only then, might ultimately specific normative recommendations be proposed, although this is not the primary aim of this research project.¹⁸⁵ Instead, this research project departs from the assessment that it is already sufficiently challenging and valuable in itself to study positive harmonised product liability law, its underlying normative theory and what the application to circular economic strategies might mean from a more descriptive and analytical perspective. Only towards the end of the dissertation, a limited number of discrete normative recommendations can be articulated, which are limited in terms of validity to the preceding research that focused on harmonised product liability and circular economy in the consumer goods sector (see also *infra* nr. 30.b).

30. ANCILLARY RESEARCH OBJECTIVES – A number of other objectives are ancillary in nature, but are nevertheless important sub-goals of the dissertation in their own regard.

- a. The first ancillary objective consists of conceptualizing and systematizing this dissertation's distinctive factual subject matter. Although they are not truly new, circular economic methods of distributing and producing consumer goods seem to have not yet been examined in an integrated manner in legal scholarship. Hence, there does not yet appear to exist a comprehensive overview and systematization of the consumer good distribution and production methods that diverge from the dominant linear economic model. Product liability law, in this case specifically EU harmonised product liability, is cross-cutting in nature. It therefore seems a particularly apt legal research field to study the impact of circular economy in the consumer goods sector.

Whereas the first Chapter already included some limited conceptualization of this dissertation's factual subject matter, the following, relatively brief Part II further pursues the first ancillary research objective. It seems indispensable to first acquire an understanding of the essential features of circular economy in the consumer goods sector before proceeding with the rest of the research. Furthermore, another goal is to develop some classification of the different manifestations of circular strategies in the consumer goods sector, at least of those that are most directly relevant to product liability. This should facilitate the subsequent study of product liability's application in this particular context. Yet this conceptualization and classification may also have relevance beyond this particular research project. The rise of circular product (re)distribution and (re)production in the consumer goods sector raises other legal questions as well, such

¹⁸⁵ In their critical autopsy of a lot of contemporary, 'policy-driven' European legal research, VAN GESTEL and MICKLITZ find that a lot of legal research all too readily implies that there is indeed a 'legal problem' that needs to be solved, often in the absence of complementary research of an empirical nature or from other disciplines and with having a too strong focus on expected consequences of a pursued legal intervention rather than on examining whether a problem indeed exists and what is behind it. R. van Gestel and H.-W. Micklitz, 'Why Methods Matter in European Legal Scholarship' (2014) 20 *European Law Journal* 292, 301-303. See also R. van Gestel, H.-W. Micklitz and L.M. Poiares Pessoa Maduro, *Methodology in the New Legal World* (EUI Working Paper, 2012) 22.

as relating to product safety and market surveillance regulation, contract law, consumer protection, intellectual property, etc.

- b. The second ancillary research objective consists of providing a comprehensive descriptive analysis on how to apply product liability law in general to those circular methods of consumer good distribution and production. This is the main part of the dissertation's work, given the complexity of the applicable legal rules, especially in a comparative perspective, and given the comparable absence of already existing, specific studies as discussed in the state of the art overview *supra* nrs. 25-26. This ancillary objective is of course a necessary step to achieve the main research objective. Nevertheless, existing sources on product liability law relating to aspects of alternative distribution and production methods are extremely limited in Europe (see *supra* nr. 25). Hence, a significant added value of the dissertation can consist of simply mapping, organizing and explaining for the first time in a context-specific, tailored manner the applicable legal rules. This may not only be particularly useful from an academic perspective purely because existing legal sources on this topic are scarce, limited in scope and disorganized. Circular economy seems also at least in the European consumer goods sector to be rapidly growing and to receive support from policy initiatives (see *infra* nr. 65). The importance in legal practice of related product liability questions will therefore continue to grow as well.
- c. The main research objective is not limited to a descriptive analysis of positive EU product liability harmonisation's application to circular strategies but strives to ultimately also normatively understand those rules, evaluate them and, if necessary, formulate normative recommendations. Consequently, the third ancillary research objective is to develop and operationalise a normative framework and to subsequently apply this framework to the combination of this dissertation's legal and factual subject matter. As discussed *supra* nr. 23 and further explored *infra* nrs. 102 et seq., the economic analysis of product liability law literature provides a rich framework that seems particularly suited to be applied in this research context yet it also has some limitations. This is why the normative framework will not limit itself to the economic analysis of law and also use insights from doctrinal legal theory in order to construct a more comprehensive, 'holistic' normative understanding of what product liability entails, what it can and should pursue and what this might mean in the context of circular economy.

Section C. Research scope

31. OVERVIEW – The dissertation is limited in several ways, which are explained below. First of all, the focus is on products, not services and certain consumer goods are excluded. Second, the emphasis is on substantive product liability law, which at least in the descriptive stage excludes alternatives to civil liability and largely ignores civil procedure. Third, this dissertation focuses in particular on EU product liability harmonisation. Finally, some

additional limitations more specific to the factual focus on circular economy first require more technical understanding of the substance and scope of circular economy and are therefore discussed *infra* nrs. 74-78.

32. **FACTUAL SCOPE: PHYSICAL AND MOVABLE GOODS** – The dissertation focuses on the traditional category of physical, movable consumer goods. Purely digital content and digital services¹⁸⁶ or other goods that cannot be observed like electricity, are therefore excluded. Immovable goods, such as real estate, fall outside the research scope as well, although physical goods that are distributed as movables and only afterwards incorporated in an immovable good, are included in accordance with the harmonised product liability law.¹⁸⁷ These excluded categories of ‘immaterial’¹⁸⁸ and immovable goods, are definitely also important in the modern lives of consumers and each of them has specific, strong links with circular economy. Nevertheless, they are excluded due to feasibility considerations, because they are in case of digital content and electricity fundamentally different in nature with regards to product life extension or redistribution strategies, because they are subject to vastly different regulatory frameworks than traditional, durable consumer goods and because some of them are to a large extent subject to additional, specific civil liability and product safety rules.

33. **FACTUAL SCOPE: CONSUMER GOODS** – Moreover, the spotlight of this dissertation shines on consumer goods, which are goods that are used by natural persons in their daily, non-professional lives. Admittedly, goods used for professional purposes are also perfectly capable of injuring natural persons and this is why they are traditionally included in most product liability regimes.¹⁸⁹ Many of the insights that this dissertation gains regarding product liability for consumer goods may therefore also be relevant vis à vis professional goods. The dissertation focuses, nevertheless, on actual consumer goods because these are the products that consumers and prosumers actually use themselves and either own or hold. Hence, these are the goods which they can purchase second-hand or via platforms, which they can rent, share, repair and donate or which they are most likely to produce or upcycle themselves. Because

¹⁸⁶ Those excluded goods and services largely correspond with the scope of Parliament and Council Directive 2019/770/EU of 20 May 2019 on certain aspects concerning contracts for the supply of digital content and digital services [2019] OJ L136/1. In contrast, the concept of ‘good’ in art. 2(5) Consumer Sales Directive 2019/771 matches better with this dissertation’s factual scope, although the finer distinctions between both Directives’ scopes of application related to consumer goods with digital elements are far removed from the focal point of this dissertation.

¹⁸⁷ Art. 2 PLD-1985; art. 4 (1) PLD-2024.

¹⁸⁸ From a natural science perspective, electricity and digital code and data are all ‘physical’, given that they consist at the most minimal level of electrons moving through networks and local infrastructure. ‘Physical’ and ‘immaterial’ goods are used here rather in the traditional legal understanding. Cf. E. Van Gool, ‘Over de verhouding van informatie tot het toepassingsgebied van de productaansprakelijkheidsrichtlijn’ (2021) *SEW: Tijdschrift voor Europees en Economisch Recht* 677, 677-678, 681.

¹⁸⁹ A different question is whether damage caused by a product accident to such goods provide grounds for a claim based on a specific product liability theory. Strict EU liability, for example, excludes material damage to goods used exclusively for professional purposes (art. 9 (b) ii) PLD-1985; art. 6(1)b(iii) PLD-2024). See *infra* nr. 190.

of this, actual consumer goods raise the most challenging and pertinent questions relating to the application of harmonised product liability law in the context of circular methods of distribution and production. Additionally, given their proximity to natural persons, consumer goods are responsible for most serious product accidents (see *infra* nr. 41), which further justifies focusing on them. For the same reasons, ‘mixed purpose’ goods, which are goods that can be used by both consumers and professionals, are not a particular focal point of this dissertation (see also *infra* nr. 78 on the exclusion of B2B product distribution).

34. FACTUAL SCOPE: EXCLUDING PERISHABLE GOODS, BIOMEDICAL GOODS AND MOTOR VEHICLES – Within the category of physical, movable consumer goods, a number of products are specifically excluded.

First of all, the dissertation focuses on ‘durable’ goods, which means that perishable consumer goods like food fall outside the research scope. Such goods, although important in relation to circular economy,¹⁹⁰ are different in how circular (re)distribution and (re)production methods can apply to them. Moreover, foodstuffs are subject to a comprehensive system of *ex ante* safety regulation, which further justifies their exclusion from the research scope.

Second, pharmaceuticals and biomedical products like organs, blood and medical devices are all excluded as well. The reasons are similar. On the one hand, the circular product distribution and production methods studied here cannot easily be applied to them and in many cases their trade is restricted. Above all, they are subject to a complex and stringent *ex ante* regulatory framework and in some cases also to specific *ex post* liability or reparation rules.¹⁹¹

Third, the dissertation does not specifically focus on automobiles. This may seem odd, given the relative importance of these particular consumer goods in the development of (product) liability law in general (see *supra* nr. 14.c) and given the very significant second-hand, repair and rental markets for motor vehicles that exist and thrive. The main reason is because specific liability and mandatory insurance rules apply to these goods, which exceed the scope of this dissertation and warrant separate research. Additionally, they are also subject to a more comprehensive *ex ante* safety regulation than most other consumer goods. For reasons of feasibility and focusing on underexamined aspects, it therefore seems advisable to prioritise looking at other durable consumer goods than motor vehicles. Nevertheless, precisely because of the important role fulfilled by motor vehicles in the present and past practice of circular consumer goods economy and product liability case law, motor vehicles remain often indirectly relevant to the research project. Hence, these sources will be referenced, but motor vehicles themselves do not constitute a specific point of attention.

¹⁹⁰ See, e.g., A. Jurgilevich et al., ‘Transition towards Circular Economy in the Food System’ (2016) 8 *Sustainability* 69; M. Hamam et al., ‘Circular Economy Models in Agro-Food Systems: A Review’ (2021) 13 *Sustainability* 3453; M.M. De Oliveira, A. Lago and G.P. Dal’ Magro, ‘Food loss and waste in the context of the circular economy: a systematic review’ (2021) 294 *Journal of Cleaner Production* 126284.

¹⁹¹ See, e.g., BELGIUM: Wet van 31 maart 2010 betreffende vergoeding van schade als gevolg van gezondheidszorg, *BS* 2 april 2010, 19913. FRANCE: Loi nr. 2002-303 du 4 mars 2002 relative aux droits des malades et à la qualité du système de santé, *JORF* 5 mars 2002, nr. 1. GERMANY: §§ 84-94a Gesetz über den Verkehr mit Arzneimitteln vom 12 Dezember 2005, *BGBI* I, 3394.

35. **FACTUAL AND LEGAL SCOPE: LIABILITY FOR PRODUCTS, ONLY CONSIDERING SERVICES THAT CONSTITUTE CONSUMER GOOD DISTRIBUTION AND PRODUCTION**– This dissertation focuses not on service liability but on product liability: the civil liability for in particular the extrinsic damage that results from product accidents (see *supra* nrs. 4-5). Consumer products and not services are the one constant in the alternative distribution and production methods on which this dissertation focuses (see also *supra* nr. 18 and *infra* nr. 74). It is of course true that some product-related services fulfil a prominent role in this research project.

Services themselves are only a focal point in this dissertation to the extent that they directly constitute either methods of product (re)distribution, such as services that provide access-based consumption, or methods of product (re)production, such as repair or refurbishing services that can potentially modify a product structurally. Hence, other product-related services, such as advice on product use, are only examined indirectly to the extent these are directly relevant to the application of harmonised product liability law, which remains intrinsically limited to liability for defects in products.

Feasibility is a reason for drawing this line. Yet the main consideration is the fact that liability for services as such, is an entirely different beast than product liability. Examining it would require a very different research design and would detract from the focus of this research project on liability for product accidents (see *supra* nr. 4) and, more specifically, product liability for circular economic product (re)distribution and (re)production methods. Services themselves are much more heterogenous than product distribution and production activities and involve accident risks that are more difficult to control and assess, which complicates the general use of liability rules other than those based on a traditional fault criterion or on explicit contractual guarantees.¹⁹² This is perhaps best illustrated by the failed proposal for a general EU service liability directive, which would have imposed a strict liability by reversing the burden of proof relating to absence of fault.¹⁹³ Moreover, there is neither in the EU nor in the US a general regulatory framework on safety of services which is comparable in terms of scope and requirements to consumer product safety regulation. Consequently, even if the dissertation would limit itself to the subset of all product-related services, it would still seem ill-advised to make general statements about liability for services.

36. **LEGAL SCOPE: SUBSTANTIVE, NOT CROSS-BORDER PRODUCT LIABILITY, IMPLEMENTED THROUGH CURATIVE CLAIMS** – The dissertation focuses on substantive rules of product liability law that are enforced through curative claims. Moreover, no cross-jurisdictional considerations are considered.

Hence, rules of civil procedure generally fall outside the research scope, notwithstanding their importance to actual ‘product liability law in action’ and for understanding the overall

¹⁹² See also U. Magnus and H.-W. Micklitz, *Liability for the Safety of Services* (Nomos 2006); H.-W. Micklitz, ‘Liability for Defective Products and Services’ in N. Reich and others (eds.), *European Consumer Law* (2nd edn., Intersentia 2014) 274-284.

¹⁹³ Commission, ‘Proposal for a Council Directive on the liability of suppliers of services’ [1991] OJ C12/8. After a lot of criticism, in particular relating to the at that time new principle of subsidiarity and the feared consequences of applying this harmonization in sectors like professional advice and construction services, it was ultimately withdrawn (Commission, ‘Communication on new directions on the liability of suppliers of services’ (Communication) COM(1994) 260 final).

role of product liability in a legal system. The only exception are the rules of civil evidence law applicable to product liability claims, because they are so deeply intertwined with the operation in practice of liability theories. Nevertheless, also these rules are not a focal point of this study. Aspects of civil evidence are only explicitly considered where they are particularly decisive in the application of harmonised product liability in a circular economic setting and/or where they deviate from the default principles of imposing the burden of proof on plaintiffs and requiring reasonable certainty or an equivalent standard of proof.

Similarly, the dissertation does not directly focus too much on alternatives to product liability law, such as *ex ante* safety regulation, criminal law, private insurance, social security (including public healthcare) or the market mechanism. Nevertheless, it is important to grasp the significant roles played by these alternative in relation to product accidents and how they often interact with the operation in practice of product liability law. This is why they have already been introduced *supra* nrs. 4 and 9-11 and why they are thoroughly considered *infra* nrs. 150-165 as part of the normative evaluation of the role of (harmonised) product liability law in the context of circular economy. Moreover, instances where the rules of the PLD-1985 and PLD-2024 are unclear in relation to certain circular strategies like reuse, repair and prosumers, often require to look by analogy to how EU general product safety regulation deals *ex ante* with similar questions. This is because EU harmonised product liability and EU general product safety regulation are closely related and actually appear to be converging (see also *supra* nr. 25.c). Hence, specific, pertinent aspects of general EU product safety regulation appear in this dissertation's analysis of EU product liability harmonisation.

Additionally, the dissertation largely disregards anticipatory claims, which seek injunctions to prevent an imminent product accident (see also *supra* nr. 4). This is mainly because these raise specific questions about admissibility or damage requirements and because they are closely related to procedural law and to private enforcement of product safety regulation, which both already fall outside the scope. Moreover, even to the extent that they are allowed in the different examined legal systems, anticipatory claims based on product liability are rarely used in practice. This is likely because of the asymmetry in terms of information and priorities¹⁹⁴ between possible plaintiffs and defendants when a product accident might be imminent but has not yet occurred.

Finally, the dissertation excludes cross-border elements in product accidents or rather does not consider in detail the resulting consequences under private international law ('conflict of laws'). The basic principles of private international law rules relating to product liability inside the EU are reasonably well established and do not seem to be specifically challenged more as a result of more circular strategies of (re)distribution and (re)production.¹⁹⁵

¹⁹⁴ Anticipatory claims only serve the goal of prevention, while curative claims serve both the goals of prevention and reparation (see *supra* nr. 7).

¹⁹⁵ See on jurisdiction art. 7(2) Parliament and Council Regulation 1215/2012/EU of 12 December 2012 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters (Brussels I recast) [2012] OJ L351/1, 7; CJEU 16 January 2014, C-45/13, *Andreas Kainz v. Pantherwerke AG*, ECLI:EU:C:2014:7 (interpreting the place of the event giving rise to the damage as the place where the product in question was manufactured, motivating this i.a. on the basis of "the possibility of gathering evidence in order to establish the defect in question, the efficacious conduct of proceedings and, therefore, the

An overarching reason for the aforementioned choices are feasibility and the need to focus sufficiently in-depth on the intricate details of applying current product liability law to circular distribution and production methods. The excluded aspects require separate studies with a different research design.

37. FOCUS ON EU PRODUCT LIABILITY LAW – As well known, although the PLD is considered to be a maximum harmonisation instrument, it is limited by the way in which it explicitly allows national liability regimes that either have a different theoretical basis or existed prior to the PLD-1985's notification date to continue to apply (see *infra* nrs. 171 and 207-219). This has led to a situation where, as observed in the past by authors from multiple Member States, the PLDI is infrequently used in practice and national liability theories are mostly preferred to resolve product accident cases.¹⁹⁶ Nevertheless, this trend seems to be reversing somewhat,

sound administration of justice"). See on applicable law arts. 4-5 Parliament and Council Regulation 864/2007/EC of 11 July 2007 on the law applicable to non-contractual obligations (Rome II) [2007] OJ L199/40, 44. See also Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nrs. 18.01-18.260.

¹⁹⁶ See, e.g., **IN GENERAL:** M. Goyens, 'Remarques finales' in M. Goyens (ed.), *La Directive 85/374/CEE relative à la responsabilité du fait des produits: dix ans après* (Centre de Droit de la Consommation 1996) 237-242; M. Reimann, 'Product Liability in a Global Context: the Hollow Victory of the European Model' (2003) *European Review of Private Law* 128 146-148; Borghetti, *La responsabilité du fait des produits*, 575, 579; P. Machnikowski, 'Conclusions' in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 685. **BELGIUM:** H. Cousy, 'De garantie voor verborgen gebreken en de productaansprakelijkheid' in B. Tilleman and P.A. Foriers (eds.), *De Koop - La Vente* (die Keure 2002) 68-69; D. Verhoeven, 'De Wet Productaansprakelijkheid: onbekend en/of onbemind?' in M. Kruithof (ed.), *Inzichten in actueel aansprakelijkheidsrecht en verzekeringsrecht (ICAV II)* (Intersentia 2018) 176, 206. **FRANCE:** G. Viney and P. Jourdain, *Les conditions de la responsabilité* (3rd edn., LGDJ 2006) 864; P. Le Tourneau, *Responsabilité des vendeurs et fabricants* (5th edn., Dalloz 2015) nr. 22.53. **GERMANY:** S. Lenze, 'German product liability law: between European Directives, American Restatements and common sense' in D. Fairgrieve (ed.), *Product Liability in Comparative Perspective* (Cambridge UP 2005) 107.

notably in France but also in Germany and to some extent also in Belgium and seemingly elsewhere in the EU.¹⁹⁷

A first reason to explain the gradual increase in use of the PLD-1985 regime might be the disappearance in pending product liability litigation of products that fall outside the regime's scope because they were placed on the market before the entry into force of national implementing legislation.¹⁹⁸

A second reason might be the growing awareness in the legal profession of the PLDI as a special liability regime, especially among more recently trained lawyers.¹⁹⁹

An important third possible reason of its growing popularity consists of the consequences in some instances of the CJEU case law on the PLD's maximum harmonising nature (see *infra* nrs. 170-171). Especially for Belgian law, this seems to imply that several applications of national (extra)contractual product liability theories *sensu lato* are likely no longer possible due to the scope of EU product liability maximum harmonisation. This is examined in detail *infra* nrs. 207-219.

Additionally, the PLD-2024 clarifies and expands the PLD's scope of application and introduces various new, plaintiff-friendly rules, as discussed *infra* nrs. 178 et seq. It furthermore requires Member States to digitally publish “*any final judgment delivered by their national courts of appeal or of the highest instance in proceedings*” based on the PLDI and requires the Commission set up and maintain “*an easily accessible and publicly available database*” that would

¹⁹⁷ See FRANCE: F. Leduc, ‘Questions - Réponses’ in GRERCA (ed.), *La responsabilité du fait des produits défectueux* (IRJS 2013) 443; J.-S. Borghetti, ‘Product Liability in France’ in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 235; Bloch and Poumarède, ‘L’indemnisation des victimes de produits’, nr. 6311.12. GERMANY: Authors report an uptake in the relative attractiveness and actual use of the German PLDI since the compensation it provides was expanded to non-pecuniary damages (*Schmerzensgeld*) in 2002. *E.g.*, Eisenberg et al., *Produkthaftung*, 103; U. Magnus, ‘Product Liability in Germany’ in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 242-243; Kullmann, ‘Haftung aus § 823 Abs. 1 BGB’, § 1512, 1; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, Einleitung, nrs. 24-25. BELGIUM: H. Bocken, ‘Buitencontractuele aansprakelijkheid voor gebrekkige producten’ in X. (ed.), *Bijzondere overeenkomsten. PUC W. Delva nr. 34* (Kluwer 2008) 362. SEE ALSO: B.A. Koch, ‘Product Liability in Austria’ in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 146 (reporting on the popularity of the PLDI in Austrian legal practice); Fairgrieve and Goldberg, *Product Liability*, 3rd edn., 183-184 (reporting that the PLDI is the most popular liability theory in UK product liability litigation and stating that it has had a significant impact in many member states); J.-S. Borghetti, ‘Taking EU Product Liability Law Seriously: How Can the Product Liability Directive Effectively Contribute to Consumer Protection?’ (2023) 1 *French Journal of Legal Policy* 136, 139 (observing the historical rise in popularity of the PLD-1985 in legal practice).

¹⁹⁸ The adoption of implementing legislation occurred in many instances with major delays. *E.g.*, France has transposed the 1985 PLD-1985 only in 1998 (Loi nr. 98-389 du 19 mai 1998 relative à la responsabilité du fait des produits défectueux, *JORF* 21 mai 1998, nr. 117). See also on the delay before a lot of cases based on the PLD-1985 regime started to be reported Fairgrieve and Goldberg, *Product Liability*, 3rd edn., 184.

¹⁹⁹ See M. Reimann, ‘Product Liability in a Global Context: the Hollow Victory of the European Model’ (2003) *European Review of Private Law* 128 149-150 (mentioning unfamiliarity and conservatism among lawyers as one of the reasons of limited use of the PLDI in European legal practice).

integrate all these judgements.²⁰⁰ If this is properly implemented, it seems likely to further bolster the uptake of EU harmonised product liability rules.

In light of this, this dissertation decides to focus on harmonised product liability law. The following reasons further motivate this choice.

- a. First of all, it is in Europe and especially in Belgian law the regime that is perhaps most explicitly based on a process of linear economic production, distribution and use and where most, although not all, of the issues and uncertainties discussed *supra* nrs. 15-24 occur. Harmonised product liability can be seen as the EU-wide culmination of the risk spreading, risk internalisation and economic analysis rationales for civil liability relating to product accidents, but it has so far only been premised on a context of industrial manufacturing and mass consumption (see also *supra* nrs. 13-14). Within product liability *sensu lato*, it can therefore be ranked as first among equals in terms of salience vis à vis the dissertation's research topic.
- b. A second reason relating to the first consists of the fact that the PLDI is the only liability theory in Belgian law and arguably also in current French law that is specific to the context of consumer product accidents.²⁰¹ This is especially pertinent for the normative dimension of this research project, because it increases the value of this research project's findings and in particular any normative recommendations, when these remain limited to the PLDI. In contrast, evaluative findings relating to national liability regimes are comparatively less impactful given that these regimes have a much broader scope than the issues of consumer product accidents studied in this dissertation.
- c. Third, the PLDI is in Belgium and France the only liability regime that all persons injured by product accidents, both injured consumers and injured third parties, can theoretically invoke it. This simple fact makes it all the more important to know exactly under which conditions it applies to emerging methods of circular consumer good (re)distribution and (re)production. To the extent that it is inapplicable or raises significant uncertainties in a given situation, a proportionally bigger group of persons injured by product accidents is affected than in case of other liability theories. Given this broad scope of application, the PLDI seems to be particularly relevant to focus on in a comprehensive analysis of this dissertation's subject matter.
- d. Fourth, the PLDI regime has explicit aims of providing to injured parties a significant level of protection and of harmonizing European product liability law as much as possible.²⁰² Although national product liability theories share to some extent the first aim, this only holds true in a somewhat weaker manner, given the different nature and origin of national contractual and extracontractual liability theories. The aim of market

²⁰⁰ Art. 19 PLD-2024.

²⁰¹ The same might perhaps also be said of German law. The specific case law on the reversal of the burden of proof in *deliktische Produkthaftung* is specific to product accidents. But the statutory basis itself (§ 823(1) BGB) and most of the general rules of this major extracontractual liability theory have of course a much broader scope of application.

²⁰² See recitals 1-13 PLD-1985; recitals 1-64 PLD-2024. This is examined in more detail *infra* nrs. 167-169.

harmonisation is exclusive to the PLD-1985 and PLD-2024 and, given that it continues to preserve at least in principle general (extra)contractual theories of national law (see *infra* nr. 171), the PLDI's aim of harmonisation can only be achieved to the extent that a given product accident scenario falls within its scope without too many legal uncertainties. Hence, given these underlying aims, an argument can be made that it would be more problematic for the PLDI than for other product liability theories if it would turn out to have significant gaps in protection or engender too many questions in a growing context of alternative economic models.

- e. Fifth, harmonised product liability law is currently subject to legislative reform. This provides a window of opportunity for descriptive and normative findings of this research project in relation to the PLD-1985 and the PLD-2024 to have perhaps relatively quickly a direct impact, either by inspiring amendments or by providing guidance on how to best interpret the regime in relation to alternative distribution and production methods. It is worth emphasizing here that several EU institutions regard circular economy also as a more general policy priority (see *infra* nr. 65). Additionally, the PLD-2024 is still very novel and a substantial amount of legal research is generally required to uncover all its implications. At the same time, the PLD-1985 will still remain applicable for a long time to many product accidents after the PLD-2024's entry into force. This is because products placed on the market or put into service prior to that date remain subject to the implementation of the PLD-1985,²⁰³ which is especially important in the context of circular strategies to extend product lifetimes. Devoting particular attention to both the PLD-1985 and the PLD-2024, may therefore not only directly help to achieve this dissertation's research objectives but indirectly also help to advance our general understanding of EU harmonised product liability law *de lege lata* and *de lege ferenda*.
- f. Sixth, the point discussed above about the extent of the scope of EU product liability maximum harmonisation likely implies that, moving forward, the PLDI will be much more frequently applied in the national context than what has been the case in the recent past. For Belgian law, the *Cour de Cassation* has very recently ruled that at least the case law on an 'objective' extracontractual fault consisting of the fact of making a defective product available, can no longer apply due to the PLD-1985's maximum harmonisation.²⁰⁴ Likely, other components of Belgian law will in the future also be cast aside or become less attractive to plaintiffs as a result of the repercussions of EU maximum harmonisation in this domain (see *infra* nrs. 170-171 and 207-219).
- g. Finally, all the preceding reasons are amplified by the rather obvious fact that EU harmonised product liability law has a much greater territorial scope, which consists of the EU Member States and EEA as well as, much more indirectly, jurisdictions around the world that have copied it as a model for their own 'specific' product liability regime (see *supra* nr. 6.c). This of course does not mean that non-harmonised, national product

²⁰³ Art. 21 PLD-2024.

²⁰⁴ Cass. BE 14 March 2024, C.23.0100.N, ECLI:BE:CASS:2024:ARR.20240314.1N.2, *Juportal*, nrs. 5-6. See *infra* nr. 209.

liability theories are not pertinent, which remains to be far from true. Yet, it does mean that the potential audience of this research project will be greater by focusing on ‘strict’ EU product liability harmonisation. Both the academic and societal relevance of the research project (see also *infra* nrs. 39-44) thus further benefit from devoting particular attention to the PLD-1985 and PLD-2024.

Section D. Research questions

38. RESEARCH QUESTIONS – The rest of the dissertation is guided by the following main and sub- research questions. These have been formulated in order to achieve the stated research objectives (see *supra* nrs. 29-30) and take into account the aforementioned delineation of the research project’s scope and focus (see *supra* nrs. 31-37).²⁰⁵

MAIN RESEARCH QUESTION: *To what extent is existing product liability law fit for purpose when applied in the emerging context of circular economy in the consumer goods sector ?* (evaluative research objective)

FIRST SUB-QUESTION: *How does circular economy manifest itself in the durable consumer goods sector and how can its factual components be classified according to basic types that can be studied from a product liability perspective ?* (descriptive and classifying research objectives)

SECOND SUB-QUESTION: *How does current and future EU harmonised product liability law apply to the identified basic types of circular economy in the durable consumer goods sector ?* (descriptive research objective)

THIRD SUB-QUESTION: *What is the role of EU harmonised product liability law in the context of circular economy and to what extent does it fulfil this role and are any improvements possible ?* (normative (evaluative and recommendative) research objective)

Section E. Academic and societal relevance

39. RESEARCH DESIGN AND RELEVANCE – The preceding Sections have already touched upon discrete reasons why this dissertation’s subject matter might be relevant to examine in-depth. Nevertheless, it is worthwhile to bring these various arguments together and to assess them critically. This is necessary to justify the research design choices presented above. But it can also reveal insights about what doctrinal legal researchers (in the field of product liability)

²⁰⁵ See P. Verschuren and H. Doorewaard, *Designing a Research Project* (2nd edn., Eleven 2010) 91-100 (discussing how to derive main and sub- research questions from stated research objectives, the efficiency and steering functions of research questions and best practices of research question formulation).

choose to focus on, what they pay less attention to and what kind of reasons they have for doing so.

40. ACADEMIC RELEVANCE OF THE RESEARCH PROJECT: GENERAL OBSERVATIONS – As discussed *supra* nrs. 19-24, there is a dearth of literature and other legal sources that discuss the application of product liability law to consumer good distribution and production methods that diverge from the traditionally linear economic model. In the European context, almost no sources explicitly discuss the application of harmonised product liability to circular (re)distribution and (re)production methods and, when they do, these sources are very brief, look at only one method and lack any comprehensive and profound analysis. The literature on the economic analysis of product liability has so far never been applied to circular distribution and production methods. Doing so would therefore be completely innovative.

In contrast to this scarcity of available legal sources, the application of product liability law to circular economy in the consumer goods sector does raise several profound questions and uncertainties, as discussed *supra* nrs. 15-24. Hence, from a purely academic perspective, this dissertation's research objectives and questions clearly address a substantial gap of knowledge.

41. SOCIETAL RELEVANCE: THE SCALE AND GRAVITY OF CONSUMER PRODUCT ACCIDENT RISKS IN GENERAL – Product accidents continue to be pervasive in our daily lives as consumers. In the EU, between 2013 and 2017 an estimated annual average of 11,009,833 people received emergency medical care for injuries resulting from accidents caused by movable goods, excluding transport and employment related injuries.²⁰⁶ In the US in 2019, this number was 13,464,372.²⁰⁷ Consequently, also the number of deaths resulting from accidents caused by durable

²⁰⁶ Civic Consulting, *Study to support the preparation of an evaluation of the General Product Safety Directive as well as of an impact assessment on its potential revision: Final report - Part 2: Impact assessment* (2021) 220. The study compiles this number based on data provided by EuroSafe from its European Injury Database (IDB). However, not every Member State systematically provides data to the IDB and the collected data is based on samples of hospitals (see R. Kissner et al., *Injuries in the European Union 2009-2018* (2021) 6, 9-11, 15, 24-25).

²⁰⁷ N.S. Council, 'Consumer Product Injuries (2021)' <<https://injuryfacts.nsc.org/home-and-community/safety-topics/consumer-product-injuries>>. This number is compiled based on data collected by the well-established National Electronic Injury Surveillance System (NEISS). See also T. Schroeder, *Consumer Product-Related Injuries and Deaths in the United States: Estimated Injuries Occurring in 2010 and Estimated Deaths Occurring in 2008* (2012) 4 (estimating 38.573.000 medically treated injuries resulting from consumer products in 2010).

consumer goods remains substantial in both the EU²⁰⁸ and the US,²⁰⁹ even though Europe lacks sufficiently specific and reliable EU-wide data.²¹⁰ Additionally, accidents caused by durable consumer goods result in significant material and economic damage. More comprehensive estimates of total social costs, which still exclude certain damage components, range from 909 billion USD in the US during the 2009-2010 period²¹¹ to 76.6 billion EUR annually in the EU according to a recent estimate.²¹² A key reason for this difference in valuation seems to be the steep awards for non-economic damage in the US.²¹³

Consumer product accidents continue to take such a toll on society because of the sheer volume, variety and often increasing complexity of consumer goods that we actively use and that we encounter in our daily lives (see also *supra* nrs. 13-14). The extent to which product liability law plays a role in preventing and repairing these accidents can be debated. *Infra* nrs. 150-165, this dissertation engages in this debate and argues that the role of product liability compared to its alternatives is actually, overall greater in the context of circular economy than in traditional linear product distribution and production. Yet regardless of the merits of

²⁰⁸ See, e.g., Eurostat, 'Accidents and injuries statistics' <https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Accidents_and_injuries_statistics> (reporting for 2016 a total of 146.000 estimated deaths caused by accidents in general); ANEC and EuroSafe, *Position Paper: European Consumer Safety Needs Solid Injury Data* (2020) 9 (reporting for the EU an estimated 113.861 accidental deaths in the home and leisure sphere, for which I was unable to identify the reference period and to verify the used source).

²⁰⁹ See, e.g., T. Schroeder, *Consumer Product-Related Injuries and Deaths in the United States: Estimated Injuries Occurring in 2010 and Estimated Deaths Occurring in 2008* (2012) 4 (reporting for 2008 an estimated 35.900 deaths associated with consumer products); N.S. Council, 'Home and community overview' <<https://injuryfacts.nsc.org/home-and-community/home-and-community-overview/introduction>> (reporting for 2020 an estimated 156.300 deaths in the home and community category, which includes all accidental injuries that are not work-related and do not involve motor vehicles on streets and highways).

²¹⁰ There is still a general lack of solid EU-wide data on the consequences of consumer product accidents. See C. Hodges, *European Regulation of Consumer Product Safety* (Oxford University Press 2005) 82; Civic Consulting, *Study for the preparation of an Implementation Report of the General Product Safety Directive: Final report - Part 1: Main report* (European Commission, 2020) 87, 95; ANEC and EuroSafe, *Position Paper: European Consumer Safety Needs Solid Injury Data* (2020); Commission, 'Report on the implementation of Directive 2001/95/EC of the European Parliament and of the Council of 3 December 2001 on general product safety' COM(2021) 342 final, 7. See also A. Radovnikovic et al., 'Assessment of the opportunities for increasing the availability of EU data on consumer product-related injuries' (2021) 27 *Injury Prevention* 172.

²¹¹ B.A. Lawrence, R.S. Spicer and T.R. Miller, 'A fresh look at the costs of non-fatal consumer product injuries' (2015) 21 *Injury Prevention* 23-24. Importantly, this estimate is restricted to non-fatal accidents and excludes deaths (*ibid.*, 28). It also seems to exclude all damage to goods and all pure economic losses and it focuses on only some consequential economic losses.

²¹² Civic Consulting, *Study to support the preparation of an evaluation of the General Product Safety Directive as well as of an impact assessment on its potential revision: Final report - Part 2: Impact assessment* (2021) 104, 216-242. This estimate also excludes all types of damage to goods and the considered economic losses are restricted to consequential loss of income due to absence from paid employment (*ibid.*, 216, 225).

²¹³ See B.A. Lawrence et al., 'Estimating the costs of non-fatal consumer product injuries in the United States' (2000) 7 *Injury Control and Safety Promotion* 97, 104, 108-109.

this debate, it is clear that product liability law today fulfils definitely some role, which is far from negligible, in both preventing and repairing product accidents. Hence, legal questions relating to product liability law possess a considerable societal relevance. They partially determine to what extent the aforementioned, massive amount of estimated annual deaths, injuries and other damage can be prevented and repaired. Moreover, it can be said that this dissertation's specific subject matter has a broad scope of application and is continuously growing, which further increases its potential societal relevance.

42. SOCIETAL RELEVANCE: THE SIGNIFICANCE OF PRODUCT ACCIDENT RISKS RELATING TO CIRCULAR DISTRIBUTION AND PRODUCTION METHODS – A dive into available product safety data makes clear that an overwhelming majority of unsafe consumer goods are basic, relatively inexpensive and uncomplicated durable consumer goods, like toys, clothing and apparel, electrical appliances, baby equipment, lighting or outdoor equipment.²¹⁴ Similarly, perusing reported product liability litigation with a focus on consumer products outside the healthcare context, reveals that at the origin of most disputed cases lie basic and not technologically advanced consumer goods.²¹⁵ Therefore, while especially in the EU a majority of recent scholarly attention is devoted to questions involving the application of product liability to new digital technologies,²¹⁶ questions on product liability involving simple, durable consumer goods

²¹⁴ See Civic Consulting, *Study to support the preparation of an evaluation of the General Product Safety Directive as well as of an impact assessment on its potential revision: Final report - Part 2: Impact assessment* (2021) 26 (reporting during the 2005-2019 period a total of 21435 notifications in the Safety Gate / RAPEX database, of which 6610 relate to toys; 4586 to clothing, textiles and fashion items; 3311 to motor vehicles; 2384 to electrical appliances and equipment; 1083 to cosmetics; 957 to childcare articles and children's equipment; 948 to lighting equipment; 574 to chemical products; 497 to lighting chains; and 485 to hobby or sports equipment). See also E. Commission, *Safety Gate 2021 Results* (2022) 10.

²¹⁵ See, e.g., the following CJEU and Belgian case law relating to the PLD-1985 EU: CJEU 21 December 2011, C-495/10, *Thomas Dutruieux*, ECLI:EU:C:2011:869 (heated mattress); CJEU 7 July 2022, C-264/21, *Fennia v. Philips NV*, ECLI:EU:C:2022:536 (coffee machine). BELGIUM: Liège 7 November 2005, *TBBR* 2006, 620, *RCJB* 2006, 625, note E. Montero (bike saddle); Antwerpen 24 January 2007, *RW* 2009-10, 325 (household fuse box); Mons 13 January 2012, *DCCR* 2013, 999, note S. Vandemaele, *For.Ass.* 2014, 239, note C. Delbrassinne (washing machine); Mons 7 February 2013, *DCCR* 2013, 76, note D. Verhoeven, *RGAR* 2014, nr. 15048 (soda bottle); Liège 23 April 2013, *DCCR* 2014, 50, note L. Jacquemin (shower cabin); Liège 21 January 2016, *JLMB* 2017, 1187 (miller saw); Rechtbank Brussel 10 November 2009, *RGAR* 2010, nr. 14632 (bike steering fork). Only distributed electricity and to a lesser extent motor vehicles seem to be technologically advanced consumer products that are present in reported case law relating to the Belgian PLDI. Healthcare-related consumer products have a significant presence in the same Belgian case law and almost dominate CJEU case law on the PLD-1985 (excluding member state infringement proceedings). This is probably due to the very significant economic value of most product liability claims involving healthcare products, which may result in an overrepresentation in (appellate) litigation (see also *infra* nr. 43 regarding the inverse underrepresentation in litigation of certain other product accidents).

²¹⁶ See the sources listed *supra* footnote 170. See also for an example of a technological focus other than smart devices, AI-systems or 3D printing G. Howells, 'Product Liability for Nanotechnology' (2009) 32 *Journal of Consumer Policy* 381.

which the general public already uses on a day-to-day basis, might actually from a societal perspective be more relevant to focus on, at least for the time being.²¹⁷

Crucially, most current instances of circular consumer good (re)distribution or (re)production involve these same basic consumer goods like toys and baby items, household appliances, kitchen and DIY tools or sport and outdoor equipment (see also *supra* nrs. 2, 67 and 68). Therefore, an important reason why the dissertation's subject matter is societally relevant, is the fact that the examined alternative distribution and production methods are applied most frequently on precisely those basic consumer goods that are most important in terms of actual accident risks.

A second reason consists of the fact that several alternative distribution and production methods have an intrinsic potential to further exacerbate these same accident risks.²¹⁸ For example, at the occasion of a consumer good resale the necessary warnings or use instructions may not be relayed.²¹⁹ Additionally, repairs or refurbishments may create additional risks, given that these often involve disassembly, physical modification and reassembly of products. In the context of the 'right to repair' debate, US and EU industry groups have in particular warned about the safety and cybersecurity risks resulting from independent and self-repairs.²²⁰ Such concerns might be strategically overblown and facilitating repairs might in many cases be safer than trying to restrict them (see on the 'right to repair' and safe repairability *infra* nrs. 87 and 368 et seq.). Yet it cannot be denied that inherent safety concerns exist that can become more prominent when unauthorised (self- or independent) repairs or self-manufacturing of spare parts and related activities would become more prevalent in the future.

43. SOCIETAL RELEVANCE: LEGAL UNCERTAINTY HINDERING CIRCULAR ECONOMY UPTAKE AND DEVELOPMENT – As outlined *supra* nrs. 25-26, this project's particular research topic addresses a substantial lack of knowledge, which can be dubbed as the 'soft underbelly' of current product liability law. This is a sufficient reason to study it from a legal academic perspective (see *supra* nr. 40). But uncertainties in positive law also have a societal impact. Although lawyers are likely to overestimate this impact, the uncertainty surrounding product liability is certain to

²¹⁷ Naturally, this might change in the future and those new digital technologies are indeed likely to become increasingly present in daily consumer lives and product accident statistics. But the same can to some extent also be said of circular, collaborative and functional economy, which justifies proactive legal research into this topic as well (see *infra* nr. 54).

²¹⁸ See also Z. Chen, A. Yildizbasi and J. Sarkis, 'How safe is the circular economy?' (2023) 188 *Resources, Conservation and Recycling* 106649.

²¹⁹ E.g., a rented piece of clothing may be less fire-resistant than anticipated by a PSS-consumer (B. Keirsbilck, E. Terryn and E. Van Gool, 'Consumentenbescherming bij 'servitization' en product-dienst-systemen (PSS)' (2019) *Tijdschrift voor Privaatrecht* 817, 876).

²²⁰ See, e.g., US Federal Trade Commission, *Nixing the Fix: An FTC Report to Congress on Repair Restrictions* (FTC 2021) 26-31; I. Brannon and K. Seyfert, *The Economic Downsides of 'Right-to-Repair'* (National Association of Manufacturers, 2023) 9-10; S. Tews, 'Beyond Convenience: The Hidden Dangers of Right-to-Repair' (2023) <https://www.realclearpolicy.com/articles/2023/06/09/beyond_convenience_the_hidden_dangers_of_right-to-repair_939813.html>.

present at least some obstacle to the uptake and continued development of alternative methods of consumer good distribution and production. This concern of legal uncertainty, which is certainly inefficient, must be distinguished from the precise content of these product liability rules. Regarding the latter, it will be argued that it has a surprisingly limited impact on the actual uptake of circular economy in practice, due to product liability's market mechanism (see *infra* nrs. 143-146).

Companies may choose to refrain from setting up a new business model, individuals may be scared about vague but theoretically menacing risks and obtaining clear and affordable insurance coverage might be particularly difficult for any actor engaging in novel actions surrounded by legal uncertainty. Obtaining legal advice, for those able to do so, might furthermore prove more costly and still result in unsatisfactory answers. It is true that, especially in the context of *ex post* liability law, actors always can and many certainly do act despite legal uncertainty. And the legal system will eventually come up with answers, in a first instance primarily through the courts. Nevertheless, the economic inefficiency of legal uncertainty consists of the many actors who refrain from engaging or who substantially modify their conduct, as well as the actors who would have chosen not to engage if they had been aware of the legal ramifications. Various observers confirm that the current legal system and the existing legal uncertainty presents a significant barrier to circular economy.²²¹ Additionally, it is worth pointing out that legal barriers and legal uncertainty reinforce other barriers, such as market and cultural barriers.²²²

This dissertation's objectives (see *supra* nrs. 29-30) and the overall research design aim to reduce this legal uncertainty surrounding at least harmonised product liability and, in doing so, enable the uptake and continued development of circular economy in the vast sector of durable consumer goods. Directly, the study clarifies how current product liability law applies to specific situations of alternative circular methods of consumer good distribution or production. Indirectly, the study's conceptual analysis and evaluative findings may help to steer the development of these legal rules and eventually make them more conducive to circular economy.

Naturally, one can wonder to what extent this is at all desirable from a public policy perspective. Hence, this dissertation briefly delves *infra* nrs. 60-64 into arguments in favour and against circular economy. This is obviously a complex debate dependent on evolving insights from different fields of knowledge and ultimately determined by normative priorities. Nevertheless, it is clear that circular economy provides economic efficiencies, a potential for social benefits, as well as environmental benefits compared to the linear alternative. Ultimately, it can be seen as a possible means in the pursuit of more sustainable development,

²²¹ E.g., J. Kirchherr et al., *Breaking the Barriers to the Circular Economy* (Deloitte and Utrecht University 2017) 8; W. Rubens et al., *Juridische knelpunten bij circulaire economie projecten: Een verkenning en studie aan de hand van enkele concrete projecten* (OVAM 2019) 9-10; J. Grafström and S. Aasma, 'Breaking circular economy barriers' (2021) 292 *Journal of Cleaner Production* 126002, 6-9. See also H. Droege et al., 'Towards a circular disruption: On the pivotal role of circular economy policy entrepreneurs' (2023) 32 *Business Strategy and the Environment* 1142.

²²² J. Kirchherr et al., *Breaking the Barriers to the Circular Economy* (Deloitte and Utrecht University 2017) 6.

although there are also noteworthy critiques who consider it an imperfect solution as best (see *infra* nr. 64).

44. HIDDEN SOCIETAL AND ACADEMIC RELEVANCE OF PRODUCT LIABILITY APPLIED TO CIRCULAR DISTRIBUTION AND PRODUCTION METHODS – Finally, it might be counterargued that this research project's relevance remains limited due to the small existing amount of reported product liability litigation that specifically relates to circular economy. Today's lack of scholarly attention would therefore simply reflect the fact that this topic lacks relevance in real legal practice. Four rebuttals can be offered against this critical view.

- a. First of all, the main Part IV of this dissertation reveals that in several jurisdictions already some amount of product liability litigation relating to alternative distribution and production methods has been reported. This is especially true for reuse, second-hand sales and repairs, which reminds us that at least these circular methods have always been present and rather have been largely neglected until now by legal scholarship.
- b. Second, circular economy appears to be on the rise in the consumer goods sector (see also *supra* nr. 2) and this trend is likely to persist or even accelerate due to economic, social, environmental and policy-related drivers (see *infra* nrs. 60-66). This research project's relevance therefore resides partially in its proactive focus on a factual topic that will only become more important in the future.
- c. Third, from the viewpoint of societal but also of academic relevance, it appears misguided to solely focus on reported litigation. The sample of reported, predominantly appellate product liability litigation is not necessarily representative of the actual reality of occurring product accidents and of potential claims, which might be settled or never pursued to begin with. For example, product accidents involving redistributed, repurposed, reused or repaired products are distinct from traditional product accidents involving mass produced and mass distributed goods, where there might be a much greater group of potential plaintiffs and in many instances also a more clear-cut case of probably liability of one, 'deep pocket' actor. Moreover, in these traditional product liability cases there also seems to be a greater likelihood of product safety enforcement or media reporting, which may further help product liability claims succeed (see *supra* nrs. 9 and 10.d). The attractiveness of pursuing a claim might therefore be considerably lower in an alternative distribution and production context. Furthermore, empirical and behavioural theory research confirms that persons injured by product accidents are less likely to sue if they might have themselves committed a

fault, notwithstanding the potential liability of another party.²²³ Injured parties who chose goods that were distributed or produced through circular methods or who engaged in collaborative activities, seem more likely to perceive their own conduct as potentially risky and therefore as having in some way contributed to the product accident from which they suffered.

Finally, there is the overall observation that product liability claims in the alternative distribution and production context seem from a legal perspective to be often ‘messier’ than in the traditional model. The corresponding, now existing legal uncertainty further decreases the likelihood that claims are filed which involve circular distribution and production methods, but it also motivates why it is crucial to comprehensively analyse and evaluate this dissertation’s subject matter.

- d. And finally but most importantly, circular economy provides an interesting ‘negative’ image of the now dominant, traditional distribution and production model that determines current product liability law (see also *supra* nr. 29). Therefore, even if the aforementioned criticism that this dissertation’s subject matter lacks societal relevance would be true, which has already been refuted by the previous counter-arguments, it might still have a significant academic relevance because it uncovers the principles and mechanisms underpinning current product liability law (see, e.g., *supra* nrs. 19-24). Hence, this research project may provide insight into modern product liability law in the same manner as comparative law offers insight into one’s own legal system

²²³ See D.R. Hensler et al., *Compensation for Accidental Injuries in the United States* (RAND Corporation 1991) 146-148, 152-153, 162-164 (empirical study that also integrates behavioural science sources); M. Geistfeld, ‘Products liability’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) 316. See also D. Coates and S. Penrod, ‘Social Psychology and the Emergence of Disputes’ (1980) 15 *Law & Society Review* 655, 659-660, 665, 671, 674 (discussing attribution theory and persistence of self-blaming); L.F.F. William, R.L. Abel and A. Sarat, ‘The Emergence and Transformation of Disputes: Naming, Blaming, Claiming ...’ (1980) 15 *Law & Society Review* 631, 641; K.G. Shaver and D. Drown, ‘On causality, responsibility, and self-blame: A theoretical note’ (1986) 50 *Journal of Personality and Social Psychology* 697. There is a large body of literature that further explores self-blame and its legal consequences in the context of sexual crimes.

Chapter 3. Technical research design

Section A. Overview

45. RESEARCH PROJECT DESIGN – Technical research design consists of “*the decisions concerning how, where and when we are going to do our research in order to answer the research questions.*”²²⁴ The main research question can be solved by answering its three sub-questions (see *supra* nr. 38). Consequently, this overview of the technical research design follows these three sub-questions, which determine the structure of the remainder of this dissertation.

46. PART II: ANSWER TO THE FIRST RESEARCH SUB-QUESTION – *How does circular economy manifest itself in the durable consumer goods sector and how can its factual components be classified according to basic types that can be studied from a product liability perspective?* This first research sub-question combines descriptive and classifying research aims and its object is non-legal in nature. Answering it requires studying relevant literature and policy documents relating to circular economy. As a research method, this literature study is akin to doctrinal legal research although it is different because of the non-legal subject matter.²²⁵ However, notwithstanding the interdisciplinary perspectives, this remains a predominantly legal research project. Hence, the literature examined to answer this first sub-question remains limited to the seemingly most important sources, identified through proxies like citation numbers or frequent cross-references, or sources that synthesize key developments, like policy documents focused on circular economy in the consumer goods sector.

This method fits and should help to achieve the corresponding first ancillary research objective (see *supra* nr. 30.a), which has a twofold nature. On the one hand, the aim is to acquire a better understanding of the essential features of circular economy in the consumer goods sector. On the other hand, the aim is to identify a typology of its different factual manifestations in order to facilitate the subsequent descriptive analysis and evaluation of product liability law in this particular context. For both goals, it should suffice to focus on the aforementioned sources.

47. PART IV: MAIN ANSWER TO THE SECOND RESEARCH SUB-QUESTION – *How does current and future EU harmonised product liability law apply to the identified basic types of circular economy in the durable consumer goods sector?* This research sub-question has a traditional, mostly

²²⁴ P. Verschuren and H. Doorewaard, *Designing a Research Project* (2nd edn., Eleven 2010) 17.

²²⁵ Cf. T. Hutchinson, *Researching and Writing in Law* (4th edn., Thomson Reuters 2018) 219-234; M. Snel and J. de Moraes, *Doing a systematic literature review in legal scholarship* (Eleven 2018) 27-92.

descriptive legal research aim.²²⁶ As discussed *supra* nr. 30.b, the pursued in-depth analysis serves not only the academic goal of addressing the corresponding gap in the literature (see *supra* nr. 25). It also strives to be relevant to legal practice, which increasingly has to confront questions relating to product liability in the context of circular product (re)distribution and (re)production methods. This sub-question represents the most significant portion of work, due to the many components of harmonised product liability law and the complexity of this dissertation's factual subject matter. The main method used for answering this sub-question is doctrinal legal research (see also *infra* nrs. 50-51).

Although this second sub-question has a purely descriptive aim, it is not possible nor desirable to answer it by providing only positive legal analysis that is entirely undisputed. After all, as already briefly explored *supra* nrs. 15-24, quite a lot of questions currently surround this dissertation's subject matter and there are scant directly relevant legal sources. This current uncertainty is precisely one of the reasons making this research worthwhile (see *supra* nr. 40). Consequently, the analysis focuses especially on 'grey areas' by discussing different possible interpretations and by providing technical legal or policy arguments in favour or against certain interpretations. However, this is where the pretension of a purely neutral descriptive analysis reaches its limitations and explicitly referring to normative considerations becomes necessary. This is why this normative dimension will be developed earlier, already in Part III (see *infra* nrs. 48-49).

Part IV is structured in accordance with the typology of relevant factual components of circular economy that Part II identifies. This is a crucial design choice. Most legal sources structure their subject matter in a top-down approach, which departs from abstract legal principles and subsequently applies these to factual specificities. In contrast, Part IV employs a bottom-up approach, which departs from the factual typology and then applies product liability rules to this structure. The main reason for doing so is the multitude and heterogeneity of circular consumer good distribution and production methods, which would create in a traditional top-down approach a highly confusing analysis. Not only does the nature of the dissertation's factual subject matter warrant a bottom-up research design, it is believed that it increases the added value of Part IV for legal practice, because practitioners, especially in this context, depart from factual patterns and only then seek applicable legal rules. Yet the structure may also be enriching from a purely academic perspective, given that the specificity of circular economy is precisely what drives this research project's questions rather than tensions that are entirely inherent to abstract legal principles. And, as mentioned *supra* nrs. 29 and 44.d, the analysis premised on circular economy that challenges the current linear understanding of product liability law, precisely aims to achieve more fundamental insights about (EU harmonised) product liability in general.

Nevertheless, the risk of the bottom-up research design is that large parts of the legal analysis for each factual component can overlap, which would result in a lot of repetition. Three structural measures aim to limit this risk. First, the classification determined in Part II strives to avoid potential overlap as much as possible and to identify sufficiently broad yet coherent groups of factual components of circular economy in the consumer goods sector. Second, the descriptive analysis in Part IV should remain limited to the aspects of harmonised product

²²⁶ See L. Kestemont, *Handbook on Legal Methodology: From Objective to Method* (Intersentia 2018) 19-33.

liability law that are specifically relevant to each corresponding factual category. Aspects that are shared across different categories should only once be discussed extensively. And aspects that are shared with the general application of harmonised product liability in the purely linear economic model should not be elaborated on. Third, the sequence of the typology and of the discussion in Part IV may help to further limit redundancy.²²⁷

48. PART III: MAIN ANSWER TO THE THIRD RESEARCH SUB-QUESTION – *What is the role of EU harmonised product liability law in the context of circular economy, to what extent does it fulfil this role and are any improvements possible?* This final research sub-question has a clearly normative research objective. The methodologically proper method to implement it, which should guide the evaluation but also offer transparency to a scrutinizing audience, is to explicitly formulate a normative framework that shapes and determines the subsequent evaluation and identification of possible recommendations *de lege ferenda*.²²⁸ Part III of the dissertation, which is the main part where this evaluative sub-question is answered, therefore starts with a Chapter that selects criteria for this evaluative framework and motivates these choices. Additionally, these criteria are to some extent operationalized, in order to minimize gridlock when potential conflicts between different evaluative criteria would arise. The rest of Part III subsequently uses this framework to evaluate first of all from an ‘internal’ perspective which product liability rule is most desirable in general and in the context of circular economy in particular. This will confirm that a ‘stricter’ product liability rule with a contributory fault defence, such as offered by the PLDI, is overall desirable. Subsequently, it uses this framework to evaluate from an ‘external’ perspective the added value of product liability in general and in particular of such a rule like the PLDI when compared to the main alternatives for achieving the same functions as product liability, again both in general and when focusing specifically on circular economy in the consumer goods sector. In contrast to Part IV this evaluation has a top-down approach, departing from applicable legal principles and only then turning to specific factual consequences.

The normative framework developed and employed to answer the third sub-question combines elements of traditional doctrinal legal scholarship, extracontractual liability law theory with an economic analysis of product liability law.

49. WHY STARTING WITH ANSWERING THE NORMATIVE THIRD SUB-QUESTION (PART III) BEFORE ANSWERING THE DESCRIPTIVE SECOND SUB-QUESTION (PART IV)? – Finally, one may note that this research project will construct in Part III a normative framework and apply it to already evaluate product liability law in general, before it will in Part IV descriptively analyse positive,

²²⁷ E.g., factual components relating to the personal scope of product liability theories can be discussed first. Or factual components relating to reuse and redistribution can be discussed before repair and refurbishment, given that the latter are often paired with the former.

²²⁸ See L. Kestemont, *Handbook on Legal Methodology: From Objective to Method* (Intersentia 2018) 60-74; W. van der Burg, ‘The Merits of Law: An Argumentative Framework for Evaluative Judgements and Normative Recommendations in Legal Research’ (2019) 105 *Archiv für Rechts- und Sozialphilosophie* 11, 12-13 (arguing that the fact that the opposite is more common in legal scholarship – i.e. not explicitly communicating normative criteria before making evaluative or recommendatory statements – is probably due to the argumentative nature of legal practice and of legal training).

specifically EU harmonised product liability law. While most legal research projects take an inverse approach, a more substantive and a more practical reason motivate this choice.

First of all, as already mentioned *supra* nr. 47, especially when studying a more challenging area of positive law, it is often not possible to remain limited to a purely descriptive, neutral analysis. Even when trying to do so, the risk of bias seeping and colouring normatively an interpretation that is presented as established law, is too great. Instead, it is in my opinion methodologically much more preferable to articulate and motivate one's own normative framework from the outset, which then allows to explicitly signal in a primarily descriptive legal analysis where an issue is unclear, what might constitute a plausible or desirable solution. The key is doing so explicitly rather than trying to avoid it and still doing so implicitly. Moreover, this is even more important when applying harmonised product liability law to the unexamined terrain of circular economy and when considering the impact of the very new rules of the PLD-2024 for which there are almost no existing legal sources other than the (several times amended) legislative text agreed to a few months before this research project was finalised.

Second, it is of course possible to try to each time stop in a descriptive legal analysis when encountering uncertainties and, afterwards, after in the meantime developing and motivating a normative framework, coming back at these points. However, this risks to result in a great multiplication in textual output, in my opinion without great added benefits. It is not only methodologically clearer but also more practical to have already developed and explicitly presented in advance one's own normative understanding. This can still be followed by a descriptive analysis of positive law that is as objective and neutral as possible. But, where this is no longer possible or no longer desirable, an integrated but explicitly normative reflection *de lege lata* or *de lege ferenda* can offer a great enrichment.

Section B. Methods

50. MAIN METHOD: DOCTRINAL LEGAL RESEARCH – The preceding overview made clear that doctrinal legal research is used to answer most of the research questions and that it is employed throughout the dissertation. This method is sometimes also called ‘legal dogmatic’²²⁹ or ‘black-letter’²³⁰ research. It dominates legal scholarship in Europe and, although it has lost

²²⁹ *Rechtsdogmatik* is especially used as a concept in Germany, where it has a particular connotation relating to the development of modern German law. See, e.g., C. Bumke, *Rechtsdogmatik: Eine Disziplin und ihre Arbeitsweise. Zugleich eine Studie über das rechtsdogmatische Arbeiten Friedrich Carl von Savignys* (Mohr Siebeck 2017); J. Lennartz, *Dogmatik als Methode* (Mohr Siebeck 2017). But the same concept is regularly used elsewhere as well to identify what this dissertation calls, in accordance with most English sources, ‘doctrinal legal research’. E.g., J. Vranken, ‘Wij weten wel wat wij doen: Over juridisch-dogmatisch onderzoek in het privaatrecht, maar wel een slag anders’ (2014) *Nederlands Juristenblad* 1271; R. van Gestel, ‘Revitalisering van juridisch-dogmatisch onderzoek: Expliciteren van het impliciete’ (2021) *Nederlands Juristenblad* 286.

²³⁰ See, e.g., M. Salter and J. Mason, *Writing Law Dissertations: An Introduction and Guide to the Conduct of Legal Research* (Pearson 2007) 44-118.

to some extent its popularity in US legal academia, it continues also there to play a central role.²³¹

Doctrinal legal research examines positive legal rules in light of other legal sources,²³² which can be described as adopting an internal perspective in the field of law. It is to a large extent also a hermeneutic activity, because an essential task in doctrinal research consists of interpreting (written) legal sources.²³³ Hence, in this dissertation, especially in Part IV, there are many instances where different arguments regarding possible interpretations are explored and weighed against each other.

51. ECONOMIC ANALYSIS OF LAW AND OTHER INTERDISCIPLINARY SOURCES – Only in Part III, this research project will among others employ the ‘law & economics’ or ‘economic analysis of law’ literature that exists in relation to product liability law. This literature is relatively well developed but is not vast, which makes it possible to consult all directly relevant sources and the most important sources relating to more general points of economic analysis of law. Importantly, the classic ‘microeconomic analysis’ of private law in general has been in recent decades challenged by and further refined as a result of insights from behavioural science, leading to ‘behavioural law & economics’. This dissertation will pay particular attention to these further refinements, as for example illustrated *infra* nrs. 106.b, 108.b, 140 and 146.

In developing this dissertation’s normative framework in Part III, furthermore also some sources from political philosophy and especially legal theory on extracontractual liability law (‘tort theory’) will be used. However, this dissertation will only use these sources to enrich its mostly doctrinal legal, normative research, without offering its own original contribution to these fields. In contrast, this dissertation will offer a perhaps modest but nonetheless original contribution to the economic analysis of product liability law, which will unsurprisingly focus specifically on the particular context of circular economy (see in particular *infra* nrs. 120, 138-148 and 151-164).

52. USE OF SOURCES – Given the nature of doctrinal legal research described above, the main methodological question it raises is which legal sources should be consulted and referenced.

²³¹ E.g., D. Rhode, ‘Legal Scholarship’ (2002) 115 *Harvard Law Review* 1327, 1339: “Doctrinal analysis, which is also the staple of conventional legal theory, remains the method of choice for the vast majority of legal scholars.”

²³² See T. Hutchinson, *Researching and Writing in Law* (4th edn., Thomson Reuters 2018) 50-53; S. Taekema, ‘Theoretical and Normative Frameworks for Legal Research: Putting Theory into Practice’ (2018) 8 *Law and Method* 1, 2-3; R. van Gestel, ‘Revitalisering van juridisch-dogmatisch onderzoek: Expliciteren van het impliciete’ (2021) *Nederlands Juristenblad* 286, 286; E. Tjong Tjin Tai and P. Verbruggen, ‘Onderzoeksmethoden in de rechtswetenschap: Over pluraliteit en vernieuwing’ (2022) *Nederlands Juristenblad* 4, 4-5.

²³³ See for description of (doctrinal) legal research as related to hermeneutics M.M. Siems, ‘Legal Originality’ (2008) 28 *Oxford Journal of Legal Studies* 147, 156; W. van der Burg, ‘The Merits of Law: An Argumentative Framework for Evaluative Judgements and Normative Recommendations in Legal Research’ (2019) 105 *Archiv für Rechts- und Sozialphilosophie* 11, 32; E. Tjong Tjin Tai and P. Verbruggen, ‘Onderzoeksmethoden in de rechtswetenschap: Over pluraliteit en vernieuwing’ (2022) *Nederlands Juristenblad* 4, 5, 9.

This question is unavoidable because there is a potentially endless supply of sources relating to aspects of this dissertation's subject matter.²³⁴

The sources used to answer the first research sub-question in Part II have already been discussed *supra* nr. 46. Part III uses sources from the economic analysis of law literature as well as sources from interdisciplinary tort theory, in addition to more traditional doctrinal legal scholarship. For Part IV, the dissertation examines in principle all legislation and case law that directly relates to the particularities of applying harmonised product liability law to circular economic strategies. Nevertheless, when a lot of case law exists relating to a given point, the more hierarchically authoritative and more recent decisions are prioritised.

53. A FINAL INTRODUCTORY NOTE ON LANGUAGE, TEXTUAL PRESENTATION AND REFERENCING SOURCES – Finally, it is useful to briefly motivate some of the key choices that determine how this dissertation is communicated to its audience. Because of its text-bound, even hermeneutic nature, formal aspects of a dissertation are in what is mostly doctrinal legal research, particularly relevant. And given the length of a doctoral dissertation, this formal aspects is probably even more important here than in other scholarly output.

The dissertation is written in English because of the greater potential audience, which still as a *lingua franca* in the EU even after Brexit corresponds with the choice to focus on EU harmonised product liability law (see *supra* nr. 37). Moreover, English is also the pre-established language of the interinstitutional research cooperation that enabled this doctoral research project. To conform with other European legal writing, British English is used. Given the challenges inherent to legal translation, an attempt is made to use terms which are as neutral and functional as possible when making cross-jurisdictional statements, and to use specific terms when making statements specific to a legal system. The brief glossary in the frontmatter of this dissertation provides definitions of the most frequently used functional concepts.

Typographically, this text is presented in the 'Source Serif' typeface, including true italics and other essential features.²³⁵ Its design and other text formatting choices strive to help the audience to read faster and hold its attention.²³⁶

The referencing of sources, which is a characteristic feature of doctrinal research, follows the 4th edition of the Oxford University Standard for the Citation of Legal Authorities (OSCOLA). Unlike many other legal citation styles, it avoids redundant information and too many fonts, which help to keep the footnotes slightly more concise and less visually taxing.

²³⁴ See also E. Tjong Tjin Tai and P. Verbruggen, 'Onderzoeksmethoden in de rechtswetenschap: Over pluraliteit en vernieuwing' (2022) *Nederlands Juristenblad* 4, 10 (discussing the increased availability of possibly relevant sources and the need to explicitly motivate how sources have been selected).

²³⁵ See Source Serif <<https://fonts.adobe.com/fonts/source-serif>> accessed 12 August 2022. It has been designed by Frank Grießhammer for Adobe and is inspired by the historical work of Pierre Simon Fournier. The version used here is the 'Source Serif Pro' font included in the Microsoft Office Word license provided to me by KU Leuven.

²³⁶ See M. Butterick, *Typography for lawyers* (2nd edn., O'Connor's 2010) 21-23, 86, 94, 104, 173-215; D. Tarasov, A. Sergeev and V. Filimonov, 'Legibility of Textbooks: A Literature Review' (2015) 174 *Procedia: Social and Behavioral Sciences* 1300, 1301-1303.

Moreover, this style is relatively clear and simple to use.²³⁷ Nevertheless, a major change to OSCOLA implemented in this dissertation,²³⁸ consists of not using short citation forms for every second citation, which should help readers to identify sources quickly without having to look up references elsewhere. Only sources that are used very frequently are abbreviated and instead listed in the front matter. A substantial addition is the use of ‘signals’ to introduce references with more nuance and precision, in accordance with the US Bluebook and Belgian V&A styles. Finally, given the study’s comparative dimension, the used formats for citing cases and legislation are those that are most common in the corresponding legal systems.

²³⁷ *E.g.*, in contrast to the ‘Bluebook’, which dominates US law review literature and which provides a hopelessly complicated set of rules that only survives and further grows because it is both created and enforced by successive generations of law review student editors. *See* R.A. Posner, ‘Goodbye to the Bluebook’ (1986) 53 *University of Chicago Law Review* 1343.

²³⁸ There are also some more minute changes to OSCOLA. *E.g.*, punctuation is used for abbreviations, square brackets are never used, journal names are italicised, ECLI-numbers are used in case law and ‘para’ and ‘paras’ are replaced by ‘nr.’ and ‘nrs.’ respectively.

Part II. Understanding circular methods for producing and distributing consumer goods

Chapter 1. Circular economy

54. OVERVIEW – The first research sub-question aims to understand and systematize this dissertation’s distinctive factual subject matter, which is, considered as a whole, generally underexamined (see *supra* nrs. 30.a and 38). A first step consists of studying main sources on circular, collaborative and functional economy, to understand their essential features and how these concepts relate to the consumer goods sector (see also *supra* nr. 46).

Section A. The ‘circular economy’ concept

55. THE INTELLECTUAL ORIGINS OF CIRCULAR ECONOMY – The authors who are considered to have coined the term ‘circular economy’, are ecological economists PEARCE AND TURNER in 1989.²³⁹ They built upon the pioneering work of BOULDING,²⁴⁰ who conceptualized in a seminal 1966 essay Earth as a spaceship with a limited stock of resources, and GEORGESCU-ROEGEN,²⁴¹ who further explored BOULDING’s insight that the Second Law of Thermodynamics can serve

²³⁹ D.W. Pearce and K.R. Turner, *Economics of Natural Resources and the Environment* (Johns Hopkins University Press 1989) 29-42. Attribution by M.S. Andersen, ‘An introductory note on the environmental economics of the circular economy’ (2007) 2 *Sustainability Science* 133, 133; B. Su et al., ‘A review of the circular economy in China: moving from rhetoric to implementation’ (2013) 42 *Journal of Cleaner Production* 215, 215; P. Ghisellini, C. Cialani and S. Ulgiati, ‘A review on circular economy: the expected transition to a balanced interplay of environmental and economic systems’ (2016) 114 *Journal of Cleaner Production* 11, 14; M. Geissdoerfer et al., ‘The Circular Economy: A new sustainability paradigm?’ (2017) 143 *Journal of Cleaner Production* 757, 759.

²⁴⁰ K.E. Boulding, ‘The Economics of the Coming Spaceship Earth’ in H. Jarrett (ed.), *Environmental Quality in a Growing Economy* (Johns Hopkins University Press 1966) 1-14. Boulding famously contrasted this view of a ‘spaceship economy’ with the ‘cowboy economy’ of the time.

²⁴¹ N. Georgescu-Roegen, *The Entropy Law and the Economic Process* (Harvard University Press 1971). An author who has also further built on the application of the Second Law to economic and social systems, is J. Rifkin, *Entropy: A New World View* (Viking Press 1980).

as a prism for understanding that the current economic system uses materials in a manner that dramatically increases entropy in an unnecessarily rapid pace.²⁴² Another early influence consists of the famous ‘four laws’ promulgated in 1971 by the ecologist COMMONER: (i) “*Everything is Connected to Everything Else*”; (ii) “*Everything Must Go Somewhere*”; (iii) “*Nature Knows Best*”; and (iv) “*There Is No Such Thing as a Free Lunch*”.²⁴³

In truth, several concepts and many resulting streams of interdisciplinary research have contributed to our current understanding of ‘circular economy’. At least ten such ‘schools of thought of circular economy’ have been identified.²⁴⁴ If we limit ourselves to those that are most directly relevant to this dissertation’s factual focus on the production and distribution of durable consumer goods (see *supra* nrs. 33-34), then we can list the following other intellectual origins of the circular economy.

RENNER pioneered in 1947 the concept of ‘industrial symbiosis’, which he defined as a situation where unlike industries exist together within an area because of an organic relationship between them.²⁴⁵ In 1989, AYRES developed the related ‘industrial metabolism’ concept, which explores the parallels between the use of matter and energy in economic and biological systems.²⁴⁶ Around the same time, the concept of ‘industrial ecology’ became in vogue and developed into a sprawling research field.²⁴⁷ In an influential early article, the underlying idea is succinctly summarized as “*Wastes from one industrial process can serve as the raw materials for another, thereby reducing the impact of industry on the environment.*”²⁴⁸

Circular economy has furthermore been inspired by the broader thinking about ‘sustainable development’, which originates from the international political level around the same time period and for which the link with the circular economy is further discussed *infra* nr. 64. In 1994, LYLE combined many of the preceding insights into his concept of ‘regenerative design’

²⁴² See D.W. Pearce and K.R. Turner, *Economics of Natural Resources and the Environment* (Johns Hopkins University Press 1989) 37-38.

²⁴³ B. Commoner, *The Closing Circle: Nature, Man, and Technology* (Knopf ebook 1971, 2014 reprint) 26-36.

²⁴⁴ A.S. Homrich et al., ‘The circular economy umbrella: Trends and gaps on integrating pathways’ (2018) 175 *Journal of Cleaner Production* 525, 527. See also Ellen MacArthur Foundation, *Towards the circular economy. Vol 1: Economic and business rationale for an accelerated transition* (2013) 26-27; M. Geissdoerfer et al., ‘The Circular Economy: A new sustainability paradigm?’ (2017) 143 *Journal of Cleaner Production* 757, 759; K. Winans, A. Kendall and H. Deng, ‘The history and current applications of the circular economy concept’ (2017) 68 *Renewable and Sustainable Energy Reviews* 825, 825-826; M. Borrello, S. Pascucci and L. Cembalo, ‘Three Propositions to Unify Circular Economy Research: A Review’ (2020) 12 *Sustainability* 4069, 5.

²⁴⁵ G.T. Renner, ‘Geography of Industrial Localization’ (1947) 23 *Economic Geography* 167, 181.

²⁴⁶ R.U. Ayres, ‘Industrial metabolism and global change’ (1989) 121 *International Social Science Journal* 363. See also on earlier roots of the idea Fischer-Kowalski, ‘Exploring the history of industrial metabolism’ in R.U. Ayres and L.W. Ayres (eds.), *A Handbook of Industrial Ecology* (Edward Elgar 2002) 16-26.

²⁴⁷ Important early publications are R.A. Frosch, ‘Industrial Ecology: A Philosophical Introduction’ (1992) 89 *Proceedings of the National Academy of Sciences* 800; T.E. Graedel and B.R. Allenby, *Industrial Ecology* (Prentice Hall 1995). See also on the development of the field S. Erkman, ‘The recent history of industrial ecology’ in R.U. Ayres and L.W. Ayres (eds.), *A Handbook of Industrial Ecology* (Edward Elgar 2002) 27-35.

²⁴⁸ R.A. Frosch and N.E. Gallopoulos, ‘Strategies for Manufacturing’ (1989) 261 *Scientific American* 144, 144.

for sustainable economic development. He described it as “replacing the present linear system of throughput flow with cyclical flows at sources, consumption centers, and sinks. [...] A regenerative system provides for continuous replacement, through its own functional processes, of the energy and materials used in its operation.”²⁴⁹ McDONOUGH AND BRAUNGART have further built on the work of in particular LYLE and STAHEL.²⁵⁰ In 2002, they published a book and later started a research institute and certification business on their ‘cradle-to-cradle’ design philosophy, which focuses on designing products with positive impacts, by using renewable energy and by ensuring that ‘biological nutrients’ safely return to natural systems and ‘technical nutrients’ are reused at a high quality.²⁵¹

The *primus inter pares* among the ‘parents’ of the circular economy is STAHEL, who co-authored with REDAY back in 1977 a report for the European Commission which already sketched a vision of ‘an economy in loops’ and explored how it can improve job creation, resource efficiency and competitiveness (see also *infra* nrs. 61-63).²⁵² In 1982, he published ‘The Product-Life Factor’, a paper that focuses on product-life extension activities like reusing, repairing, reconditioning and recycling products about which he claimed that they can provide impetus to the private sector and contribute to the transition towards a more sustainable society (see also *infra* nrs. 62 and 64).²⁵³ In 2006, STAHEL presented his ‘performance economy’ concept, which combines circular and functional economy (see also *infra* nr. 67) and pursues resource-efficient economic growth through business models that focus in particular on the utilisation value or performance of goods and services.²⁵⁴ His writings have in recent years started to focus explicitly on the ‘circular economy’ concept.²⁵⁵

Finally, it is worth emphasizing that most of the underlying ideas already existed before the aforementioned concepts were coined and widely adopted. While the circular economy has

²⁴⁹ J. Lyle, *Regenerative Design for Sustainable Development* (John Wiley & Sons 1994) 10. LYLE was a landscape architect who expanded his ‘regenerative design’ thinking beyond the built environment. He was mainly inspired by another circular economy progenitor originating from the agricultural sector: ‘permaculture’, which was pioneered by MOLLISON AND HOLMGREN (B. Mollison and D. Holmgren, *Permaculture One. A perennial agriculture system for human settlements* (Transworld Publishers 1978)).

²⁵⁰ LYLE’s design philosophy as a source of inspiration is clear and McDONOUGH had previously collaborated with him. STAHEL has actually coined the term ‘cradle to cradle’ and has worked with his Product Life Institute extensively on product design. See ‘Cradle to Cradle’ <<http://www.product-life.org/en/cradle-to-cradle>>; ‘Schools of thought that inspired the circular economy’ <<https://ellenmacarthurfoundation.org/schools-of-thought-that-inspired-the-circular-economy>>.

²⁵¹ This is the original description developed in W. McDonough and M. Braungart, *Cradle to Cradle: Remaking the Way We Make Things* (North Point Press 2002). See on their most recent product standard Products Innovation Institute, *Cradle to Cradle Certified: Version 4.0 Product Standard* (2021).

²⁵² W.R. Stahel and G. Reday, *The Potential for Substituting Manpower for Energy* (EC Commission 1977). The report was republished as W.R. Stahel and G. Reday, *Jobs for Tomorrow, the Potential for Substituting Manpower for Energy* (Vantage Press 1981).

²⁵³ W.R. Stahel, ‘Product-Life Factor’ (1982) <<https://p2infohouse.org/ref/33/32217.pdf>> 72. See also ‘Product-Life Factor (Mitchell Prize Winning Paper 1982)’ <<http://www.product-life.org/en/major-publications/the-product-life-factor>>.

²⁵⁴ W.R. Stahel, *The Performance Economy* (2nd edn., Palgrave Macmillan 2010) 1.

²⁵⁵ E.g., W.R. Stahel, ‘The circular economy’ (2016) 531 *Nature* 435; W.R. Stahel, *The Circular Economy: A User’s Guide* (Routledge 2019).

grown in recent decades on the basis of the aforementioned intellectual roots, actually encompasses practices that are anything but new in human history, as examined *infra* nr. 57.

56. DEFINING ‘CIRCULAR ECONOMY’ – The origins and schools of thought discussed above have all merged into the current circular economy construct.²⁵⁶ At the outset, it should be mentioned that this dissertation focuses on the current understanding of circular economy of primarily European academia and policymakers and not on different conceptualizations, such as the one that is dominant in China. The latter focuses less on consumption patterns and more on production processes, waste management, land use and the prevention of pollution in a much broader sense.²⁵⁷

There is not yet an academic consensus on a definitive definition of ‘circular economy’. Currently, it is probably best regarded as an ‘umbrella concept’, which unifies thinking from different origins in a common, evolving field,²⁵⁸ or even as an ‘essentially contested concept’.²⁵⁹ In 2018, KIRCHHER ET AL. found and examined 114 different definitions of circular economy in the literature. Their coding analysis resulted in the following description, which can be regarded as a relatively broadly shared understanding of the concept: “*an economic system that is based on business models which replace the ‘end of-life’ concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes, thus operating at the micro level (products, companies, consumers), meso level (eco-industrial parks) and macro level (city, region, nation and beyond), with the aim to accomplish sustainable development, which implies creating environmental quality, economic prosperity and social equity, to the benefit of current and future generations.*”²⁶⁰ Another definition that is perhaps more directly suitable for this dissertation’s focus on durable consumer goods, is the one of GEISSDOERFER ET AL.: “*an economic system in which resource input and waste, emission, and energy leakages are minimised by cycling, extending, intensifying, and dematerialising material and energy loops. This can be achieved through digitalisation, servitisation, sharing solutions, long-lasting product design, maintenance, repair, reuse, remanufacturing, refurbishing, and recycling.*”²⁶¹

For the purposes of this research project, it seems unnecessary to split hairs on different nuances in how the literature or a particular regulatory initiative understands circular

²⁵⁶ See also for a more chronological, narrative-based overview of the development of ‘circular economy’ F. Blomsma and G. Brennan, ‘The Emergence of Circular Economy: A New Framing Around Prolonging Resource Productivity’ (2017) 21 *Journal of Industrial Ecology* 603, 607-611.

²⁵⁷ See W. McDowall et al., ‘Circular Economy Policies in China and Europe’ (2017) 21 *Journal of Industrial Ecology* 651, 655, 657-658.

²⁵⁸ F. Blomsma and G. Brennan, ‘The Emergence of Circular Economy: A New Framing Around Prolonging Resource Productivity’ (2017) 21 *Journal of Industrial Ecology* 603, 604-606.

²⁵⁹ J. Korhonen et al., ‘Circular economy as an essentially contested concept’ (2018) 175 *Journal of Cleaner Production* 544, 548-549. See also J. Voorter, *De juridische transitie naar een circulaire economie in de bouwsector in België: een rondedans van risico's, verantwoordelijkheden en samenwerking* (PhD, UHasselt and Maastricht University 2023) 63-74.

²⁶⁰ J. Kirchherr, D. Reike and M. Hekkert, ‘Conceptualizing the circular economy: An analysis of 114 definitions’ (2017) 127 *Resources, Conservation and Recycling* 221, 224-225.

²⁶¹ M. Geissdoerfer et al., ‘The Circular Economy: A new sustainability paradigm?’ (2017) 143 *Journal of Cleaner Production* 757, 759.

economy's precise substance or scope. First of all, this project's factual focus on durable, movable consumer goods (see *supra* nrs. 32-34) is more narrow than the circular economy as a whole, which extends to all economic sectors. Second, the project looks directly neither at the functional nor at the collaborative economy, which are separate trends that partially overlap with the circular economy (see *infra* nrs. 67-68). Third and most significantly, no harmonised product liability rules are limited to a particular conceptualization of the circular economy or a component thereof.

It therefore suffices to grasp the essential nature of the circular economy. Due to the concept's broad and still relatively disputed nature, it is often helpful to describe it negatively by contrasting it with its antonym, 'linear economy' (e.g. *supra* nr. 2). The definitions of KIRCHHER ET AL. and GEISSDOERFER ET AL. cited above provide more concrete, positive and comprehensive definitions. Ultimately, the one essential element that distinguishes the circular economy from other conceptions of the economic system seems to be its fundamental principle of 'preserving' resources and energy. The circular economy strives through various strategies to preserve as long as possible and as much as possible the value of products, components, materials and energy (see *supra* nr. 55). This is the element that also remains present in more succinct definitions of the circular economy, such as those used by Chinese scholars,²⁶² STAHEL²⁶³ or the EU Commission.²⁶⁴ Obtaining a more concrete understanding of how the circular economy pursues this goal of preservation of resources and energy, requires examining the different strategies that drive circular economy in practice, which are examined *infra* nrs. 58-59.

57. A HISTORICAL PERSPECTIVE: FROM A MORE CIRCULAR TO A MORE LINEAR ECONOMY (AND BACK AGAIN) – The preceding discussion on how the 'circular economy' concept emerged in recent decades, might create the impression that its underlying ideas and practices are fundamentally new as well. However, as discussed below, this is not true.²⁶⁵ Clarifying this historical

²⁶² Z. Yuan, J. Bi and Y. Moriguchi, 'The Circular Economy: A New Development Strategy in China' (2006) 10 *Journal of Industrial Ecology* 4, 5: "Although there is no commonly accepted definition of CE so far, the core of CE is the circular (closed) flow of materials and the use of raw materials and energy through multiple phases."

²⁶³ W.R. Stahel, *The Circular Economy: A User's Guide* (Routledge 2019) 6: "The circular industrial economy manages stocks of manufactured assets, such as infrastructure, buildings, vehicles, equipment and consumer goods, to maintain their value and utility as high as possible for as long as possible; and stocks of resources at their highest purity and value."

²⁶⁴ Commission, 'Towards a circular economy: A zero waste programme for Europe' (Communication) COM(2014) 398 final, 2: "Circular economy systems keep the added value in products for as long as possible and eliminates waste. They keep resources within the economy when a product has reached the end of its life, so that they can be productively used again and again and hence create further value."

²⁶⁵ See also D. Reike, W. Vermeulen and S. Witjes, 'The circular economy: New or Refurbished as CE 3.0? Exploring Controversies in the Conceptualization of the Circular Economy through a Focus on History and Resource Value Retention Options' (2018) 135 *Resources, Conservation and Recycling* 246; W.R. Stahel, 'History of the Circular Economy. The Historic Development of Circularity and the Circular Economy' in S. Eisenriegler (ed.), *The Circular Economy in the European Union* (Springer 2020) 7-19. Both sources state that 'circular economy' is not new, but their examination and sources go back only to the 1970'ies (cf. *supra* nr. 71).

background is relevant, because the advent of more linear economy as a result of industrialisation and mass consumption seems to have been the main driver for the development of ‘specific’ product liability rules that are central to this research project (see *supra* nr. 14). At the same time, when examining and evaluating liability rules in relation to now re-emerging patterns of circular economy in the consumer goods sector, it is worthwhile to realize that those practices were already common in earlier, premodern times. This is especially relevant because civil liability law develops slowly across long timeframes.²⁶⁶

In the past, reusing, sharing and reselling durable goods seems to have been the norm rather than the exception. Even if we focus on early-modern European consumption, which has been studied relatively well and is already somewhat closer to our present economic system, we find that items were handed down and used through generations, traders sold second-hand items exclusively or along new products, auctions of property of a debtor or a deceased person were ubiquitous and theft or war provided another supply of second-hand goods.²⁶⁷ All social groups seem to have participated in using and buying second-hand goods, albeit with varying motivations and for goods ranging from basic household items to luxury products.²⁶⁸

The same holds true for repair activities. The archaeological record reveals that we have been repairing objects as long as we have been producing them.²⁶⁹ When human-made objects became more complex, repair activities likewise became more sophisticated.²⁷⁰ Additionally, recycling components and materials is also nothing new and has been part of

²⁶⁶ See the sources cited *supra* footnotes 120-121.

²⁶⁷ See e.g., J. Stobart, ‘Clothes, cabinets and carriages: second-hand dealing in eighteenth century England’ in B. Blondé and others (eds.), *Buyers & sellers: Retail circuits and practices in medieval and early modern Europe* (Brepols 2006) 227-242; L. Fontaine, N. Scott and J. Goode, ‘Conclusion’ in L. Fontaine (ed.), *Alternative Exchanges: Second-Hand Circulations from the Sixteenth Century to the Present* (Berghahn Books 2008) 235-243; I. Van Damme and R. Vermoesen, ‘Second-hand consumption as a way of life: Public auctions in the surroundings of Alost in late 18th century’ (2009) 24 *Continuity and Change* 275, 276-298. See also on the preceding historical period K.K. Staples, ‘The Significance of the Secondhand Trade in Europe, 1200-1600’ (2015) 13 *History Compass* 297.

²⁶⁸ I. Van Damme and R. Vermoesen, ‘Second-hand consumption as a way of life: Public auctions in the surroundings of Alost in late 18th century’ (2009) 24 *Continuity and Change* 275, 276; J. Stobart and I. Van Damme, ‘Introduction’ in J. Stobart and I. Van Damme (eds.), *Modernity and the Second-Hand Trade: European Consumption Cultures and Practices, 1700-1900* (Palgrave 2010) 4.

²⁶⁹ See, e.g., J. Joy, ‘Fire Burn and Cauldron Bubble’: Iron Age and Early Roman Cauldrons of Britain and Ireland’ (2014) 80 *Proceedings of the Prehistoric Society* 327, 336-343; H. Julia, ‘The Practice of Repairing Vessels in Ancient Egypt: Methods of Repair and Anthropological Implications’ (2016) 79 *Near Eastern Archaeology* 280; A. Perzanowski, *The Right to Repair: Reclaiming the Things We Own* (Cambridge University Press 2022) 50-52 (referring to sources on i.a. prehistoric repair activities).

²⁷⁰ A. Perzanowski, *The Right to Repair: Reclaiming the Things We Own* (Cambridge University Press 2022) 51-52.

production processes throughout the ages.²⁷¹ It seems that ‘circular’ activities have obviously always been attractive when products and materials are considered precious.

Nevertheless, these circular economy activities started to slowly recede into the background in an uneven process that started in the ‘consumer revolution’ and only fully picked up steam as a consequence of the ‘industrial revolution’ (see *supra* nr. 13). When more and more types of newly-manufactured goods became more affordable for a growing part of the population, reusing and buying second-hand goods became rarer and also became rather associated with being poor, except for art and a few very expensive durable goods (‘capital assets’).²⁷² For repair activities, standardised production first brought the advantages of interchangeable parts and until a few decades ago there was a thriving repair industry for most durable consumer goods.²⁷³ However, when buying new goods became increasingly cheaper and more convenient than repair services while the throw-away society fuelled by globalized mass manufacturing started to reach her zenith, also the repair sector started at least for consumer goods to shrink dramatically in the industrialized world.²⁷⁴ Finally, recycling remained a part of production activities throughout the period of increasing industrialization.²⁷⁵ But it seems to have become somewhat less important in relative terms when mass-disposal became collectively organized and when the costs of recycling in many cases started to outweigh the dropping prices for extracting and processing virgin resources around the world.²⁷⁶

Regarding second-hand purchases and repair activities, an extra possible reason for their demise in recent decades is the observation that many mass-manufacturers have started to

²⁷¹ See, e.g., D. Woodward, ‘Swords into Ploughshares’: Recycling in Pre-Industrial England’ (1985) 38 *The Economic History Review* 175–180-191; I. Freestone, ‘The Recycling and Reuse of Roman Glass: Analytical Approaches’ (2015) 57 *Journal of Glass Studies* 29, 29-40; R. Sands and E. Marlière, ‘Produce, Repair, Reuse, Adapt, and Recycle: The Multiple Biographies of a Roman Barrel’ (2020) 23 *European Journal of Archaeology* 356, 363-365; H.K. Ryley, *Re-using manuscripts in late medieval England: repairing, recycling, sharing* (York Medieval Press 2022) 61-104.

²⁷² S. Nenadic, ‘Middle-Rank Consumers and Domestic Culture in Edinburgh and Glasgow 1720-1840’ (1994) 145 *Past & Present* 122, 133-134; J. Stobart and I. Van Damme, ‘Introduction’ in J. Stobart and I. Van Damme (eds.), *Modernity and the Second-Hand Trade: European Consumption Cultures and Practices, 1700-1900* (Palgrave 2010) 4-5; F. Trentmann, *Empire of Things: How We Became a World of Consumers, from the Fifteenth Century to the Twenty-First* (HarperCollins 2016) 710-711.

²⁷³ A. Perzanowski, *The Right to Repair: Reclaiming the Things We Own* (Cambridge University Press 2022) 52-55. See also V. Packard, *The Waste Makers* (Longmans 1963) chapter II.12; S. Krebs and H. Weber, ‘Rethinking the History of Repair’ in S. Krebs and H. Weber (eds.), *The Persistence of Technology: Histories of Repair, Reuse and Disposal* (Transcript Verlag 2021) 32-33.

²⁷⁴ See T. Cooper and G. Salvia, ‘Fix it: Barriers to Repair and Opportunities for Change’ in R. Crocker and K. Chiveralls (eds.), *Subverting Consumerism: Reuse in an Accelerated World* (Routledge 2018) 250; S. Krebs and H. Weber, ‘Rethinking the History of Repair’ in S. Krebs and H. Weber (eds.), *The Persistence of Technology: Histories of Repair, Reuse and Disposal* (Transcript Verlag 2021) 30, 34-35. See also J. McCollough and A. Qiu, ‘Rising repair costs and the throwaway society’ (2021) 41 *Economic Affairs* 284.

²⁷⁵ See S. Strasser, *Waste and Want: A Social History of Trash* (Holt Paperbacks 2000) 38-101; P. Desrochers, ‘Regional development and inter-industry recycling linkages: some historical perspectives’ (2002) 14 *Entrepreneurship & Regional Development* 49–55-62; F. Trentmann, *Empire of Things: How We Became a World of Consumers, from the Fifteenth Century to the Twenty-First* (HarperCollins 2016) 681-682.

²⁷⁶ See from the consumer perspective S. Strasser, *Waste and Want: A Social History of Trash* (Holt Paperbacks 2000) 102-264.

make products less durable, less easily repairable and prone to more quickly become obsolete.²⁷⁷ While there is little evidence of purely intentional ‘planned obsolescence’,²⁷⁸ which is of course hard to prove, it is true that many consumer goods are today subject to ‘premature obsolescence’. This is a complex phenomenon with various causes shaped by multiple actors. In addition to traditional ‘material obsolescence’, there are also, among others, ‘technological’, ‘economic’ and ‘psychological obsolescence’.²⁷⁹

In conclusion, some of the products that are today being reused, repaired or recycled might be novel. And the same definitely holds true for certain new techniques that are now used or the role currently played by the internet and other digital technologies. But the essential strategies of the circular economy are from a historical perspective anything but new in the consumer goods sector. And it seems more correct to consider the recent attention for ‘circular economy’ as a way to reconnect with more sustainable relationships that we had with consumer goods in the past.

Section B. Circular economy strategies

58. THE ‘BUTTERFLY DIAGRAM’, ‘WASTE HIERARCHY’ AND ‘R-FRAMEWORK’ – A catalyst which has drawn in Europe a lot of attention to circular economy, is the ELLEN MACARTHUR FOUNDATION. Its ‘butterfly diagram’ is probably the most well-known and widely-used visual representation of the circular economy. And it is useful here to understand some of its key features. First, notwithstanding the many loops, the diagram still makes clear that some ‘leakage’ is unavoidable. This relates to the fundamental observation of the Second Law of Thermodynamics raised at the beginning of this chapter and the reality that circular economy is an ideal, which explains why this dissertation regularly refers to ‘a more circular economy’. Second, in accordance with MCDONOUGH AND BRAUNGART (see *supra* nr. 55), a distinction is made between biological and technical nutrients. Since this dissertation focuses on durable consumer goods (see *supra* nr. 34), the technical nutrients and the righthand side of the diagram are most

²⁷⁷ See V. Packard, *The Waste Makers* (Longmans 1963) nrs. I.2, II.6-11; C. Bakker et al., ‘Products that go round: exploring product life extension through design’ (2014) 69 *Journal of Cleaner Production* 10, 10-11; A. Perzanowski, *The Right to Repair: Reclaiming the Things We Own* (Cambridge University Press 2022) 19-20. Indicative of the fact that reducing product useful lifespans and increasing replacement rates has at least been considered as a business strategy, is the economic literature on the topic. E.g., P.M. Gregory, ‘A Theory of Purposeful Obsolescence’ (1947) 14 *Southern Economic Journal* 24; J. Bulow, ‘An Economic Theory of Planned Obsolescence’ (1986) 101 *Quarterly Journal of Economics* 729; A. Fishman, N. Gandal and O. Shy, ‘Planned Obsolescence as an Engine of Technological Progress’ (1993) 41 *The Journal of Industrial Economics* 361.

²⁷⁸ See also *infra* footnotes 1529-1530 with regards to the French prohibition on ‘*obsolescence programmée*’ in art. L441-2 Code de la Consommation.

²⁷⁹ See B. Burns, ‘Re-evaluating obsolescence and planning for it’ in T. Cooper (ed.), *Longer lasting products: Alternatives to the throwaway society* (Gower 2010) 43-50; S. Prakash et al., *Einfluss der Nutzungsdauer von Produkten auf ihre Umweltwirkung: Schaffung einer Informationsgrundlage und Entwicklung von Strategien gegen 'Obsoleszenz'* (Umwelt Bundesamt 2016) 45-51, 132-235; A. Michel, *Premature Obsolescence: In Search of an Improved Legal Framework* (Intersentia 2023) 30-34, 69-101.

salient to us. Finally, the diagram visualizes a hierarchy that prioritizes the ‘inner loops’ and products or materials can cycle through multiple loops and/or cycle longer through one loop.²⁸⁰ Notwithstanding the clearly established hierarchy of priorities, industrial actors and policymakers continue to often prioritize sub-optimal ‘outer loops’ (see also *infra* nr. 65).

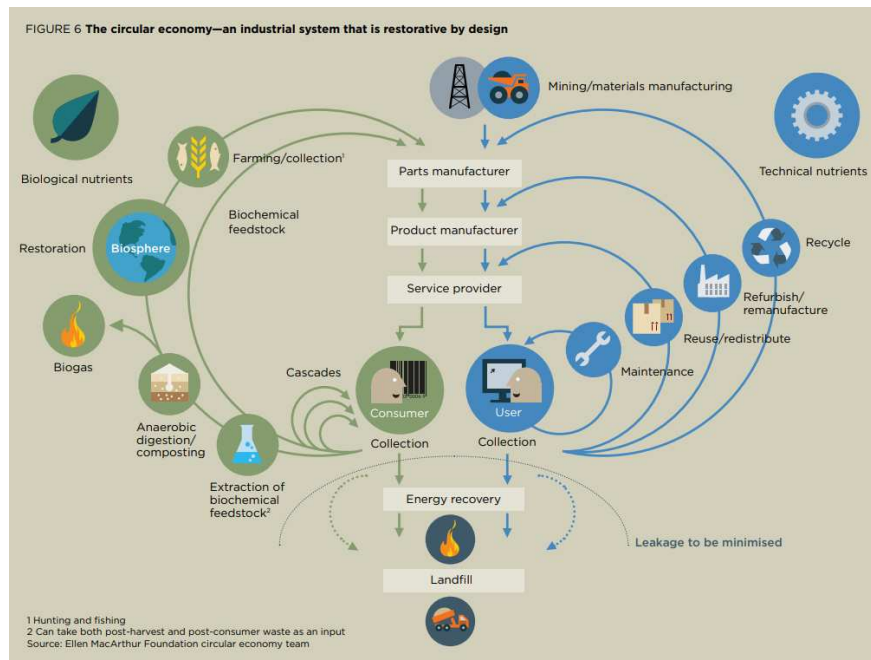


Figure 3: ‘Butterfly diagram’ of the circular economy (Ellen MacArthur Foundation 2013).²⁸¹

The feature that ‘inner loops’ are more efficient than ‘outer loops’ is reminiscent of the famous ‘ladder of LANSINK’ dating back to 1979: reduce > reuse > recycling > energy recovery > incineration > landfill.²⁸² This has become the ‘waste hierarchy’, which is still central to current EU waste law. In its most recent iteration, the EU waste hierarchy is as follows: prevention > preparing for re-use > recycling > other recovery, e.g. energy recovery > disposal.²⁸³ Different, more detailed waste hierarchies have been developed in the literature.²⁸⁴ Originally, the waste hierarchy focused more on waste treatment than prevention. Yet, the more the prevention and reuse priorities are elaborated, the more the waste hierarchy blends

²⁸⁰ Ellen MacArthur Foundation, *Towards the circular economy. Vol 1: Economic and business rationale for an accelerated transition* (2013) 30.

²⁸¹ *Ibid.*, 24.

²⁸² The original motion proposed by LANSINK and adopted by the Dutch Parliament (*Tweede Kamer*) in 1979, is hard to retrieve. But see for a first-hand account ‘De man van de ladder’ <<https://www.adlansink.nl/voorbeeld-pagina/de-man-van-de-ladder/>>.

²⁸³ Art. 4 Parliament and Council Directive 2008/98/EC of 19 November 2008 on waste and repealing certain Directives [2008] OJ L312/3, 10. See also art. 3 Council Directive 75/442/EEC of 15 July 1975 on waste [1975] OJ L194/39, 40; art. 3 Council Directive 91/156/EEC of 18 March 1991 amending Directive 75/442/EEC on waste [1991] OJ L78/32, 34.

²⁸⁴ E.g., M. Gharfalkar et al., ‘Analysis of waste hierarchy in the European waste directive 2008/98/EC’ (2015) 39 *Waste Management* 305, 308-310.

into the broader circular economy concept which has emerged in the meantime (see *supra* nr. 55). Consequently, both concepts are now often seen as pursuing similar goals.²⁸⁵

Specifically for the ‘technical nutrients’ half of the circular economy which is central to this dissertation, a circular economy variant of the waste hierarchy has been developed that is named after the starting letter of each of the hierarchy’s constituent terms in English: the ‘R-framework’. Its original form and current nucleus is the ‘3R-framework’ (reduce > reuse > recycle), which the 2008 circular economy law of China has for example enshrined.²⁸⁶ The aforementioned EU waste hierarchy can be seen as a ‘4R-framework’, by also adding ‘recovery’. While the 3R- and 4R-frameworks are most visibly present in the existing literature, more detailed frameworks are now increasingly employed. A 6R-framework has for example been proposed (reduce > reuse > repurpose > repair > remanufacture > recycle > recover).²⁸⁷ And most recently, sources have started using a 9R-framework,²⁸⁸ which seems to have been first developed in the Netherlands in 2014.²⁸⁹ For the purposes of this dissertation, it is a highly useful typology because its higher level of detail distinguishes more kinds of different factual interactions with durable products. These might not only have varying merits in terms of circular economic potential but may also have different consequences in the application of product liability *sensu lato* (see also *supra* nrs. 18 and 46).

²⁸⁵ See, e.g., C. Zhang et al., ‘An overview of the waste hierarchy framework for analyzing the circularity in construction and demolition waste management in Europe’ (2022) 803 *Science of The Total Environment* 149892, 6; ‘A zero waste hierarchy for Europe’ <<https://zerowasteurope.eu/2019/05/a-zero-waste-hierarchy-for-europe>>.

²⁸⁶ Art. 2 Circular Economy Promotion Law of the People’s Republic of China, adopted on 29 August 2008 at the 4th session of the Standing Committee of the 11th National People’s Congress. See for an English translation <https://ppp.worldbank.org/public-private-partnership/sites/ppp.worldbank.org/files/documents/China_CircularEconomyLawEnglish.pdf>.

²⁸⁷ S. Sihvonen and T. Ritola, ‘Conceptualizing ReX for Aggregating End-of-life Strategies in Product Development’ (2015) 29 *Procedia CIRP* 639.

²⁸⁸ E.g., N. Van Buren et al., ‘Towards a Circular Economy: The Role of Dutch Logistics Industries and Governments’ (2016) 8 *Sustainability* 647, 3; M. Dyer, S. Wu and M.-H. Weng, ‘Convergence of Public Participation, Participatory Design and NLP to Co-Develop Circular Economy’ (2021) 1 *Circular Economy and Sustainability* 917; P. Nowicki et al., ‘The circular economy and its benefits for pro-environmental companies’ (2023) *Business Strategy and the Environment* published in advance, 1-16; R. Reich et al., ‘Defining the goals of Product Passports by circular product strategies’ (2023) 116 *Procedia CIRP* 257.

²⁸⁹ RLI - Dutch Council for the Environment and Infrastructure, *Circular economy: From wish to practice* (2015) 59. The Council credits the 9R-framework to J. Cramer, *Elementaire deeltjes: Milieu* (Singel 2014).

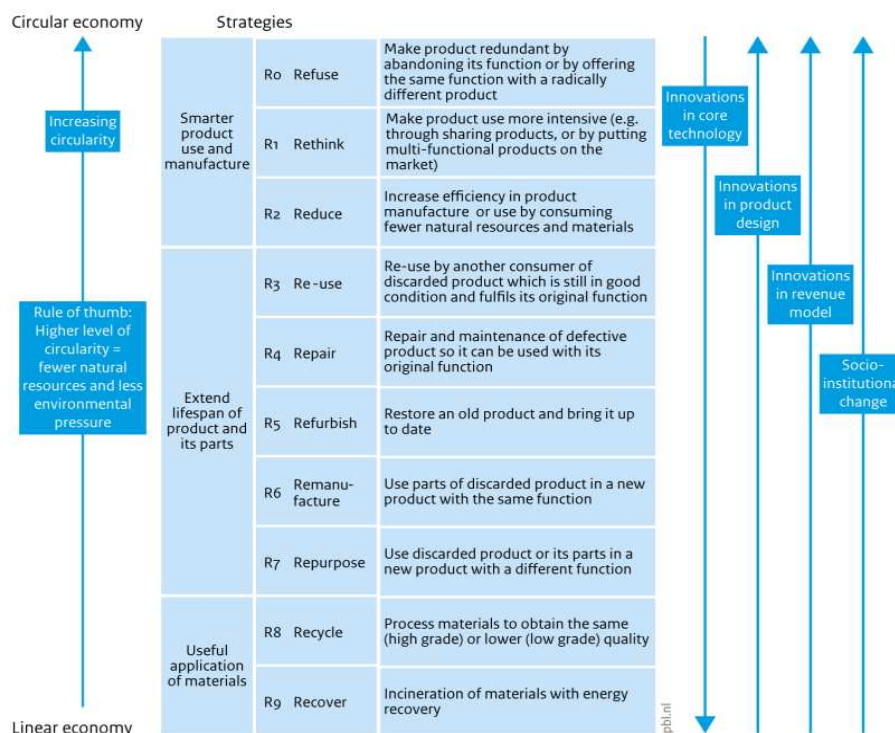


Figure 4: '9R-framework' of the circular economy (Potting et al. 2017).²⁹⁰

59. CIRCULAR ECONOMY STRATEGIES AND BUSINESS MODELS – The definitions by VAN ACKER ET AL. and KIRCHHER ET AL. cited *supra* nrs. 2 and 56, signal something crucial about circular economy: it is implemented in practice through actions by individual actors and especially through so-called 'circular business models'. These can be defined as “a business model in which the conceptual logic for value creation is based on utilizing economic value retained in products after use in the production of new offerings. [...] implies a return flow to the producer from users, though there can be intermediaries between the two parties.”²⁹¹ Although this topic seems to have been somewhat neglected in the past,²⁹² a growing part of the circular economy literature now

²⁹⁰ J. Potting et al., *Circular economy: Measuring innovation in the product chain* (PBL Netherlands 2017) 5.

²⁹¹ M. Linder and M. Williander, 'Circular Business Model Innovation: Inherent Uncertainties' (2017) 26 *Business Strategy and the Environment* 182, 183. See also Commission, 'Making sustainable products the norm' (Communication) COM(2022) 140 final, 10; M. Geissdoerfer et al., 'Circular business models: A review' (2020) 277 *Journal of Cleaner Production* 123741, 3-4.

²⁹² M. Lieder and A. Rashid, 'Towards circular economy implementation: a comprehensive review in context of manufacturing industry' (2016) 115 *Journal of Cleaner Production* 36, 46-48; M. Geissdoerfer et al., 'Circular business models: A review' (2020) 277 *Journal of Cleaner Production* 123741, 5. More scholarly attention was devoted earlier to PSS business models, which partially overlap with circular economy (see *infra* nr. 67).

focuses on business models²⁹³ and the drivers and obstacles for different actors to participate in the circular economy.²⁹⁴

This dissertation purposefully uses the term ‘circular (economy) strategy’ rather than ‘business model’, because the latter implies that the central actor is (always) a professional ‘business’, a commercial enterprise.²⁹⁵ Admittedly, companies (will) also play in the consumer goods sector a pivotal role in the transition towards more circular economy.²⁹⁶ Nevertheless, especially in a legal-interdisciplinary context, the term ‘business model’ signals²⁹⁷ a too narrow view of the now emerging circular consumer goods economy. In it, individual consumers, ‘prosumers’ and non-profit associations fulfil an important grassroots role, regularly despite rather than by virtue of B2C-companies (see *supra* nrs. 2 and 68.a-c). This is especially true where circular and collaborative economy overlap (see *infra* nrs. 68 and 70).

There are various ways to identify and categorize circular strategies, such as the product design perspective,²⁹⁸ the idea of resource ‘loops’²⁹⁹ the ‘circular business model innovation’ perspective,³⁰⁰ upstream and downstream value propositions³⁰¹ or the distinction between supply-side-driven, demand-side driven and full-lifecycle strategies.³⁰² Given this dissertation’s factual and legal subject matter (cf. *supra* nr. 56), it seems most relevant to focus not on

²⁹³ See *infra* footnotes 297-305.

²⁹⁴ E.g., A. de Jesus and S. Mendonça, ‘Lost in Transition? Drivers and Barriers in the Eco-innovation Road to the Circular Economy’ (2018) 145 *Ecological Economics* 75; J. Kirchherr et al., ‘Barriers to the Circular Economy: Evidence From the European Union (EU)’ (2018) 150 *Ecological Economics* 264; V. Rizos et al., *Barriers and enablers for implementing circular economy business models* (CEPS 2021); S. Rousseau and R. Carmen, *Consumer Attitudes towards Circular Business Models and Activities* (CE Center 2021).

²⁹⁵ See M. Linder and M. Williander, ‘Circular Business Model Innovation: Inherent Uncertainties’ (2017) 26 *Business Strategy and the Environment* 182, 183; M. Geissdoerfer et al., ‘Circular business models: A review’ (2020) 277 *Journal of Cleaner Production* 123741, 3-4.

²⁹⁶ But see N. Bocken, P. Ritala and P. Huotari, ‘The Circular Economy: Exploring the Introduction of the Concept Among S&P 500 Firms’ (2017) 21 *Journal of Industrial Ecology* 487 (finding that aspects of circular economy were scarce in press releases from large listed US companies from 2005 to 2014, suggesting that awareness is likely higher in European and Chinese companies).

²⁹⁷ Most authors use the term ‘business model’ in a broad manner and the focus on the B2C-perspective can be partially explained by the goal of realizing a circular economy that already starts at the original product design and manufacturing stage. However, it should be noted that an important criticism against the current ‘circular economy’ discourse is its current focus on firms and the market. See H. Corvellec, A. Stowell and N. Johansson, ‘Critiques of the circular economy’ (2022) 26 *Journal of Industrial Ecology* 421, 426-427.

²⁹⁸ E.g., C. Bakker et al., *Products that Last: Product Design for Circular Business Models* (BIS Publishers 2014) 63-88 (“The Classic Long Life Model; The Hybrid Model; The Gap Exploiter Model; The Access Model; The Performance Model”).

²⁹⁹ E.g., N. Bocken et al., ‘Product design and business model strategies for a circular economy’ (2016) 33 *Journal of Industrial and Production Engineering* 308, 309-317 (“Slowing; Closing; and Narrowing Resource Loops”).

³⁰⁰ E.g., M. Geissdoerfer et al., ‘Circular business models: A review’ (2020) 277 *Journal of Cleaner Production* 123741, 8 (“CBM Transformation; Circular Start-Up; CBM Diversification; CBM Acquisition”).

³⁰¹ E.g., A. Urbinati, D. Chiaroni and V. Chiesa, ‘Towards a new taxonomy of circular economy business models’ (2017) 168 *Journal of Cleaner Production* 487, 490-492.

³⁰² E.g., F. Diaz Lopez, T. Bastein and A. Tukker, ‘Business Model Innovation for Resource-efficiency, Circularity and Cleaner Production: What 143 Cases Tell Us’ (2019) 155 *Ecological Economics* 20, 22-34.

the perspective of one actor such as the original manufacturer or consumer but rather on the objective changes of or surrounding a durable consumer good throughout its lifecycle (see *supra* nrs. 18 and 32-34). Adopting this perspective, a few recently developed typologies are most pertinent for the purposes of answering this research project's first research sub-question (see *supra* nr. 46). Importantly, these selected typologies of circular economy strategies also reflect relatively well the 9R-framework (see *supra* nr. 58).

WEETMAN identifies five 'commercial models': (i) sell; (ii) exchange; (iii) share; (iv) rent or lease; and (v) performance or result services. Additionally, she also distinguishes four 'circular operating models': (i) recovery and recycling; (ii) resell and reuse; (iii) refill and maintain; and (iv) remanufacture.³⁰³

GEISSDOERFER ET AL. find on the basis of a literature review four generic circular strategies: (i) cycling ("*materials and energy are recycled within the system, through reuse, remanufacturing, refurbishing, and recycling*"); (ii) extending ("*the use phase of the product is extended, through long-lasting and timeless design, marketing that encourages long use phases, maintenance, and repair.*"); (iii) intensifying ("*the use phase of the product is intensified through solutions such as sharing economy or public transport.*"); and (iv) dematerialising ("*the provision of product utility without hardware through substitution with service and software solutions.*").³⁰⁴

LÜDEKE-FREUND, GOLD AND BOCKEN identify six circular strategies based on a morphological analysis of the literature: (i) repair and maintenance; (ii) reuse and redistribution; (iii) refurbishment and remanufacturing; (iv) recycling; (v) cascading and repurposing; (vi) organic feedstock business model patterns.³⁰⁵

Section C. Circular economy arguments and policy

60. POLICY ARGUMENTS AND DISCOURSE – In recent years, 'circular economy' has become a buzzword in economic circles and civil society, while it has become a focal point for public policy in the EU and elsewhere (see *infra* nr. 65). This can be explained by the many economic, social and environmental advantages this alternative economic system promises to offer (see *infra* nrs. 61-64).

61. ECONOMIC CONSIDERATIONS: POTENTIAL GAINS AND 'REBOUND EFFECTS' – Better preservation of resources and energy through circular economy strategies can offer several economic advantages. As a global investment opportunity by 2030, it has been estimated at 4.5 trillion

³⁰³ C. Weetman, *Circular Economy Handbook for Business and Supply Chains: Repair, Remake, Redesign, Rethink* (KP 2016) 89-103.

³⁰⁴ M. Geissdoerfer et al., 'Circular business models: A review' (2020) 277 *Journal of Cleaner Production* 123741, 7.

³⁰⁵ F. Lüdeke-Freund, S. Gold and N. Bocken, 'A Review and Typology of Circular Economy Business Model Patterns' (2019) 23 *Journal of Industrial Ecology* 36, 45-53.

USD.³⁰⁶ Estimates of GDP growth by 2050 in an ambitious scenario range from -0.1% to 14%.³⁰⁷ Population growth and industrialization, especially in developing countries, further reinforce the economic advantages that circular economy can offer.³⁰⁸

As a first advantage, circular strategies help to avoid the cost of new resources and energy for replacement products while the economic value of existing products with an extended useful life is retained.³⁰⁹ Second, although circular economy strategies negatively impact resource extraction and manufacturing sectors, these activities predominantly occur abroad when seen from an EU perspective. Instead, circular strategies like reuse, repair, remanufacturing and recycling, provide local economic growth and local labour jobs. This may locally help to reduce unemployment (see *infra* nr. 62). At the same time, this improves the EU trade balance, reduces strategic dependency on imports and tends to result in an increase in local economic activity and innovation.³¹⁰

Third, there is a global risk of exhaustion of several non-renewable and stress on renewable natural resources, each with varying degrees of scarcity and evolving reserves and demand.³¹¹ Circular economy can help to mitigate this systemic risk as well as help in reducing future costs for mitigating climate change, remediating pollution, managing waste and dealing with degraded ecosystems (see *infra* nr. 63).³¹²

³⁰⁶ P. Lacy and J. Rutqvist, *Waste to Wealth: The Circular Economy Advantage* (Palgrave Macmillan 2015) 29-30. See also Ellen MacArthur Foundation and SYSTEMIQ, *Achieving 'Growth Within'* (2017) 10-15 (estimating for the EU by 2025 a 320 billion EUR opportunity).

³⁰⁷ G. Aguilar-Hernandez, J. Dias-Rodrigues and A. Tukker, 'Macroeconomic, social and environmental impacts of a circular economy up to 2050: A meta-analysis' (2021) 278 *Journal of Cleaner Production* 123421, 5. See also H. Boonman, P. Verstraten and A. van der Weijde, 'Macroeconomic and environmental impacts of circular economy innovation policy' (2023) 35 *Sustainable Production and Consumption* 216, 220 (estimating a 3.9% higher GDP in the EU in 2030).

³⁰⁸ See also R. Dobbs et al., *Resource Revolution: Meeting the world's energy, materials, food, and water needs* (McKinsey 2011); P. Lacy and J. Rutqvist, *Waste to Wealth: The Circular Economy Advantage* (Palgrave Macmillan 2015) 3-18.

³⁰⁹ See SITRA, *The opportunities of a circular economy for Finland* (2015) 13-62; S. Tuladhar, M. Yuan and D. Montgomery, *An Economic Analysis of the Circular Economy* (NERA 2016) 8-14; C. Montalvo, D. Peck and E. Rietveld, *A Longer Lifetime for Products: Benefits for Consumers and Companies* (EU Parliament 2016) 19-27, 36-38; International Resource Panel, *Resource Efficiency: Potential and Economic Implications* (UNEP 2017) 92-110.

³¹⁰ See T. Bastein et al., *Opportunities for a circular economy in the Netherlands* (TNO 2013) 51-57; Deloitte, *Study on socioeconomic impacts of increased reparability* (EU Commission, 2016) 68-73; C. Montalvo, D. Peck and E. Rietveld, *A Longer Lifetime for Products: Benefits for Consumers and Companies* (EU Parliament 2016) 36-39, 41; A. Wijkman and K. Skånberg, *The Circular Economy and Benefits for Society* (Club of Rome, 2017) 38-42.

³¹¹ See Chatham House, *Natural Resources in 2020, 2030, and 2040: Implications for the United States* (US National Intelligence Council 2013); P. Lacy and J. Rutqvist, *Waste to Wealth: The Circular Economy Advantage* (Palgrave Macmillan 2015) 6-7; International Resource Panel, *Global Resources Outlook 2019* (UNEP 2019).

³¹² See, e.g., on climate mitigation International Resource Panel, *Resource Efficiency: Potential and Economic Implications* (UNEP 2017) 281-283; A. Wijkman and K. Skånberg, *The Circular Economy and Benefits for Society* (Club of Rome, 2017) 6-7, 37-38.

However, economists point out that there is a risk of ‘rebound effects’, where resource and energy savings from circular strategies are offset by a resulting increase in consumption or production. For example, decreased demand for resources and energy leads to lower prices, which then again increases demand (‘price effect’).³¹³ A second-hand, remanufactured or shared product might insufficiently replace a new one, which still results in more consumption (‘lack of substitution effect’).³¹⁴ Or circular strategies might save consumers money, which they subsequently spend on extra consumption (‘responding effect’).³¹⁵ The latter can also occur at the supply side, where producers can reinvest gains in production (capacity).³¹⁶ There might even be a ‘psychological’ or ‘motivational’ rebound effect, where the circular or green credentials of a product encourages its consumption.³¹⁷ These and other rebound effects particularly undermine the aforementioned third economic advantage of circular economy as well as all the environmental advantages discussed *infra* nr. 63. Fortunately, although very real, rebound effects can be limited in scope.³¹⁸ And it is possible to counteract them through various strategies, like combining different circular strategies and actors, improving actor awareness, employing nudging, presenting products as full substitutions or using command-and-control and fiscal rather than purely market-based strategies.³¹⁹ Effectively prioritizing the highest ranked circular strategy, ‘refuse’ (see *supra* nr. 58), also provides a bulwark against most rebound effects.

³¹³ See T. Zink and R. Geyer, ‘Circular Economy Rebound’ (2017) 21 *Journal of Industrial Ecology* 593, 598. This is called a ‘macroeconomic price effect’, since, there can also be a ‘microeconomic’ variant: as a result of making it more affordable to operate a good that consumes less energy, water or other resource, the good is operated more. See, e.g., L. Davis, ‘Durable Goods and Residential Demand for Energy and Water: Evidence from a Field Trial’ (2008) 39 *RAND Journal of Economics* 530.

³¹⁴ D. Cooper and T. Gutowski, ‘The Environmental Impacts of Reuse: A Review’ (2017) 21 *Journal of Industrial Ecology* 38, 50-51; T. Zink and R. Geyer, ‘Circular Economy Rebound’ (2017) 21 *Journal of Industrial Ecology* 593, 597-598; T. Siderius and K. Poldner, ‘Reconsidering the Circular Economy Rebound effect: Propositions from a case study of the Dutch Circular Textile Valley’ (2021) 293 *Journal of Cleaner Production* 125996, 3. Alternatively, circular products and service may also replace each other, so-called circular ‘cannibalisation’. See Circle Economy, EEB and Fair Trade, *Avoiding Blind Spots: Promoting Circular and Fair Business Models* (2020) 20.

³¹⁵ T. Makov and D. Vivanco Font, ‘Does the Circular Economy Grow the Pie? The Case of Rebound Effects From Smartphone Reuse’ (2018) 6 *Frontiers in Energy Research* 1, 4; C. Castro et al., ‘The rebound effect of circular economy: Definitions, mechanisms and a research agenda’ (2022) 345 *Journal of Cleaner Production* 131136, 6-7.

³¹⁶ T. Zink and R. Geyer, ‘Circular Economy Rebound’ (2017) 21 *Journal of Industrial Ecology* 593, 598.

³¹⁷ See D. Maxwell et al., *Addressing the Rebound Effect* (EU Commission 2011) 31; T. Santarius and M. Soland, ‘How Technological Efficiency Improvements Change Consumer Preferences: Towards a Psychological Theory of Rebound Effects’ (2018) 146 *Ecological Economics* 414. This is of course exacerbated by ‘greenwashing’.

³¹⁸ Cf. regarding energy efficiency K. Gillingham et al., ‘The rebound effect is overplayed’ (2013) 493 *Nature* 475.

³¹⁹ See D. Maxwell et al., *Addressing the Rebound Effect* (EU Commission 2011) 59-100; T. Zink and R. Geyer, ‘Circular Economy Rebound’ (2017) 21 *Journal of Industrial Ecology* 593, 599; P. Zerbino, ‘How to manage the Circular Economy Rebound effect: A proposal for contingency-based guidelines’ (2022) 378 *Journal of Cleaner Production* 134584, 4-5.

62. SOCIAL CONSIDERATIONS: EMPLOYMENT REDISTRIBUTION AND LOCAL ADVANTAGES – As a first socio-economic benefit, circular strategies can expand the scope and reduce prices in second-hand goods markets, which are particularly important for economically underprivileged communities.³²⁰ Second, in developed countries, a transition to a more circular economy is expected to deliver a net increase in employment, although the effects differ between circular strategies and are also dependent on the used technologies.³²¹ This coincides with job losses in local manufacturing, yet these are offset by more employment in repair, maintenance, refurbishing and leasing and to a lesser extent in remanufacturing, recycling and recapturing activities.³²² Unfortunately, more circular economy in developed countries can perhaps in the short term contribute to unemployment in low-wage countries.³²³ Moreover, a circular economy implementation that is blind to existing social inequity may also further reinforce different forms of social inequality, poor labour conditions and discrimination.³²⁴ Third, when discussing the increase in employment in developed countries, it should be emphasized that this offers many additional, sociocultural benefits, like physical and psychological well-being, sense of agency social ties and sense of community.³²⁵ However, circular economy also consists of a lot of informal labour, like self-repair, redistribution and sharing activities of prosumers and non-profit associations.³²⁶ As touched upon *infra* nrs. 68 and 70, such circular activities that overlap with collaborative or sharing economy excel in providing these types of sociocultural benefits of wellbeing and social cohesion.³²⁷ Finally, the social advantages

³²⁰ See Deloitte, *Study on socioeconomic impacts of increased reparability* (EU Commission, 2016) 14, 76 (re-marking that this economic advantage is partially offset by higher utility bills due to lower energy and water efficiency); A. Perzanowski, *The Right to Repair: Reclaiming the Things We Own* (Cambridge University Press 2022) 20-22.

³²¹ G. Aguilar-Hernandez, J. Dias-Rodrigues and A. Tukker, 'Macroeconomic, social and environmental impacts of a circular economy up to 2050: A meta-analysis' (2021) 278 *Journal of Cleaner Production* 123421, 5-8. See also the next footnote.

³²² See Cambridge Econometrics, Trinomics and ICF, *Impacts of circular economy policies on the labour market: Final report* (EU Commission, 2018) 73-74; G. Willeghems and K. Bachus, *Employment impact of the transition to a circular economy: literature study* (CE Center, 2018) 48; L. Llorente-González and X. Vence, 'How labour-intensive is the circular economy? A policy-orientated structural analysis of the repair, reuse and recycling activities in the EU' (2020) 162 *Resources, Conservation and Recycling* 105033.

³²³ But see H. Boonman, P. Verstraten and A. van der Weijde, 'Macroeconomic and environmental impacts of circular economy innovation policy' (2023) 35 *Sustainable Production and Consumption* 216, 224 (stating that increased circularity in the EU may have a positive employment effect in Africa and Middle East as a result of growing re-processing sectors exporting to Europe).

³²⁴ See Circle Economy, EEB and Fair Trade, *Avoiding Blind Spots: Promoting Circular and Fair Business Models* (2020) 18, 22-23.

³²⁵ C. Montalvo, D. Peck and E. Rietveld, *A Longer Lifetime for Products: Benefits for Consumers and Companies* (EU Parliament 2016) 40.

³²⁶ G. Willeghems and K. Bachus, *Employment impact of the transition to a circular economy: literature study* (CE Center, 2018) 49.

³²⁷ See also regarding collaborative repair A. Perzanowski, *The Right to Repair: Reclaiming the Things We Own* (Cambridge University Press 2022) 41-48; M. Meißner, 'Repair is care? Dimensions of care within collaborative practices in repair cafes' (2021) 299 *Journal of Cleaner Production* 126913; K. Bradley and O. Persson, 'Community repair in the circular economy. Fixing more than stuff' (2022) 27 *Local Environment* 1321.

and trade-offs rarely take centre stage in the academic as well as policy discourse on circular economy and often seem merely an afterthought,³²⁸ which has consequences for its relationship to sustainable development (see *infra* nr. 64).

63. ENVIRONMENTAL CONSIDERATIONS: POTENTIAL FOR NET ADVANTAGES – Extending product lifecycles or intensifying their use helps to avoid the air, water and soil pollution, habitat and biodiversity loss and other environmental externalities associated with producing and distributing new products, including those resulting from the required resource extraction and energy production.³²⁹ Crucial for the current global climate crisis, this can also result in significant savings in greenhouse gas emissions.³³⁰ These environmental benefits from avoiding production of new goods should be offset with the reality that existing products might use energy, water or other resources less efficiently during operation. Nevertheless, lifecycle assessments demonstrate that for many product types extending their useful life is already preferable to replacement.³³¹ And, at least in the EU, this ‘circular advantage’ is expected to further grow because products have already become more energy and resource efficient, because the share of renewables in the energy mix grows and because refurbishing or remanufacturing strategies can improve the efficiency of an existing product.³³²

Additionally, besides the production phase, circular strategies always offer the environmental advantage of avoiding waste generation and associated pollution in the end-of-life phase.³³³ Nevertheless, certain circular strategies furthermore require production of spare parts, transportation³³⁴ as well as use of tools and infrastructure for repairing, remanufacturing or sharing. Assessing the environmental impact of specific circular strategies for specific products therefore requires holistic lifecycle assessments (cf. *supra* nr. 18 in relation to product

³²⁸ But see an overview of the social aspects at the local level impacted by circular economy A. Mies and S. Gold, ‘Mapping the social dimension of the circular economy’ (2021) 321 *Journal of Cleaner Production* 128960, 5-11. See also *infra* footnotes 471-474.

³²⁹ See European Environment Agency, *Circular economy in Europe: Developing the knowledge base* (EEA Report 2016) 12-13; H. Boonman, P. Verstraten and A. van der Weijde, ‘Macroeconomic and environmental impacts of circular economy innovation policy’ (2023) 35 *Sustainable Production and Consumption* 216, 224-226.

³³⁰ See A. Wijkman and K. Skånberg, *The Circular Economy and Benefits for Society* (Club of Rome, 2017) 37-42; J. Cantzler et al., ‘Saving resources and the climate? A systematic review of the circular economy and its mitigation potential’ (2020) 15 *Environmental Research Letters* 123001; R. Vogt et al., *Determining climate protection potential in the circular economy for Germany and the EU: Partial report EU* (Umwelt Bundesamt 2023).

³³¹ E.g., C. Bakker et al., ‘Products that go round: exploring product life extension through design’ (2014) 69 *Journal of Cleaner Production* 10; Deloitte, *Study on socioeconomic impacts of increased reparability* (EU Commission, 2016) 63-66.

³³² See D. Cooper and T. Gutowski, ‘The Environmental Impacts of Reuse: A Review’ (2017) 21 *Journal of Industrial Ecology* 38, 46-49.

³³³ See Deloitte, *Study on socioeconomic impacts of increased reparability* (EU Commission, 2016) 66; Z. Zhang et al., ‘Environmental impacts of hazardous waste, and management strategies to reconcile circular economy and eco-sustainability’ (2022) 807 *Science of The Total Environment* 150856.

³³⁴ See, e.g., on logistics impacts of repair and product-as-a-service models Circle Economy, EEB and Fair Trade, *Avoiding Blind Spots: Promoting Circular and Fair Business Models* (2020) 28.

liability) and complementary, broader assessment methods.³³⁵ It is important that economic rebound effects (see *supra* nr. 62) are considered as well, since they can partially negate each of the aforementioned environmental advantages of circular economy.

In conclusion, a more circular economy offers substantial advantages for minimizing environmental problems at the local level and ensuring that human development remains within ‘planetary boundaries’.³³⁶ As discussed below, the question is whether it suffices.

64. LINK WITH SUSTAINABLE DEVELOPMENT AND ASSOCIATED CRITICISM – Given the observations that circular economy can bring not only economic but also social and environmental advantages, it is unsurprising that stakeholders, especially policymakers and legal researchers,³³⁷ often equate it unconditionally with sustainable development. The latter is the defining challenge of our era, as we still have hundreds of millions of people who live without access to basic human necessities despite large concentrations of wealth, all while human development has started to cross several boundaries in the earth system on which our common prosperity and ultimate survival depends (see *infra* nr. 121). Development is sustainable if it “*meets the needs of the present without compromising the ability of future generations to meet their own needs*”,³³⁸ which indeed seeks an equilibrium between interdependent economic, social and environmental pillars.³³⁹ Most authors now effectively agree that a more circular economy can serve as a tool in the crucial transition to a more sustainable state of development.³⁴⁰ This is especially true for ‘sustainable development goal 12’ “*sustainable consumption and production*”, which is considered to be one of the most challenging goals to achieve

³³⁵ Some other assessment methods are better in assessing effects beyond the boundaries of a single product’s lifecycle. See generally J. Walzberg et al., ‘Do We Need a New Sustainability Assessment Method for the Circular Economy? A Critical Literature Review’ (2021) 1 *Frontiers in Sustainability* 620047, 4-9.

³³⁶ See J. Rockström et al., ‘Planetary Boundaries: Exploring the Safe Operating Space for Humanity’ (2009) 14 *Ecology & Society* 32; W. Steffen et al., ‘Planetary boundaries: Guiding human development on a changing planet’ (2015) 347 *Science* 1259855; J. Rockström et al., ‘Safe and just Earth system boundaries’ (2023) 619 *Nature* 102.

³³⁷ See, e.g., Commission, ‘Towards a circular economy: A zero waste programme for Europe’ (Communication) COM(2014) 398 final, 2-4; E. Van Gool and A. Michel, ‘The New Consumer Sales Directive 2019/771 and Sustainable Consumption: a Critical Analysis’ (2021) 10 *Journal of European Consumer and Market Law* 136, 136-137 (admittedly, I have been guilty of this simplification myself).

³³⁸ UN World Commission on Environment and Development, *Our Common Future* (UN doc A/42/427, 1987) 41. See also *infra* nr. 121.

³³⁹ E.g., UN General Assembly Resolution of 16 September 2005, ‘2005 World Summit Outcome’ (2005) A/RES/60/1, nr. 48; J. Elkington, *Cannibals with Forks: the Triple Bottom Line of 21st Century Business* (New Society 1998).

³⁴⁰ E.g., A. Rashid et al., ‘Resource Conservative Manufacturing: an essential change in business and technology paradigm for sustainable manufacturing’ (2013) 57 *Journal of Cleaner Production* 166; M. Geissdoerfer et al., ‘The Circular Economy: A new sustainability paradigm?’ (2017) 143 *Journal of Cleaner Production* 757, 764-766; P. Schroeder, K. Anggraeni and U. Weber, ‘The Relevance of Circular Economy Practices to the Sustainable Development Goals’ (2019) 23 *Journal of Industrial Ecology* 77; W.R. Stahel, *The Circular Economy: A User’s Guide* (Routledge 2019) 11-14.

without harming other goals in the 2030 UN agenda.³⁴¹ In conceptual frameworks on sustainable development, ‘consumption and production processes’ generally seize a central, decisive role.³⁴²

However, as the discussion *supra* nrs. 61-63 demonstrated, circular economy’s economic, social and environmental advantages are not always clear-cut. They depend on each circular strategy, contextual circumstances and complex dynamics involving various actors, as illustrated by the aforementioned rebound effects. There are always to some extent trade-offs, between economic, social and environmental dimensions and between winners and losers across spatial and time scales.³⁴³ Additionally, two extra, apparent differences between circular economy and sustainable development are worth pointing out.

On the one hand, many authors observe that the social dimension remains largely absent in current thinking about circular economy.³⁴⁴ Although it can offer some social advantages (see *supra* nr. 62), these seem more coincidental than intentional and it is still unclear how circular economy will in a comprehensive and consistent manner contribute to more intragenerational equity.³⁴⁵ The circular economy framework can therefore evolve towards more comprehensive sustainability by better integrating social considerations, especially in the context of human development needs outside industrialized countries.³⁴⁶

On the other hand, many authors find that the link between circular economy and sustainable development is based on a ‘weak’ understanding of the latter.³⁴⁷ This prioritizes economic growth (‘green growth’) and assumes that technology and science can overcome any environmental and social problem. In contrast, ‘strong sustainability’ prioritizes natural capital and assumes that some consumption should be reduced and the growth imperative abandoned

³⁴¹ P. Pradhan et al., ‘A Systematic Study of Sustainable Development Goal (SDG) Interactions’ (2017) 5 *Earth's Future* 1169. See on the sustainable development goals UN General Assembly Resolution of 25 September 2015, Transforming our world: the 2030 Agenda for Sustainable Development (A/RES/70/1).

³⁴² E.g., P. Matson, W.C. Clark and K. Andersson, *Pursuing Sustainability: A Guide to the Science and Practice* (Princeton University Press 2016) 16-18; W. Clark and A. Harley, ‘Sustainability Science: Toward a Synthesis’ (2020) 45 *Annual Review of Environment and Resources* 331, 341-342.

³⁴³ Unsurprisingly, differences across spatial and timescales are one of the aspects of complexity in the pursuit of sustainable development. See P. Matson, W.C. Clark and K. Andersson, *Pursuing Sustainability: A Guide to the Science and Practice* (Princeton University Press 2016) 56-58.

³⁴⁴ M. Geissdoerfer et al., ‘The Circular Economy: A new sustainability paradigm?’ (2017) 143 *Journal of Cleaner Production* 757, 765-766; A. Murray, K. Skene and K. Haynes, ‘The Circular Economy: An Interdisciplinary Exploration of the Concept and Application in a Global Context’ (2017) 140 *Journal of Business Ethics* 369, 376; N. Millar, E. McLaughlin and T. Börger, ‘The Circular Economy: Swings and Roundabouts?’ (2019) 158 *Ecological Economics* 11, 16; A. Mies and S. Gold, ‘Mapping the social dimension of the circular economy’ (2021) 321 *Journal of Cleaner Production* 128960, 2-3.

³⁴⁵ See also P. Schroeder, K. Anggraeni and U. Weber, ‘The Relevance of Circular Economy Practices to the Sustainable Development Goals’ (2019) 23 *Journal of Industrial Ecology* 77.

³⁴⁶ See P. Schröder, A. Lemille and P. Desmond, ‘Making the circular economy work for human development’ (2020) 156 *Resources, Conservation and Recycling* 104686.

³⁴⁷ S. Sauvé, S. Bernard and P. Sloan, ‘Environmental sciences, sustainable development and circular economy: Alternative concepts for trans-disciplinary research’ (2016) 17 *Environmental Development* 48, 53; K. Anastasiades et al., ‘Translating the circular economy to bridge construction: Lessons learnt from a critical literature review’ (2020) 117 *Renewable and Sustainable Energy Reviews* 109522.

(‘degrowth’).³⁴⁸ Hence, strong sustainability advocates criticize circular economy by holding that it only delays but not prevents ultimately unsustainable outcomes resulting from endless growth, consumption and global development needs, since perfect circularity of materials and energy is theoretically impossible.³⁴⁹ Leakage in loops or increasing entropy is indeed inevitable in the long run, pursuant to the second law of thermodynamics that lies at the origin of thinking on circular economy (see *supra* nr. 55). And economic ‘rebound effects’ (see *supra* nr. 61) effectively demonstrate the risk of combining circular strategies with boundless consumption. A recent study appears to support this critical view, by finding that the primary resources extracted annually as a result of economic growth in EU countries have been roughly four times the resources saved by circular economy initiatives.³⁵⁰

Of course, economic measurements of circular initiatives and the aforementioned ‘weak sustainability’ interpretation predominantly focus on recycling, recapturing and to a lesser extent on repairing and reuse. As discussed *supra* nr. 58, ‘refusing’ consumption and ‘rethinking’ it by using products more intensively are theoretically key strategies at the top of the hierarchy of a complete circular economy. Consequently, ‘strong sustainability’ and circular economy still seem reconcilable and a rapprochement is possible, in the literature and perhaps also in future public and private policy implementation.³⁵¹ Additionally, strong and weak sustainability are not mutually exclusive but rather form a spectrum. A combination of both halfway on this spectrum (‘intermediate sustainability’) which addresses social inequities (‘just sustainability’), likely presents a preferable path towards sustainable development.³⁵² And a readjusted and more holistic conception of circular economy can help to pursue such a long-term human development goal.

³⁴⁸ See M. Cabeza Gutés, ‘The concept of weak sustainability’ (1996) 17 *Ecological Economics* 147, 147-148; J. Pelenc and J. Ballet, ‘Strong sustainability, critical natural capital and the capability approach’ (2015) 112 *Ecological Economics* 36, 37.

³⁴⁹ J. Korhonen, A. Honkasalo and J. Seppälä, ‘Circular Economy: The Concept and its Limitations’ (2018) 143 *Ecological Economics* 37, 43-44; K. Skene, ‘Circles, spirals, pyramids and cubes: why the circular economy cannot work’ (2018) 13 *Sustainability Science* 479, 481-485; N. Millar, E. McLaughlin and T. Börger, ‘The Circular Economy: Swings and Roundabouts?’ (2019) 158 *Ecological Economics* 11, 14-16. See also F. Savini, ‘Futures of the social metabolism: Degrowth, circular economy and the value of waste’ (2023) 150 *Futures* 103180, 1-4.

³⁵⁰ M. Bianchi and M. Cordella, ‘Does circular economy mitigate the extraction of natural resources? Empirical evidence based on analysis of 28 European economies over the past decade’ (2023) 203 *Ecological Economics* 107607, 6.

³⁵¹ See, e.g., P. Schröder et al., ‘Degrowth within: Aligning circular economy and strong sustainability narratives’ (2019) 146 *Resources, Conservation and Recycling* 190; I. Nesterova and H. Buch-Hansen, ‘Degrowth and the circular economy: Reflecting on the depth of business circularity’ (2023) 414 *Journal of Cleaner Production* 137639; F. Savini, ‘Futures of the social metabolism: Degrowth, circular economy and the value of waste’ (2023) 150 *Futures* 103180, 7-9.

³⁵² See C. Williams and A. Milington, ‘The diverse and contested meanings of sustainable development’ (2004) 170 *The Geographical Journal* 99, 101. See also J. Agyeman, R. Bullard and B. Evans, ‘Exploring the Nexus: Bringing Together Sustainability, Environmental Justice and Equity’ (2002) 6 *Space and Polity* 77.

In conclusion, although circular economy is not a synonym of sustainable development, it is a possible subset thereof³⁵³ and a potential tool. Overall, the currently dominant academic and policy discourse and implementation practice can provide some economic, environmental and to a lesser extent social benefits. But for circular economy to more significantly contribute to sustainability, it has to better integrate social equity considerations not only at the local but at the global level. And it has to truly prioritize strategies of ‘refusing’ and ‘re-thinking’ consumption.

65. A CIRCULAR ECONOMY POLICY AGENDA IN EUROPE AND ELSEWHERE – Given these potential benefits of circular economy, policymakers around the world have embraced the concept.

An important pioneer is China, which started to promote eco-industrial parks in the late 1990’ies and adopted in 2009 a law on the promotion of circular economy.³⁵⁴ In the US, circular economy is less well known as an overarching concept and regulation mostly takes a backseat to industry and grassroots initiatives. While the federal government level has only recently started to implement the concept by building on long running waste regulation,³⁵⁵ certain states have adopted initiatives relating to more ‘inner loop’ strategies. In particular, there is in the US a strong activist movement in favour of more ‘independent’ and ‘self-repair’,³⁵⁶ which has led to some states adopting ‘right to repair’ legislation.³⁵⁷

³⁵³ M. Geissdoerfer et al., ‘The Circular Economy: A new sustainability paradigm?’ (2017) 143 *Journal of Cleaner Production* 757, 766.

³⁵⁴ See *supra* footnote 286. See also R. Bleischwitz et al., ‘The circular economy in China: Achievements, challenges and potential implications for decarbonisation’ (2022) 183 *Resources, Conservation and Recycling* 106350. See also *supra* nr. 56 on the different understanding of circular economy in China and Europe.

³⁵⁵ See ‘Advancing a Circular Economy to Meet Our Climate, Energy, and Economic Goals’ <<https://www.whitehouse.gov/ostp/news-updates/2023/07/05/advancing-a-circular-economy-to-meet-our-climate-energy-and-economic-goals/>>; EPA Office of Resource Conservation and Recovery, *Building a Circular Economy For All: Progress Toward Transformative Change* (EPA 2022).

³⁵⁶ See A. Perzanowski, ‘Consumer Perceptions of the Right to Repair’ (2020) 96 *Indiana Law Journal* 361; T. Klosowski, ‘What You Should Know About Right to Repair’ *New York Times* (15 July 2021) <<https://www.nytimes.com/wirecutter/blog/what-is-right-to-repair/>>; ‘We Have the Right to Repair Everything We Own’ <<https://www.repair.org/aboutus>>.

³⁵⁷ E.g., Massachusetts, Act Relative to Automotive Repair (2013), *Session Laws: Acts (2013)*, Ch. 165; Colorado, Consumer Wheelchair Repair Bill of Rights Act (2022), House Bill 22-1031; California, Act to amend and renumber the heading of Chapter 8.6 (commencing with Section 42490) of, and to add Chapter 8.6, titled Right to Repair Act (2023) Senate Bill 244; New York, Act to amend the general business law, in relation to the sale of digital electronic equipment and providing diagnostic and repair information; and to amend a chapter of the laws of 2022 amending the general business law relating to the sale of digital electronic equipment and providing diagnostic and repair information (2023) Senate and Assembly A 1285.

In Europe, most countries have adopted policy strategies on circular economy.³⁵⁸ Germany was a relatively early pioneer in circular resource management and eco-industrial parks.³⁵⁹ Regarding legislation that directly impacts the distribution and use phases of consumer goods' lifecycles, France has fulfilled a pioneering role through laws adopted in 2014, 2015 and 2020.³⁶⁰ Among others, these have established a prohibition on 'planned obsolescence' and on repair-obstructing practices,³⁶¹ an obligation to inform consumers through a uniform index score on the repairability or in the near future on the durability of electric and electronic products,³⁶² an obligation to inform consumers on the availability of spare parts and in case of certain products even an obligation to provide spare parts.³⁶³

However, it is the EU which has in recent years most visibly pursued the transition to a more circular consumer goods economy, motivated by the aforementioned policy objectives in combination with a concern for safeguarding a sufficiently harmonised, level playing field. Building on already long-standing EU waste, chemicals and product regulations as well as precursory policy strategies,³⁶⁴ the Commission published in 2015 its first Circular Economy Action Plan.³⁶⁵ This was followed in 2020 by a second Action Plan,³⁶⁶ which is a cornerstone of the European Green Deal³⁶⁷ and which was complemented for the purposes of the consumer goods sector by the green transition dimension of the New Consumer Agenda.³⁶⁸ The action plans present a progressively more ambitious and comprehensive policy agenda, which led to numerous legislative proposals that have in some cases already been adopted or are currently pending before the EU legislator. Specifically worth highlighting for the purposes of this dissertation are the new Ecodesign for Sustainable Products Regulation 2024 (see *infra* nrs. 251 and 344), the Promoting Repair Directive 2024 (see *infra* nrs. 389 and 395) and also

³⁵⁸ E.g., BELGIUM: SPF Environnement and SPF Economie, *Plan d'action fédéral pour une économie circulaire 2021-2024* (2021). The Flemish, Walloon and Brussels Regions have also adopted circular economy as a policy priority for their respective competences. FRANCE: Ministère de la Transition Écologique et Solidaire, *Feuille de route de l'Economie Circulaire* (2019); Ministère de la Transition Écologique et Solidaire, *Stratégie nationale 'Recyclabilité, recyclage et réincorporation des matériaux'* (2021). GERMANY: Bundesministerium für Umwelt, *Die Nationale Kreislaufwirtschaftsstrategie (NKWS)* (2023).

³⁵⁹ See K. Winans, A. Kendall and H. Deng, 'The history and current applications of the circular economy concept' (2017) 68 *Renewable and Sustainable Energy Reviews* 825, 826-827.

³⁶⁰ Loi nr. 2014-856 du 31 juillet 2014 relative à l'économie sociale et solidaire, *JORF* 1 août 2014, nr. 176; Loi nr. 2015-992 du 17 août 2015 relative à la transition énergétique pour la croissance verte, *JORF* 18 août 2015, nr. 189; Loi nr. 2020-105 du 10 février 2020 relative à la lutte contre le gaspillage et à l'économie circulaire, *JORF* 11 février 2020, nr. 35.

³⁶¹ Arts. L441-1-L441-4 Code de la Consommation. See also *infra* nrs. 237 and 397.

³⁶² Art. L541-9-2 Code de l'Environnement.

³⁶³ Arts. L111-4-L111-4-1 Code de la Consommation.

³⁶⁴ Commission, 'Integrated Product Policy: Building on Environmental Life-Cycle Thinking' (Communication) COM(2003) 302 final; Commission, 'Roadmap to a Resource Efficient Europe' (Communication) COM(2011) 571 final.

³⁶⁵ Commission, 'An EU action plan for the Circular Economy' (Communication) COM(2015) 614 final.

³⁶⁶ Commission, 'A new Circular Economy Action Plan: For a cleaner and more competitive Europe' (Communication) COM(2020) 98 final.

³⁶⁷ Commission, 'The European Green Deal' (Communication) COM(2019) 640 final.

³⁶⁸ Commission, 'New Consumer Agenda: Strengthening consumer resilience for sustainable recovery' (Communication) COM(2020) 696 final.

the Empowering Consumers for the Green Transition Directive 2024/825 and the accompanying Green Claims Proposal 2023 (see *infra* nrs. 252 and 396).

66. TOP-DOWN VERSUS BOTTOM-UP SUPPORT, PRIORITIES AND CURRENT STATE – Especially in legal research, it is important to emphasize that, when such regulatory support for circular economy is adopted and implemented, it merely reinforces a myriad of already existing alternative business models and grassroots initiatives by individuals and associations. This sociocultural support and growth lies at the core of the now emerging circular consumer goods economy (see illustrations *supra* nr. 2). And it is particularly important for the more ‘inner loop’ strategies such as reusing, redistributing, repairing or refurbishing products, which are preferential from efficiency and sustainability points of view (see *supra* nrs. 58 and 64). At the same time, it is striking that most ‘top-down’ circular economy policy initiatives have until now focused precisely on the less efficient ‘outer loops’, in particular recycling.³⁶⁹ This seems to be changing only recently, as illustrated by US ‘right to repair’ legislation and the recent EU and French legislation in support of more durable and more repairable products (see *supra* nr. 65). Yet, the most efficient and sustainable strategy, ‘refuse’, remains at present outside the public policy crosshairs and only exists as a bottom-up strategy pursued by individual consumers based on their personal motivations or constraints (see also *supra* nr. 64).

Finally, recent studies assess that the European economy remains for the time being mostly linear and that the current, limited transition in a growing economy goes too slow to achieve targets.³⁷⁰ However, there is not yet a reversal in sight in political and regulatory support for a more circular economic system. This is because of the enticement of the aforementioned economic, social and environmental advantages and because there continue to be improvements in knowledge on how to most efficiently pursue these advantages and how to better align circular economy with sustainable development (see *supra* nrs. 61-64). Hence, it seems likely that circular economy will continue to grow in the consumer goods sector and that at least in Europe the overarching legal framework will continue to evolve as well.³⁷¹

³⁶⁹ V. Ranta et al., ‘Exploring institutional drivers and barriers of the circular economy: A cross-regional comparison of China, the US, and Europe’ (2018) 135 *Resources, Conservation and Recycling* 70, 79-80; A. De Pascale et al., ‘The circular economy implementation at the European Union level. Past, present and future’ (2023) 423 *Journal of Cleaner Production* 138658. See also N. De Sadeleer, *Droit des déchets de l’UE: De l’élimination à l’économie circulaire* (Bruylant 2016) 198; A. Michel, *Premature Obsolescence: In Search of an Improved Legal Framework* (Intersentia 2023) 593.

³⁷⁰ A. Marino and P. Pariso, ‘Comparing European countries’ performances in the transition towards the Circular Economy’ (2020) 729 *Science of The Total Environment* 138142; M. Bianchi and M. Cordella, ‘Does circular economy mitigate the extraction of natural resources? Empirical evidence based on analysis of 28 European economies over the past decade’ (2023) 203 *Ecological Economics* 107607; European Court of Auditors, *Circular economy: Slow transition by member states despite EU action* (2023). See also H. Wang et al., ‘Measuring progress of China’s circular economy’ (2020) 163 *Resources, Conservation and Recycling* 105070.

³⁷¹ See for a comprehensive policy outlook K. Hartley et al., ‘A policy framework for the circular economy: Lessons from the EU’ (2023) 412 *Journal of Cleaner Production* 137176.

Section D. Clarifying the overlap with functional and collaborative economy

67. B2C SERVITISATION AND FUNCTIONAL ECONOMY AS PARTIALLY OVERLAPPING TRENDS WITH CIRCULAR ECONOMY IN THE CONSUMER GOODS SECTOR – Goods offered to consumers for sale by businesses are more than ever bundled together with ancillary services. Traditional examples are installation, maintenance, repair, insurance or take-back services for purchased cars, bikes, electronics or various types of consumer equipment.³⁷² Digital services, like the sharing of information, software updates and cybersecurity protection have also rapidly become ubiquitous, accompanying not only B2C-sales of purely digital products but also of ‘smart’ physical objects that are part of the growing ‘internet of things’ like smartphones, wearables, connected cars and smart household appliances, toys or security devices.³⁷³ Moreover, in B2C-markets it is also becoming more common that durable, movable consumer goods are no longer sold but that access to them is offered as a service. Examples are ‘product-as-a-service’

³⁷² See, e.g., F. Mahut et al., ‘Product-Service Systems for servitization of the automotive industry: a literature review’ (2017) 55 *International Journal of Production Research* 2102, 2112; ‘Inspection et réparation’ <www.canyon.com/fr-fr/customer-service/help-center/inspection-repair.html>; ‘HP Services and Extended Coverage’ <www.hp.com/us-en/services/consumer/carepack-pc.html>; ‘All Mighty Guarantee’ <www.ospreyeurope.com/gb_en/all-mighty-guarantee/>; ‘The only bicycle dealer offering service at home’ <www.bizbike.be/en>; ‘Husqvarna Care’ <www.husqvarna.com/fr/services/husqvarna-care>.

³⁷³ See European Commission, *Smart Wearables: Reflection and Orientation Paper* (2016) 4-7; D. Holloway and L. Green, ‘The Internet of Toys’ (2016) 2 *Communication Research and Practice* 506; OECD, *Consumer product safety in the Internet of Things* (2018) 9-11; B. Sovacool and D. Furszyfer Del Rio, ‘Smart home technologies in Europe: A critical review of concepts, benefits, risks and policies’ (2020) 120 *Renewable & Sustainable Energy Reviews* 109663, 1-6.

or 'pay-per-use' contracts that offer to consumers rights to use furniture,³⁷⁴ kitchen and household appliances,³⁷⁵ electronics,³⁷⁶ baby and child items³⁷⁷ or sports and outdoor equipment.³⁷⁸

This weakening of the dominance of sales contracts is referred to as 'servitisation' and can be seen as part of the 'functional economy'. The main idea is that customers do not really seek ownership of a product but need a specific functionality, exemplified by the quote "*They don't want quarter-inch drill bits, they want quarter inch holes.*"³⁷⁹ The literature examines servitisation based on the concept of 'product-service system' ('PSS'), which is "*a mix of tangible products and intangible services designed and combined so that they jointly are capable of fulfilling final customer needs.*"³⁸⁰ An influential typology labels the aforementioned examples where products are still sold but complemented with ancillary services as 'product-oriented PSS'. The other business models that no longer include a transfer of ownership are qualified as either 'use-oriented' or 'result-oriented PSS', depending on whether the consumer is offered use rights for a specific, pre-identified good or only an abstract, functional outcome according to an agreed level of performance.³⁸¹

³⁷⁴ See, e.g., 'Why you might be leasing not buying your next couch' <www.cnn.com/2022/01/22/why-you-might-be-renting-not-buying-your-next-couch.html>; 'Lease a couch' <www.motiefatelier.be/lease-a-couch/>; 'Louer ses meubles IKEA c'est désormais possible!' <www.moveandrent.com/fr/nos-marques/ikea>.

³⁷⁵ E.g., 'Home Appliances rental' <www.orent.com/fr/en/c/rent-appliances>; 'De beste spullen als een service: Het beste voor iedereen' <<https://bundles.nl/>>; 'Coolblue groot elektro abonnementen' <www.coolblue.be/nl/advies/alles-over-coolblue-abonnementen.html>; 'Miete Bosch Produkte' <www.bluemovement.com/de-de>.

³⁷⁶ E.g., 'Les avantages location FNAC' <www.fnac.com/location>; 'Technik online leihen' <www.leihzig.de/technik>; 'Who says headphones can't last a lifetime?' <<https://gerrardstreet.nl/>>.

³⁷⁷ E.g., 'Location de jeux et jouets' <<https://libetlou.com/>>; 'Minino verleihservice rund ums baby' <www.minino-online.de/>; 'Child and babies accessories rental' <www.orent.com/fr/en/c/rent-kids>; 'Baby Gear Rentals - Make travel with little ones a breeze and create a home-like experience while you're away' <www.babyquip.com/>.

³⁷⁸ E.g., 'Practice more sports: DIVERSIFY with our rental service' <<https://rent.decathlon.be/>>; 'Location de skis et de snowboards' <www.asadventure.com/fr/asa/location-ski.html>; 'Vermietung von Ausrüstung für Trekking und Camping' <www.outdoorverleih.com/>; 'Freizeitartikel online leihen' <www.leihzig.de/sport-freizeit>.

³⁷⁹ This famous quote is attributed to Theodore Levitt, a U.S. marketing professor who used it in his lectures from the 1960's onwards. See for early references in his writings to product-related services and the consumer's search for functionality rather than a specific product T. Levitt, 'Marketing Myopia (1960 original, Best of HBR reprint)' (2004) 82 *Harvard Business Review* 138, 144-45; T. Levitt, 'Production-line approach to service' (1972) 50 *Harvard Business Review* 41, 42, 50.

³⁸⁰ A. Tukker and U. Tischner, 'Product-services as a research field: past, present and future. Reflections from a decade of research' (2006) 14 *Journal of Cleaner Production* 1552, 1552. See also M. Goedkoop et al., *Product Service systems, Ecological and Economic Basics* (1999) 18; O. Mont, 'Clarifying the concept of product-service system' (2002) 10 *Journal of Cleaner Production* 237, 238; T. Baines et al., 'State-of-the-art in product-service systems' (2007) 221 *Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture* 1543, 1545.

³⁸¹ See T. Baines et al., 'State-of-the-art in product-service systems' (2007) 221 *Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture* 1543, 1547; W. Reim, V. Parida and D. Örtqvist, 'Product-Service Systems (PSS) business models and tactics: a systematic literature review' (2015) 97 *Journal of Cleaner Production* 61, 65-66

Certain product-service systems have a potential to be more environmentally sustainable and there is an overlap with circular economy (cf. *supra* nrs. 2 and 59). Nevertheless, its main drivers are the commercial profits it can offer to both PSS-providers and the convenience it can offer to consumers as well as its synergies with increasing digitalisation and the internet of things.

68. COLLABORATIVE ECONOMY: PLATFORMS, PROSUMERS, SHARING AND MAKING AS PARTIALLY OVERLAPPING TRENDS WITH CIRCULAR ECONOMY IN THE CONSUMER GOODS SECTOR – Another change over the last two decades in the consumer goods sector, is the rise of online platforms that allow both non-professional ‘prosumers’ or ‘peers’ (P2P) and businesses (B2C) to offer products or services to consumers.³⁸² This phenomenon is often referred to as the ‘collaborative’, ‘sharing’, ‘platform’ or ‘peer-to-peer’ economy, which are all closely related concepts with slightly different, often disputed meanings. It is best known for online platforms that create trilateral economic relationships by matching supply and demand for mobility, tourism, real estate or labour (‘gig economy’) services. Nevertheless, in the context of this research project, it is important to interpret collaborative activities broadly but at the same time focus on the different ways in which they affect the distribution and production of physical, movable consumer goods.³⁸³

- a. First of all, there are online marketplaces that enable sales of almost any such consumer product. Some focus on professional B2C vendors, like large e-commerce webshops that often combine acting as a marketplace for third-party sellers with selling their own products directly to consumers.³⁸⁴ Other marketplaces mainly focus on P2P sales by non-professional vendors³⁸⁵ or try to attract both types.³⁸⁶ Although a large majority of goods sold online are new, marketplaces where predominantly refurbished³⁸⁷ or

³⁸² Comprehensive data specific to the trilateral platform model and excluding bilateral transactions via a seller’s own webstore, are hard to find. Nevertheless, it is clear that the overall e-commerce sector has grown tremendously in both Europe and the U.S. during the last decade, even more strongly during the COVID-19 pandemic. See EUROSTAT, *E-commerce statistics for individuals* (last updated January 2022), <https://ec.europa.eu/eurostat/statistics-explained/index.php?title=E-commerce_statistics_for_individuals>; U.S.C. Bureau, *2nd Quarter 2022 Retail E-Commerce Sales Report* (2022), <www.census.gov/retail/mrts/www/data/pdf/ec_current.pdf>.

³⁸³ See also *infra* nr. 74 on the focus on product distribution and production.

³⁸⁴ See, e.g., ‘Become an Amazon seller’ <<https://sell.amazon.com.be/en/>>; ‘Gemeinsam handeln!’ <www.otto.market/html>; ‘Partner worden’ <<https://partnerplatform.bol.com/nl/>>; ‘Vendez en ligne sur le site leader français du e-commerce!’ <<https://marketplace.cdiseout.com/>>; ‘Händler-Registrierung’ <www.kaufland.de/haendler-infobereich/de/so-funktioniert/haendler-anmeldung/>.

³⁸⁵ See, e.g., ‘Make money selling on eBay’ <www.ebay.com/sl/sell>; ‘Berlin for sale’ <<https://berlin.craigslist.org/search/sss?lang=en&cc=gb>>.

³⁸⁶ See, e.g., ‘Mettre en vente’ <<https://fr.shopping.rakuten.com/connect?action=login&url=%2Fseller%2Fsell-form>>.

³⁸⁷ See, e.g., ‘Le comparateur du reconditionné’ <www.reepet.fr/>; ‘Refurbed Produkte mit mindestens 12 Monaten Garantie’ <www.refurbed.de/products/>; ‘Are you looking for an iPhone 11, MacBook, Samsung, ...’ <www.backmarket.com/en-us>.

second-hand³⁸⁸ goods are sold (sometimes dubbed ‘recommerce’) demonstrate how these types of platforms can enable the circular economy strategy of extending product lifespans (see *supra* nrs. 2 and 59).

- b. Second, there are platforms and online communication services that enable the sharing of consumer goods, like platforms and social media groups allowing neighbours to borrow or rent all kinds of equipment from each other.³⁸⁹ P2P sharing of access to underused assets without a transfer of ownership and through community-based online platforms, is often regarded as the traditional understanding of ‘collaborative consumption’ or of the ‘sharing economy’.³⁹⁰ Closely related to this but involving a transfer of ownership are platforms that facilitate ‘swapping’ (bartering)³⁹¹ of consumer goods or donations, which can be to charities or consist of peer-to-peer ‘freecycling’.³⁹² Finally, borrowing, renting, swapping or donating consumer goods of course continues to also take place offline, for example directly among family, friends or neighbours or via public swap and donation shelves. Some social organizations also provide access to

³⁸⁸ See, e.g., ‘Marketplace’ <www.facebook.com/marketplace>; ‘Voor jou - In je buurt - Trending’ <www.2dehands.be/>; ‘Des millions de petites annonces et autant d’occasions de se faire plaisir’ <www.leboncoin.fr/>. Especially prominent and popular are platforms focusing on the reselling of clothes and apparel items, see, e.g., ‘Prêts à faire du tri dans vos placards?’ <www.vinted.be/>; ‘Welcome to the community-powered circular fashion marketplace’ <www.depop.com>.

³⁸⁹ See, e.g., ‘Good to share: Borrow and rent things with your neighbors’ <www.peerby.com/en-be>; ‘Share things with your neighbours’ <<https://www.streetbank.com>>; ‘Het sociale netwerk voor je buurt’ <www.hoplr.com/nl>; ‘Groupes’ <www.facebook.com/groups/feed/>; ‘Zoeken of een nieuwe chat starten’ <<https://web.whatsapp.com/>>.

³⁹⁰ E.g., R. Belk, ‘You are what you can access: Sharing and collaborative consumption online’ (2014) 67 *Journal of Business Research* 1595, 1595; Commission Communication of 2 June 2016 A European agenda for the collaborative economy (2016) COM/2016/0356 final; V. Hatzopoulos, *The Collaborative Economy and EU Law* (Hart Publishing 2018) 6-8; C. Miguel, E. Martos-Carrión and M. Santa, ‘A Conceptualisation of the Sharing Economy: Towards Theoretical Meaningfulness’ in V. Česnuitytė and others (eds.), *The Sharing Economy in Europe: Developments, Practices, and Contradictions* (Palgrave Macmillan 2022) 30-35. ‘Collaborative consumption’ or ‘sharing’ are particularly important with regards to the aforementioned services relating to real estate (e.g. *Airbnb*, *Couchsurfing*, *Gîtes de France*), mobility (e.g. *Uber*, *Lyft*, *BlaBlaCar*) and ‘gig’ work (e.g. *Taskrabbit*, *Neighborly*, *Fiverr*).

³⁹¹ See, e.g., ‘Tauschen bei Deutschlands meistbesuchter Tauschbörse’ <www.tauschticket.de>; ‘Donnez, prêtez, troquez, des biens et des services’ <<https://mytroc.fr>>; ‘Swap Shop’ <www.gumtree.com/swap-shop>; ‘Search barter’ <<https://newyork.craigslist.org/search/bar>>.

³⁹² See, e.g., ‘Recyclage, entraide et partage!’ <<https://donnons.org>>; ‘Welcome to The Freecycle Network’ <www.freecycle.org>; ‘Online Weggeefwinkel België’ <www.online-weggeefwinkel.be>; ‘Want free stuff? Got stuff to give away?’ <<https://trashnothing.com/beta>>; ‘Free Your Stuff Deutschland’ <www.free-your-stuff.com/de>; ‘Dons uniquement’ <www.leboncoin.fr/recherche?donation=1>; ‘Donner au lieu de jeter’ <<http://recupe.net>>.

‘libraries of things’, for example for tools³⁹³ or for toys and baby equipment,³⁹⁴ which can be borrowed or loaned for an annual membership fee or a fixed cost. All the aforementioned methods of sharing consumer goods in the broad sense correspond again with the circular strategies of using goods more intensively or extending their lifespan (cf. *supra* nrs. 2 and 59) and, at least those not involving a transfer of ownership, can be considered to be also a part of the functional economy (see *supra* nr. 67, *in fine*).

- c. Third, there are online platforms and resources that allow ‘prosumers’ to help each other in repairing consumer goods³⁹⁵ and professional repair businesses to supply repair-related products and services directly to consumers. These are an essential part of the ‘repair movement’, which is in turn an important driver behind the circular strategy of product repairs (see *infra* nr. 87). It can happen through online troubleshooting forums, diagnostic tools, video tutorials and the sharing of repair manuals that can be original or have been authored independently.³⁹⁶ ‘Live’ virtual repair advice is accessible through videocalls, which can range from P2P assistance and clinics³⁹⁷ to on-demand B2C service calls.³⁹⁸ Moreover, spare parts, either new originals, salvaged or self-produced components, are sold by prosumers and businesses online.³⁹⁹ Additionally, online platforms can enable offline repair assistance and services like repair cafés and clinics.⁴⁰⁰ Finally, although rare when activities are conducted by ‘prosumers’ rather than professionals, these platforms and online resources can also be used in the

³⁹³ See, e.g., ‘Borrow from the Chicago tool library’ <www.chicagotoollibrary.org>; ‘La bibliothèque d’outillage accessible et écologique à Bruxelles’ <www.tournevie.be>; ‘Willkommen bei Münchens erster Werkzeugbibliothek’ <<https://erfindergarden.de/werkzeugbib>>.

³⁹⁴ See, e.g., ‘Toy Library Locations’ <www.usatla.org/toy-library-locations>; ‘Spieleverleih’ <<https://ludothek.de/spieleverleih>>; ‘La carte des ludothèques’ <www.kanas.com/associationdesludothequesfrancaises/les-ludotheques/carte>; ‘De bibliotheek voor babyspullen’ <<https://babytheek.wordpress.com>>.

³⁹⁵ See generally A. Fortunato, ‘Le service à distance d’aide à la réparation de produits’ (2022) 47 *Revue Juridique de l’Environnement* 91, 94-95.

³⁹⁶ See, e.g., ‘Answers Forum’ <www.ifixit.com/Answers>; ‘Welcome to our user-contributed teardowns on the hottest new gadgets’ <www.ifixit.com/Teardown>; ‘Repair Guides’ <www.ifixit.com/Guide>; ‘Guides de réparation: pros & gratuits’ <www.sosav.be/guides>; ‘Suivez notre outil de diagnostic de panne’ <www.spareka.fr/comment-reparer>; ‘Der große Ersatzteilshop Reparaturratgeber zur Fehlerdiagnose’ <www.ersatzteilshop.de/reparatur>; ‘Finde hier die passende Anleitung für dein Gerät’ <www.kaputt.de/optionen/anleitungen>.

³⁹⁷ See, e.g., ‘Joining Zoom Fixit Clinics or the Global Fixers Discord Server’ <<https://fixitclinic.blogspot.com/2021/01/joining-zoom-fixit-clinics-or-global.html>>; ‘Producing great online repair events – learning from around the world’ <<https://therestartproject.org/get-involved/online-repair-events>>.

³⁹⁸ See, e.g., ‘Le service de réparation d’électroménager par visioconférence’ <www.pivr.fr>; ‘Dépannage en visio’ <www.spareka.fr/>.

³⁹⁹ See, e.g., ‘Direct Repair has every spare part you’re looking for’ <www.directrepair.eu>; ‘Liste des pièces détachées’ <www.planetrepair.fr/pièces-detachees-occasion>; ‘Toutes nos pièces de réparation’ <www.sosav.fr/store>; ‘Gemeinsam reparieren - Ersatzteile und Reparaturhinweise’ <www.ersatzteilshop.de>.

⁴⁰⁰ See, e.g., ‘Find repair help in your region and give broken devices a second life’ <www.repairconnects.org/en>; ‘Start a Clinic’ <https://fixitclinic.blogspot.com/p/start-one_13.html>.

context of refurbishments or remanufacturing of goods that go beyond simple repairs (see *infra* nrs. 89-90).

- d. Fourth, there is 'collaborative production', which is related to concepts like 'social manufacturing', 'peer production' and the 'maker movement'. The main idea is that prosumers collaborate with each other, associations and companies in open, inclusive networks in the design and manufacturing of consumer goods.⁴⁰¹ Although individuals have also in modern times always continued to produce goods themselves, recent technologies allow them to better collaborate and manufacture technically complex objects relatively quickly and cheaply. Prosumers now have access to manufacturing resources like 3D printing, computer-numerically-controlled ('CNC') machine tools and circuit board printing, either at home,⁴⁰² in 'makerspaces', 'hackerspaces' or 'fab labs'⁴⁰³ or through online on-demand manufacturing services.⁴⁰⁴ In these virtual and physical settings, prosumers share not only general advice but also product designs, detailed manufacturing instructions or computer aided design ('CAD') files. Of course, 'personal fabrication' continues to also occur in independent, non-collaborative ways. But regardless how prosumers create durable consumer goods, it is important to realize that many of these end up being used by strangers as a result of the aforementioned online marketplaces and collaborative consumption (see *supra* nr. 68.a-b). Some P2P product distribution platforms even specifically focus on personally fabricated goods like furniture, toys, decorations and apparel items.⁴⁰⁵

69. FOCUS ON CIRCULAR ECONOMY, SEPARATED FROM COLLABORATIVE AND FUNCTIONAL ECONOMY – The preceding discussion demonstrates that the circular, collaborative and functional economy models have different basic features and goals, but also that they overlap to a

⁴⁰¹ See also L. Probst et al., *Collaborative Economy: Collaborative production and the maker economy* (2015) 2; P. Jiang, J. Leng and K. Ding, 'Social manufacturing: A survey of the state-of-the-art and future challenges' (IEEE International Conference on Service Operations and Logistics, and Informatics, 2016) 12; M. Hamalainen, B. Mohajeri and T. Nyberg, 'Removing barriers to sustainability research on personal fabrication and social manufacturing' (2018) 180 *Journal of Cleaner Production* 666, 675.

⁴⁰² See, e.g., T. Hoffman, 'The Best 3D Printers for 2022' (28 June 2022) <www.pcmag.com/picks/the-best-3d-printers>; A. Lewis, '8 Best Cheap CNC Routers in 2022 (Beginner & Advanced Machines)' (6 July 2022) <www.cncsourced.com/cnc-routers/best-cnc-machines>; S. Gehlot, 'How to Make a Printed Circuit Board (PCB)' (20 March 2018) <<https://maker.pro/pcb/tutorial/how-to-make-a-printed-circuit-board-pcb>>.

⁴⁰³ See, e.g., 'Explore The Makerspace Directory! Let's uncover the best places to learn, discover, make and collaborate' <<https://makerspacedir.com>>; 'What is Fab Lab Berlin?' <www.fablab-berlin.org/en>; 'Liste hackerspaces & makerspaces France' <www.coworking-france.com/coworking/coworking-france/hackerspaces-makerspaces-france>.

⁴⁰⁴ See, e.g., 'Your 3D Printing Service' <<https://i.materialise.com/en>>; 'Full feature custom PCB prototype service' <<https://www.pcbway.com>>; 'CNC Machining Services' <<https://xometry.eu/en/cnc-machining>>.

⁴⁰⁵ See, e.g., 'Find things you'll love. Support independent sellers. Only on Etsy.' <www.etsy.com>; 'Amazon Handmade' <www.amazon.com/Handmade>; 'Dein Marktplatz für liebevolle Handarbeiten' <<https://palundu.de>>.

considerable extent. As a consequence of the latter, these alternative economic models are frequently conflated by policymakers and scholars.⁴⁰⁶

This research project only focuses on ‘circular economy’ and will only look at aspects of functional and collaborative economy in the consumer goods sector where these entirely overlap with circular strategies.

Therefore, in order to obtain a finer factual understanding of the exact extent of circular economy in the consumer goods and to be able to ultimately identify a useful but comprehensive typology that answers the first research sub-question,⁴⁰⁷ it is necessary to point out the precise overlaps and differences between the three models.

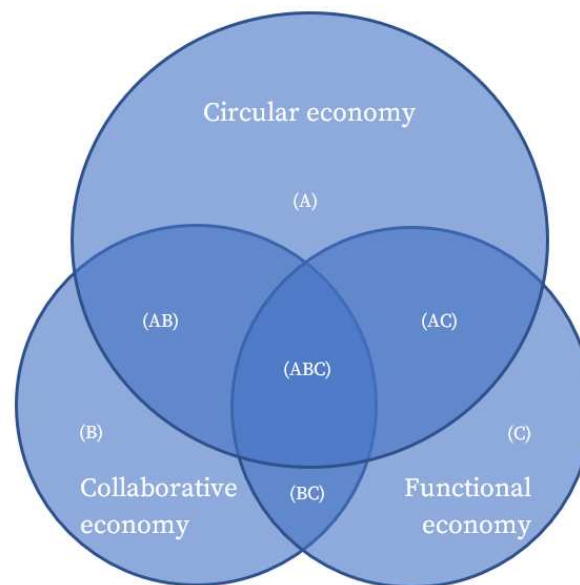


Figure 5: Diagram of circular economy, collaborative and functional economy in the durable consumer goods sector.

70. OVERLAP (‘AB’) AND DISTINCTION BETWEEN CIRCULAR (‘A’) AND COLLABORATIVE (‘B’) ECONOMY – We have seen that sharing of goods between prosumers can qualify as a circular strategy.⁴⁰⁸ Consequently, the ‘sharing economy’ or ‘sharing’ is considered by some as a subset of circular economy⁴⁰⁹ and sustainability is regularly mentioned as a potential benefit in sharing

⁴⁰⁶ A key underlying reason seems to be because almost all literature and policy documents focus primarily on only one of these models and, at best, try to expand this view. Only a limited number of sources consider two of these economic models side-by-side. Examining all three of them in a consistent manner, appears to be rather new and can be considered to be a contribution of this dissertation (see also *supra* nr. 38.a).

⁴⁰⁷ See *supra* nrs. 30.a and 38 on the ancillary research objective and research sub-question addressed by this Part II.

⁴⁰⁸ In the R-framework, it is often labelled as ‘rethinking’ consumption (see *supra* nrs. 58-59).

⁴⁰⁹ E.g., K. Webster, *The Circular Economy: A Wealth of Flows* (2nd edn., Ellen MacArthur Foundation, 2017) chapter 5; A.S. Homrich et al., ‘The circular economy umbrella: Trends and gaps on integrating pathways’ (2018) 175 *Journal of Cleaner Production* 525, 534, 537-538; M. Henry et al., ‘The battle of the buzzwords: A comparative review of the circular economy and the sharing economy concepts’ (2021) 38 *Environmental Innovation and Societal Transitions* 1, 15.

economy discourse. The underlying idea is that the intensified use of a single good can help to avoid production of additional goods. However, ‘collaborative economy’ also encompasses collaborative production and repairs as well as P2P sales and donations of goods (see *supra* nr. 68). In his essay on circular economy, MALCORPS argues that these other collaborative activities can also bring benefits of avoided production of new goods and help to achieve more sustainable development.⁴¹⁰ Although there is little research in this area, this view is confirmed by a few other authors.⁴¹¹ And this chimes indeed with the criticism against current circular economy discourse as being neglectful of the social dimension of sustainability (see *supra* nr. 64). Nevertheless, any thesis on the convergence of circular and collaborative economy (‘AB’) leading to more sustainability, has to confront the risk of economic ‘rebound effects’ (see *supra* nr. 61) and the reality that the now dominant version of the ‘sharing economy’ or ‘platform economy’ actually generates substantial environmental and social externalities and is thus certainly not generally sustainable.

The latter brings us to the observation that a large part of the current collaborative economy does not necessarily overlap with circular economy (‘B’). For example, ridesharing companies like Uber seem to increase car-based traffic and resulting emissions in cities (another ‘rebound effect’, cf. *supra* nr. 61).⁴¹² Moreover, people are likely to take less care of goods which they do not own, which is a ‘moral hazard’. Additionally, collaborative production and even collaborative repair activities are likely to require more resources and energy than professional production and repairs, respectively, due to less efficient machines and processes. And they might also be more likely to occur in circumstances where, from a product lifecycle assessment perspective, it is more efficient to replace rather than repair (see also *supra* nr. 63).⁴¹³ Moreover, even P2P selling might sometimes entail more transportation or misinformed purchases that still require additional consumption.

To complete the picture, there are of course many more manifestations of circular economy that do not involve activities by prosumers and cannot be qualified as part of our broad conception of collaborative economy (‘A’). Examples are professional second-hand good sellers and product-as-a-service providers, professional original and independent repair repairers,

⁴¹⁰ J. Malcorps, ‘Naar een duurzame circulaire economie in Vlaanderen? Hoe ambitieus durft Vlaanderen te zijn?’ (2016) 76 *Oikos* 42, 48-49.

⁴¹¹ E.g., J. Agyeman, *Introducing Just Sustainabilities: Policy, Planning and Practice* (Zed Books 2013) 17-22; M. Hamalainen, B. Mohajeri and T. Nyberg, ‘Removing barriers to sustainability research on personal fabrication and social manufacturing’ (2018) 180 *Journal of Cleaner Production* 666.

⁴¹² See G. Erhardt et al., ‘Do transportation network companies decrease or increase congestion?’ 5 *Science Advances* eaau2670; R. Al Balawi et al., ‘Ride-Sharing Services and Environmental Sustainability: An Empirical Investigation of UberX Entry and Gas Emissions’ (2020) *AMCIS 2020 Proceedings* 11; J. Ward, J. Michalek and C. Samaras, ‘Air Pollution, Greenhouse Gas, and Traffic externality Benefits and Costs of Shifting Private Vehicle Travel to Ridesourcing Services’ (2021) 55 *Environmental Science & Technology* 13174.

⁴¹³ Collaborative production and repair are motivated by sociocultural motivations of agency, self-sufficiency and social interactions (see also *supra* nr. 68 and *infra* nr. 87). These are relevant to the social dimension of sustainable development but less to the economic and environmental dimensions, which are more central to the current conception of circular economy (see *supra* nrs. 61 and 63).

refurbishers or remanufacturers, as well as industrial recycling and recapturing activities (see *supra* nrs. 58-59).

In conclusion, while it is not in itself a core focus of this research project, areas where collaborative economy does clearly overlap with circular economy ('AB' and 'ABC') will be considered in the study of how product liability and in particular EU harmonised product liability relate to circular economy. Examples are thus self- and independent repairs and refurbishments by prosumers and donations, bartering or resales of second-hand products by prosumers.

71. OVERLAP ('AC') AND DISTINCTION BETWEEN CIRCULAR ('A') AND FUNCTIONAL ('C') ECONOMY – As discussed *supra* nrs. 58-59 and 67, rental contracts or sharing, which mainly correspond with use-oriented PSS, are frequently identified as potential circular strategies. Just like in case of 'collaborative consumption', these strategies intensify the use of an already existing good and may avoid consumption of new goods. Nevertheless, when professionals start providing products as services, there is the additional benefit of internalised incentives to provide durable products and to extend their lifetime as long as possible through diligent maintenance and repairs. This benefit is even greater in case of result-oriented PSS.⁴¹⁴

Moreover, also certain additional services in product-oriented PSS overlap with circular economy ('AC'), like repair, maintenance and take-back services. Not only do such additional services help to extend product lifecycles, they also provide again an incentive to originally already sell durable, easily repairable and/or easily recoverable products that will require less work during the period of agreed service provision.

However, many other services in product-oriented PSS are part of functional but not circular economy ('C'), like digital services related to information-feeds or entertainment.⁴¹⁵ Moreover, use- and even result-oriented PSS are not always more sustainable than traditional linear sales. Consumers tend to take less care of products that they do not own, although this risk can be mitigated.⁴¹⁶ And the large quantity of products that are produced for a service-based offer, might be insufficiently used and become quickly obsolete. Additionally, the risk of economic 'rebound effects', like price, lack of substitution or respending effects (see *supra* nr. 61), is also present in all service-based models.

To complete the picture, a significant part of circular economy remains completely unrelated to functional economy ('A'). Examples are sales and donations of second-hand products or of repaired, refurbished or remanufactured products, reusing and repurposing one's own products or recycling and recapturing in industrial production processes.

⁴¹⁴ See in particular A. Tukker, 'Eight types of product-service system: eight ways to sustainability? Experiences from SusProNet' (2004) 13 *Business Strategy and the Environment* 246.

⁴¹⁵ The most common digital services ancillary to sales of physical products, software updates concerning functionality or cybersecurity, can be considered as contributing to product longevity and avoiding premature obsolescence. Hence, these are to some extent related to circular economy (see also *infra* nr. 242).

⁴¹⁶ Cf. *supra* nr. 11.d and 108, *in fine* regarding the use of adapted premiums and coinsurance to counter moral hazard in the insurance context.

In conclusion, while it is not in itself a core focus of this research project, areas where functional economy does clearly overlap with circular economy ('AC' and 'ABC') will be considered in the study of how product liability and in particular EU harmonised product liability relate to circular economy. The clearest example are repair and refurbishment services and use- and result-oriented PSS, although the circular economic potential of the latter can be doubted.

72. COMPARATIVE OBSERVATION: CIRCULAR ECONOMY IS MOST COMPREHENSIVE AND CLOSEST TO SUSTAINABILITY – Given that there is almost no research that compares all three alternative economic models side-by-side, it is worth pointing out the peculiar role played by circular economy.

First of all, while collaborative and functional economy overlap with relatively small parts of circular economy, the latter can theoretically encompass most of the first two mentioned, alternative economic models in the sector of durable consumer goods. However, this is merely a potential. In practice, it is actually striking that the most common and commercially successful manifestations of collaborative and functional economy, likely do not result in significant reductions in resource and energy consumption. Hence, notwithstanding its broad theoretical scope, it remains ill-advised to conflate circular economy with the other two.

Second, precisely the parts of collaborative and functional economy that in practice overlap most effectively with circular economy, are also the parts that seem overall more sustainable. This matches the finding that circular economy, among the three models, appears most closely associated with sustainable development.⁴¹⁷ Nevertheless, circularity and sustainability are certainly not synonyms (see *supra* nr. 64).⁴¹⁸

⁴¹⁷ See also, e.g., the bibliometric data on the prominence of 'sustainability' in literature on circular economy M. Henry et al., 'The battle of the buzzwords: A comparative review of the circular economy and the sharing economy concepts' (2021) 38 *Environmental Innovation and Societal Transitions* 1, 8-10.

⁴¹⁸ Additionally, it can also be pointed out that collaborative economy, as it is broadly conceptualized in this dissertation, is especially driven by sociocultural elements that are precisely missing in circular economy, according to those who criticize the latter's lack of a social sustainability dimension. See *supra* footnote 344.

Chapter 2. Identifying a typology of circular economy in the consumer goods sector

73. OVERVIEW – After examining the essential features of circular economy, answering the first research sub-question in its entirety requires to identify a typology that can be used to structure the subsequent product liability analysis (see *supra* nrs. 38 and 46). In this Chapter, this is achieved in three steps.

Section A explains why a broad understanding of the distinction between distribution and production provides a useful framework to structure the analysis, although the use phase of a product is to a considerable extent still retained for mainly horizontal product liability claims. Additionally, this dissertation's factual subject matter is further demarcated.

Section B combines the distribution-production distinction with insights gained in the previous Chapter. This creates a typology that can provide an analytic understanding of the different factual manifestations of circular economy in the consumer goods sector.

Section A. Focus on distribution and production of physical and durable consumer goods

74. 'DISTRIBUTION' AND 'PRODUCTION' AS ANCHORS FOR VERTICAL AND DIAGONAL CLAIMS OF SPECIFIC PRODUCT LIABILITY – As its subtitle signals, this dissertation zeroes in on 'distribution' and 'production' of consumer goods (see also *supra* nr. 18). The former is defined in the OXFORD ENGLISH DICTIONARY as "*The dispersal among consumers of commodities produced [...]*."⁴¹⁹ '(Re)distribution' is therefore understood in this dissertation as any process aiming to let a product arrive at a (new) user. The same dictionary defines 'production' as "*The action or process of*

⁴¹⁹ Oxford English Dictionary, 'distribution (noun) - meaning & use - 1.b.(a)' (revised 2007) <https://www-oed-com.kuleuven.e-bronnen.be/dictionary/distribution_n?tab=meaning_and_use>. The dictionary dates this meaning back to 1793. The omitted second part of the definition is "[...]: *this being, as opposed to 'production', the business of commerce.*" It demonstrates the common understanding of product distribution as a commercial activity. But it can be omitted here, given that this dissertation, while limiting itself to harmonised product liability, is nevertheless interested in the extent to which non-commercial prosumers and other collaborative economy actors would (re)distribute products and potentially fall subject to the PLDI, especially under the PLD-1985 with its stringent defence of art. 7(c) PLD-1985 (see *infra* nrs. 197-198).

*making goods from components or raw materials; the manufacture of goods for sale and consumption.*⁴²⁰ Such definition imposes no limitations on what kind of person in what kind of context is performing the production, which leaves room for collaborative production, remanufacturing, etc. Likewise, this dissertation understands ‘(re)production’ in a broad sense as any process aiming to create, recreate or modify a product.

As the typology in the next Section demonstrates, the twofold distinction between ‘(re)distribution’ and ‘(re)production’ activities is very useful to distinguish relevant factual components of circular economy in the consumer goods sector. At the same time, this dichotomy is also particularly salient from a product liability perspective. Although Part IV’s legal analysis will demonstrate this in an indirect manner, it is at this stage worthwhile to more directly identify why distribution and production are so pertinent to product liability. The best way to do so is by contrasting their role with those of the other main phases in a product lifecycle (cf. *supra* nr. 18): the ‘use’ and ‘end-of-life’ phases.

- a. Naturally, a third party injured by a product accident can claim on a horizontal basis against the person who was using the product at the time. Such claims rely on ‘general product liability’ theories, in particular extracontractual liability for fault or the Belgian-French liability for custody of defective goods (see *supra* nrs. 5, 6.b, 208 and 217). Given the significance of protecting third parties, this dissertation does effectively examine such horizontal product liability for using a product. Nevertheless, it is less important in legal theory and in practice, because ‘specific product liability theories’ (see *supra* nr. 6) are generally inapplicable to product users as defendants and because these parties are also infrequently targeted in product liability litigation that is based on general product liability (but see *infra* nr. 217 on reasons why this may change).

At first sight, this is a striking difference, since the user is closest to a product at the time of an accident and he likely had at least some hypothetical possibility to prevent the accident or mitigate the damage. Why is he then not subject to more stringent product liability and/or targeted more often in practice? Two reasons can be given for this stark difference, which at the same time explain why specific product liability theories are mostly limited to imposing liability on distributors and producers of harmful products.

- b. A first reason consists of the coevolution of modern product liability law with industrial production and mass consumption (see *supra* nrs. 13-14). Specific product liability rules going beyond the fault-based model, were precisely developed in response to the social, economic and technological changes resulting from new distribution methods, which consisted of longer, professionalised distribution chains, and from new industrial production methods, which enabled serial manufacturing and the generation of a larger amount, variety and complexity of consumer goods. Therefore, not changes in the use

⁴²⁰ Oxford English Dictionary, ‘production (noun) - meaning & use - I.1.b’ (revised 2007) <https://www-oed-com.kuleuven.e-bronnen.be/dictionary/production_n?tab=meaning_and_use>. The dictionary dates this meaning back to 1767.

but rather in the production and distribution of consumer goods lay at the roots of modern and in particular specific product liability law.⁴²¹

- c. As a second reason, although they are not physically present at the scene of most product accidents, producers and to a lesser extent distributors have a significant control over product accident risks. This is a crucial observation from an accident-prevention perspective that is especially important in the economic analysis of product liability law (see *supra* nr. 23 and *infra* nr. 108). Producers and distributors have this potential control even in case of traditional, unconnected (not ‘smart’) and non-autonomous (not ‘AI’-based) products.⁴²² Producers design and make the product that can turn out to be defective. Producers and distributors can check it prior to putting it into (further) distribution and they are also responsible for passing down relevant safety information. This potential control over product accident risks is greater for producers and distributors acting in a professional capacity, which explains why specific product liability theories tend to remain limited to these defendants (see also *supra* nr. 16 and *infra* nr. 197). In conclusion, precisely as a result of the aforementioned changes in modern production and distribution of consumer goods, producers and distributors have superseded product users as the most apt parties to be held liable for an occurring product accident.
- d. Finally, a product’s lifecycle ultimately ends in the end-of-life phase, when it is discarded as waste. In a more circular economy, this is as much as possible postponed through various strategies, like reuse, repair, refurbishing, remanufacturing and, ultimately, recycling and recapturing (see *supra* nrs. 58-59). All these strategies can to some extent be considered as forms of (re)distribution and (re)production of the product, its components or constituent materials and energy. Hence, circular economy can actually be considered as a method to reduce the end-of-life phase through expanding the (re)distribution and (re)production phases, which further increases the significance of the latter to product liability.⁴²³

A perfect and endless circular economy is of course impossible (see also *supra* nr. 64). Consequently, some products and components eventually become waste (and

⁴²¹ The increased technical complexity of products is considered here as a consequence of new industrial production methods. *But see supra* nr. 16.c on the relative significance of the changed nature of products as a reason for the emergence of specific product liability law.

⁴²² See on the reduced control of ‘frontend operators’ and increased control of producers and ‘backend operators’ over smart products and AI-systems G. Wagner, ‘Robot Liability’ in S. Lohsse, R. Schulze and D. Staudenmayer (eds.), *Liability for Artificial Intelligence and the Internet of Things* (Nomos 2019) 37-39; E. Van Gool, J. De Bruyne and M. Fierens, ‘De regulering van artificiële intelligentie (deel 2): Een analyse van buitencontractuele aansprakelijkheid’ (2021) *Rechtskundig Weekblad* 1003, 1017-1018; B. Deffains and G. de Montcuit, ‘Proposition d’un régime de responsabilité objective applicable au dommage causé par une machine auto-apprenante’ (2022) *Revue Trimestrielle de Droit Civil* 257, nrs. 28-29, 49-54, 62. *See also infra* nr. 217.

⁴²³ Just like circular, collaborative and functional economy can be seen as methods to reduce or punctuate a product’s use phase with (re)distribution and (re)production. *See supra* nr. 18 on the product lifecycle perspective and product liability.

dissipated energy) definitively. Once a product becomes waste, the role of product liability law greatly diminishes. Instead, administrative regulation takes over and ensures to a considerable extent that waste is safely handled and disposed of, among others through ‘extended producer responsibility’. This is the complex domain of waste law, which falls beyond the scope of this dissertation limited to civil liability (see *supra* nrs. 4 and 36). Additionally, it should be noted that waste mostly inflicts environmental damage, which is also outside this research project’s scope (see *infra* nr. 75).

In summary, this dissertation primarily focuses on vertical and diagonal product liability claims that are anchored on the (re)distribution and (re)production phases of a product.

75. NO FOCUS ON SERVICES AND DIGITAL CONTENT – The references in possible circular economy supporting strategies to sharing, rethinking products as services or virtualisation and the preceding discussion of functional economy in the consumer goods sector (see *supra* nrs. 59 and 67), make it necessary to reiterate two important demarcations. First of all, as discussed *supra* nr. 35, this research project focuses on product and not on service liability. The only services that remain within the research scope are those that are methods of product (re)distribution or product (re)production, such as repair and refurbishing services or services relating to collaborative production. Second, as discussed *supra* nr. 32, this dissertation focuses on physical goods and excludes digital content and digital services. Digitalization and especially emerging digital technologies like AI, internet of things and 3D-printing raise interesting questions relating to both strict and other types of product liability. These have already received and continue to receive ample attention in the literature.⁴²⁴ Hence, to ensure this research project’s coherence and feasibility, the realm of digital products and services is not further explored.⁴²⁵

76. NO FOCUS ON ENVIRONMENTAL DAMAGE – This predominantly legal research project focuses on product liability. This consists of liability for product accidents that directly cause personal injuries, damage to private goods and possibly resulting economic or non-economic damage, suffered by individual consumers and third parties (see also *supra* nrs. 4-5). Damage to the environment as a public good, although an evolving topic in not only Belgium but also other legal systems, falls outside this research project’s scope, since it is different damage in nature that can only be claimed by a few plaintiffs subject to strict conditions that differ greatly between the examined legal systems.⁴²⁶ It can, for example, also not be claimed on the basis of the harmonised product liability.⁴²⁷ Of course, environmental externalities can indirectly lead to damage to private persons or goods, such as illness resulting from pollution or property damage resulting from climate change. Nevertheless, this highly fascinating and

⁴²⁴ See *supra* footnote 170 on recent European literature.

⁴²⁵ But see regarding art. 10(2)a-c PLD-2024’s ‘digital exception to the posteriority defence’ *infra* nrs. 196, 242 and 248.

⁴²⁶ Public interest litigation in general, including environmental public interest litigation based on different civil liability theories, are not part of this research project. See also *supra* nr. 36.

⁴²⁷ See *infra* nr. 190. See also V. Ulfbeck, ‘From Linear to Circular Value Chains: A Role for Tort Liability in Recycling Practices?’ (2022) 13 *European Journal of Risk Regulation* 603, 612.

growing domain of civil liability law is too broad and complex to include in this study focused on traditional product liability law.

As a result, when a product or component causes damage to the environment during its use or end-of-life phases (see also *supra* nr. 74.d), this falls also outside the scope of this study. Likewise, liability for environmental externalities resulting from resource and energy inefficiencies during the production or use phases of a product, which are especially important in the broader context of circular economy policy (see *supra* nrs. 56 and 58), are not part of this dissertation focused on liability for consumer good accidents either.⁴²⁸

77. NO FOCUS ON ‘REFUSE’ OR ‘NO-CONSUMPTION’ – As discussed *supra* nr. 58, the most efficient circular strategy is ‘refuse’, which consists of consumers who refrain from engaging in redundant consumption. Indeed, especially in the industrialized world where mass manufacturing and unbridled consumerism now dominate (see also *supra* nr. 13), there is a large degree of ‘overconsumption’ of goods and services providing limited utility that the consumer can actually miss. This ‘refuse’ strategy is where circular economy most clearly overlaps with ‘strong sustainability’ and ‘degrowth’, which might be the direction of a future evolution of circular economy towards more truly sustainable development (see *supra* nr. 64).

Notwithstanding this pivotal importance of decreasing consumption, it is beyond the scope of this research project. From the outset, the factual focus has been on methods of consumer good distribution and production (see also *supra* nr. 74), which already assumes that a product has been made available for consumption. And, of course, only if a consumer good is effectively produced, distributed and, possibly, used, can product accidents actually occur and do product liability considerations arise.

78. NO FOCUS ON B2B PRODUCT DISTRIBUTION – Finally, this dissertation will not scrutinize B2B transactions of product (re)distribution, even not those involving consumer goods. On the one hand, this is due to reasons of feasibility and focus. Certain rules apply specifically to transactions between professionals, which risks to further complicate the legal analysis. On the other hand, this is due to the limited relevance of B2B distribution to this research project. First of all, most B2B transactions are situated in the original, linear distribution chain of consumer goods, which is not part of the circular economy. Second, where B2B distribution does intervene in circular consumer goods strategies, for example a second-hand good is first resold between professionals before being purchased by a new consumer, this B2B distribution phase is likely brief and uneventful from a product liability perspective. This is because this dissertation focuses on consumer goods and does not pay separate attention to ‘mixed purpose goods’ (see *supra* nr. 33). Hence, the products in question are very unlikely to be used and the product accident risk is therefore low. Naturally, in an intervening B2B distribution phase, relevant use instructions or warnings can be lost or a product or component can be marketed for a different function (see *infra* nr. 84.d). But, in the event of a subsequent product accident, would mainly be relevant recourse claims, contractual exoneration clauses and

⁴²⁸ These externalities during production might also be considered as not part of the product liability domain, because it occurs before a product has been created or – in the terminology of the PLD-2024 – before it has been placed on the market or put into service (see *infra* nrs. 194 and 412).

possible insurance, which are not central to this research. Third, the societally most significant type of extrinsic damage resulting from product accidents caused by consumer goods, death and personal injury, is also most likely to occur when a product is used, installed or transported by a consumer/prosumer. Such situations are always preceded by a B2C or P2P transaction, which are therefore most salient to further focus on.

Section B. Circular strategies in the consumer goods sector

§ 1. Circular redistribution: the basic type of retransfers

79. ‘RETRANSFERRING’ AND ‘RESELLING’: DEFINING ‘SECOND-HAND’ PRODUCTS – This typology distinguishes between ‘transferring’ and ‘retransferring’ as well as ‘selling’ and ‘reselling’.⁴²⁹ Transfers relate to a transfer of ownership of a product. Retransfers are transfers where the affected product is ‘second-hand’. Increasingly popular synonyms for the latter with more positive connotations are ‘pre-owned’ or ‘pre-loved’ products.⁴³⁰

A product that is no longer ‘new’ and can be retransferred as ‘second-hand’ is a product that has been used before in some manner. In case of consumer goods, this is mostly done by a consumer. From a product lifecycle perspective (cf. *supra* nr. 18), it means that after an initial distribution phase there has been an intervening period of product use before the retransfer occurs. This prior use can be very brief and not intensive and does not have to result in any damage or visible wear and tear, although some traces of past use, teared packaging or a removed seal are often inevitable after a durable, physical consumer good has been used. Such visible traces, however light, are only required when a consumer has merely tested a product before deciding to sell, donate or barter it, in order to still qualify as a retransfer of an already second-hand good. Furthermore, it is not necessary that the consumer who receives the retransferred product (‘repurchaser’, ‘barterer’ or ‘donee’) is aware that it is second-hand. Such a subjective criterion is rejected and, instead, the objective fact of a past use phase suffices for a qualification as a retransfer, because many product liability theories do not have a

⁴²⁹ Theoretically, it is possible to also speak about ‘redonating’, ‘rebartering’ or even ‘resharing’. However, on the one hand, when consumers donate, barter or share durable consumer goods, these are most often second-hand goods. On the other hand, in the current sales-dominated economy, second-hand goods that are donated, bartered or shared, have in almost all cases been initially purchased rather than been acquired through donation or barter. Hence, ‘redonating’, ‘rebartering’ or ‘resharing’ are confusing and largely redundant concepts. Instead, where necessary, it can still be specified whether the activity relates to a new or second-hand good.

⁴³⁰ See examples *supra* footnotes 2-8.

contractual basis and also protect third parties.⁴³¹ Finally, this typology also applies the general concepts ‘retransfer’ and ‘second-hand’ to situations where there have been multiple consecutive retransfers (‘third-hand’ products, etc.), which may become more prominent in a more circular economy.

The reason for defining ‘second-hand’ in such a broad manner is threefold. First of all, although broad, this understanding still focuses on what is essential from a product liability perspective. The fact that a product has been used before, however, lightly, is crucial because it raises concerns about product defects originating after a product was initially placed on the market and because it adds (the) preceding users(s) and retransferor(s) as extra potential defendants of a product liability claim. It makes a retransferor essentially different from a distributor in the initial, linear product distribution chain. Second, in a product liability analysis, one should avoid a grey area of so-called ‘new’ goods that indeed have ostensibly a similar condition as truly new goods but that still have been used before, although briefly and lightly. The latter should as much as possible fall in the ‘second-hand’ category, which is by nature always a heterogeneous spectrum, ranging from ‘almost new’ to ‘almost completely destroyed’ goods. Moreover, in the current mostly linear economy, many consumers remain biased in favour of ‘new products’,⁴³² which is another reason to cast the net sufficiently wide and distinguish on the basis of the fact of past use rather than any (visible) damage or wear and tear. Third, equating second-hand with the fact of prior use is also how the concept of ‘second-hand goods’ in EU consumer sales law is interpreted by certain scholars⁴³³ and how the Commission interprets ‘second-hand products’ in the energy labelling regulation.⁴³⁴ This suggests that such an understanding is useful in practice and employing it here contributes to coherence in the regulation of the circular consumer goods economy.

Finally, it is necessary to specify how the concepts of ‘second-hand’ and ‘retransfer’ relate to other units of this dissertation’s typology. First of all, a retransferred product can be but is more often not ‘reused’, since most second-hand products are not yet considered obsolete by

⁴³¹ A subjective criterion depending on whether the consumer believes that he receives a ‘new’ or ‘second-hand’ product, would be more suitable for an analysis of traditional contract law, focused on intrinsic damage (contractual conformity) rather than product liability’s focus on protecting injured consumers as well as injured third parties against extrinsic damage. *See also supra* nr. 5.

⁴³² This is perhaps most clearly illustrated by the amount of returned e-commerce products that have barely been tested or used but which e-retailers nevertheless dispose of as waste, recycle or donate, because selling them again is apparently no longer economically feasible. *See the data cited in* E. Terryn and E. Van Gool, ‘The Role of European Consumer Regulation in Shaping the Environmental Impact of E-commerce’ (2021) *Journal of European Consumer and Market Law* 89, 95.

⁴³³ *See* E. Van den Haute, *Contrats spéciaux: La vente* (Larcier 2018) 95; S. Lorenz, ‘§ 474 Begriff des Verbrauchsgüterkaufs; anwendbare Vorschriften’ in H.P. Westermann (ed.), *Münchener Kommentar BGB, Band 4. Schuldrecht BT I. §§ 433-534* (Beck 2019) nr. 17; Tilleman and Van Den Abeele (collab.), *Gevolgen van de koop*, 828. It is curious to notice that not more sources on EU consumer sales law explain or question the ‘second-hand’ concept, notwithstanding its presence already in arts. 1(3) and 7(1) Consumer Sales Directive 1999/44/EC and now again in arts. 3(5)a, 10(6) and 25 Consumer Sales Directive 2019/771.

⁴³⁴ Commission, ‘Frequently Asked Questions on the Energy Labelling Regulation and its delegated acts’ (November 2018) 4. *See also* art. 1(2)a Parliament and Council Directive 2017/1369/EU of 4 July 2017 setting a framework for energy labelling and repealing Directive 2010/30/EU [2017] OJ L198/1.

a majority of consumers (see *infra* nr. 83.b).⁴³⁵ Second, a retransfer and second-hand qualification require that a product has effectively been used, as discussed above. The mere fact of successive transfers of ownership does not suffice, since this already happens frequently in linear distribution chains of new products. Our understanding of retransfer and second-hand therefore differs from the definition of “*bien d’occasion*” in the French Code de Commerce.⁴³⁶ Moreover, also the “*invendus non alimentaires*” for which French law imposes a re-use or recycling obligation, are not second-hand products according to this typology since this obligation only applies to unsold products that are still ‘new’.⁴³⁷ When prosumers distribute durable consumer goods, it has to be established whether the prosumer has only acquired them for the purposes of distributing new products or whether he has first used them in some manner and it concerns a retransfer of a second-hand product. When a consumer has never used a durable consumer good but stored it during a long time, it ultimately depends on the quality of storage whether it becomes second-hand at the occasion of a later transfer.⁴³⁸ Third, products that are repaired or refurbished and that are subsequently sold, donated or bartered, are according to this dissertation’s typology second-hand products that are retransferred. Remanufactured products are always considered as new products (see also *infra* nrs. 85-90).⁴³⁹

80. RESELLING (B2C, P2P AND P2B) – Sales contracts where ownership of a good is transferred in return for a payment, are by far the most important product distribution method. When the sold good is second-hand, it is a ‘resale’ (see *supra* nr. 79).

⁴³⁵ Likewise, a reused product can be but is often not second-hand, since consumers may use their products during a very long time without an intervening retransfer. Hence, second-hand and reused products are two partially overlapping units of the typology which are not subsets of each other. See also *infra* nr. 83.

⁴³⁶ Art. L321-1, second section Code de Commerce: “*Sont considérés comme d’occasion les biens qui, à un stade quelconque de la production ou de la distribution, sont entrés en la possession d’une personne pour son usage propre, par l’effet de tout acte à titre onéreux ou à titre gratuit, ou ont subi des altérations qui ne permettent pas leur mise en vente comme neufs.*”

⁴³⁷ Art. L541-15-8 (I) Code de l’Environnement: “*Les producteurs, importateurs et distributeurs de produits non alimentaires neufs destinés à la vente sont tenus de réemployer, notamment par le don des produits de première nécessité à des associations de lutte contre la précarité et des structures de l’économie sociale et solidaire bénéficiant de l’agrément ‘entreprise solidaire d’utilité sociale’ tel que défini à l’article L. 3332-17-1 du code du travail, de réutiliser ou de recycler leurs invendus [...]*.” See also C. Lepla, ‘L’obligation de gestion des invendus non alimentaires’ (2022) 47 *Revue Juridique de l’Environnement* 81, nr. 14.

⁴³⁸ When the storage is akin to storage by a professional trader, it makes little sense to suddenly consider these goods as second-hand and this is simply the distribution of new goods by a prosumer. When the storage damages the durable consumer good, for example because of conditions in a basement or as a result of it being crushed or moved, it is a second-hand good at the occasion of a subsequent retransfer. When a consumer stores and does not use a consumer good during a very long time and it is also not damaged in any way, it may still be a new good when it is later transferred, although the good may now be considered as being reused simply as a result of the passing of time.

⁴³⁹ See regarding the interpretation of repaired and remanufactured products in the context of the ‘second hand good’ concept in EU consumer sales law E. Van Gool and A. Michel, ‘The New Consumer Sales Directive 2019/771 and Sustainable Consumption: a Critical Analysis’ (2021) 10 *Journal of European Consumer and Market Law* 136, 138.

B2C resales of second-hand products are quite common and occur both in physical second-hand (or ‘mixed’ product) stores or online via webstores and online marketplaces.

Resales by prosumers mostly occur on a P2P-basis.⁴⁴⁰ This is, on the one hand, an age-old phenomenon consisting of sales to friends and acquaintances or to strangers at yard sales or flea markets (see *supra* nr. 57 on the historical background). On the other hand, P2P resales between strangers have in recent years been reinvigorated by the advent of online marketplaces (see *supra* nr. 68.a). Such online (distance) sales of second-hand goods are now dubbed ‘recommerce’.⁴⁴¹

Nevertheless, reselling is an activity that also regularly occurs on a P2B-basis. Some professionals (partially) specialize in selling second-hand consumer goods, which they first need to source. And many of them are additionally in the business of first repairing or refurbishing such items. On the one hand, such P2B reselling can occur in person such as in a repair workshop or a second-hand goods store.⁴⁴² Vertically integrated retailers like Decathlon or Apple have now also started to repurchase from their own consumers as part of a circular scheme.⁴⁴³ On the other hand, P2B resales can equally occur online as another part of ‘recommerce’, since various professional second-hand goods traders and refurbishers source goods on online marketplaces and through their own websites.⁴⁴⁴ Given that generally similar rules apply to P2B resales as to P2P variants, it makes sense to discuss them together.

81. BARTERING SECOND-HAND GOODS (MAINLY P2P) – Before the advent of money, first in the form of precious commodities and then state-issued fiat currency, the dominant method of economic transaction was to ‘barter’: exchanging or ‘swapping’ goods in kind.⁴⁴⁵ Unlike the simplification in most modern economic and legal writings, there are many possible constellations of barter which involve various parties, pooling, debt and long running arrangements,

⁴⁴⁰ See also F. Lüdeke-Freund, S. Gold and N. Bocken, ‘A Review and Typology of Circular Economy Business Model Patterns’ (2019) 23 *Journal of Industrial Ecology* 36, 47-48.

⁴⁴¹ See C. Braun, ‘Recommerce: The New Old - Recommerce giants will redefine the multi-billion dollar used goods market’ (2017) <<https://medium.com/actoncapital/recommerce-the-new-old-b95df04e05fb>>; P. Rogers, ‘Recommerce; Deconstructing the Reselling Phenomenon in eCommerce’ (2020) <<https://vervaunt.com/recommerce-deconstructing-the-reselling-phenomenon>>.

⁴⁴² E.g., ‘Comment vendre vos produits?’ <<https://www.cashconverters.be/fr/content/8-comment-vendre-vos-produits>>; ‘How to sell’ <<https://2ndstreetusa.com/selling-guide>>.

⁴⁴³ This often happens in exchange of a voucher rather than a cash payment. See ‘Jouw sportartikelen eenvoudig doorverkopen’ <https://www.decathlon.be/nl/Buy-back_lp-YHWEUD>; ‘Apple Trade In: Trade in. Upgrade. Save.’ <<https://www.apple.com/shop/trade-in>>.

⁴⁴⁴ E.g., ‘Revendez votre produit sur Recommerce’ <<https://www.recommerce.com/fr/revendre-un-appareil-sur-recommerce-com>>; ‘Verkaufe deine Elektronik und Medien’ <<https://www.rebuy.de/verkaufen>>. See also *supra* nr. 4.a for references to large online marketplaces where professionals also buy second-hand goods from prosumers.

⁴⁴⁵ See A. Chapman, ‘Barter as a Universal Mode of Exchange’ (1980) 20 *L'Homme* 33; S. Svizzero and C. Tisdell, ‘Barter and the Origin of Money and Some Insights from the Ancient Palatial Economies of Mesopotamia and Egypt’ (2019) *Economic Theory, Applications and Issues Working Paper* No. 81.

even when excluding services.⁴⁴⁶ In order to further limit complexity, this dissertation focuses on the two types of barter that seem most common today in relation to physical and durable second-hand consumer products (see also *supra* nrs. 32-34 and 79).⁴⁴⁷ Bartering second-hand products is a type of ‘retransfer’ (see *supra* nr. 79).

First of all, there is the ‘direct barter’ where one or more consumer goods are simultaneously exchanged for one or more other products between two parties. This is the ‘barter contract’ regulated in the civil codes of the examined European legal systems.⁴⁴⁸ A prosumer may either barter products with an acquaintance at a social occasion or with a stranger at a flea market or through a ‘trading up’ spree on the street or online.⁴⁴⁹ As another example of the reinvigoration of ‘collaborative distribution’ through the internet, there are now countless online platforms and neighbourhood-based social media groups where prosumers can directly barter products with each other.⁴⁵⁰ And in most cases, these are second-hand products.

Second, there are so-called ‘barter exchanges’ or ‘barter clubs’, where a person can exchange his products for credits linked to the exchange, which allow this person to use these credits to acquire different products offered by other parties on the exchange. Given that these credits only have value in the barter exchange, they cannot be considered a monetary payment and they should rather be considered a specific good consisting of a claim for performance, determined by the exchange’s conditions. Consequently, the complete operation can legally be best characterized as two consecutive bilateral barter contracts with different counterparties, mediated through the exchange. Nowadays, these exchanges are mostly online,⁴⁵¹ although such barter exchanges can also exist offline, as a feature of a social organization or residential network.

⁴⁴⁶ Labour or other services in kind are frequently performed in exchange for one or more products. However, at least according to the continental European understanding of barter (see *infra* footnote 448), this is rather a payment in kind for a service than bartering goods. *But see* S. Pareja, ‘It Taxes a Village: The Problem with Routinely Taxing Barter Transactions’ (2010) 59 *Catholic University Law Review* 785 (extensive examples on using ‘barter’ in the US with regards to exchanging services for other services or services for goods). *See also supra* nr. 35 on this dissertation’s focus on products rather than services.

⁴⁴⁷ While within developing countries there might be a lot of barter activities, barter is also prominent in international trade, called ‘countertrade’. *See* P. Mishkin, ‘Countertrade and Barter: The Basic Legal Structure’ (1986) 14 *International Business Lawyer* 7.

⁴⁴⁸ *See* BELGIUM: arts. 1702-1707 Old CC BE (‘ruil’ or ‘échange’). FRANCE: arts. 1702-1707 CC FR (‘échange’). GERMANY: § 480 BGB (‘Tausch’).

⁴⁴⁹ *E.g.*, ‘Turn A Paper Clip Into A House: Welcome To Trading Up’ <<https://www.wbur.org/hereandnow/2021/07/21/bartering-trading-up-pandemic>>; ‘Voici la reine du troc’ <<https://www.rtl.be/people/dune-epingle-cheveux-elle-obtient-une-maison-un-plus-tard-voici-la-reine-du-troc/2021-12-30/article/441384>>.

⁴⁵⁰ *E.g.*, ‘Troc classique’ <<https://mytroc.fr/comment-ca-marche>>; ‘So funktioniert der Direkttausch (1:1)’ <<https://www.tauschgnom.de/content/hilfe-eins-zu-eins/38>>; ‘Search barter’ <<https://newyork.craigslist.org/search/bar>>. *See also* R. Lerman, ‘Bartering is back: When life gives you lemons, trade them for a neighbor’s hand sanitizer’ *Washington Post* (2020) <<https://www.washingtonpost.com/technology/2020/05/11/barter-trade-coronavirus-pandemic>>.

⁴⁵¹ *E.g.*, ‘Tauschen bei Deutschlands meistbesuchter Tauschbörse’ <www.tauschticket.de>; ‘Donnez, prêtez, troquez, des biens et des services’ <<https://mytroc.fr>>; ‘Sell your old stuff. Get new stuff you love.’ <<https://www.listia.com>>.

Like in case of resales (see *supra* nr. 80), products bartered by prosumers are mostly second-hand, although bartering new products is as a matter of fact possible, although it is not a circular strategy. Prosumers mostly barter consumer goods on a P2P basis. Despite the fact that also B2B barter markets exist (which is out of scope, as discussed,⁴⁵² professional traders likely prefer P2B resales over P2B barter to acquire second-hand consumer goods.⁴⁵³

82. DONATING SECOND-HAND GOODS (B2C, P2P AND P2B) – As a final method of retransfers, second-hand products can of course also be donated, which still seems to occur surprisingly often for various types of goods.⁴⁵⁴ In the examined European legal systems, a donation is a contract in which a party ('donor') gratuitously offers to transfer the ownership of a good to another party ('donee') who accepts this.⁴⁵⁵ As perhaps the oldest method of transferring goods, donations have remained throughout the ages a relatively important part of social life. People donate goods to relatives, friends and acquaintances, for reasons of affection or sympathy. Similar feelings of benevolence also lead people to donate goods to strangers, directly or through a charity as an intermediary. While such donations for social motivations remain common, environmental motivations related to circular economy have recently become an equally important driver for prosumers to donate goods. The practice of donating but also seeking and claiming goods for free as a circular strategy has been dubbed 'freecycling'.⁴⁵⁶ A circular alternative is to donate goods to thrift shops which have a repair or refurbishment workshop.⁴⁵⁷

All types of donation can occur entirely offline, for example through charity thrift shops, collection rounds or drop-off containers or through freecycling fairs or neighbourhoods 'give-away' shelves. Nevertheless, many donations and especially 'freecycling'⁴⁵⁸ are increasingly facilitated online. Like in case of sales (see *supra* nr. 80), products donated by prosumers are mostly second-hand, although also new goods can be donated by prosumers. Direct donations on a P2P basis are prevalent. But a lot of donations, especially those based more on social than environmental motivations, are offered to charities responsible for subsequently distributing these goods to where they are needed. These can be qualified as P2B donations if the charity is categorized according to its professional organization rather its absence of a commercial goal. Finally, products donated by businesses are most often still new according

⁴⁵² E.g., 'Business-first Barter System' <<https://americasbarterexchange.com/>>.

⁴⁵³ This is because of fiscal challenges relating to barter are more significant for professionals and because they are unlikely to systematically have goods of seemingly comparable value and utility to a prosumer which they can profitably offer and which the consumer would want to receive in exchange.

⁴⁵⁴ E.g., empirical data sources on smartphone donations H. Wieser and N. Tröger, 'Exploring the inner loops of the circular economy: Replacement, repair, and reuse of mobile phones in Austria' (2018) 172 *Journal of Cleaner Production* 3042, 3044.

⁴⁵⁵ See BELGIUM: art. 4.132, § 2 CC BE ('*schenking*' or '*donation*'). FRANCE: art. 931 CC FR ('*donation*'). GERMANY: § 516 BGB ('*Schenkung*').

⁴⁵⁶ See S. Eden, 'Blurring the boundaries: Prosumption, circularity and online sustainable consumption through Freecycle' (2015) 17 *Journal of Consumer Culture* 265; S. Aptekar, 'Gifts Among Strangers: The Social Organization of Freecycle Giving' (2016) 63 *Social Problems* 266.

⁴⁵⁷ See, e.g., 'Hoe kan ik spullen schenken aan Kringwinkel?' <<https://www.dekringwinkel.be/faq.html>>

⁴⁵⁸ See, e.g., *supra* footnote 392.

to this dissertation's typology,⁴⁵⁹ although B2C donations of genuine second-hand products are not unheard of.

§ 2. Circular (and collaborative) product usage

a. Reusing products

83. 'REUSE': CONTINUING TO USE AN AT LEAST PARTIALLY OBSOLETE PRODUCT FOR THE SAME PURPOSE – As discussed *supra* nr. 58, 'reusing' products is a highly effective circular economy strategy that is ranked high in R-ladder hierarchies, generally only below the out-of-scope 'refuse' (see *supra* nr. 77). To some extent, it can also be regarded as a collaborative activity, since it is an activity where consumers fulfil an active role and provide an alternative to an extra B2C transaction by 'reusing' an existing product that they already have. But because 'reusers' do not supply a product or service to another party nor do they modify a product, reuse cannot be qualified as economic activity by a prosumer in the narrow sense (cf. *supra* nrs. 74 and 68).

Reuse is not easy to define and there are a myriad of understandings out there.⁴⁶⁰ In order to make it a useful unit of the typology which avoids unnecessary overlap, this dissertation conceptualizes it narrowly in a twofold manner.

- a. As a first step, European standard EN 45554:2020 defines 'reuse' as the "*process by which a product or its parts, having reached the end of their first use, are used for the same purpose for which they were conceived*".⁴⁶¹ This offers a clear distinction with 'repurposing' (see *infra* nr. 84). A similar description is used in a lot of literature on circular economy⁴⁶² and in EU waste law for the related term 're-use',⁴⁶³ which is, however, not part of a product's use phase (see *infra* nr. 93). In this typology, this definition is complemented

⁴⁵⁹ E.g., the "*inventus*" for which French law imposes a re-use or recycle obligation which notably recommends to donate them to charities (art. L541-15-8 Code de l'Environnement), are 'new' products that were unsold and therefore have not been used before. See *supra* footnote 437.

⁴⁶⁰ E.g., International Resource Panel, *Re-defining Value: The Manufacturing Revolution. Remanufacturing, Refurbishment, Repair and Direct Reuse in the Circular Economy* (UNEP 2018) 26 (similar definition of 'reuse' as this dissertation but expanding it to everything before end-of-life phase except repair and refurbishment); J. Delanoeije and K. Bachus, *Reuse. The understudied circular economy strategy* (CE Center, 2020) 4-9 (requiring a transfer of ownership, which equates 'reuse' with '(re)transferring' in this dissertation's typology). See also the distinction between 're-use' and 'preparing for re-use' according to EU waste law *infra* nrs. 93-94.

⁴⁶¹ CEN-CENELEC, *EN 45554:2020. General methods for the assessment of the ability to repair, reuse and upgrade energy-related products* (2020) 6, nr. 3.1.3.

⁴⁶² E.g., Ellen MacArthur Foundation, *Towards the circular economy. Vol 1: Economic and business rationale for an accelerated transition* (2013) 25; F. Lüdeke-Freund, S. Gold and N. Bocken, 'A Review and Typology of Circular Economy Business Model Patterns' (2019) 23 *Journal of Industrial Ecology* 36, 40. See also sources cited *supra* footnote 460.

⁴⁶³ Art. 3(13) Waste Framework Directive 2008/98: "'re-use' means any operation by which products or components that are not waste are used again for the same purpose for which they were conceived;"

by the essential requirement that ‘reuse’ occurs strictly during a single product use phase. Hence, only a product’s user and no form of redistribution can be involved in ‘reusing’ a product.⁴⁶⁴

Consequently, ‘reuse’ is first of all distinguished from activities that ‘redistribute’ second-hand products (see *supra* nrs. 79-82). Second, it is distinguished from ‘reproduction’ activities that repair, refurbish or remanufacture second-hand products or ‘re-use’ spare parts (see *infra* nrs. 85-91) or that ‘re-use’ products and components in collaborative or industrial production (see *infra* nr. 93). Third, ‘reuse’ is distinguished from ‘preparing for re-use’ and other ‘recovery’ operations, which imply that a product or component has become waste at the end of its lifecycle (see *infra* nrs. 92 and 94). Although all these different circular strategies can potentially be considered as methods of ‘reusing’ a product, only the most narrow and specific understanding limited to a single use phase is retained to create a more granular and useful typology. Finally, to ensure conformity with EU waste law and to signal the difference in meaning with ‘re-use’, the term ‘re-use’ is employed where necessary to identify other instances of using again an existing product or component (see *infra* nr. 93).

- b. As a second step, not every repeated use of a durable consumer good (without changing its purpose and during the same use phase) qualifies as ‘reuse’. It would otherwise turn into an almost complete synonym to ‘use’ in general and therefore a meaninglessly broad term for the purposes of this dissertation’s product liability analysis. Additionally, ‘reuse’ can also not be equated with simply using a ‘second-hand’ product, given that this concept in our typology already refers to a product that to some (limited) extent has been used before and is subsequently transferred (see *supra* nr. 79). ‘Reuse’ must also encompass situations where a new product is used during an extended period of time by its first user, without any intervening retransfer.

Instead, this dissertation understands ‘reuse’ as the situation where a user continues to use a product or uses it again despite the fact that it is from a general societal perspective considered to be ‘at least partially obsolete’.⁴⁶⁵ ‘Obsolescence’ is the situation where consumers no longer consider a product in its current state to be useful,⁴⁶⁶ which can have many interrelated reasons, like psychological, technological or economic.⁴⁶⁷ An ‘at least partially obsolete product’ means that, although it is possible that a significant

⁴⁶⁴ See also D. Reike, W. Vermeulen and S. Witjes, ‘The circular economy: New or Refurbished as CE 3.0? Exploring Controversies in the Conceptualization of the Circular Economy through a Focus on History and Resource Value Retention Options’ (2018) 135 *Resources, Conservation and Recycling* 246, 255.

⁴⁶⁵ See A. Michel, *Premature Obsolescence: In Search of an Improved Legal Framework* (Intersentia 2023) 107-108. Although largely similar, MICHEL understands ‘direct reuse’ differently by also including redistribution activities and waste recovery through ‘preparing for re-use’ (see *supra* nr. 79 and *infra* nr. 94), which can be explained by her focus on preventing premature obsolescence in general rather than on product liability. See also on the importance of perceived obsolescence for reuse (or repair) decisions H. Wieser and N. Tröger, ‘Exploring the inner loops of the circular economy: Replacement, repair, and reuse of mobile phones in Austria’ (2018) 172 *Journal of Cleaner Production* 3042, 3050.

⁴⁶⁶ M. den Hollander, C. Bakker and E. Hultink, ‘Product Design in a Circular Economy: Development of a Typology of Key Concepts and Terms’ (2017) 21 *Journal of Industrial Ecology* 517, 519.

⁴⁶⁷ See the sources cited *supra* footnote 279 regarding the types of ‘(premature) obsolescence’.

group of consumers would continue to ‘reuse’ the product, at least a bigger group of consumers would currently rather, according to a linear logic, discard the product as waste or, according to a circular logic, redistribute it or seek a repair or refurbishment. Instead, a ‘reuser’ chooses to not yet consider the product as obsolete, to continue the product’s current use phase and, in doing so, extend the product’s lifetime,⁴⁶⁸ even though there has been no intervening product redistribution or reproduction (see *supra* nr. 74).

‘An alternative description of ‘reuse’ could be that a product is used beyond its ‘initially estimated useful life’, which is indeed largely comparable to the preceding description of ‘reusing’ an obsolete product. However, this typology prefers as a criterion the objective expectations of (a majority among) consumers in general rather than the (alleged) initial assessment by the product’s manufacturer, since the *ex post* expectations of the general public rather than the *ex ante* intention of the individual product manufacturer are generally key in product liability law (see, e.g., *infra* nr. 179).

Finally, it is worth pointing out that circular strategies such as repurposing, redistributing, repairing or even discarding consumer goods as waste followed by their potential recovery (see *infra* nrs. 84-95), often only occur in practice after a period during which said goods have not been used but remained passively in the consumer’s possession. These are so-called ‘hibernating’ products,⁴⁶⁹ like stored, old electronics, furniture, toys or outdoor equipment. If such hibernating products remain functional, then a consumer can avoid each of these alternative strategies by simply reusing the product. This is why reuse, when it is available, can be considered as the most efficient circular strategy that still entails consumption (see *supra* nr. 58).

b. Repurposing products

84. ‘REPURPOSE’: USING A PRODUCT FOR A NEW PURPOSE – ‘Repurpose’, sometimes also called ‘recontextualize’, is a circular strategy consisting of using a product for another purpose than

⁴⁶⁸ Cf. M. den Hollander, C. Bakker and E. Hultink, ‘Product Design in a Circular Economy: Development of a Typology of Key Concepts and Terms’ (2017) 21 *Journal of Industrial Ecology* 517, 519 who distinguish between ‘product use cycle’ (“the duration of the period that starts at the moment a product is released for use after manufacture or recovery, and ends at the moment a product becomes obsolete”) and ‘product lifetime’ (“the duration of the period that starts at the moment a product is released for use after manufacture and ends at the moment a product becomes obsolete beyond recovery at product level”). Consequently, according to their terminology, “products can have one or more use cycles, but only one lifetime”.

⁴⁶⁹ See *ibid.*, 111-112.

the one it was initially designed and manufactured for.⁴⁷⁰ It can be considered the same as ‘reuse’, but across product functions rather than across time. ‘Repurposing’ is a creative activity by the consumer himself, which can also to some extent be regarded as a part of collaborative ‘reproduction’ of products.

Like ‘reuse’, ‘repurpose’ is deceptively challenging to define because there are many overlapping factual constellations out there. To understand how repurposing fits within this dissertation, all different possible understandings are listed below. Again similar to ‘reuse’ (cf. *supra* nr. 83), this typology nevertheless reserves the use of the term ‘repurpose’ without further specification for the most narrow type of ‘repurpose’, which is limited to a single use phase and involves neither a redistribution nor a physical modification of the product. However, as discussed below and *infra* nrs. 262 et seq., such ‘repurposing’, can sometimes and in particular from the perspective of accident-prevention be still considered as a form of product ‘reproduction’, since the product’s function is modified (cf. *supra* nr. 74). As part of this dissertation’s typology, this is insufficient to no longer consider it as a strategy that is most closely associated with the product use phase. Yet, it is a substantive difference with reuse which should be kept in mind when analysing applicable product liability law.

To further complicate things, several of the possible understandings of ‘repurpose’ are regularly also labelled as ‘upcycling’,⁴⁷¹ which is a combination of ‘upgrading’ and ‘recycling’.⁴⁷² Nevertheless, this dissertation avoids this term due to two reasons.⁴⁷³ First, despite its many possible meanings, ‘upcycling’ is mostly associated with ‘recycling’, which is a circular strategy for recovering waste by reprocessing materials at the sub-component level to subsequently use them in new production processes (see *infra* nr. 95). Hence, ‘recycling’ can no longer be meaningfully called ‘repurposing’ a product or a component, since the latter cease to exist. Second, ‘upcycling’ implies an increase in value and, hence, requires environmental, economic and/or sociocultural benefits. Yet, this dissertation wants to examine the product liability consequences of all possible ‘repurposing’ activities, regardless of how they

⁴⁷⁰ M. den Hollander, C. Bakker and E. Hultink, ‘Product Design in a Circular Economy: Development of a Typology of Key Concepts and Terms’ (2017) 21 *Journal of Industrial Ecology* 517, 522; J. Delanoeije and K. Bachus, *Reuse. The understudied circular economy strategy* (CE Center, 2020) 5-6; M. Schulz et al., ‘Circular economy considerations in choices of LCA methodology: How to handle EV battery repurposing?’ (2020) 90 *Procedia CIRP* 182, 183. See also art. 3(31) Parliament and Council Regulation 2023/1542/EU of 12 July 2023 concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020 and repealing Directive 2006/66/EC [2023] OJ L191/1, 27: “‘repurposing’ means any operation that results in a battery, that is not a waste battery, or parts thereof being used for a purpose or application other than that for which the battery was originally designed;”.

⁴⁷¹ See K. Sung and T. Dao, ‘Repair and Upcycling: How Do We Know Which Repair Is Considered as Upcycling?’ in K. Sung, J. Singh and B. Bridgens (eds.), *State-of-the-Art Upcycling: Research and Practice* (Springer 2021) 105-108.

⁴⁷² C. Wegener, ‘Upcycling’ in V. Glăveanu, L. Tanggaard and C. Wegener (eds.), *Creativity: A New Vocabulary* (Palgrave 2016) 181.

⁴⁷³ This is despite the fact that ‘upcycling’ as a concept implies notions of (collaborative) creativity and is particularly relevant to the underexplored social dimension of circular economy (see *supra* nr. 62). See, e.g., B. Bridgens et al., ‘Creative upcycling: Reconnecting people, materials and place through making’ (2018) 189 *Journal of Cleaner Production* 145.

are perceived. As a result, only the conceptually clearer term ‘repurposing’ and not ‘upcycling’ will be further used.

- a. The first type of ‘repurposing’, the meaning that will be retained for this dissertation’s typology, consists of a change in the purpose for which a product is used, while the repurposed product is neither redistributed nor physically modified. Hence, during a product’s use phase, only its function and nothing else is changed. Not only complete products but also individual product components can be repurposed. Examples are using a door as a table surface, turning boxes or crates into step stools for kids, using pipes or tires as play equipment, stacking wine boxes or planks and bricks into open cabinets or bookshelves or turning holed bricks into plant pots on a window sill.⁴⁷⁴ More technical repurposing activities are possible as well: an electric car battery can be repurposed as a home battery and smartphones or tablets can receive a second life as baby monitors, digital photo frames or security cameras.⁴⁷⁵ Samsung has taken steps to even enable such repurposing for ‘internet of things’ applications.⁴⁷⁶
- b. The second type of ‘repurposing’, which is sometimes also called ‘upcycling’, consists of modifying a product or component and possibly assembling it with other materials to create a new product with a new purpose.⁴⁷⁷ Examples are making playground installations from old sports equipment, barrels and other items, using a rotan basket as a pendant light frame, assembling ladders or window shutters into wardrobes and clothing racks, turning old skis or skateboards into chairs or shelves, etc.⁴⁷⁸ Household appliances, car parts and electronics can be used to make housing for pets, furniture, toys or even self-manufacture drones.⁴⁷⁹ In this typology, this is considered as a ‘re-use’ of a product or component in collaborative production of a new item, albeit with the extra complication of a change in function (see also *infra* nr. 91).

⁴⁷⁴ See, e.g., ‘65 Useful and Easy Upcycling Ideas for Every Skill Level’ <<https://www.goodhousekeeping.com/home/craft-ideas/how-to/g139/genius-upcycling-ideas>>.

⁴⁷⁵ See A. Assunção, P. Moura and A. de Almeida, ‘Technical and economic assessment of the secondary use of repurposed electric vehicle batteries in the residential sector to support solar energy’ (2016) 181 *Applied Energy* 120; C. Velazco, ‘Your drawer full of old tech could have a new life, or start a fire. Here’s how to handle it.’ *Washington Post* (2021) <<https://www.washingtonpost.com/technology/2021/09/28/how-to-recycle-repurpose-e-waste>>.

⁴⁷⁶ ‘Galaxy Upcycling Program to Enable Consumers to Repurpose Galaxy Smartphones into Smart Home Devices’ <<https://news.samsung.com/us/samsung-galaxy-upcycling-program-repurpose-galaxy-smartphones-smart-home-devices>>.

⁴⁷⁷ E.g., this is how ‘repurpose’ is understood in the ‘9R-framework’ of POTTING ET AL. See Figure 4 *supra* nr. 58.

⁴⁷⁸ See, e.g., ‘Upcycled furniture ideas’ <<https://www.pinterest.ca/adelleonfire/upcycled-furniture-ideas>>; ‘43 Brilliant Ways To Reuse And Recycle Old Tires’ <<https://www.boredpanda.com/recycling-tires-upcycling-diy-ideas>>.

⁴⁷⁹ See, e.g., ‘10 Weirdly Awesome New Uses for Old Appliances’ <<https://www.bobvila.com/slideshow/10-weirdly-awesome-new-uses-for-old-appliances-49564>>; ‘9 Awesome DIY Ideas to Put Old Car Parts to Good Use’ <<https://www.makeuseof.com/diy-ideas-upcycle-old-car-parts>>; ‘upcycled electronics’ <<https://www.pinterest.com/StJoeCoReStore/upcycled-electronics>>.

- c. Third, existing products and components can be ‘repurposed’ in repair or refurbishing activities, by being used creatively as a spare part for a different function or in a different type of product than the use for which they were originally designed. This is most often done in collaborative repairs (see also *supra* nr. 68.c) with basic components like electronic boards and wires, mechanical nuts and bolts, rubbers, springs, hinges, buttons, etc. In this dissertation, this type of repurposing is considered as part of repair and refurbishment activities (see also *infra* nrs. 85-89).
- d. Fourth, any of the aforementioned steps might be combined with a form of subsequent redistribution.⁴⁸⁰ For example, a prosumer may share his smart home creation, sell his furniture made from existing items or a professional may sell repurposed spare parts. This is a repurposing category which requires particular attention when examining in this dissertation retransferring.
- e. Finally, products and components can potentially be used again for a different purpose in industrial production processes. Depending on the circumstances, this is a part of remanufacturing (see *infra* nr. 90) or how this dissertation interprets ‘re-use’ in industrial production settings (see *infra* nr. 93), which both often require to first recover these products or components if they have already become waste (see *infra* nrs. 94-95).

§ 3. Circular reproduction

a. Repairing, refurbishing and remanufacturing products

85. MATERIAL TYPOLOGY OF REPAIR ACTIVITIES *SENSU LATO* – A whole spectrum exists of circular strategies in which an existing product’s functioning and composition can change, ranging from maintenance to re-using some of its parts in manufacturing a new one.

At one end, there is maintenance, a broad notion that can be defined as a “*combination of all technical, administrative and managerial actions during the life cycle of an item intended to retain it in, or restore it to, a state in which it can perform the required function.*”⁴⁸¹ ‘Retaining’ refers to so-called ‘preventive maintenance’,⁴⁸² which has different sub-types like time-based (pre-terminated), condition-based and predictive maintenance.⁴⁸³ ‘Restoring’ refers to ‘corrective

⁴⁸⁰ E.g., ‘recontextualize’, a synonym of repurpose, is used to also generally encompass what this dissertation calls redistribution in M. den Hollander, C. Bakker and E. Hultink, ‘Product Design in a Circular Economy: Development of a Typology of Key Concepts and Terms’ (2017) 21 *Journal of Industrial Ecology* 517, 522.

⁴⁸¹ CEN-CENELEC, *EN 13306:2017. Maintenance - Maintenance terminology* (2017) 8. See also A. Márquez, *The Maintenance Management Framework: Models and Methods for Complex Systems Maintenance* (Springer 2007) 69.

⁴⁸² CEN-CENELEC, *EN 13306:2017. Maintenance - Maintenance terminology* (2017) 34: “*maintenance carried out intended to assess and/or to mitigate degradation and reduce the probability of failure of an item*”.

⁴⁸³ Defined respectively in *ibid.*, 35: “*preventive maintenance carried out in accordance with established intervals of time or number of units of use but without previous condition investigation [...]. [...] preventive*

maintenance', which consists of an intervention that only occurs when it is already observed that a product no longer functions as required.⁴⁸⁴ To a large extent, maintenance overlaps with the use phase of a product, which is not this dissertation's main focus (see *supra* nr. 74). It is only directly relevant to this dissertation's focus on 'reproduction' of products (and 're-distribution of spare parts') where it results in direct changes to the state of a product and possibly replacements of specific parts. And this is where (corrective) maintenance, being a very broad concept, overlaps with 'repair' and in some cases even 'refurbishment' (see *infra* nrs. 88 and 89).⁴⁸⁵ Hence, for reasons of consistency, this dissertation avoids using (types of) maintenance as a separate unit of study and rather fixates on 'repair' and other strategies which more clearly relate to potential changes in the functioning and composition of a product. This also corresponds with the choice to focus on products rather than services, at least not services that do not involve product (re)distribution or (re)production (see *supra* nr. 35).

At the other end of the spectrum, existing products and components can be used ('re-used') in the manufacturing phase of new, entirely different products. This is included in this dissertation's typology, since it is part of 'reproduction' (see *supra* nr. 74). But because completely new, industrial manufacturing processes are less challenging from a product liability perspective and because these circular strategies partially overlap with the end-of-life phase and waste qualification, which has significant legal consequences, it is necessary to separately examine 're-use' and related strategies like recycling *infra* nrs. 92-95.

In between these two ends, there are strategies that involve potential changes to the functioning and composition of products, without resulting in the manufacturing of completely new products. 'Repair', 'refurbishment' and 'remanufacturing' are the central concepts that can be distinguished here, according to an increasing level of physical intervention in the product and technical requirements. Given the significance of these three circular product 'reproduction' strategies to this research project, they are designated as separate units of examination for our typology and the material difference between them is explained in more detail *infra* nrs. 88-90. Nevertheless, in order to grasp the complexity of repair and related strategies in the consumer goods sector before examining this from a product liability

maintenance which include assessment of physical conditions, analysis and the possible ensuing maintenance actions [...]. [...] condition-based maintenance carried out following a forecast derived from repeated analysis or known characteristics and evaluation of the significant parameters of the degradation of the item". See also A. Márquez, The Maintenance Management Framework: Models and Methods for Complex Systems Maintenance (Springer 2007) 70-71; N. Sakib and T. Wuest, 'Challenges and Opportunities of Condition-based Predictive Maintenance: A Review' (2018) 78 Procedia CIRP 267, 268-269; T. Wu et al., 'Proactive maintenance scheduling in consideration of imperfect repairs and production wait time' (2019) 53 Journal of Manufacturing Systems 183, 183.

⁴⁸⁴ CEN-CENELEC, EN 13306:2017. *Maintenance - Maintenance terminology* (2017) 38: "maintenance carried out after fault recognition and intended to restore an item into a state in which it can perform a required function". See also A. Márquez, *The Maintenance Management Framework: Models and Methods for Complex Systems Maintenance* (Springer 2007) 71; Y. Wang et al., 'A corrective maintenance scheme for engineering equipment' (2014) 36 *Engineering Failure Analysis* 269, 269.

⁴⁸⁵ See also A. Márquez, *The Maintenance Management Framework: Models and Methods for Complex Systems Maintenance* (Springer 2007) 71-72 (discussing even 'overhaul' and 'rebuilding' as maintenance activities).

perspective in Part III, it is necessary to first outline below ‘who’ can conduct these strategies and the related concept of the ‘right to repair’.

86. PERSONAL TYPOLOGY OF REPAIR ACTIVITIES – Repair and to a lesser extent refurbishment and remanufacturing activities are complicated by the fact that they are performed by different actors. As already discussed, not only professionals but also prosumers repair or otherwise reproduce products (see *supra* nr. 68.c-d).

However, a different, equally instructive distinction can be made between ‘self-repair’, ‘original repair’ and ‘independent repair’.⁴⁸⁶ ‘Self-repair’ is when a consumer repairs or attempts to repair his own products, possibly following advice and tools provided by third parties ‘Original repair’ consists of repair activities performed either by the product’s original manufacturer or affiliated actors who are part of the original distribution and service network, which is sometimes also called ‘authorised repair’.⁴⁸⁷ ‘Independent repair’ is repair done by another party than a consumer or an actor in the original distribution and service network.⁴⁸⁸ Traditionally, independent repairers are companies but, as part of collaborative repair (see *supra* nr. 68.c), there are also (semi-)professional non-commercial repair service providers, like people working in a non-profit repair café or makers lab. Self-repair is always done by the owner of a product, while independent and original repair can either be offered as a service to consumers or occur after these repairers have first obtained these products, in which case they will likely redistribute the repaired products afterwards.

The aforementioned threefold personal distinction is not examined separately in this dissertation’s typology, unlike prosumers and platforms who are pertinent for other circular strategies as well. Nevertheless, the examination in Part IV of product liability for repaired,

⁴⁸⁶ See E. Terryn, ‘A Right to Repair? Towards Sustainable Remedies in Consumer Law’ (2019) *European Review of Private Law* 851, 853, 864; US Federal Trade Commission, *Nixing the Fix: An FTC Report to Congress on Repair Restrictions* (FTC 2021); E. Van Gool, ‘A European ‘right to repair’: Yes! But how (far)?’ *CCM Blog* (2021) <<https://law.kuleuven.be/ccm/blog/?p=68>>; iFixIt, ‘We Must Secure Our Right to Repair Everything We Own’ <<https://www.ifixit.com/Right-to-Repair#repair-is-freedom>>; B. Dao, ‘Unlocking consumer freedom: EU Parliament votes yes to right to repair’ (2023) <<https://eeb.org/unlocking-consumer-freedom-eu-parliament-votes-yes-to-right-to-repair>>; V. Mehnert, ‘Reparaturen für alle? – Rechtliche Perspektiven des ‘Right to repair’ (2023) *Zeitschrift für Rechtspolitik* 9, 9; M. van der Velden, E. Maitre-Ekern and D.K. Wanja, ‘The Role of Independent Repair in a Circular and Regenerative Economy’ (2023) *Circular Economy and Sustainability*, <https://doi.org/10.1007/s43615-023-00304-y>.

⁴⁸⁷ See, e.g., art. 1(1)c Commission Regulation 461/2010/EU of 27 May 2010 on the application of Article 101(3) of the Treaty on the Functioning of the European Union to categories of vertical agreements and concerted practices in the motor vehicle sector [2010] OJ L129/52, 56: “‘authorised repairer’ means a provider of repair and maintenance services for motor vehicles operating within the distribution system set up by a supplier of motor vehicles;”.

⁴⁸⁸ See, e.g., art. 1(1)e(i) *ibid.*, 56: “‘independent repairer’ means: (i) a provider of repair and maintenance services for motor vehicles not operating within the distribution system set up by the supplier of the motor vehicles for which it provides repair or maintenance;”. The term ‘independent repairers’ is now also used in art. 5(6) Promoting Repair Directive 2024, although it is not defined in that particular instrument but will be specified for different product categories in Ecodesign repairability requirements (see *infra* nr. 393).

refurbished and remanufactured products (see *infra* nrs. 88-90 on these concepts), will return from time to time to this distinction between ‘self-’, ‘independent’ and ‘original’ activities, because it influences legal outcomes.⁴⁸⁹ Additionally, the distinction is useful to understand the ambivalent ‘right to repair’ concept, as outlined in the next section.

87. A ‘RIGHT TO REPAIR’? – The ‘right to repair’ is a socio-legal phenomenon, consisting of grassroots, irregular repair activities, legal activism and lobbying as well as legislative initiatives aiming to facilitate repair and to a lesser extent refurbishment and remanufacturing activities. More concretely, it strives to make repair information, spare parts and repair services more available, to make products more repair-friendly, and to overcome various legal obstacles such as those relating to intellectual property, product regulation, contract law and insurance.⁴⁹⁰ After all, product owners of course already enjoy, from a narrow legal point of view, a right to at least try to repair their own products as part of ownership’s *ius abutendi*.⁴⁹¹ As a result of this movement, a more meaningful ‘right to repair’ is now gradually being created, through regulatory initiatives both within the EU and certain US states which make the regulatory framework more conducive to repair, refurbishment and remanufacturing activities.⁴⁹²

Nevertheless, it also remains a contested concept with diverging interpretations. Industry, traditional environmental or consumer protection researchers and advocates⁴⁹³ and even

⁴⁸⁹ E.g., self-repair either results in vertical claims against which the contributory fault defence is very salient or a combination of diagonal with horizontal claims, depending on whether the consumer or a third party is injured. Independent repair allows combinations of vertical and diagonal claims against actors in the original distribution chain with separate claims against the repair service provider. In both cases, those defendants can of course try to claim against each other in recourse. And original repair may lead to higher safety expectations as well as unavailability of certain defence arguments, given the connection between repair and original production. See *infra* nrs. 348 et seq.

⁴⁹⁰ The ‘right to repair’, although rarely defined explicitly, thus concerns the possibility to be actually able to either successfully self-repair products or to obtain effective repair services, whether original or independent, without needing to overcome excessive difficulties and costs. See all sources cited in footnotes 356, 492 and 497.

⁴⁹¹ I. Lacroix, *Recht op herstellen: aansprakelijkheids- en verbintenissenrechtelijke implicaties van de circulaire economie* (die Keure 2022) 13.

⁴⁹² See *supra* footnote 357 on adopted US ‘right to repair’ legislative initiatives and *infra* nrs. 393 et seq. on examples of EU and national European law facilitating different repair activities. See also for general overviews of legislative initiatives in the US and Europe National Conference of State Legislators, ‘Right to Repair 2023 Legislation’ <<https://www.ncsl.org/technology-and-communication/right-to-repair-2023-legislation>>; European Consumer Centre France, ‘Spare parts and repairs: A right in Europe?’ (2023) <<https://www.europe-consommateurs.eu/en/shopping-internet/spare-parts-and-repairs.html>>.

⁴⁹³ E.g., N. Bocken et al., ‘Product design and business model strategies for a circular economy’ (2016) 33 *Journal of Industrial and Production Engineering* 308, 310-311; International Resource Panel, *Re-defining Value: The Manufacturing Revolution. Remanufacturing, Refurbishment, Repair and Direct Reuse in the Circular Economy* (UNEP 2018) 42-43, 55-58; BEUC, *Improving consumers' access to product repair: BEUC position on the proposal for an EU directive on the right to repair* (2023).

certain ‘right to repair’ grassroots campaigners⁴⁹⁴ are often satisfied with having the possibility to have your products repaired in general, for which widely available and affordable original repair services can suffice. Most stakeholders,⁴⁹⁵ however, understand the ‘right to repair’ as a right to have meaningful access to either independent repair services or self-repair options and preferably both, by means of reliable repair information, available spare parts, limited intellectual property obstacles, etc.⁴⁹⁶ Finally, some grassroots activists but also certain researchers adopt a more libertarian view, which is closely aligned with collaborative economy. This view understands ‘right to repair’ solely in terms self-repair, meaning that individual prosumers should be able to repair their own consumer goods, at most supported by other prosumers in a physical or online, non-commercial community.⁴⁹⁷

In the end, adopted ‘right to repair’ legislation, as a political compromise, is most often a mix of these three visions,⁴⁹⁸ although self-repair and repair activities by prosumers more generally seem to receive the least support in present EU regulation. For example, the very recently adopted Promoting Repair Directive 2024 promotes original repair by making it a more attractive remedy for consumers under EU consumer sales law, among others by extending the legal guarantee period with a year after an intervening repair, and by requiring producers of specific products for which Ecodesign or other repairability requirements have

⁴⁹⁴ E.g., ‘FAQ: Don’t we already have the right to repair our product?’ <<https://repair.eu/faqs>>: “Your right to repair stops where the manufacturer’s right to produce a non-repairable product begins.”

⁴⁹⁵ E.g., EUROPE: European Parliament Resolution of 25 November 2020 Towards a more sustainable single market for business and consumers [2021] OJ C425, 10, nr. 11; E. Terryn, ‘A Right to Repair? Towards Sustainable Remedies in Consumer Law’ (2019) *European Review of Private Law* 851, 864-873; Right to Repair, *Right to Repair Europe’s Position on the EU initiative ‘Sustainable consumption of goods – promoting repair and reuse’* (2022). See also V. Mehnert, ‘Reparaturen für alle? – Rechtliche Perspektiven des ‘Right to repair’ (2023) *Zeitschrift für Rechtspolitik* 9, 10 (critically discussing the *Herstellerzentriertes Recht auf Reparatur*); M. van der Velden, E. Maitre-Ekern and D.K. Wanja, ‘The Role of Independent Repair in a Circular and Regenerative Economy’ (2023) *Circular Economy and Sustainability*, <https://doi.org/10.1007/s43615-023-00304-y> (examining importance of independent repair for circular economy). UNITED STATES: US Federal Trade Commission, *Nixing the Fix: An FTC Report to Congress on Repair Restrictions* (FTC 2021) 22-53; N. Mirr, ‘Defending the Right to Repair: An Argument for Federal Legislation Guaranteeing the Right to Repair’ (2020) 105 *Iowa Law Review* 2393, 2393-2399; iFixIt, ‘We Must Secure Our Right to Repair Everything We Own’ <<https://www.ifixit.com/Right-to-Repair#repair-is-freedom>>.

⁴⁹⁶ The difference between both interpretations is whether you aim to combat premature obsolescence (see sources cited supra footnote 279) and want to obtain the potential environmental and economic benefits of more repair activities in general, for which original repair services can suffice, or whether you want manufacturers to not monopolize their own products’ repair market and want to obtain the freedom and potential social and economic benefits of independent and self-repair. Cf. with the discussion on policy arguments in favour of circular economy supra nrs. 60-64.

⁴⁹⁷ E.g., A. Rosborough, ‘Unscrewing the Future: The Right to Repair and the Circumvention of Software TPMs in the EU’ (2020) 11 *Journal of Intellectual Property, Information Technology and Electronic Commerce Law (JIPITEC)* 26, 46-47; P. Samuelson, ‘Freedom to Tinker’ (2016) 17 *Theoretical Inquiries in Law* 563. See also M. van der Velden, ‘Fixing the World One Thing at a Time’: Community repair and a sustainable circular economy’ (2021) 304 *Journal of Cleaner Production* 127151; K. Bradley and O. Persson, ‘Community repair in the circular economy. Fixing more than stuff’ (2022) 27 *Local Environment* 1321.

⁴⁹⁸ See also, e.g., US ‘right to repair’ legislation listed supra footnote 357.

been established to provide commercial repair services after expiration of the consumer sales guarantee, unless repair has become impossible.⁴⁹⁹ But the same proposal simultaneously supports independent repair by providing consumers with a platform where they can find commercial repairers.⁵⁰⁰ And existing Ecodesign repairability requirements relating to access to spare parts and repair information, are mostly focused on supporting professional independent repairers, although this might change if new requirements based on the Ecodesign for Sustainable Products Regulation 2024 would adopt a broader understanding of the right to repair (see *infra* nr. 393). In contrast both self- and independent repair activities by professionals and prosumers are supported by the information requirements on availability of spare parts and repair instructions and, when developed, repairability scores of products, which are proposed by the Empowering Consumers for the Green Transition Directive 2024/825 (see *infra* nr. 395), just like some of the more comprehensive French regulation in support of repair activities (see *infra* nr. 397).

88. REPAIRING PRODUCTS – As the quintessential method to extend the lifecycle of defective products, repair is an important strategy in any circular hierarchy (see *supra* nrs. 58-59) and legislative initiatives are now being adopted in both Europe and the US to further stimulate repair activities (see *supra* nr. 65). The latter is partially also motivated by repair's collaborative dimension (see *supra* nr. 68.c). Nevertheless, from a circular economy perspective, it does not matter who conducts a repair. Both repairs by professionals and by prosumers can be seen as generally effective circular strategies, although the environmental and economic impact of individual repairs are of course not the same and occasionally a replacement can be preferable over a repair.

DEN HOLLANDER ET AL. define 'repair' as "*the correction of specific faults in an obsolete product, bringing the product back to working condition, whereby any warranty on the repaired product generally is less than those of newly manufactured equivalents and may not cover the whole product, but only the component that has been replaced.*"⁵⁰¹ This is a useful definition for the purposes of this typology, albeit with the understanding that there does not have to be a specifically promised legal guarantee. On the one hand, it confirms the essential function of repairs as restoring a faulty or 'obsolete' (see also *supra* nr. 83.b) product back to a working condition.⁵⁰² This is also reflected in the definition of 'repair' in the new Ecodesign for Sustainable Products Regulation 2024.⁵⁰³ On the other hand, the definition cited above emphasizes that repair is limited to remediating the apparent defects that make a product obsolete and that not the entire product

⁴⁹⁹ Arts. 5 and 16 Promoting Repair Directive 2024. See also *infra* nr. 385.

⁵⁰⁰ Art. 7 *ibid.* Member States shall determine the access to and registration for the platform (art. 7(3) *ibid.*), which will in most cases likely be geared towards professional independent and original repairers but not prosumer at the supply side.

⁵⁰¹ M. den Hollander, C. Bakker and E. Hultink, 'Product Design in a Circular Economy: Development of a Typology of Key Concepts and Terms' (2017) 21 *Journal of Industrial Ecology* 517, 522.

⁵⁰² See also CEN-CENELEC, EN 45554:2020. *General methods for the assessment of the ability to repair, reuse and upgrade energy-related products* (2020) 6, nr. 3.1.5 'repair': "process of returning a faulty product to a condition where it can fulfil its intended use".

⁵⁰³ Art. 2(20) Ecodesign for Sustainable Products Regulation 2024: "'repair' means returning a defective product or waste to a condition where it fulfils its intended use;"

is systematically examined and brought in a better state.⁵⁰⁴ The latter is a crucial distinction with ‘refurbishment’ and ‘remanufacture’, which are defined *infra* nrs. 89-90 as separate units of the typology.⁵⁰⁵ The essential feature that repair is limited in scope to the already discovered defects is moreover in accordance with how we have argued elsewhere that EU consumer law’s ‘repair’ remedy should be interpreted.⁵⁰⁶

At the borderline of product use and (re)production, repair should be distinguished from ‘preventive maintenance’, which consists of inspections and servicing tasks to retain the functional capabilities of a product.⁵⁰⁷ Preventive maintenance mostly aims to prevent the need for actual repairs, although it can also help to more quickly discover a defect that requires repair.

Additionally, ‘upgrading’ is sometimes considered separately as a type of repair where components or techniques of superior quality compared to the original product are used.⁵⁰⁸ The typology does not use it as a separate concept and some ‘upgrades’ would rather qualify as another activity of circular or collaborative (re)production.⁵⁰⁹ Nevertheless, in Part III’s product liability analysis it is worthwhile to consider to what extent repairs (and refurbishments or remanufacturings) deviate from the original product design and whether such deviation can be considered an ‘upgrade’ or ‘downgrade’ from an overall safety perspective.

Finally, if a product has become waste, it can only be repaired as part of a ‘preparing for re-use’ recovery operation and additional end-of-waste requirements have to be met (see *infra* nr. 92).

⁵⁰⁴ See A. King et al., ‘Reducing waste: repair, recondition, remanufacture or recycle?’ (2006) 14 *Sustainable Development* 257, 259-260; International Resource Panel, *Re-defining Value: The Manufacturing Revolution. Remanufacturing, Refurbishment, Repair and Direct Reuse in the Circular Economy* (UNEP 2018) 25-26.

⁵⁰⁵ Theoretically, it is possible to also conceptualize ‘refurbish’ and potentially even ‘remanufacture’ as subsets of a single broad concept of ‘repair *sensu lato*’. This would, however, overlook important differences relevant to a product liability analysis. Hence, this typology uses a more narrow conception of ‘repair *sensu stricto*’.

⁵⁰⁶ E. Van Gool and A. Michel, ‘The New Consumer Sales Directive 2019/771 and Sustainable Consumption: a Critical Analysis’ (2021) 10 *Journal of European Consumer and Market Law* 136, 144. See also G. Howells, C. Twigg-Flesner and T. Wilhelmsson, *Rethinking EU Consumer Law* (Routledge 2018) 187.

⁵⁰⁷ J.D. Linton and V. Jayaraman, ‘A framework for identifying differences and similarities in the managerial competencies associated with different modes of product life extension’ (2005) 43 *International Journal of Production Research* 1807, 1814. In addition to ‘preventive maintenance’, there are other subtypes like ‘predictive’ and ‘corrective maintenance’. The latter largely overlaps with repair activities. See *supra* nr. 85.

⁵⁰⁸ See T. Cooper and G. Salvia, ‘Fix it: Barriers to Repair and Opportunities for Change’ in R. Crocker and K. Chiveralls (eds.), *Subverting Consumerism: Reuse in an Accelerated World* (Routledge 2018) 243.

⁵⁰⁹ Cf. CEN-CENELEC, *EN 45554:2020. General methods for the assessment of the ability to repair, reuse and upgrade energy-related products* (2020) 6, nr. 3.1.4 ‘upgrade’: “process of enhancing the functionality, performance, capacity or aesthetics of a product”. Hence, this activity can qualify as repair, refurbishment or remanufacturing but also as collaborative production or industrial re-use and potentially even as a form of repurposing.

89. REFURBISHING PRODUCTS – ‘Refurbishing’ or its synonym ‘reconditioning’ can be considered as a halfway house between repair and remanufacturing. DEN HOLLANDER ET AL. define both terms as “*the process of returning an obsolete product to a satisfactory working and/or cosmetic condition, that may be inferior to the original specification, by repairing, replacing or refinishing all major components that are markedly damaged, have failed, or that are on the point of failure, even where the customer has not reported or noticed faults in those components.*”⁵¹⁰ This largely corresponds with the regulatory definition of ‘*produit reconditionné*’, which recent French regulation legally protects in B2C relationships.⁵¹¹ It also matches the definition of ‘refurbishment’ in the Ecodesign for Sustainable Products Regulation 2024,⁵¹² although it is in this typology limited to products and ‘refurbishments’ of waste are discussed separately as part of ‘preparing for re-use’ (see *infra* nrs. 92-94). But, in contrast to those regulatory definitions, the definition cited above clarifies the distinction with repair by emphasizing that refurbishment aims to functionally and/or cosmetically restore a product in its entirety and is not limited to remediating only observed defects.⁵¹³ The distinction with remanufacture is that a refurbished product has not been methodically disassembled, checked and cleaned at the most profound level and the resulting quality is not necessarily as good as a new product (see *infra* nr. 90).⁵¹⁴

Given its more demanding nature compared to repair, it is generally performed by professionals. Nevertheless, a grey zone does exist, which could in some cases be qualified as a refurbishment by prosumers.⁵¹⁵ In the legal analysis, this should be kept in mind when examining refurbishment activities in general, collaborative repairs and collaborative production activities.

Newly refurbished products are often sold with a commercial guarantee, to signal to potential consumers the product’s quality. Whether a refurbished product qualifies as a ‘new product’ depends first of all on the specific refurbishment’s factual quality, which as the

⁵¹⁰ M. den Hollander, C. Bakker and E. Hultink, ‘Product Design in a Circular Economy: Development of a Typology of Key Concepts and Terms’ (2017) 21 *Journal of Industrial Ecology* 517, 522.

⁵¹¹ Art. R122-4 Code de la Consommation. It is worth noting that EU regulation on medical devices also defines the term ‘fully refurbishing’. But the imposed requirements make clear that this is actually closer to remanufacturing according to this dissertation’s typology. See art. 2(31) Parliament and Council Regulation 2017/745/EU of 5 April 2017 on medical devices [2017] OJ L117/1, 17.

⁵¹² Art. 2(18) Ecodesign for Sustainable Products Regulation 2024: “‘*refurbishment*’ means actions carried out to prepare, clean, test, service and, where necessary, repair a product or a discarded product in order to restore its performance or functionality within the intended use and range of performance originally conceived at the design stage at the time of the placing of the product on the market;”.

⁵¹³ See A. King et al., ‘Reducing waste: repair, recondition, remanufacture or recycle?’ (2006) 14 *Sustainable Development* 257, 261; Ellen MacArthur Foundation, *Towards the circular economy. Vol 1: Economic and business rationale for an accelerated transition* (2013) 25.

⁵¹⁴ Y. Chen and F. Chen, ‘On the Competition between Two Modes of Product Recovery: Remanufacturing and Refurbishing’ (2019) 28 *Production and Operations Management* 2983, 2985; F. Lüdeke-Freund, S. Gold and N. Bocken, ‘A Review and Typology of Circular Economy Business Model Patterns’ (2019) 23 *Journal of Industrial Ecology* 36, 49.

⁵¹⁵ E.g., your handy neighbour completely refurbishes at an occasion your older piece of furniture or bike for you.

definition indicates can be but not always is of an overall⁵¹⁶ inferior nature compared to the original quality the product had when it was newly manufactured. Secondly, it depends above all on the applicable regulatory framework. For EU harmonised product liability and general EU product regulation, this is further discussed *infra* nrs. 352-354.

Finally, if a product qualifies as waste, refurbishment consists of a ‘preparing for re-use’ recovery operation and additional end-of-waste requirements have to be (see *infra* nr. 92).

90. REMANUFACTURING PRODUCTS – A commonly accepted definition of ‘remanufacturing’ is the following by IJOMAH: “a process of returning a used product to at least OEM original performance specification from the customer’s perspective and giving the resultant product a warranty that is at least equal to that of a newly manufactured equivalent.”⁵¹⁷ Again, a separate commercial guarantee is not necessary, although this is probably as frequently issued for remanufactured as for refurbished products. The distinction with refurbishment is twofold (see also *infra* nrs. 352-354). On the one hand, the result is a product that meets regulatory and industry standards which allow it to be considered as being almost as good as and in many cases even better than the original product when it had been placed on the market or put into service as new.⁵¹⁸ On the other hand, remanufacturing consists of methodically inspecting and disassembling completely the used product (‘core’), cleaning, recalibrating, testing and if necessary reprocessing or replacing components, by using either parts cannibalised from other cores or newly manufactured parts,⁵¹⁹ meticulously reassembling all components and retesting the

⁵¹⁶ It is possible that some parts or performance aspects of a refurbished product have a higher quality than when the product was originally placed on the market or put into service, while others have a lower quality.

⁵¹⁷ W. Ijomah, *A model-based definition of the generic remanufacturing business process* (PhD, University of Plymouth 2002) 186. ‘OEM’ stands for ‘original equipment manufacturer’.

⁵¹⁸ See Y. Chen and F. Chen, ‘On the Competition between Two Modes of Product Recovery: Remanufacturing and Refurbishing’ (2019) 28 *Production and Operations Management* 2983, 2985; F. Lüdeke-Freund, S. Gold and N. Bocken, ‘A Review and Typology of Circular Economy Business Model Patterns’ (2019) 23 *Journal of Industrial Ecology* 36, 49. By nature, some products cannot be remanufactured to a quality that is as good as the original, like batteries. Cf. art. 3(32) Parliament and Council Regulation 2023/1542/EU of 12 July 2023 concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020 and repealing Directive 2006/66/EC [2023] OJ L191/1, 27: “‘remanufacturing’ means any technical operation on a used battery that includes the disassembly and evaluation of all its battery cells and modules and the use of a certain number of battery cells and modules that are new, used or recovered from waste, or other battery components, to restore the battery capacity to at least 90 % of the original rated capacity, and where the state of health of all individual battery cells does not differ more than 3 % between cells, and results in the battery being used for the same purpose or application as the one for which the battery was originally designed;”.

⁵¹⁹ Depending on the core’s quality, it can be used for one of three types of remanufacturing: ‘product remanufacturing’; ‘component remanufacturing’; and ‘component cannibalization’. See J. Östlin, E. Sundin and M. Björkman, ‘Product life-cycle implications for remanufacturing strategies’ (2009) 17 *Journal of Cleaner Production* 999, 1002. For purposes of simplicity and because product liability relating to consumer goods ultimately concerns final products which are placed on the market, this dissertation focuses mostly on the overarching strategy of ‘product remanufacturing’.

now remanufactured product, all the while applying the aforementioned standards for new products.⁵²⁰

Actual remanufacturing requires substantial professional equipment and expertise and is generally performed by the original manufacturer or a licensed third-party industrial company.⁵²¹ As a result, true product remanufacturing by prosumers seems to be practically impossible and is instead probably a collaborative refurbishment or a re-use of components in collaborative production. The distinction between remanufacturing and re-use (in either an industrial or collaborative production context) consists of the fact that a remanufacturer departs from an existing product, strives to preserve it as much as possible and avoids departures from the original product design when having to replace a component. However, this distinction can sometimes become difficult to make in practice, because sometimes many parts that are either new or cannibalised from other cores, are used in remanufacturing a still barely identifiable original core.⁵²² Finally, products often have a waste-status prior to being used in remanufacturing. In such case, a ‘preparing for re-use’ recovery operation must first be completed (see *infra* nrs. 92 and 94).

The preceding discussion makes clear why this typology’s understanding of ‘remanufacturing’ slightly differs from the definition in art. 2(16) Ecodesign for Sustainable Products Regulation 2024.⁵²³ On the one hand, this proposed definition requires that “*at least one change is made to the product*”, which goes precisely against a basic feature of remanufacturing, which strives to reconstitute as much as possible an original product according to the highest quality standards. On the other hand, art. 2(16) Ecodesign for Sustainable Products Regulation 2024 also encompasses remanufacturing of products that have already become waste. This typology separates this under ‘preparing for re-use’, given the significance of the waste qualification in the EU legal context, although admittedly many products in practice first become waste and have to be recovered before they can be remanufactured (see *infra* nr. 94).

⁵²⁰ See W. Ijomah, *A model-based definition of the generic remanufacturing business process* (PhD, University of Plymouth 2002) 123-238; A. King et al., ‘Reducing waste: repair, recondition, remanufacture or recycle?’ (2006) 14 *Sustainable Development* 257, 261-262; J. Östlin, E. Sundin and M. Björkman, ‘Product life-cycle implications for remanufacturing strategies’ (2009) 17 *Journal of Cleaner Production* 999, 999; Y. Chen and F. Chen, ‘On the Competition between Two Modes of Product Recovery: Remanufacturing and Refurbishing’ (2019) 28 *Production and Operations Management* 2983, 2985.

⁵²¹ See also the distinction between ‘OEM remanufacturing’, ‘contract remanufacturing’ and ‘independent, 3rd party remanufacturing’ in G. Hatcher, W. Ijomah and J. Windmill, ‘Design for remanufacture: a literature review and future research needs’ (2011) 19 *Journal of Cleaner Production* 2004, 2006.

⁵²² See ‘What Is Remanufacturing?’ <<https://in.indeed.com/career-advice/career-development/remanufacturing>>. See also J. Östlin, E. Sundin and M. Björkman, ‘Product life-cycle implications for remanufacturing strategies’ (2009) 17 *Journal of Cleaner Production* 999, 1007-1008; F. Zhang et al., ‘Inventory management for a remanufacture-to-order production with multi-components (parts)’ (2019) 30 *Journal of Intelligent Manufacturing* 59.

⁵²³ Art. 2(16) Ecodesign for Sustainable Products Regulation 2024: “‘remanufacturing’ means an industrial process in which a product is produced from objects that are waste, products or components and in which at least one change is made to the product that affects the safety, performance, purpose or type of the product typically placed on the market with a commercial guarantee;”.

91. ‘RE-USE’ OF SPARE PARTS – In repair, refurbishment and remanufacturing, defective components frequently have to be replaced by spare parts. Most often, these are new parts, produced by the original manufacturer or a licensed party and these have already been placed on the market by these parties. Occasionally, these are self-manufactured by a repairer, as happens sometimes in collaborative repairs (cf. *supra* nr. 68.c-d). A more circular alternative is to use ‘second-hand spare parts’ that have been used before and salvaged from a core, which is already especially common in the car and bike sectors and are often resold on online platforms.⁵²⁴ In accordance with the typology’s general concept for using again existing products and components in production processes (see *infra* nr. 93), this is called in this dissertation ‘re-use’ of (second-hand) spare parts. Once more, it has to be noted that these re-used parts may have already qualified as waste, which requires a ‘preparing for re-use’ recovery and fulfilment of the end-of-waste criteria (see *infra* nrs. 92 and 94). Finally, new or re-used spare parts can potentially also be repurposed parts, which were initially designed for another function or product (see *supra* nr. 84.c).

b. Circular strategies in production and end-of-life stages

i. ‘Re-use’ of products and ‘preparing for re-use’ of waste

92. ‘WASTE’ IN CIRCULAR ECONOMY: A *CONTRADICTION IN TERMINIS*? – A lot of the legal literature published in recent years relating to circular economy focuses on its fraught relationship with EU waste law.⁵²⁵ To consider this important legal dimension in our typology and to lay the groundwork for a solid subsequent analysis of product liability, it is necessary to also briefly zoom in on it. This dissertation makes abstraction of the many sectoral regulations and only considers (the core provisions of) the Waste Framework Directive 2008/98, which the Commission now proposes to modestly amend.⁵²⁶ Most circular strategies essentially aim to prevent waste (see *supra* nrs. 58-59). In contrast, although the 2008 Directive and subsequent

⁵²⁴ See, e.g., ‘Met het door VLAIO gesteunde project 'Ready2Reuse' zet Febelauto de voordelen van tweedehandsonderdelen in de verf.’ <<https://www.febelauto.be/nl/auto-inleveren/ready2reuse-tweedehands-is-eersteklas>>; ‘Eurostocks is the e-commerce platform to find vehicles, car parts, accessories, tyres & rims. Locally and abroad!’ <<https://www.eurostocks.com/cms/car%20parts/used-car-parts>>; ‘Bike Parts - Buy & Sell Used Spare Parts in Kerala’ <https://www.olx.in/kerala_g2001160/spare-parts_c1585/q-bike-parts>; ‘Vélos & Véломoteurs - Vélos Pièces’ <<https://www.2ememain.be/l/velos-velomoteurs/velos-pieces/>>.

⁵²⁵ See, e.g., T. de Römpf, *The legal transition towards a Circular Economy: EU environmental law examined* (PhD, KU Leuven & UHasselt 2018) 219-300; T. Turunen, *The concepts of waste and non-waste in the circular economy* (PhD, University of Eastern Finland 2018); J. Voortter, *De juridische transitie naar een circulaire economie in de bouwsector in België: een rondedans van risico's, verantwoordelijkheden en samenwerking* (PhD, UHasselt and Maastricht University 2023) 241-434.

⁵²⁶ Commission, ‘Proposal for a Directive of the European Parliament and of the Council amending Directive 2008/98/EC on waste’ COM(2023) 420 final. This proposed revision is mostly limited to food and textile waste, which falls outside the scope of this research project in case of the former (see *supra* nr. 34) and is less relevant to product accidents in case of the latter.

amendments introduced important novelties to accommodate a more circular economy,⁵²⁷ the fundamentals of EU waste law have been developed largely according to a linear economic logic with the aim to maximally protect the environment against waste, which is regarded as harmful rather than useful.⁵²⁸ Nonetheless, it needs to be considered that a perfect circular economy is physically impossible (see *supra* nr. 64), that there will consequently always remain at least some amount of actual waste and that waste can of course be ‘hazardous’.⁵²⁹ Therefore, there will to some extent always remain, even in a more circular economy, a need for waste regulation.

The sticking point is that “*any substance or object which the holder discards or intends or is required to discard*” automatically qualifies as ‘waste’.⁵³⁰ This is a very broad but also an uncertain scope, which the CJEU has in a large body of case law mostly interpreted in a very expansive manner.⁵³¹ Hence, countless products and components on which prosumers or professionals (want to) apply any of the aforementioned circular strategies, actually qualify as ‘waste’. And once a material is considered to be ‘waste’, circular strategies to ‘re-use’ (see *infra* nr. 93) its material or energetic value are prohibited, unless an ‘end-of-waste status’ is obtained. The latter not only requires that the waste undergoes a complete ‘recovery’, for which there are several options (see *infra* nrs. 94-95).⁵³² Additionally, four conditions need to be fulfilled: an effective use for specific purposes, an existing market demand, regulatory and technical compliance and the absence of adverse environmental or human health impacts. Meeting these conditions was originally intended to be established through EU-wide or, on a subsidiary basis, national end-of-waste criteria.⁵³³ Nevertheless, given that few of these regulations have been established, in particular at the EU-level, the most important, third method are

⁵²⁷ Compared to prior EU waste law, Waste Framework Directive 2008/98 i.a. made the waste hierarchy more detailed pursuant to the ‘R-framework’ (see *supra* nr. 58) and introduced the end-of-waste concept. See among subsequent amendments especially Parliament and Council Directive 2018/851/EU of 30 May 2018 amending Directive 2008/98/EC on waste [2018] OJ L150/109.

⁵²⁸ See also E. Maitre-Ekern, ‘Re-thinking producer responsibility for a sustainable circular economy from extended producer responsibility to pre-market producer responsibility’ (2021) 286 *Journal of Cleaner Production* 125454.

⁵²⁹ This is meant here in the factual sense. ‘Hazardous waste’ is also a specifically regulated subset of ‘waste’ (cf. arts. 17-20 Waste Framework Directive 2008/98), but is still subject to the same basic principles and can in principle also be ‘recovered’ (CJEU 7 March 2013, C-358/11, *Lapin elinkeino*, ECLI:EU:C:2013:142, nrs. 53-60).

⁵³⁰ Art. 3(1) Waste Framework Directive 2008/98. This definition has barely changed since the origin of EU waste law in 1975.

⁵³¹ See generally N. De Sadeleer, *Droit des déchets de l'UE: De l'élimination à l'économie circulaire* (Bruylant 2016) 123-155; J. Malinauskaite, H. Jouhara and N. Spencer, ‘Waste Prevention and Technologies in the Context of the EU Waste Framework Directive: Lost in Translation?’ (2017) *European Energy and Environmental Law Review* 66, 69-74; T. Turunen, *The concepts of waste and non-waste in the circular economy* (PhD, University of Eastern Finland 2018) 61-69, 73-74, 81-88. The expansive interpretation is essentially driven by EU environmental law’s precautionary principle and to a lesser extent by the polluter-pays and preventive principles, which are all enshrined in art. 191(2) TFEU.

⁵³² Arts. 6(1) *juncto* 10-11 Waste Framework Directive 2008/98.

⁵³³ Art. 6(1)-(3) *ibid.*

individual decisions by national authorities on a case-by-case basis on whether specific materials after recovery meet the aforementioned conditions and have ceased to be waste.⁵³⁴

Finally, a person who for the first time uses or places on the market a product that has successfully obtained end-of-waste status, has to meet all requirements of chemical and product regulation applicable to using or placing on the market new products.⁵³⁵

For many potential circular applications that would use waste, this is a very burdensome and frequently unsuccessful process. In practice, circular actors regularly need to speculate that a material does not yet qualify as waste and can be ‘re-used’ which avoids the difficult end-of-waste gauntlet. Such legal speculation is especially problematic given the risk of administrative and criminal liability for unlawful applications of waste.⁵³⁶ Although largely underexamined in the vast literature on circular economy and waste law, prosumers are likely even blissfully unaware that they might illegally use waste in the context of a reuse, repurpose, repair or collaborative production activity.

93. ‘RE-USE’ OF NON-WASTE PRODUCTS, COMPONENTS AND MATERIALS – With this background, we can address for the purposes of our typology the circular strategies in the production and end-of-life stages of a product.

Art. 3(13) Waste Framework Directive 2008/98 defines ‘re-use’ (*réemploi*, *Wiederverwendung* or *hergebruik*) as “any operation by which products or components that are not waste are used again for the same purpose for which they were conceived”. Hence, this concept in EU waste law actually encompasses certain circular strategies that have already been specified above in this dissertation’s typology, like ‘reuse’, ‘repair’, ‘refurbishment’ and ‘remanufacturing’. But it also encompasses other strategies that still lack a specification, because ‘reuse’ as a concept has been restricted to the continued use of an obsolete product in an uninterrupted use phase (*supra* nr. 83). ‘Re-use’ is therefore an apt term to help to identify these remaining circular strategies. These are the ‘re-use’ and sometimes even repurposing⁵³⁷ of components and materials obtained from obsolete products (‘cores’), which are used in industrial or even collaborative manufacturing or remanufacturing processes (see also *supra* nrs. 83-84). For industrial manufacturers, the reason for re-using second-hand components and materials are closely tied to the economic and environmental advantages of circular economy (see *supra* nrs. 61 and 63).

Hence, when a still observable original product (‘core’) is fully and methodically restored, this constitutes remanufacturing, as introduced *supra* nr. 90. But when separate product components are ‘re-used’ to make an entirely new product, this is referred to as ‘re-use’ in general. This distinction is useful to continue referring separately to ‘remanufacturing’, where an

⁵³⁴ Art. 6(4) *ibid.* See also CJEU 28 March 2019, C–60/18, *Tallinna Vesi*, ECLI:EU:C:2019:264, nrs. 21-31; O. Johansson, ‘The End-of-Waste for the Transition to Circular Economy: A Legal Review of the European Union Waste Framework Directive’ (2023) 53 *Environmental Policy and Law* 167.

⁵³⁵ Art. 6(5) Waste Framework Directive 2008/98.

⁵³⁶ See art. 36 *ibid.*

⁵³⁷ ‘Re-use’ according to this dissertation’s typology also includes the ‘repurposing’ of components in industrial or collaborative production or the repurposing of spare parts in repairs or refurbishments. See also *supra* nrs. 91 and 93.

original product remains clearly observable and which lies on a spectrum with repairs and refurbishments.

94. ‘PREPARING FOR RE-USE’ OF WASTE – Art. 3(13) Waste Framework Directive 2008/98’s concept of ‘re-use’ requires that the concerned product or component is not (yet) waste, since it is a method of waste prevention rather than waste management.⁵³⁸ Hence, once a product or component qualifies as waste, it can no longer be directly re-used in a reuse, repair, refurbishment, remanufacturing activity or in collaborative or industrial production. Instead, it has to first obtain end-of-waste status. This requires first of all that the four conditions for end-of-waste status are met on the basis of applicable European or national criteria or a case-specific regulatory approval (see *supra* nr. 92). At the same time, this requires a completed waste recovery operation, in this case more specifically ‘preparing for re-use’ (*préparation en vue du réemploi*),⁵³⁹ ‘Vorbereitung zur Wiederverwendung’ or ‘voorbereiding voor hergebruik’). Art. 3(16) Waste Framework Directive 2008/98 defines it as “*checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be re-used without any other pre-processing*”.

Given its material and energy efficiency and high ranking in the ‘R-framework’ (see *supra* nr. 58), ‘preparing for re-use’ is actually in the EU waste hierarchy the highest ranked recovery strategy which takes precedence over all other forms of waste management (cf. *infra* nr. 95).⁵⁴⁰ ‘Preparing for re-use’ is in practice a very broad concept, as a mirror of ‘re-use’ itself (see *supra* nr. 93). It encompasses any activity to ensure that former products or components qualified as waste meet the four end-of-waste conditions. This “*may be as simple as the checking of waste*”,⁵⁴¹ but might for example also consist of “*repairing bicycles, furniture, or electrical or electronic equipment*”⁵⁴² or intensive refurbishment of other products or individual components. From a practical perspective, not the recovery operation itself is often the most challenging step but rather benefitting from relevant criteria or an individual decision by competent authorities that confirms that the end-of-waste conditions have effectively been met (see *supra* nr. 92).

In the product liability analysis of Part III, it seems necessary to discuss ‘preparing for re-use’ separately given the significance in the EU of the waste qualification and the requirements of the end-of-waste stage. Nevertheless, to a large extent, the more detailed analysis will be able to benefit from the preceding discussion relating to other units of the typology

⁵³⁸ See arts. 3(9)(12), 9(1)d-e and 10-11 *ibid*.

⁵³⁹ Although this is the official concept in the French version of 3(16) Waste Framework Directive 2008/98, the French implementing legislation uses the concept ‘*réutilisation*’ (art. L541-1-1 Code de l’Environnement). The latter is indeed a more elegant term to signal the distinction with ‘*réemploi*’ (i.e. re-use).

⁵⁴⁰ Art. 4(1) Waste Framework Directive 2008/98. See generally on the EU waste hierarchy N. De Sadeleer, *Droit des déchets de l’UE: De l’élimination à l’économie circulaire* (Bruylant 2016) 190-208; T. Turunen, *The concepts of waste and non-waste in the circular economy* (PhD, University of Eastern Finland 2018) 42-59.

⁵⁴¹ Recital 22 *ibid*.

⁵⁴² Commission DG Environment, *Guidance on the interpretation of key provisions of Directive 2008/98/EC on waste* (EU Commission 2012) 34.

like reuse, repair, refurbishment, remanufacturing and re-use in industrial or collaborative production.

ii. Recycling and other waste recovery operations

95. RECYCLING, RECAPTURING AND OTHER WASTE RECOVERY OPERATIONS – By now, we have arrived at the bottom of the ‘R-framework’ (see *supra* nr. 58) and also the lower reaches of the EU waste law hierarchy (art. 4(1) Waste Framework Directive 2008/98). Ranked in the latter precisely below ‘preparing for re-use’, is another waste recovery operation, ‘recycling’, which is defined as “*any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. [...]*”⁵⁴³ Recycling operations break down obsolete products (‘cores’) into constituents materials and then reprocess these up to the level of its physico-chemical properties to allow them to be used again for the same or other applications.⁵⁴⁴ There are different types of recycling, like ‘open-loop’ or ‘closed-loop’, depending on whether the recycled material is used in the same or similar types of products, and ‘downcycling’ or ‘upcycling’ (see also *supra* nr. 84 on the ambiguity of ‘upcycling’), depending on whether the quality of the material improves or decreases over time.⁵⁴⁵ Although it is a relatively inefficient circular strategy, it has for a long time dominated policy discourse and the popular imagination relating to circular economy (see *supra* nr. 66).

Ranked in the EU waste hierarchy below ‘recycling’, is the generic ‘other recovery’ category.⁵⁴⁶ This encompasses for example the circular strategy of ‘recapturing’ energy from materials in incineration and organic digestion processes (see also *supra* nr. 58). Underneath, at the lowest rank of the waste hierarchy, is ‘disposal’, which is no longer a waste recovery operation and corresponds with the old, linear economy method of dealing with waste.⁵⁴⁷ However, even disposed waste does not have to be lost definitively to the circular economy, since landfills can be ‘re-mined’, not only through the informal and often often hazardous waste scraping in developing countries but also through more organized, industrial ‘landfill mining’.⁵⁴⁸ Such re-mining is more likely to lead to recapturing or recycling than to the more optimal preparing for re-use.

⁵⁴³ Art. 3(17) Waste Framework Directive 2008/98.

⁵⁴⁴ See Commission DG Environment, *Guidance on the interpretation of key provisions of Directive 2008/98/EC on waste* (EU Commission 2012) 32.

⁵⁴⁵ See T. de Römph, *The legal transition towards a Circular Economy: EU environmental law examined* (PhD, KU Leuven & UHasselt 2018) 246-248.

⁵⁴⁶ This consists of recovery operations that do not qualify as preparing for re-use or recycling. Art. 3(15) Waste Framework Directive 2008/98 defines ‘recovery’ as “*any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy. Annex II sets out a non-exhaustive list of recovery operations;*”.

⁵⁴⁷ Art. 3(19) Waste Framework Directive 2008/98 defines ‘disposal’ as “*any operation which is not recovery even where the operation has as a secondary consequence the reclamation of substances or energy. Annex I sets out a non-exhaustive list of disposal operations;*”.

⁵⁴⁸ See D. Reike, W. Vermeulen and S. Witjes, ‘The circular economy: New or Refurbished as CE 3.0? Exploring Controversies in the Conceptualization of the Circular Economy through a Focus on History and Resource Value Retention Options’ (2018) 135 *Resources, Conservation and Recycling* 246, 257.

For the purposes of this dissertation, recycling and waste recovery operations other than preparing for re-use are generally less relevant.⁵⁴⁹ This is because the integrity of originally designed and manufactured product components and products is lost in these processes. Recycling still raises important concerns at the level of for example EU chemicals regulation like REACH⁵⁵⁰ and RoHS⁵⁵¹. Yet, in other regards, it does not really matter from a product liability perspective whether product manufacturing processes use virgin or recycled materials. The origin of the energy used in manufacturing, is even entirely irrelevant from a traditional product liability perspective, which focuses on personal injuries and other extrinsic damage to private goods but not on damage to the environment as a public good or very indirectly resulting private damage (see *supra* nr. 76).

⁵⁴⁹ Together with arguments of legal coherence, this also explains why this typology has largely copied concepts of EU waste law for the least efficient circular strategies and has not adopted more granular, alternative distinctions, as sometimes argued for in literature on circular economy in the end-of-life phase. See, e.g., M. Gharfalkar et al., 'Analysis of waste hierarchy in the European waste directive 2008/98/EC' (2015) 39 *Waste Management* 305.

⁵⁵⁰ Parliament and Council Regulation 2006/1907/EC of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) [2006] OJ L396/1 (amended many times).

⁵⁵¹ Parliament and Council Directive 2011/65/EU of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (recast) [2011] OJ L174/88 (amended many times).

Part III. A normative perspective on product liability (in circular economy)

96. OVERVIEW – This Part aims to provide a general ‘normative compass’ which can guide the subsequent, more in-depth legal analysis of product liability applied to circular economic strategies. At the same time, the normative framework synthesized in this Part may of course have also a more general relevance to the study of product liability in general.

By nature, this Part has a particularly vast perspective and builds on an abundance of past scholarly work from multiple disciplines. Even more than any other component of this dissertation, it therefore truly ‘stands on the shoulders of giants’.⁵⁵² Yet, this also means that, in order to make this a feasible component of a broader research project, the following Chapters are limited in explicitly cited sources, avoid ancillary information or very detailed interdisciplinary analysis and present this normative perspective in a targeted, general discussion.

Part III consists of three Chapters.

The first Chapter, which is the most significant, starts with distinguishing between the corrective justice and distributive justice traditions of understanding the normative foundation of current product liability law. Subsequently, the Chapter analyses product liability’s societal functions from the economic analysis of law’s perspective of efficiency. The focus is on general functions of each product liability rule for durable consumer goods in general (see also *supra* nr. 34 on excluded sectors), which disregards other aspects like for example market harmonisation through the PLD-1985 in the EU-context⁵⁵³ or the potential impact on

⁵⁵² “We are like dwarfs on the shoulders of giants, so that we can see more than they, and things at a greater distance, not by virtue of any sharpness of sight on our part, or any physical distinction, but because we are carried high and raised up by their giant size.” Ironically, the figure of speech of ‘dwarves on the shoulders of giants’ is often misattributed to an individual who is undeniably himself a ‘giant’ (ISAAC NEWTON), but it is actually much older and dates back to at least the 12th Century. This quote is found in the 1159 *Metalogicon* by JOHN OF SAILISBURY (Book 3, Chapter 4), who attributes it to BERNARD OF CHARTRES. See S. Ratcliffe (ed.) *Oxford Essential Quotations* (4th ed. online) (4th edn, Oxford University Press 2016), “Bernard of Chartres d. c. 1130”.

⁵⁵³ But note that economic analysis of law are just like certain doctrinal scholars particularly critical of the market harmonizing effect of (current) EU product liability law, which still under the new Directive achieves only a partial harmonisation and which is an *ex post* liability rule which likely constitutes barely an obstacle to intra-EU economic activity if non-harmonised. See *infra* footnotes 945-946 and 949.

innovation.⁵⁵⁴ Next, the Chapter examines the redistributive effects of who ultimately ‘wins’ and ‘loses’ from the product liability system and how these rules relate to sustainable development, again mostly from an economic perspective since this proves the most apt in answering these questions in a relatively clear and sophisticated manner. Finally, the Chapter considers how these normative understandings of product liability rooted in distributive justice can be reconciled with the traditional corrective justice foundation of extracontractual liability and product liability in particular. Ultimately, this examination results in a holistic, operationalized normative framework for product liability law (see Figure 7 *infra* nr. 130).

The second Chapter applies this framework by looking inside the system of product liability and studying to what extent alternative rules of stricter, fault-based or ‘no liability’ satisfy its different normative criteria. Overall, it seems that strict liability combined with a contributory fault defence has a slight preference over a purely fault-based liability in terms of efficiency, especially when we limit ourselves to the most ordinary circumstances of consumer product accidents and if we do not rely on the pre-existence of partial alternatives to product liability. Strict liability with a contributory fault defence also seems slightly more desirable in terms of limiting sustainability externalities, while it can potentially approximate fault-based liability in terms of corrective justice if the risk-internalisation principle is respected. In contrast, the third option of no liability is generally undesirable, at least from an ‘internal’ perspective limited to product liability.

The third Chapter applies this normative perspective at a very general level by comparing the product liability system as a whole with its main alternatives, like the market mechanism, product safety regulation or private and social insurance, in light of the different functions of product liability law. This leads to a perhaps counter-intuitive argument that the added value of product liability compared to its alternatives increases from an economic efficiency perspective when a linear economic consumption model is replaced by circular strategies. In contrast, there is a risk that product liability’s more generally accepted added value in terms of corrective justice decreases when applied to circular strategies, although this depends on precisely how different product liability rules are implemented in this context.

⁵⁵⁴ See, e.g., from the perspective of economic analysis P. Huber and R. Litan (eds.), *The liability maze: the impact of liability law on safety and innovation* (Brookings Institution 1991); M. Geistfeld, ‘Products liability’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) § 11.12; M. Faure, ‘Liability for Unknown Risks: A Law and Economics Perspective’ (2016) 7 *Journal of European Tort Law* 198.

Chapter 1. A holistic normative framework

Section A. Corrective justice: a ‘traditional’ view on product liability’s normative goal

97. THE ARISTOTELIAN DISTINCTION BETWEEN ‘DISTRIBUTIVE JUSTICE’ AND ‘CORRECTIVE JUSTICE’ – As a starting point for the theoretical examination leading to this dissertation’s normative framework, it is useful to return to a fundamental distinction in political philosophy going back to ARISTOTLE. To this day, this distinction seems useful as a *summa divisio* of theoretical thinking about extracontractual liability law.⁵⁵⁵

On the one hand, there is ‘distributive justice’, which is “*manifested in distributions of honour or money or the other things that fall to be divided among those who have a share in the constitution.*”⁵⁵⁶ This conception of justice is determined by ‘geometric proportions’ of ‘merit’, which different political regimes will interpret differently.⁵⁵⁷ Distributive justice is thus concerned with the perspective of society as a whole and adopts an *ex ante* outlook on what is a ‘just’ distribution of resources. The economic analysis of product liability law examined in the next Section clearly adopts such a distributive perspective, where the applied criterion of ‘merit’ is mostly economic ‘efficiency’ in the pursuit of welfare maximization.⁵⁵⁸

⁵⁵⁵ In civil liability law theory, ‘distributive justice’ is sometimes called a ‘consequentialist’ or ‘instrumental’ approach and ‘corrective justice’ and ‘non-consequentialist’ or ‘moral’ approach. *E.g.*, B. Wauters, ‘Historical, Philosophical, and Legal Foundations of Strict Liability in Hugo Grotius - Some Introductory Remarks to the Special Dossier’ (2021) 42 *Grotiana* 1, 1. These labels are not further used, because they do not have the advantage of being as widely used throughout the Western philosophical tradition and because they seem confounding (distributive justice pursues of course also certain ‘moral’ goals, while corrective justice also focuses on ‘consequences’ and to some extent a legal rule can be an ‘instrument’ in the pursuit of such justice, although this remains limited to the rule’s own ‘internal’ and ‘bilateral’ context).

⁵⁵⁶ Aristotle (translated by W.D. Ross), ‘Nicomachean Ethics’ *Internet Classics Archive MIT* (350 B.C.E.) <<https://classics.mit.edu/Aristotle/nicomachaen.5.v.html>>, Book V, § 2.

⁵⁵⁷ *Ibid.*, Book V, § 3: “*Further, this is plain from the fact that awards should be 'according to merit'; for all men agree that what is just in distribution must be according to merit in some sense, though they do not all specify the same sort of merit, but democrats identify it with the status of freeman, supporters of oligarchy with wealth (or with noble birth), and supporters of aristocracy with excellence.*”

⁵⁵⁸ See R. Posner, ‘Wealth Maximization and Tort Law: A Philosophical Inquiry’ in D. Owen (ed.), *The Philosophical Foundations of Tort Law* (Oxford University Press 1997) 99-112.

On the other hand, there is ‘corrective justice’, which is “*the justice in transactions between man and man*” and relates to situations “*if one inflicted injury and the other has received it.*”⁵⁵⁹ This conception of justice is determined by ‘arithmetic proportions’ and the aim is to ‘rectify’ a harm one person has inflicted on another by ‘equalizing’ it.⁵⁶⁰ At least in the context of extracontractual liability, corrective justice is thus concerned with the ‘bilateral’ or ‘correlative’⁵⁶¹ perspective of the individual parties in a concrete accident which may give rise to liability and it adopts an *ex post* outlook on a ‘just’ correction of inflicted damage. This is arguably how still today most legal practitioners and virtually all parties involved in an accident-related dispute understand the underlying rationale of extracontractual liability (see *infra* nr. 99 on some of the underlying reasons).

It is important to note that ARISTOTLE and many thinkers in the natural law tradition who later build on this distinction, never saw distributive and corrective justice as wholly irreconcilable (see also *infra* nr. 125).⁵⁶²

98. TRADITIONAL PREFERENCE FOR AND RECENT THEORETICAL RESURGENCE OF CORRECTIVE JUSTICE AS THE NORMATIVE FOUNDATION OF EXTRACTIONAL LIABILITY – Many doctrinal scholars regard what amounts to corrective justice as the normative foundation of extracontractual liability law in general. It can therefore today be considered as the ‘traditional’ view on

⁵⁵⁹ Aristotle (translated by W.D. Ross), ‘Nicomachean Ethics’ *Internet Classics Archive MIT* (350 B.C.E.) <<https://classics.mit.edu/Aristotle/nicomachaen.5.v.html>>, Book V, § 4.

⁵⁶⁰ *Ibid.*, Book V, § 4: “*Therefore, this kind of injustice being an inequality, the judge tries to equalize it; for in the case also in which one has received and the other has inflicted a wound, or one has slain and the other been slain, the suffering and the action have been unequally distributed; but the judge tries to equalize by means of the penalty, taking away from the gain of the assailant.*”

⁵⁶¹ See, e.g., E. Weinrib, *Corrective Justice* (Oxford University Press 2012) 36: “[...] corrective justice is a normative structure that is fair to both parties. Fairness in this context refers not to the determination of one’s appropriate share as a matter of distributive justice, but to reasons for liability that, by treating the parties as correlatively situated, favor neither of them at the expense of the other. Because the fair terms of a bilateral interaction cannot be set on a unilateral basis, considerations whose justificatory force extends only to one party are inadmissible. Corrective justice therefore requires justifications for liability that pertain to the relationship between the parties rather than to one or the other of the parties in isolation.”

⁵⁶² See J. Gordley, ‘Tort Law in the Aristotelian Tradition’ in *The Philosophical Foundations of Tort Law* (Oxford University Press 1997), 132-140 (criticizing modern corrective justice theorists who argue that corrective justice can only be coherently understood by separating it from distributive justice, by discussing how both are connected in the work of ARISTOTLE, THOMAS AQUINAS, LESSIUS and others); D. Priel, ‘Private Law: Commutative or Distributive?’ (2014) 77 *The Modern Law Review* 308, 319-322 (criticizing work by BEEVER who seems to imply that, like him, several authors in the natural law tradition would have considered both those forms of justice as irreconcilable).

product liability's normative goal.⁵⁶³ Sometimes this is an explicit choice.⁵⁶⁴ More often, this is reflected by the fact that 'reparation' is put forward as the principal⁵⁶⁵ or in some cases even the sole⁵⁶⁶ function of these legal rules. 'Reparation' by itself directly relates to corrective justice's essential goal of remediating the harm one wrongdoer has inflicted on another person, while it requires additional conditions before it can relate to distributive justice instead, such as risk-allocation to 'deep pockets' or reparation by those who are best placed to take precautions in order to prevent future accidents (cf. *infra* nrs. 106 et seq.).⁵⁶⁷

This traditional dominance of corrective justice can be historically explained by the fact that it has from the late Middle Ages up to the early 20th century dominated Western philosophical thinking about extracontractual liability law, which was conceived in terms of interpersonal 'wrongs' which must be 'rectified'.⁵⁶⁸ This might also explain why so many scholars of this field of law remain relatively vague about it, present apparent adherence to notions of corrective justice only in terms of primacy of 'reparation' as liability law's key function or refer to specific policy functions which actually mix corrective with distributive justice (see *infra* nrs. 126-128).⁵⁶⁹ In recent decades, however, certain European and in particular US legal

⁵⁶³ Corrective justice can be considered as 'traditional' when departing from its dominance in the intellectual roots of primarily fault-based extracontractual liability in the 19th century codifications in civil law systems and the rise of negligence in common law. When going earlier back in time, notions of distributive justice would have arguably be considered as equally if not more 'traditional'. See *infra* nrs. 98-99 and the sources cited *supra* footnote 120. Moreover, in the course of the 20th century, notions of distributive justice have overall made a significant re-entry in both scholarship and positive rules of extracontractual liability law, in particular product liability. See *infra* nrs. 100-101 and the sources cited *supra* footnote 121.

⁵⁶⁴ E.g., J. Tanghe, *Het gebrek in het leerstuk van de zaakaansprakelijkheid* (Intersentia 2022) 410. See also sources cited *infra* footnotes 571-581.

⁵⁶⁵ E.g., J. Bell, 'The Development of Tort Law' in H. Koziol and B. Steininger (eds.), *European Tort Law 2007* (Springer 2007) 8; G. Viney, *Introduction à la responsabilité* (3rd edn., LGDJ 2008) 77; H. Bocken, I. Boone and M. Kruithof, *Inleiding tot het schadevergoedingsrecht. Buitencontractueel aansprakelijkheidsrecht en andere schadevergoedingsstelsels* (2nd edn., Die Keure 2014) 25. See also Wagner, MüKo BGB, 'Vorbemerkung (Vor § 823)', nr. 45 (references to German literature putting reparation forward as liability law's essential objective).

⁵⁶⁶ E.g., J.-L. Fagnart, 'Vers la faute objective?' (2018) *Revue Critique de Jurisprudence Belge* 42, 62. See also P. Verbruggen, 'Theoretische rechtvaardigingen voor het personele toepassingsbereik van het voorstel voor een nieuwe Richtlijn productaansprakelijkheid' (2023) 2023/40 *Nederlands Tijdschrift voor Burgerlijk Recht* 365, 366: "Corrigerende (of vergeldende) rechtvaardigheid richt zich op het corrigeren of vereffenen van een toestand die door het toerekenbaar onrechtmatig handelen van de een bij de ander is ontstaan. In het aansprakelijkheidsrecht draait het dan in de eerste plaats om het herstellen van de schade die dat foutief handelen tot gevolg heeft gehad."

⁵⁶⁷ See Wagner, MüKo BGB, 'Vorbemerkung (Vor § 823)', nrs. 45-46.

⁵⁶⁸ See J. Gordley, 'Tort Law in the Aristotelian Tradition' in *The Philosophical Foundations of Tort Law* (Oxford University Press 1997) 137-141; D. Owen, 'Why Philosophy Matters to Tort Law' in D. Owen (ed.), *The Philosophical Foundations of Tort Law* (Oxford University Press 1997) 1. See also N. Jansen, *Die Struktur des Haftungsrechts: Geschichte, Theorie und Dogmatik ausservertraglicher Ansprüche auf Schadenersatz* (Mohr Siebeck 2003) 271-375; A. Beever, *Forgotten Justice: Forms of Justice in the History of Legal and Political Theory* (Oxford University Press 2013) 99-170.

⁵⁶⁹ See, e.g., sources cited *supra* footnotes 565-566 and *infra* footnotes 624 and 647. See also J. Coleman, 'The

scholars have more fundamentally explored how (versions of) corrective justice can provide a persuasive theoretical basis for rules of extracontractual liability. To a large extent, this thinking has precisely been developed in response to what has been called the ‘distributive turn’⁵⁷⁰ in especially US contemporary discourse about tort law, with the economic analysis of law acting as the most notable proponent (see *infra* nrs. 100 et seq.).⁵⁷¹

It must be noted, however, that there are today many competing views on how corrective justice must be understood as a normative basis of extracontractual liability law. The most ‘pure’ example is perhaps WEINRIB’S formalist understanding of liability law as pursuing no other (external) goal than the special morality which links injurer and sufferer.⁵⁷² As another example, ZIPURSKY AND GOLDBERG’S ‘civil recourse’ theory centres around the notion that extracontractual liability is a system which empowers individuals to choose whether or not to bring rights of action against those who have committed legal wrongs against them.⁵⁷³ HERSHOVITZ focuses also on the procedural dimension of liability litigation and argues that, fundamentally, the only thing extracontractual liability does is providing a substitute for private ‘retribution’, even ‘revenge’.⁵⁷⁴ As a final, contrasting illustration, RADZIK shines the

Practice of Corrective Justice’ in *The Philosophical Foundations of Tort Law* (Oxford University Press 1997), 57: “there are very few systematic accounts of tort law based on corrective justice, and it is fair to say that the field is in its relative infancy.”

⁵⁷⁰ S. Perry, ‘The Distributive Turn: Mischief, Misfortune and Tort Law’ (1996) 16 *Quarterly Law Journal* 315.

⁵⁷¹ D. Owen, ‘Why Philosophy Matters to Tort Law’ in D. Owen (ed.), *The Philosophical Foundations of Tort Law* (Oxford University Press 1997) 2; A. Pino-Emhart, ‘The Old and New Philosophical Foundations of Tort Law’ (2016) 79 *The Modern Law Review* 504, 505. See also B. Zipursky, ‘Civil Recourse, Not Corrective Justice’ (2003) 91 *Georgetown Law Journal* 695, 695-697 (considering as drivers behind the resurgence of corrective justice in US legal thinking a response to the economic analysis preeminence, a response to the liberal political philosophy of RAWLS, DWORKIN and others, a response to instrumentalism in US legal thinking which is more widespread than economic analysis and the attractiveness of explaining legal rules based on their own terms); N. Oman and J. Solomon, ‘The Supreme Court’s Theory of Private Law’ (2013) 62 *Duke Law Journal* 1109, 1119-1123 (considering as drivers behind the resurgence of corrective justice thinking in private law: a response to the ‘instrumentalist’ thinking with economic analysis as the most notorious contributor, the revival in US law of legal formalism and the revival in US law of rights-based thinking).

⁵⁷² See E. Weinrib, *The Idea of Private Law* (2nd Revised edn., Oxford University Press 2012) 3-21, 145-170. See also E. Weinrib, *Corrective Justice* (Oxford University Press 2012) 9-37.

⁵⁷³ B. Zipursky, ‘Civil Recourse, Not Corrective Justice’ (2003) 91 *Georgetown Law Journal* 695, 754. See also as one of the more recent publications in which both authors put forward this view and connect it to the basic argument that ‘torts’ are fundamentally about ‘wrongs’ and not ‘losses’ J. Goldberg and B. Zipursky, ‘Torts as Wrongs’ (2010) 88 *Texas Law Review* 917, 945-986. Note that especially ZIPURSKY maintains that the ‘civil recourse’ theory departs from corrective justice, although he considers both as closely related. However, this seems unconvincing when looking at the basic features of both and when understanding corrective and distributive justice as two broad traditions with each having countless interpretations. See also E. Weinrib, ‘Civil Recourse and Corrective Justice’ (2011) 39 *Florida State University Law Review* 273.

⁵⁷⁴ S. Hershovitz, ‘Tort as a Substitute for Revenge’ in *Philosophical Foundations of the Law of Torts* (Oxford University Press 2014) 86-102. Note that, although HERSHOVITZ acknowledges the corrective justice label in *ibid.*, he initially attempted to move away from both distributive and corrective justice. See S. Hershovitz, ‘Harry Potter and the Trouble with Tort Theory’ (2011) 63 *Stanford Law Review* 67.

spotlight on the wrongdoer and argues that extracontractual liability law pursues instead ‘atonement’ and ‘reconciliation’, by imperfectly attempting to repair moral relationships.⁵⁷⁵

99. UNDERSTANDING THE ENDURING ATTRACTIVENESS OF CORRECTIVE JUSTICE AS THE NORMATIVE FOUNDATION OF EXTRACTIONAL LIABILITY – The attractiveness to doctrinal scholars and legal practitioners of corrective justice as a normative framework for extracontractual liability can be explained by several reasons.

- a. First of all, corrective justice fits relatively well with the continued primary role played in modern law by fault-based liability (*culpa*), especially as a consequence of 19th century codifications in civil law systems but also as a result of the enduring popularity of negligence in modern common law. This has created a basic structure which up to this day paints even the 20th century resurgence of stricter liability in response to particular societal risks as mostly exceptions to a fault-based default setting (see also *supra* nr. 14 and *infra* nr. 100).⁵⁷⁶ Although it is a mistake to rigidly tie corrective justice to fault and distributive justice to stricter liability (see *infra* nr. 124), there is indeed a correlation between corrective justice and notions of blame surrounding fault-based liability. And historically, modern fault-based liability has effectively its roots in thinking of canonists and natural law theorists centred around interpersonal moral obligations and restitution.⁵⁷⁷
- b. Second, corrective justice captures what its contemporary proponents call the ‘bilateral’ or ‘correlative’ nature of the interaction between an injured party and potentially liable party, which is indeed the axiomatic factual structure underlying every case of extracontractual liability.⁵⁷⁸

⁵⁷⁵ L. Radzik, *Making Amends: Atonement in Morality, Law, and Politics* (Oxford University Press 2009); L. Radzik, ‘Tort Processes and Relational Repair’ in *Philosophical Foundations of the Law of Torts* (Oxford University Press 2014) 231–249. This is based on ‘reconciliation theory’ which has flourished in application to other fields of law (e.g. criminal law, transitional justice, etc.).

⁵⁷⁶ See the extensive sources cited *supra* footnote 120. These sources discuss how fault-based extracontractual liability rose to dominance in the (early) modern period as a result of canon law, modern natural law scholars and rising individualism or liberalism. Note that the cited US sources paint a more mixed, disputed picture, although with a clear rise in the prominence of negligence in the 19th century.

⁵⁷⁷ See N. Jansen, *Die Struktur des Haftungsrechts: Geschichte, Theorie und Dogmatik ausservertraglicher Ansprüche auf Schadenersatz* (Mohr Siebeck 2003) 284–312, 323–360; G. Etier, *Du risque à la faute: Evolution de la responsabilité civile pour le risque du droit romain au droit commun* (Bruylant 2006) 235–340; J. Halbeek, ‘Buitencontractuele aansprakelijkheid aan de vooravond van de moderne samenleving’ in B. Debaenst and B. Delbecke (eds.), *Vangnet of springplank? Het buitencontractuele aansprakelijkheidsrecht in een moderne samenleving (1804-heden)* (die Keure 2014) 18–25; J. Sampson, ‘The Place of Fault in Grotius’s Conception of Liability for Wrongdoing’ (2021) 42 *Grotiana* 53, 57–68.

⁵⁷⁸ See E. Weinrib, ‘Correlativity, Personality, and the Emerging Consensus on Corrective Justice’ (2001) 2 *Theoretical Inquiries in Law* 107; E. Weinrib, *Corrective Justice* (Oxford University Press 2012) 9–37; A. Pino-Emhart, ‘The Old and New Philosophical Foundations of Tort Law’ (2016) 79 *The Modern Law Review* 504, 505–506. See also J. Coleman, ‘The Practice of Corrective Justice’ in *The Philosophical*

- c. Third, this relates to the fact that corrective justice also fits better than distributive justice with how judges adjudicate extracontractual liability rules. Namely, they are supposed to only look at the particular conduct of the defendant and the plaintiff in causal connection to the concrete accident, which means that they at least in theory ignore each party's wealth, character or other broader characteristics, as ARISTOTLE states in his explanation of corrective justice.⁵⁷⁹ Indeed, judges in extracontractual liability cases, are at least on the surface supposed to not independently pursue particular goals of public policy other than corrective justice's scheme of repairing interpersonal damage.⁵⁸⁰ Nevertheless, one must consider that judges always enjoy some discretionary margin which will inevitably be coloured by policy consideration. And, at a more systemic level, public policy concerns, which will likely be oriented more towards distributive justice, shape of course the *a priori* design and development of liability rules (see also *infra* nr. 125).
- d. Fourth, corrective justice fits better than distributive justice with a rights-based, formalist understanding 'from within' of the legal system and of private law in particular. In this view, liability law does not pursue external goals, as examined in the following Sections. Instead, just the fact that someone enjoys a right requires by itself that a reparation occurs in case of a violation of this right.⁵⁸¹ For example, this rejects the view held by economic analysts that someone has the freedom and is even expected in

Foundations of Tort Law (Oxford University Press 1997), 66-67: "The claims of corrective justice are limited or restricted to parties who bear some normatively important relationship to one another. A person does not, contrary to the view I once defended, have a claim in corrective justice to repair 'in the air', against no one in particular. It is a claim against someone in particular." See also *supra* footnote 561.

⁵⁷⁹ Aristotle (translated by W.D. Ross), 'Nicomachean Ethics' *Internet Classics Archive MIT* (350 B.C.E.) <<https://classics.mit.edu/Aristotle/nicomachaen.5.v.html>>, Book V, § 4: "For it makes no difference whether a good man has defrauded a bad man or a bad man a good one, nor whether it is a good or a bad man that has committed adultery; the law looks only to the distinctive character of the injury, and treats the parties as equal, if one is in the wrong and the other is being wronged, and if one inflicted injury and the other has received it."

⁵⁸⁰ This is poignantly illustrated by COLEMAN in an example where he is a dreadfully poor individual and happens to damage your car when you, as the reader, happen to be extremely rich. In this situation, he argues that he must repair your damage based on corrective justice, although the underlying distribution of wealth would be considered as unjust based on distributive justice. J. Coleman, 'The Mixed Conception of Corrective Justice' (1991) 77 *Iowa Law Review* 427, 428-429. See also G. Fletcher, 'Fairness and Utility in Tort Theory' (1972) 85 *Harvard Law Review* 537, 547, footnote 40; E. Weinrib, 'Legal Formalism: On the Immanent Rationality of Law' (1988) 97 *Yale Law Journal* 949, 997; A. Pino-Emhart, 'The Old and New Philosophical Foundations of Tort Law' (2016) 79 *The Modern Law Review* 504, 506-507.

⁵⁸¹ See P. Cane, 'Justice and Justifications for Tort Liability' (1982) 2 *Oxford Journal of Legal Studies* 30, 31; E. Weinrib, *The Idea of Private Law* (2nd Revised edn., Oxford University Press 2012) 22-83; R. Stevens, *Torts and Rights* (Oxford University Press 2007) 326-327. See also J. Coleman, 'The Practice of Corrective Justice' in *The Philosophical Foundations of Tort Law* (Oxford University Press 1997), 70: "We need no notion of a joint goal or aspiration to make sense of the claim that those responsible for the misfortunes of others have a duty to repair them. It is part of our common-sense morality or moral practice that individuals have such a duty. That is what I mean by saying that the duty of corrective justice is non-instrumental."

certain situations to choose not to meet a normative standard which is too stringent from a cost-benefit analysis and in return to simply compensate the caused ‘losses’ (cf. *infra* nr. 108.c). From the perspective of corrective justice, such behaviour is truly prohibited as unlawful and the subsequent reparation is not merely of a ‘loss’ but rather of a ‘wrong’.⁵⁸² The recent dissertation of the late THIJMEN NUNINGA similarly adopts an internal, ‘norm-centric’ view on private law, where liability requires a remedy not because one or more goals of public policy must be pursued but simply because of the ‘promise of the norm’, which was included in existing rights and duties of individuals that have been violated and thus necessitate a right to remediation.⁵⁸³

Section B. Distributive justice: a ‘public policy’ view on product liability’s normative goal

100. THE 20TH CENTURY RISE OF DISTRIBUTIVE JUSTICE AS AN ALTERNATIVE NORMATIVE FOUNDATION OF EXTRACONTRACTUAL LIABILITY LAW – The notion of distributive justice, as introduced *supra* nr. 97, refers to a more public, society-wide perspective on what might be a ‘just’ extracontractual liability rule, based on how it allocates resources. Instead of corrective justice’s ‘internal’, often formal perspective on a liability rule, distributive justice adopts a ‘functional’ or ‘instrumental’ perspective on the broader, societal impact a particular liability rule can have. Consequently, the distributive justice perspective sees extracontractual liability law, although it relates to private disputes between individuals, as just another mechanism for public regulation.⁵⁸⁴

While corrective justice has in pre-modern and modern times dominated Western philosophical thinking about extracontractual liability (see *supra* nr. 98), this started to change around the start of the 20th century. At that time, as we have described *supra* nr. 14, the technological and social changes brought about by continuing industrialisation started to challenge the primacy of traditional fault-based liability. While this led to the adoption of new, stricter liability rules, like the discovery of *la responsabilité du fait des choses* in first

⁵⁸² See E. Weinrib, ‘Legal Formalism: On the Immanent Rationality of Law’ (1988) 97 *Yale Law Journal* 949, 978, 980-981; A. Pino-Emhart, ‘The Old and New Philosophical Foundations of Tort Law’ (2016) 79 *The Modern Law Review* 504, 507. Note that rights-based theorists like STEVENS and KEATING consider their theory as distinct from corrective justice, notwithstanding several shared principles. This is again a matter of labels and does not refute the fact that their thinking is much more related to and arguably still a part of the broad ‘corrective justice tradition’ compared to the equally broad ‘distributive’ counterpart. See R. Stevens, *Torts and Rights* (Oxford University Press 2007) 1-128, 326-340; G. Keating, ‘The Priority of Respect over Repair’ (2012) 18 *Legal Theory* 293.

⁵⁸³ W.T. Nuninga, *Recht, plicht, remedie* (R&P nr. CA25) (Wolters Kluwer 2022) 13-64.

⁵⁸⁴ See N. Oman and J. Solomon, ‘The Supreme Court’s Theory of Private Law’ (2013) 62 *Duke Law Journal* 1109, 1117-1118; D. Dobbs, P. Hayden and E. Bublick, *Dobb’s Law of Torts* (Westlaw 2022 update) § 11.

French and then Belgian law or *Gefährdungshaftung* in German law,⁵⁸⁵ this was also accompanied by new scholarly thinking about the appropriate functions of liability law which started to adopt a perspective with more clearly a distributive conception of justice. The most notable and early example is perhaps the *théorie du risque* pioneered by French scholars JOSSEMAND and SALEILLES,⁵⁸⁶ for which groundwork was laid a decade earlier by Belgian scholar SAINCTELETTE.⁵⁸⁷

Around the same period in the US, future Supreme Court Justice WENDELL HOLMES JR. started arguing that economic incentive instead of morality best predicts behaviour of legal subjects⁵⁸⁸ and that also in private law public policy considerations should guide judicial decision-making.⁵⁸⁹ The resulting adoption of a distributive justice perspective by the succeeding legal realist tradition⁵⁹⁰ and others, ensured that over time effectively the mainstream of the US legal academy started to consider rules like those of ‘torts’ as indeed just another instrument for the pursuit of society-wide goals of public policy.⁵⁹¹ It is precisely the strength of this ‘distributive turn’,⁵⁹² which has subsequently reinvigorated more recent, extensive scholarship about corrective justice as an alternative theoretical foundation (see *supra* nr. 98).

⁵⁸⁵ Cf. Borghetti, *La responsabilité du fait des produits*, 6-7, 599-600; N. Jansen, *Die Struktur des Haftungsrechts: Geschichte, Theorie und Dogmatik ausservertraglicher Ansprüche auf Schadenersatz* (Mohr Siebeck 2003) 369-388; H. Bocken, I. Boone and M. Kruithof, *Inleiding tot het schadevergoedingsrecht. Buitencontractueel aansprakelijkheidsrecht en andere schadevergoedingsstelsels* (2nd edn., Die Keure 2014) 183-189; P. Jourdain, *Les principes de la responsabilité civile* (10th edn., Dalloz 2021) 10-13. See also sources cited *supra* footnote 121.

⁵⁸⁶ See in particular L. Josserand, *De la responsabilité du fait des choses inanimées* (Arthur Rousseau 1897); R. Saleilles, *Les accidents de travail et la responsabilité civile: essai d'une théorie objective de la responsabilité délictuelle* (Arthur Rousseau 1897).

⁵⁸⁷ SAINCTELETTE argued, among others, that employers have a strict ‘result obligation’ relating to the security of their employees, which covered the most significant accident risks at a time of unchecked industrialisation (C. Saintelette, *De la responsabilité et de la garantie: accidents de transport et de travail* (Bruylant 1884)). See J. van Meerbeeck, ‘Le juge, la responsabilité civile et l’assurance : alea iacta est’ in Y. Cartuyvels (ed.), *Les ambivalences du risque, regards croisés en sciences sociales* (FUSL 2008) nrs. 12-13.

⁵⁸⁸ O. Wendell Holmes Jr., ‘The Path of the Law’ (1897) 10 *Harvard Law Review* 457 (reprint <https://moglen.law.columbia.edu/LCS/palaw.pdf>) 2: “You can see very plainly that a bad man has as much reason as a good one for wishing to avoid an encounter with the public force, and therefore you can see the practical importance of the distinction between morality and law.”

⁵⁸⁹ *Ibid.*, 10: “I think that the judges themselves have failed adequately to recognize their duty of weighing considerations of social advantage.”

⁵⁹⁰ E.g., K. Llewellyn, ‘Some Realism About Realism--Responding to Dean Pound’ (1931) 44 *Harvard Law Review* 1222, 1236: “The conception of law as a means to social ends and not as an end in itself; so that any part needs constantly to be examined for its purpose, and for its effect, and to be judged in the light of both and of their relation to each other.”

⁵⁹¹ See N. Oman and J. Solomon, ‘The Supreme Court’s Theory of Private Law’ (2013) 62 *Duke Law Journal* 1109, 1117-1119. See also G. Keating, ‘The Idea of Fairness in the Law of Enterprise Liability’ (1997) 95 *Michigan Law Review* 1266 1266-1269.

⁵⁹² S. Perry, ‘The Distributive Turn: Mischiefs, Misfortune and Tort Law’ (1996) 16 *Quarterly Law Journal* 315.

The most influential strand of this thinking in terms distributive justice about extracontractual liability was the development from the 1960's onwards of the economic analysis of law.⁵⁹³ As examined in the preceding Section, the economic analysis clearly adopts a perspective which does not look at *ex post* repairs of interpersonal wrongs but rather at what is *ex ante* the most 'just' legal rule in terms of its effects on society, either in terms of 'efficiency' or 'equity'.

101. THE ATTRACTIVENESS OF DISTRIBUTIVE JUSTICE AS A NORMATIVE FOUNDATION OF PRODUCT LIABILITY, IN PARTICULAR FOR THE MOST STRICT PRODUCT LIABILITY RELATING TO MANUFACTURING DEFECTS – The preceding sections of this Chapter have mostly discussed corrective and distributive justice as normative foundations of extracontractual liability law in general. This is because most contemporary sources on these key concepts in private law theory adopt this broader perspective, because sources specifically relating to contractual liability focus on intrinsic damage and conformity, which falls outside the scope of this research project, and because many legal doctrinal sources specifically focusing on product liability are unclear about underlying theoretical foundations (but see *infra* nr. 127). Nevertheless, it is at this stage necessary to turn specifically to this dissertation's focus on 'product liability', the rules of mostly extracontractual liability law for extrinsic damage suffered by consumers and damage suffered by third parties as a result of product accidents (see *supra* nrs. 5-7). The reason why is because product liability, much more than general extracontractual liability rules, tends to be very conducive to normative thinking in terms of distributive justice.⁵⁹⁴

- a. Perhaps this is nowhere clearer than when looking at the traditional rationales put forward by legal scholars as the theoretical explanations for 'specific product liability' theories (see *supra* nr. 6). As the examination *supra* nrs. 19-23 and *infra* nr. 128 showcases, the 'risk-spreading', the 'accident-prevention' and the economic 'efficiency' rationales all clearly belong to a distributive conception of justice.⁵⁹⁵ Only the 'risk-internalisation' argument is more closely associated with corrective justice, although the latter bears distributive justice connotations as well (see *infra* nr. 128.c).
- b. Furthermore, also the different 'functions' of product liability law clearly demonstrate this close relationship with distributive justice.⁵⁹⁶ The two most important functions, 'accident-prevention' and 'reparation' of damage, have at the outset of this dissertation been presented as clearly established public policy goals of this body of private law (see Figure 1 *supra* nr. 4). In this view, a product liability rule is not necessarily there to

⁵⁹³ D. Owen, 'Why Philosophy Matters to Tort Law' in D. Owen (ed.), *The Philosophical Foundations of Tort Law* (Oxford University Press 1997) 2; N. Oman and J. Solomon, 'The Supreme Court's Theory of Private Law' (2013) 62 *Duke Law Journal* 1109, 1118.

⁵⁹⁴ See also N. Jansen, *Die Struktur des Haftungsrechts: Geschichte, Theorie und Dogmatik ausservertraglicher Ansprüche auf Schadenersatz* (Mohr Siebeck 2003) 621-623 (collecting German sources; connecting the more distributive 'risk-principle' as a foundation of objective (stricter) forms of liability).

⁵⁹⁵ See also A. Pino-Emhart, 'The Old and New Philosophical Foundations of Tort Law' (2016) 79 *The Modern Law Review* 504, 506, footnote 9.

⁵⁹⁶ Admittedly, this is rather a 'self-fulfilling prophecy', because 'instrumentalist' distributive justice is precisely focused on those functions while 'formalist' corrective justice precisely ignores them by justifying liability rules 'from within'. See *supra* nr. 99.d.

correct an intrinsic ‘wrong’ in a relationship between two parties, but rather to provide society with a system which can protect persons from the risks of the modern system of mass consumption by preventing as many product accidents from occurring and by organizing a system of insurance, ultimately paid for by consumers, for the unfortunate individuals who happen to be affected by the remaining accidents. The latter relates to the distributive goal of ‘risk-allocation’, although the same function of ‘reparation’ can admittedly also be construed in terms of corrective justice (see *supra* nr. 98). ‘Accident-prevention’ can always only fit in the *ex ante* perspective of public policy based on distributive justice and not in the *ex post* mould of corrective justice which by nature requires that an accident has already occurred.⁵⁹⁷

Moreover, the economic analysis *infra* nrs. 110-111 reveals two additional ‘functions’ of product liability: ensuring efficient levels of consumption through price-signalling and the administrative costs of the product liability system. These are even more clearly only perceivable in terms of distributive and not corrective justice.

- c. A possible explanation for the aptness of product liability to distributive justice, is the relative distance between parties in a typical product liability claim. Partially, this is a result of product liability’s ‘privity problem’ (see *supra* nr. 5), since there is no direct contractual relationship between parties in most vertical claims and no connection at all in case of diagonal claims. Yet, extracontractual liability law is of course rife with accidents involving parties who have no pre-existing relationship whatsoever. A more fundamental reason is the fact that typical claims of ‘specific’ product liability are ‘mediated’ through products, which is why we call it somewhat bizarrely ‘product liability’ and not ‘manufacturers and distributors liability’ or something equivalent.⁵⁹⁸ Liability is ultimately imposed on a defendant, but this is based, according to most product liability theories, on the defectiveness of the harmful product with which this person had some relationship as a producer or distributor (see also *supra* nr. 18). Hence, in comparison with general extracontractual liability, it is less intuitive to think about product liability in terms of a ‘wrong’ inflicted by one person to another, while it is easier to think about it in terms of a societal risk for which legal rules should provide a public policy of prevention and insurance (cf. *supra* nrs. 99-100).
- d. A second, complementary explanation for the aptness of product liability to distributive justice, is the presence of a market. This drastically determines the actual effects of private law rules of product liability, as the economic analysis of product liability in the next Section demonstrates. The accident-prevention function of product liability operates actually on the basis of the product market,⁵⁹⁹ where prices will be higher for

⁵⁹⁷ Hence, SCHWARTZ chronicles how accident-prevention or ‘deterrence’ did not really figure in US academic literature on tort law prior to the advent of the economic analysis literature (G. Schwartz, ‘Mixed Theories of Tort Law: Affirming Both Deterrence and Corrective Justice’ (1997) 75 *Texas Law Review* 1801, 1804-1806).

⁵⁹⁸ This almost ontological perspective is explored in A. Bernstein, ‘How Can a Product Be Liable?’ (1995) 45 *Duke Law Journal* 1.

⁵⁹⁹ Of course, this is from the perspective of the purely profit-maximizing firm on the market. When

products with higher expected liability costs (see *infra* nr. 108). And the same holds true for the price-signalling function (see *infra* nr. 110).

Most importantly, the market ensures that the basic scheme of corrective justice, where a 'wrong' is 'equalized', falls apart at least according to *ex ante* economic terms.⁶⁰⁰ This is because consumers pay in normal market circumstances for the defending producer's or distributor's product liability through small price increases, which is why product liability allocates only a risk away from consumers and why consumers as a class pay for their own product liability reparation through prices similar to insurance premiums. This is different for third parties, who actually receive, if they are injured in a product accident resulting in liability, a reparation which they never had to pay for and which is instead mostly financed by the harmful product's consumers (see *infra* nrs. 106.a and 113).

Corrective justice is therefore as a theoretical framework much less persuasive for the majority of product liability cases with injured consumers. Only for injured third parties does the basic scheme hold up where someone else must repair a wrong for which he might have some responsibility. Nevertheless, even for third parties it can be argued that these same persons tend to be also consumers for other products and thus overall contribute to the product liability risk-allocation system (see *infra* nr. 112).

- e. Finally, there is the fact that 'specific product liability' theories and in particular liability based on the PLD-1985 and its US counterpart of strict products liability (see *supra* nr. 6), have moved away from the connotations of culpability and correcting 'wrongs' which are more closely associated with traditional fault-based liability. And, although it is incorrect to rigidly link strict liability with distributive justice and fault with corrective justice (see *infra* nr. 124), it is indeed true that fault-based liability more easily matches with corrective justice and stricter liability more easily with distributive justice (see *supra* nrs. 99.a and 100).⁶⁰¹ Historically, the canonists, scholasticists and natural law

dropping the economic perspective, natural persons running the firm might to some extent be inherently induced to comply with applicable liability and product safety rules, without considering any potential loss of profits.

⁶⁰⁰ A proponent of corrective justice would of course argue that an *ex post* perspective must be adopted instead. First of all, this perspective means that one must disregard the fact that the injured consumer has prior to the accident paid a slightly higher product price due to expected liability costs, since this is an allegedly redundant personal characteristic rather than a causal contributor to the accident (see *supra* nr. 99). Second, the *ex post* perspective means that the individual injured consumer will virtually always receive significantly more reparation than the slightly increased price he had paid for the particular harmful product due to expected liability costs. Someone thinking in terms of distributive justice would disagree with both points, arguing that the first's limitation is arbitrary and arguing that the second is incorrect because consumers consume in the long run countless products where they pay for expected liability costs but do not receive any reparation.

⁶⁰¹ E.g., G. Keating, 'Strict Liability Wrongs' in *Philosophical Foundations of the Law of Torts* (Oxford University Press 2014), 293: "Whatever its faults, the economic conception nurtures a habitat in which strict liability is at home. To be sure, from an economic point of view, strict liability is by no means necessarily superior to negligence. [...] The moral conception, curiously, fares worse on this score. [...] moral theorists have sought either to fit the round peg of strict liability into the square hole of negligence liability, or to expel strict

theorists who built especially in civil law systems the corrective justice foundation of modern extracontractual liability law, struggled with and largely ignored the few purely objective forms of liability inherited from Roman law.⁶⁰² And contemporary scholars propagating corrective justice as the theoretical foundation of extracontractual liability and of private law more broadly, often either shun away from or ardently criticize ‘strict liability’ such as forms of specific product liability.⁶⁰³

Nevertheless, as discussed *infra* nrs. 125-127, there have recently been scholars who argue that more strict liability, including so-called enterprise liability in the field of product accidents, can be justified on the basis of corrective justice. And it is of course misguided to understand contemporary product liability based on the PLD-1985 or US strict products liability as truly strict, since at least for design and information defects they clearly approximate fault-based liability (see *supra* nr. 7 and *infra* nrs. 173). This leaves of course the inherently stricter product liability for manufacturing defects. Hence, BÜYÜKSAGIS argues in his dissertation that distributive justice convincingly serves as the theoretical foundation of liability based on the PLD-1985 for manufacturing defects,⁶⁰⁴ while he does not in the same explicit manner claim this label for liability for design and information defects for which he happens to advocate for a purely fault-based liability.⁶⁰⁵

Section C. The functions of product liability law, informed by economic analysis

liability from the law of torts, [...].”

⁶⁰² See J. Gordley, ‘Tort Law in the Aristotelian Tradition’ in *The Philosophical Foundations of Tort Law* (Oxford University Press 1997), 131-132; J. Sampson, ‘The Place of Fault in Grotius’s Conception of Liability for Wrongdoing’ (2021) 42 *Grotiana* 53, 54-68; B. Wauters, ‘Historical, Philosophical, and Legal Foundations of Strict Liability in Hugo Grotius - Some Introductory Remarks to the Special Dossier’ (2021) 42 *Grotiana* 1, 1-3.

⁶⁰³ E.g., J. Coleman, *Risks and Wrongs* (Oxford University Press 2002), 367: “Several cases that conventional wisdom treats as falling under the rule of strict liability might be usefully analyzed as involving the kind of fault implicated in the principle of corrective justice.”; J. Goldberg and B. Zipursky, *Torts* (Oxford University Press 2010), 267: “We must acknowledge that our insistence that tort law is a law of wrongs puts us in a difficult spot when it comes to explaining the presence of common law strict liability for abnormally dangerous activities.” See also sources cited *infra* footnote 751.

⁶⁰⁴ E. Büyüksagis, *La notion de défaut dans la responsabilité du fait des produits* (Schulthess 2005), 309-311.

⁶⁰⁵ Note, however, that the arguments he raises in favour of fault-based liability for design and information defects seem to theoretically also originate from a distributive conception of justice (*ibid.*, 361-372).

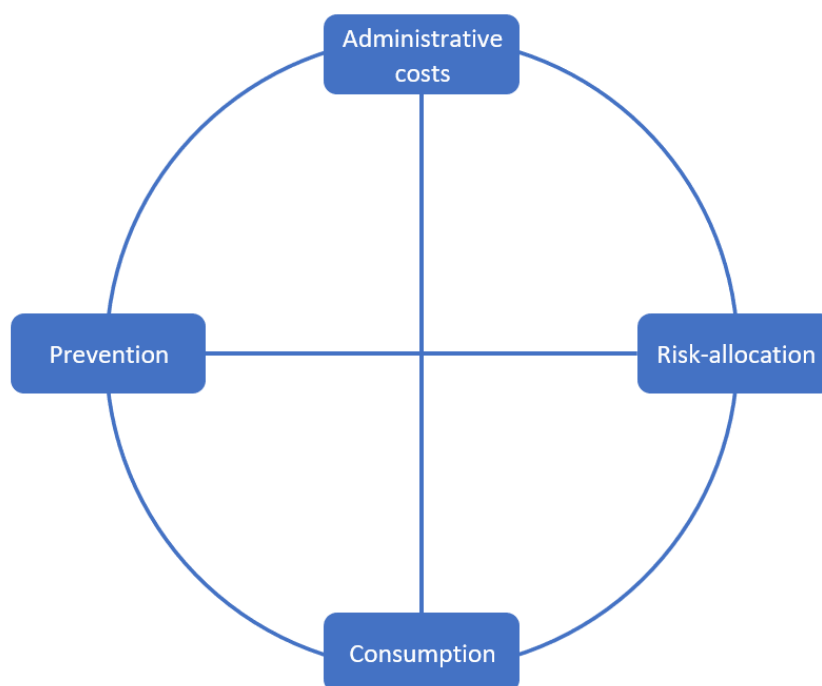


Figure 6: The ‘cross hairs’, the four general functions of product liability.

102. DIVING INTO THE DISTRIBUTIVE JUSTICE PERSPECTIVE OF THE ECONOMIC ANALYSIS OF PRODUCT LIABILITY, BY STUDYING PRODUCT LIABILITY’S ‘FUNCTIONS’ – Although there are different interpretations of corrective justice applied to extracontractual liability, its main features are relatively comparable and its normative gist clearly points towards ‘rectifying’ a ‘wrong’ committed by one person to another (see *supra* nrs. 98-99). In contrast, distributive justice is overall a more open-ended framework, because different interpretations of what is a ‘just’ distribution of resources can have much more wildly differing outcomes.⁶⁰⁶

As a next step in constructing this dissertation’s normative framework, it is therefore necessary to further explore what a sound interpretation of distributive justice in the context of product liability might be. And, here, a purposeful choice is made for the economic analysis of law (see also *supra* nrs. 23 and 51). This is mainly because this interdisciplinary legal perspective has during the last half century been extremely influential in legal academia in

⁶⁰⁶ It is in this regard worthwhile to return to ARISTOTLE as the original source. About distributive justice, he states “[...] for all men agree that what is just in distribution must be according to merit in some sense, though they do not all specify the same sort of merit, but democrats identify it with the status of freeman, supporters of oligarchy with wealth (or with noble birth), and supporters of aristocracy with excellence.” (Aristotle (translated by W.D. Ross), ‘Nicomachean Ethics’ *Internet Classics Archive MIT* (350 B.C.E.) <<https://classics.mit.edu/Aristotle/nicomachaen.5.v.html>>, Book V, § 3). In comparison, his view on corrective justice is much more fixed, even when applied across different cases: “Therefore, this kind of injustice being an inequality, the judge tries to equalize it; for in the case also in which one has received and the other has inflicted a wound, or one has slain and the other been slain, the suffering and the action have been unequally distributed; but the judge tries to equalize by means of the penalty, taking away from the gain of the assailant.” (ibid., §4).

general and for the sub-domain of product liability in particular.⁶⁰⁷ Additionally, the literature on the economic analysis of product liability law has become very comprehensive and has been refined over multiple decades of research. It is therefore also vast, which requires the following sections to mainly focus on authoritative texts reporting on the state of the art and certain key papers.

To structure this examination and to ensure that it remains limited to core insights relevant for constructing a normative framework, this Section focuses on the so-called functions of product liability. ‘Functions’ imply an external purpose or effect,⁶⁰⁸ which makes them an effective approach to structure a normative analysis based on distributive justice, as already indicated *supra* nr. 101.b. While the two most significant functions of product liability have already been mentioned at the outset of this dissertation *supra* nr. 4, economic analysis has a lot more to say about precisely how the reparation and accident-prevention functions operate as well as about two additional functions. The economic analysis literature offers furthermore valuable insights on how product liability relates to alternatives for these same functions, like product safety regulation, the market mechanism or private and public insurance.⁶⁰⁹

Finally, economists traditionally distinguish between adopting an ‘efficiency’ or an ‘equity’ outlook when analysing a legal rule. For constructing a normative framework, it is important to understand both as well as the reasons offered by economic analysts why they tend to mostly focus on efficiency.

§ 1. Traditional focus on efficiency rather than equity in the economic analysis of private law

103. ‘EFFICIENCY’ AND ‘EQUITY’ – ‘Efficiency’ is understood in this dissertation as so-called ‘Kaldor-Hicks efficiency’,⁶¹⁰ which pursues the maximization of the welfare of society as a whole (see also *infra* nr. 126, *in fine* on how ‘welfare economics’ can further expand the normative

⁶⁰⁷ This is recognized by both scholars more oriented towards corrective justice (e.g., G. Keating, ‘The Idea of Fairness in the Law of Enterprise Liability’ (1997) 95 *Michigan Law Review* 1266, 1268) and by proponents of the economic approach (e.g., M. Geistfeld, ‘Products liability’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) 288).

⁶⁰⁸ Oxford English Dictionary, ‘function (noun) - meaning & use - 2.a’ (revised 2007) <https://www.oed-com.kuleuven.e-bronnen.be/dictionary/function_n?tab=meaning_and_use#3559828>: “An activity or mode of operation that is proper or natural to a person or thing; the purpose or intended role of a thing.”

⁶⁰⁹ See *supra* nrs. 9-11 on these alternatives in general and *infra* nrs. 150-164 how these relate to product liability in the specific context of circular strategies.

⁶¹⁰ See N. Kaldor, ‘Welfare propositions in economics and interpersonal comparisons of utility’ (1939) 49 *Economic Journal* 549; J. Hicks, ‘The foundations of welfare economics’ (1939) 49 *Economic Journal* 696. It is inspired by the utilitarianism of JEREMY BENTHAM. Many contemporary economic analysts of concrete rules of private law apply this ‘Kaldor-Hicks efficiency’ rather than alternatives which are more difficult to apply for this purpose, like ‘Pareto efficiency’. See, e.g., R. Posner, *Economic Analysis of Law* (9th edn., Wolters Kluwer 2014) § 1.2; H.-B. Schäfer and C. Ott, *The Economic Analysis of Civil Law* (2nd edn., Edward Elgar 2022) 50-52.

breadth of the economic ‘efficiency’ or ‘welfare-optimalising’ analysis). It can be summarised as follows: “*state A is to be preferred to state B if those who gain from the move to A gain enough to compensate those who lose.*”⁶¹¹ Note, however, that only the possibility of this compensation should exist, which must not actually occur in practice for a situation to be considered ‘efficient’. It is also not the same as cost-benefit analysis, which is an instrumental criterion to assess a predefined normative goal, while this criterion of ‘efficiency’ is itself such a normative goal.

Economists mostly understand ‘equity’ as a particular normative view on “*the distribution of income among individuals.*”⁶¹² ‘Equity’ is of course a vast concept with countless concrete understandings in different disciplines, which do not necessarily match the economic focus on distribution of income (for example ‘procedural justice’, ‘social justice’, ‘environmental justice’ or see *supra* nrs. 97 et seq. on ‘corrective justice’). But in the economic analysis of law, it refers to how some individual persons are better off in terms of income than others as a result of a legal rule.

An intuitive understanding describes ‘efficiency’ as focusing on expanding “*the size of the pie*” and ‘equity’ as focusing on “*how the pie is sliced*”.⁶¹³

104. ECONOMIC ARGUMENTS FOR FOCUSING ON THE PERSPECTIVE OF ‘EFFICIENCY’ RATHER THAN ‘EQUITY’ IN THE CONTEXT OF PRIVATE LAW, IN PARTICULAR PRODUCT LIABILITY – Most economic analysts of private law focus on efficiency and argue that redistribution of income for the purposes of equity should be pursued through other means, in particular the system of taxes, subsidies and other transfers. Some of their key arguments, are the following.

- a. First of all, in market-based settings, which includes product accidents where the injured party is the first or a subsequent consumer of the product, it is very difficult and often even entirely impossible to redistribute income *ex ante* from one party to the transaction to the other on the basis of a general legal rule (see also *supra* nr. 101.d).⁶¹⁴ For example, if a stricter standard of product liability with fewer defences would be imposed, an individual injured consumer may be better off but, as a class, consumers will in the long run have to pay higher prices for the same products due to the expected liability costs.⁶¹⁵ More problematically, the consequence might to the contrary be an

⁶¹¹ F. Parisi, *The Language of Law and Economics: A Dictionary* (Cambridge University Press 2013) 162.

⁶¹² M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 7. See also S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 647-648; R. Cooter and T. Ulen, *Law and Economics* (6th edn., Addison-Wesley 2016) 7.

⁶¹³ M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 7.

⁶¹⁴ See S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 653-654; R. Cooter and T. Ulen, *Law and Economics* (6th edn., Addison-Wesley 2016) 8; M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 158-159. See also J. Creswell and D. Miller, ‘Determining Validity in Qualitative Inquiry’ (2000) 39 *Theory Into Practice* 124. Note that it is in competitive markets not possible to redistribute income between contractual partners, but in the case of product liability rules there might to the contrary be an undesirable subsidisation among the class of consumers from poorer to richer consumers. See *infra* nr. 117.

⁶¹⁵ M. Faure, ‘Economic Analysis of Product Liability’ in P. Machnikowski (ed.), *European Product Liability:*

adverse subsidisation within the class of consumers from poor to rich, because the expected accident costs (loss of income, damage to goods) are higher for richer consumers, while the resulting increase in prices have to be borne equally by all consumers of the same product (see *infra* nr. 116). In an important contrast, legal rules can perfectly redistribute income outside such a contractual setting. Notably, ‘third parties’⁶¹⁶ injured by product accidents effectively gain in terms of equity through a (stricter) product liability rule, while this is normally paid for by consumers of the harmful product (see *infra* nrs. 113-116).⁶¹⁷

- b. Second, legal rules rarely happen to achieve a systematic redistribution of income which matches closely with the categories between which redistribution would be desired based on equity policy considerations.⁶¹⁸ As this dissertation’s focus on product liability for circular strategies illustrates, there exists a very large diversity among potential plaintiffs and defendants in the context of accidents caused by consumer goods. A defendant might for example be a small repairer rather than a traditional manufacturing or distribution company.

Additionally, there is the reality that the redistributive effect of a legal rule generally depends on a combination of many other legal rules and factors.⁶¹⁹ In case of product liability, these factors are among others product safety regulation, regulation of the product’s use context, criminal law, training and education, resources, etc. On the one hand, these other circumstances and rules can have an opposite redistributive effect, which would undermine the equity outcome pursued by a legal rule. For example, the fact that third parties seem to gain from product liability in terms of equity, is offset by the fact that they are also themselves consumers of other products and thus still contribute to the system of product liability as a whole (but see *infra* nr. 120 on those consumers who engage more on average in circular consumption strategies). On the other hand, all these rules and factors collectively determine the overall distribution of income. And this constitutes the single, much more precise object of redistribution used by the tax and transfer system.

An Analysis of the State of the Art in the Era of New Technologies (Intersentia 2016) 647-648; M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 159. See also *infra* nrs. 108.a and 110.a.

⁶¹⁶ See *infra* footnote 709 and nr. 159 on this concept, which is different here for the purposes of the equity analysis than how this concept is understood according to the efficiency analysis of product liability.

⁶¹⁷ M. Faure, ‘Economic Analysis of Product Liability’ in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 647; M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 158-159. This is also the case when we consider insurance, where a (stricter) liability rule would result in higher premiums for insured liable parties holding liability insurance and lower premiums for third parties holding accident insurance.

⁶¹⁸ See R. Cooter and T. Ulen, *Law and Economics* (6th edn., Addison-Wesley 2016) 8; M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 162.

⁶¹⁹ See S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 654.

- c. And third, it is traditionally held that redistribution through legal rules is much more costly (inefficient) than through the tax and transfer system.⁶²⁰ To some extent, this is true. However, it must be considered that the tax and transfer system has administrative costs as well. And the costs of redistribution through legal rules are of course only very high to the extent that litigation and to a lesser negotiated settlements are required, while these are much lower to the extent that legal rules change behaviour automatically on the basis of deterrence.⁶²¹ For example, industrial manufacturers and other product liability defendants may refrain from placing a product with a particular design on the market or from making it available, purely based on fear of liability (see *infra* nr. 107). Nevertheless, such deterrent effect still requires a minimal level of actual enforcement, including in the context of product liability.

In conclusion, income redistribution through product liability rules is only possible to a limited and imprecise extent. This is definitely not to say that equity does not matter,⁶²² but rather that it is in most cases better pursued through alternatives like taxes, social security or other transfers instead, and that it makes sense to let the design of rules of private law rely on efficiency.⁶²³ Hence, it is better to focus in the design of a rule of private law and in particular of a market-based rule like product liability solely on efficiency. This can ultimately grow ‘the pie’ as a whole and thus also the ‘slice’ of every actor involved (see for example *infra* nr. 144), while the aforementioned alternative mechanisms can more effectively redistribute parts of the larger pie on the basis of equity considerations.

⁶²⁰ This argument mainly relates to administrative costs and not to the loss in efficiency resulting from price distortions which ensure that the efficient level of industry output is not obtained (cf. *infra* nrs. 110 and 111). This is because the tax and transfer system also has distortive effects, like legal rules, on what would otherwise be the efficient industry output for which people want to pay for specific products and services. Additionally, both the tax and transfer system and legal rules have a distortive effect on work effort. See S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 658; M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 155-157. Note that the extent of these distortions and the possibility for another argument in favour of redistribution through the tax and transfer system, are disputed. See, e.g., L. Kaplow and S. Shavell, ‘Why the Legal System Is Less Efficient than the Income Tax in Redistributing Income’ (1994) 23 *Journal of Legal Studies* 667, 674-677; C. Sanchirico, ‘Deconstructing the New Efficiency Rationale’ (2001) 86 *Cornell Law Review* 1003.

⁶²¹ See S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 657.

⁶²² E.g., SHAVELL gives from a welfare economics perspective the following three arguments in favour of income redistribution: the marginal utility of one dollar is likely more for a poor than a rich person; social welfare may depend directly on how equally utility is distributed among individuals, which is in turn affected by the distribution of income; and an individual’s utility may depend on the distribution of income in the general population, based on feelings of altruism and sympathy (ibid. 648-649).

⁶²³ See H.-B. Schäfer and C. Ott, *The Economic Analysis of Civil Law* (2nd edn., Edward Elgar 2022) 29 (also remarking how private law rules in countries with weaker redistributive tax and social security systems often attempt to redistribute income to socially disadvantaged individuals).

§ 2. Function 1: Risk-allocation (reparation)

105. UNDERSTANDING THE COMMON NATURE OF PRODUCT LIABILITY'S REPARATION AND RISK-SPREADING FUNCTIONS – At the outset, this dissertation has embraced the rather obvious fact that so-called 'reparation' of damage suffered by individuals is one of the core functions of product liability (see Figure 1 *supra* nr. 4 and see also the 'risk-spreading' and 'risk-internalisation' rationales *supra* nrs. 20 and 22). Doctrinal legal scholarship on product liability and civil liability law accepts this unequivocally. Nevertheless, it is interesting to see how it often distinguishes between, on the one hand, a primary goal of 'repairing' or 'compensating' damage suffered by an injured party and, on the other hand, a secondary goal of 'risk-spreading'.⁶²⁴

Such distinction between both functions is pedagogically useful, but it is also important to understand that 'reparation' and 'risk-spreading' are ultimately just two sides of the same coin. To understand this intuitively, it is worthwhile to look at a criticism raised against the traditional understanding of liability law's 'reparation' function: that it is hardly a 'function' or 'goal' at all, especially compared to alternatives like social insurance (cf. *supra* nr. 11), because even today's liability system does actually not impose liability in the vast number of cases and instead confirms in those cases that the "*loss from accident must lie where it falls*".⁶²⁵ This brings KRUIHOF to the conclusion that "*the function of liability law is more properly stated as the allocation and/or distribution of the financial burden of losses between victims and other persons [...]*".⁶²⁶

I fully agree. In my understanding, 'risk-spreading' focuses *ex ante* on risk borne by a category of persons, which can be shifted ('allocated') away through various means. 'Reparation' focuses *ex post* on what happens when the risk has been shifted away, such as on the basis of a civil liability rule for which the conditions are fulfilled, in the event that the risk has materialized. This dissertation also adopts such a unitary understanding of 'reparation' and 'risk-allocation', because of its particular usefulness in the product liability context, where also social and private insurance can allocate risk (see *supra* nr. 11) and where consumers as a class actually pay for product liability as a form of insurance through the product market, unlike injured third parties who can obtain a more traditional, actual 'reparation' (see *supra* nr. 101.d and *infra* nr. 113).

⁶²⁴ See, e.g., K. Abraham, *The Forms and Functions of Tort Law* (3rd edn., Foundation Press 2007) 17-19; J. Bell, 'The Development of Tort Law' in H. Koziol and B. Steininger (eds.), *European Tort Law 2007* (Springer 2007) 7-9; G. Viney, *Introduction à la responsabilité* (3rd edn., LGDJ 2008) 77-86; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 5-6, 9.

⁶²⁵ E.g., K. Abraham, *The Forms and Functions of Tort Law* (3rd edn., Foundation Press 2007) 18-19; M. Kruithof, 'Belgium' in B. Weyts (ed.), *International Encyclopaedia of Laws: Tort Law* (Wolters Kluwer 2018) 34. The famous expression from WENDELL HOLMES JR. has been cited *supra* footnote 588.

⁶²⁶ M. Kruithof, 'Belgium' in B. Weyts (ed.), *International Encyclopaedia of Laws: Tort Law* (Wolters Kluwer 2018) 34. See also J. Tanghe, *Het gebrek in het leerstuk van de zaakaansprakelijkheid* (Intersentia 2022) 273. The omitted second part of the quoted sentence states "[...] that in some way can influence the occurrence of the loss." This is a statement about the accident-prevention function, which is discussed in the next section.

106. THE ECONOMIC UNDERSTANDING OF HOW PRODUCT LIABILITY CAN BE EFFICIENT AS A RISK-ALLOCATION MECHANISM – From its beginning, the nascent economic analysis of law literature recognized how reparation or the lack thereof on the basis of product liability law allocates risk and how this indeed constitutes a single, core function of these legal rules.⁶²⁷

- a. More concretely, in order to assess the overall efficiency of product liability, economists adopt an *ex ante* perspective typical for distributive justice, in which they call the damage resulting from product accidents a ‘detrimental risk’. Some persons are more willing to bear such risk in return for potential benefits than others, which they call a person being more ‘risk-averse’ than another.⁶²⁸ For example, one consumer might be more willing to enjoy the benefit of a cheaper product presenting a remote safety risk than another. Or a company might be more willing than either of those consumers to bear the aforementioned risk, by incurring liability for the eventual product accident. Such company can spread and finance this liability risk through product price increases, possibly by first de-risking himself through liability insurance and charging the corresponding premiums.

Hence, a liability rule can indeed allocate the product accident’s risk away from an injured party to a producer or other liable party (see also *supra* nr. 105), just like an insurance contract allocates risk from the insured to the insurer.⁶²⁹ That only the risk is allocated away can be taken quite literally for consumers, since they generally pay for the product liability protection from an *ex ante* perspective,⁶³⁰ while injured ‘third parties’⁶³¹ additionally receive a full reparation they have not paid for (see *infra* nr. 113).

Crucially, it is generally ‘efficient’ that risks are not borne by more risk-averse persons, since these persons receive higher utility from (and are willing to pay more for) not having to bear this risk compared to a less risk-averse or risk-neutral person.⁶³²

⁶²⁷ E.g., CALABRESI referred to this as ‘secondary accident costs’ (see sources cited *supra* footnote 160). See also for an early discussion of the risk-allocation effect, which builds on CALABRESI’S earlier work R. McKean, ‘Products Liability: Trends and Implications’ (1970) 38 *University of Chicago Law Review* 3, 4, 31-34.

⁶²⁸ A more technical definition of ‘risk-averse’ is the following: “A person is said to be risk-averse if she considers the utility of a certain prospect of money income to be higher than the expected utility of an uncertain prospect of equal expected monetary value.” (R. Cooter and T. Ulen, *Law and Economics* (6th edn., Addison-Wesley 2016) 45). Note that there are also ‘beneficial risks’ which persons would voluntarily accept, like the risk of a pay-out enjoyed by a real estate agent when listing a client’s property. Note also that the opposite of a ‘risk-averse’ person is a ‘risk-seeking’ person, but this concept is not further used in this dissertation since actors seem to be in the accident and liability context just generally ‘risk-adverse’ to varying degrees or, at best, ‘risk-neutral’.

⁶²⁹ R. Cooter and T. Ulen, *Law and Economics* (6th edn., Addison-Wesley 2016) 238-239.

⁶³⁰ See also more generally on sellers passing on their liability costs to consumers R. Craswell, ‘Passing on the Costs of Legal Rules: Efficiency and Distribution in Buyer-Seller Relationships’ (1991) 43 *Stanford Law Review* 361, 366-385.

⁶³¹ See *infra* footnote 709 and nr. 159 on this concept, which is different for the purposes of redistributive effects than for the purposes of the efficiency analysis.

⁶³² See G. Wagner, ‘Tort Law and Liability Insurance’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) 379; R. Cooter and T. Ulen, *Law and Economics* (6th edn., Addison-Wesley 2016) 47; M.

- b. Crucially, persons are believed to be more risk-averse when potential losses are large compared to their personal assets and companies are presumed to be less risk-averse or risk-neutral for losses resulting from accidents with relatively low costs compared to their assets.⁶³³ A product accident, which according to this dissertation's understanding always extends to extrinsic damage (see *supra* nrs. 4-5), is of course a prime example where the loss is often (very) large for an individual consumer but more bearable for a company,⁶³⁴ which confirms the traditional 'risk-spreading' rationale of product liability discussed *supra* nr. 19. However, it must be noted that in many cases companies also seem overall 'risk-averse', albeit generally to a lesser extent than consumers.⁶³⁵ This is perhaps even more often frequently true in a more circular and collaborative economic context, but it must be noted that also large companies which mass-produce or mass-distribute identical products according to a linear economic model may be quite averse to the risk of serial damage (see also *infra* nr. 140.a). 'Prospect theory' developed by psychologists KAHNEMAN AND TVERSKY, which has been further empirically validated over the years and has influenced behavioural law and economics,⁶³⁶ generally confirms the fact that, from the bounded rationality perspective of actual persons, losses overall loom larger than gains.⁶³⁷

Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 58-59. From a welfare economics perspective, more risk-averse individuals have lower expected utilities from bearing a particular risk compared to less risk-averse persons. See S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 259.

⁶³³ See S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 258-259; R. Cooter and T. Ulen, *Law and Economics* (6th edn., Addison-Wesley 2016) 47.

⁶³⁴ M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 119.

⁶³⁵ See S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 259 (mentioning the potential role of risk-averse managers); G. Wagner, 'Tort Law and Liability Insurance' in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) 379 (discussing literature on pervasiveness of liability insurance among firms and on possible explanations, like the efficiency of market insurance compared to self-insuring through a diversified portfolio and the role of risk-averse managers); M. Faure, 'Economic Analysis of Product Liability' in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 642 (mentioning possibility of risk-aversion of firms vis à vis serial damage).

⁶³⁶ See E. Zamir, 'Law's Loss Aversion' in E. Zamir and D. Teichman (eds.), *The Oxford Handbook of Behavioral Economics and the Law* (Oxford University Press 2014) 271-274 (discussing studies confirming or elaborating on loss aversion and related phenomena which can also be explained by prospect theory like the endowment effect, the status quo bias and the sunk costs commitment). See also N. Barberis, 'Thirty Years of Prospect Theory in Economics: A Review and Assessment' (2013) 27 *Journal of Economic Perspectives* 173, 173.

⁶³⁷ D. Kahneman and A. Tversky, 'Prospect Theory: An Analysis of Decision under Risk' (1979) 47 *Econometrica* 263, 263; D. Kahneman, 'Maps of Bounded Rationality: Psychology for Behavioral Economics' (2003) 93 *The American Economic Review* 1449, 1454-1458. Note that the crucial difference between 'prospect theory' and the competing, traditional 'expected utility theory' is that people perceive outcomes as gains and losses relative to a baseline rather than as final states of welfare. And the convex value function for losses is generally steeper than the concave value function for gains.

Injured ‘third parties’⁶³⁸ can be considered as completely risk-averse. After all, to the extent that they are truly independent third parties, they receive no utility from the fact that a consumer obtains and uses a particular consumer good (potentially at a lower price in return for less safety), while this presents them with a risk of damage they want to avoid.

- c. As a result, to the extent that liable parties are indeed less risk-averse than injured consumers and third parties, product liability rules are efficient because they allocate risk away from the most risk-averse actors. More strict liability is in those circumstances more efficient in terms of risk-allocation than more traditional fault-based liability. This is because fault-based liability still leaves a (very big) risk of losses from accidents for which no risk-allocation through fault-based liability is imposed, because the standard of care is met.⁶³⁹ The traditional economic analysis even holds that no risk-allocation through a purely fault-based liability rule occurs at all as long as the standard of care is not more stringent than the ‘optimal’ level (see *infra* nr. 108.c), because rationally acting defending companies are assumed to always adhere to such an efficient standard of care.⁶⁴⁰
- d. Finally, if consumers are risk-averse, an alternative to a product liability rule in terms of risk-allocation is first-party accident insurance. This is also generally considered as more efficient than the third-party liability insurance which is often sought by parties subject to product liability.⁶⁴¹ However, such insurance tends to be incomplete, especially non-economic damage is frequently excluded or limited. And, even if this solution’s coverage would be complete, it still suffers from the classic ‘moral hazard’ and ‘adverse selection’ problems.⁶⁴² For example, to the extent that the insurer cannot sufficiently observe the insured’s conduct and adapt premiums, the moral hazard

⁶³⁸ ‘Third parties’ are understood in this efficiency analysis as all individuals whom a consumer does not consider in terms of interests and damage potential, when making a consumption decision. Therefore, this excludes in most cases household members of the consumers (who are ‘third parties’ according to the redistributive analysis) but this includes future consumers of the product in a more circular product lifecycle (who are not ‘third parties’ according to the redistributive analysis). See *infra* nr. 159.

⁶³⁹ But see M. Geistfeld, ‘Products liability’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.10 (considering this as potentially more efficient for consumers, because consumers can instead for damage by products meeting the standard of care obtain first-party accident insurance, which he considers as more efficient than product liability for risk-allocation purposes); *ibid.*, nr. 11.22 (considering the strict liability rule as preferable for third parties, who are otherwise not fully protected through the product liability system).

⁶⁴⁰ M. Faure, ‘Economic Analysis of Product Liability’ in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 642; M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 119-120. As product liability litigation demonstrates, companies are in reality of course regularly held liable under a fault-based product liability rule, which may or may not have been set at the optimal level. It therefore seems likely that a purely fault-based product liability rule still has some risk-allocation potential.

⁶⁴¹ The reasons why are discussed *infra* nr. 135.

⁶⁴² See Artigot-Golobardes, ‘Beyond European Product Liability’, 342-345.

problem necessitates the use of imperfect insurance through techniques like deductibles and co-insurance,⁶⁴³ which reduces the accident insurance's potential to efficiently allocate risk away from the risk-averse consumer.

Additionally, the moral hazard problem of first-party accident insurance, from which also social insurance suffers (see *supra* nr. 11.d), creates inefficient distortions in terms of accident-prevention and efficient consumption levels.⁶⁴⁴ For the latter, a strict product liability rule provides actually an effective remedy (see *infra* nrs. 109.e and 110.c). Moreover, if consumers sufficiently underestimate product accident risks, which is also probable for risk-averse consumers (see *infra* nr. 108.b), they might even erroneously choose not to pay for such accident insurance.⁶⁴⁵

Therefore, although there are also very clear benefits to private accident insurance compared to product liability for risk-allocation,⁶⁴⁶ product liability has some advantages in this regard as well.

§ 3. Function 2: Accident-prevention (taking care and activity-levels)

107. PRODUCT LIABILITY'S PREVENTION FUNCTION – The other core function pursued by product liability is the prevention of product accidents by requiring individuals with control over product accident risks to better take care, as also already recognised at the outset of this dissertation (see Figure 1 *supra* nr. 4 and the traditional 'accident-prevention' rationale *supra* nr. 19). While most doctrinal legal scholars recognize this function,⁶⁴⁷ it can be disputed how

⁶⁴³ See R. Epstein, 'Products Liability as an Insurance Market' (1985) 14 *Journal of Legal Studies* 645, 650-653; R. Cooter and T. Ulen, *Law and Economics* (6th edn., Addison-Wesley 2016) 238; Artigot-Golobardes, 'Beyond European Product Liability', 345; M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 60-62.

⁶⁴⁴ See *infra* footnote 684. See also *supra* nr. 11.d.

⁶⁴⁵ M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 120.

⁶⁴⁶ E.g., the 'adverse selection' problem might be much more significant in the third-party liability insurance potentially obtained by parties liable under product liability than in first-party accident insurance obtained by risk-averse consumers. See G. Priest, 'The Current Insurance Crisis and Modern Tort Law' (1987) 96 *Yale Law Journal* 1521, 1550-1582; M. Faure, 'Economic Analysis of Product Liability' in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 642.

⁶⁴⁷ See, e.g., also relating to extracontractual liability in general J. Bell, 'The Development of Tort Law' in H. Koziol and B. Steininger (eds.), *European Tort Law 2007* (Springer 2007) 5-7; G. Viney, *Introduction à la responsabilité* (3rd edn., LGDJ 2008) 86-90; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 7; J. Hager, 'Vorbemerkung zu §§ 823 ff' in H.-P. Mansel (ed.), *J. von Staudingers Kommentar zum BGB, Buch 2. §§ 823 A-D (Unerlaubte Handlungen 1 – Rechtsgüter und Rechte; Persönlichkeitsrecht; Gewerbebetrieb)* (De Gruyter 2021) nr. 10; M. Kruithof, 'Belgium' in B. Weyts (ed.), *International Encyclopaedia of Laws: Tort Law* (Wolters Kluwer 2018) 35; P. Pierre, 'La fonction normative de la responsabilité dans les projets français et belge' in B. Dubuisson (ed.), *La réforme du droit de la responsabilité en France et en Belgique* (Bruylant 2020) 111-116. Specifically relating to product liability,

substantial it is in concrete cases (see also *infra* nrs. 108-109 and 151-158),⁶⁴⁸ which is of course also true for every function of product liability. Some of the arguments raised by sceptics of this accident-prevention function are, however, unconvincing, such as claiming that the preventive effect would not exist for unintentional conduct or not for insured tortfeasors.⁶⁴⁹

In practice, it is often deemed undesirable that product liability aims to deter any possible product accident risk, which would normatively signal a requirement to take unlimited precautions that would be too costly for the marginal improvements in accident prevention in return and that would therefore no longer be fully complied with in practice.⁶⁵⁰ Instead, a form of ‘optimal deterrence’ is generally pursued,⁶⁵¹ as for example demonstrated by the product defect requirement in the PLD-1985 (see also *infra* nrs. 173 and 179 et seq.).

108. THE ECONOMIC UNDERSTANDING OF HOW PRODUCT LIABILITY CAN BE EFFICIENT AS AN ACCIDENT-PREVENTION MECHANISM, WHEN ONLY THE LEVEL OF CARE AND ACTIVITY OF THE LIABLE PARTY DETERMINES ACCIDENT RISKS – The economic analysis, which has always recognized and often prioritized the accident-prevention function of product liability law,⁶⁵² offers an explanation of how it technically operates, even in the complete absence of alternatives like the market mechanism or product safety regulation (see Figure 1 *supra* nr. 4).

- a. If a company is liable for damage resulting from having placed a defective product on the market, the company will add the expected liability costs to the product’s price,⁶⁵³

this is even more widely recognised and disputed less. See, e.g., already H. Cousy, *Problemen van produktenaansprakelijkheid: Rechtsvergelijkend onderzoek naar Belgisch, Frans, Nederlands, Duits, Amerikaans, Engels en Europees recht* (Bruylant 1978) 409-410.

⁶⁴⁸ See J. Bell, ‘The Development of Tort Law’ in H. Koziol and B. Steininger (eds.), *European Tort Law 2007* (Springer 2007) 6-7 (discussing how extracontractual liability law has been generally less important in a role of normative standard-setting than for example technical regulation or criminal law).

⁶⁴⁹ E.g., J.-L. Fagnart, ‘Vers la faute objective?’ (2018) *Revue Critique de Jurisprudence Belge* 42, 62. The threat of liability can of course induce a person to take more care and, in doing so, mitigate risks of accidents through negligence. And, even if certain conduct is completely covered by liability insurance, the insured will have to pay premiums which may increase as a result of his conduct and he might also have to pay deductibles or coinsurance to mitigate this ‘moral hazard’ risk. Admittedly, these counter-measures of insurance are never entirely perfect, which still leaves some reduction of liability law’s risk prevention function. See *supra* nr. 11.d. See also Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 8-9 (rejecting the liability insurance counter-argument and pointing to other deterring effects of liability other than obligations to repair damage, like reputational damage as well as loss of time and resources during liability proceedings).

⁶⁵⁰ See *infra* nr. 108.c on how, according to economic theory, a company subject to a completely strict liability will nevertheless choose to comply only with a lower optimal level of care, because he compares the costs of compliance with the expected liability costs.

⁶⁵¹ K. Abraham, *The Forms and Functions of Tort Law* (3rd edn., Foundation Press 2007) 16. This is clearly an economic consideration, which plays in the economic analysis a pivotal role in determining when the extent to which a liability rule prevents accidents, is efficient. See *infra* nr. 108.

⁶⁵² E.g., CALABRESI called prevention the reduction of ‘primary accident costs’ (see sources cited *supra* footnote 160).

⁶⁵³ See M. Faure, ‘Economic Analysis of Product Liability’ in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 647; M.

possibly in the form of liability insurance premiums due to risk-aversion (see also *supra* nr. 106.b). This will make consumers buy less of the riskier products due to higher prices and ultimately companies in a sufficiently competitive market are incentivized to improve product safety in order to be able to lower prices.⁶⁵⁴ This ‘indirect deterrent effect’ of product liability, which actually employs indirectly the market mechanism (see *supra* nr. 9),⁶⁵⁵ can theoretically be distinguished from a ‘direct deterrent effect’ through a court injunction subject to penalty payments,⁶⁵⁶ which is very rare in the product liability context (see *supra* nr. 4).

- b. Note that this prevention function of product liability is redundant if consumers would have perfect information about accident risks, since consumers are then themselves able to add these expected accident costs to the price.⁶⁵⁷ However, this alternative ‘market mechanism’ (see *supra* nr. 9) is relatively weak, because consumers generally suffer

Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 158-159. A more nuanced understanding is actually that defendants either signal product safety through lower prices despite liability costs or through placing higher quantities on the market, which lowers market prices but also increases their overall liability risks (see *infra* nr. 109.b). See A. Daughety and J. Reinganum, ‘Product Safety: Liability, R&D, and Signaling’ (1995) 85 *The American Economic Review* 1187, 1203.

⁶⁵⁴ See L. Kaplow and S. Shavell, ‘Economic analysis of law’ in A. Auerbach and M. Feldstein (eds.), *Handbook of Public Economics*, Vol. 3 (Elsevier 2002) 1680-1681; R. Posner, *Economic Analysis of Law* (9th edn., Wolters Kluwer 2014) § 6.6; M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 116-117. See also H. Bocken, I. Boone and M. Kruithof, *Inleiding tot het schadevergoedingsrecht. Buitencontractueel aansprakelijkheidsrecht en andere schadevergoedingsstelsels* (2nd edn., Die Keure 2014) 25-26. Either, these consumers will buy a cheaper product with a similar function suiting their needs, which might be cheaper because it can provide the required level of safety at a lower price. Or, if their demand is sufficiently elastic, these consumers might simply refrain from consuming. A company refusing to add the expected liability costs to the product price, possibly in the form of insurance premiums, and who would nevertheless place more risky products on the market, would run the risk of eventually going out of business due to unpriced liability costs. For companies, which generally act at least more rationally and driven by profit-seeking (‘firms’), this is at least in the long run unrealistic.

⁶⁵⁵ See *supra* footnote 599 on how from a non-economic perspective, it can be argued that natural persons, who also operate companies active on the market, might to some extent be inherently induced to comply with applicable liability rules and safety standards, without considering a potential loss of profits.

⁶⁵⁶ H. Bocken, I. Boone and M. Kruithof, *Inleiding tot het schadevergoedingsrecht. Buitencontractueel aansprakelijkheidsrecht en andere schadevergoedingsstelsels* (2nd edn., Die Keure 2014) 25.

⁶⁵⁷ K. Viscusi, ‘Does Product Liability Law Make Us Safer?’ in F. Buckley (ed.), *The American Illness: Essays on the Rule of Law* (Yale University Press 2013) 139; T. Miceli, K. Segerson and S. Wang, ‘Products Liability when Consumers vary in their Susceptibility to Harm and may misperceive Risk’ (2015) 33 *Contemporary Economic Policy* 468, 473-474; M. Faure, ‘Economic Analysis of Product Liability’ in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 636-637; M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 114-116. This is the perfect operation of the market mechanism as an alternative to product liability for the function accident-prevention (see *supra* nrs. 4 and 9). More technically, this is actually an application of the famous ‘Coase theorem’, according to which, if there would be zero transaction costs, the efficient outcome will occur regardless of applicable rules (R. Coase, ‘The Problem of Social Cost’ (1960) 3 *The Journal of Law and Economics* 1).

from cognitive limitations to process and act on information in a completely rational manner and because consumers tend to underestimate product accident risks.⁶⁵⁸

This underestimation results from the challenging nature of correctly assessing accident risks on the basis of product prices⁶⁵⁹ and the scarcity of other information sources on product safety (cf. *supra* nr. 9 and *infra* nr. 158). Behavioural science overall confirms such systematic underestimation of product accident risks by consumers. Notably, as a result of the ‘representativeness’ and ‘availability’ heuristics,⁶⁶⁰ which have also been studied first by TVERSKI AND KAHNEMAN, individual persons tend to underestimate low-probability risks like most product accidents because these are insufficiently salient, because they rely on their own or someone else’s past safe use of a (similar) product and because they are influenced by advertisement and other potentially manipulative techniques,⁶⁶¹ while individual persons to the contrary tend to overestimate low-probability risks which are very salient, highly publicized and catastrophic in nature, like the risks involving nuclear energy.⁶⁶²

In the rare event that consumers would overestimate accident risks for a particular product, they will in the absence of product liability consume less of this product, which marginally contributes to accident-prevention in absolute terms⁶⁶³ but is inefficient in terms of consumptions level (see *infra* nr. 110.a). Nevertheless, companies are then

⁶⁵⁸ See M. Geistfeld, ‘Products liability’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nrs. 11.4-11.6; T. Miceli, K. Segerson and S. Wang, ‘Products Liability when Consumers vary in their Susceptibility to Harm and may misperceive Risk’ (2015) 33 *Contemporary Economic Policy* 468, 474. But see K. Viscusi, ‘Does Product Liability Law Make Us Safer?’ in F. Buckley (ed.), *The American Illness: Essays on the Rule of Law* (Yale University Press 2013) 140 (claiming that consumers tend to generally overestimate product accident risks due to the potentially disastrous impact for an individual).

⁶⁵⁹ See, e.g., P. Burrows, ‘Consumer safety under products liability and duty to disclose’ (1992) 12 *International review of law and economics* 457; A. Kirmani and A. Rao, ‘No Pain, No Gain: A Critical Review of the Literature on Signaling Unobservable Product Quality’ (2000) 64 *Journal of marketing* 66.

⁶⁶⁰ See A. Tversky and D. Kahneman, ‘Judgment under Uncertainty: Heuristics and Biases’ (1974) 185 *Science* 1124, 1127-1128; D. Kahneman, ‘Maps of Bounded Rationality: Psychology for Behavioral Economics’ (2003) 93 *The American Economic Review* 1449, 1452-1454; J. Baron, ‘Heuristics and Biases’ in E. Zamir and D. Teichman (eds.), *The Oxford Handbook of Behavioral Economics and the Law* (Oxford University Press 2014) 3-4, 11, 15, 18.

⁶⁶¹ For HANSON AND KYSAR, another argument in favour of more objective ‘enterprise’ liability is the risk of further exploitation by companies of how easily consumers underestimate risks, such as through manipulative information, framing and presentation of choices, like the tobacco industry did during decades. See J. Hanson and D. Kysar, ‘Taking Behavioralism Seriously: Some Evidence of Market Manipulation’ (1999) 112 *Harvard Law Review* 1420; J. Hanson and D. Kysar, ‘Taking Behavioralism Seriously: The Problem of Market Manipulation’ (1999) 74 *N.Y.U. Law Review* 630.

⁶⁶² See M. Wogalter, D. Brems and E. Martin, ‘Risk perception of common consumer products: Judgments of accident frequency and precautionary intent’ (1993) 24 *Journal of safety research* 97, 98-101; H. Latin, ‘Good Warnings, Bad Products, and Cognitive Limitations’ (1994) 41 *UCLA Law Review* 1193, 1231-1234; R. Cooter and T. Ulen, *Law and Economics* (6th edn., Addison-Wesley 2016) 231-232.

⁶⁶³ See *infra* nr. 108.c. See also M. Geistfeld, ‘Products liability’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.4.

likely to voluntarily offer commercial warranties to counter the overestimation of accident risks by those consumers.⁶⁶⁴

- c. While this clarifies how product liability contributes to the prevention of accidents when consumers underestimate accident risks, it must be clarified to what extent economists would consider this efficient. From a welfare economics perspective, there is an efficient 'optimum' where the total costs for society are the lowest when combining the costs of taking care at a certain level with the expected accident costs for the corresponding, remaining risk ('optimal level of care'). For example, further increases in product safety such as by forsaking a cheaper, marginally less safe product design, will at a certain point no longer be worth the overall societal costs.⁶⁶⁵ This is of course reflected in the PLD-1985's defect assessment (see *infra* nrs. 179 et seq.).

Now, if a purely strict liability would apply and if the eventually awarded reparation precisely amounts to all actual damage (so that neither too much nor too little costs are taken into account), the rationally acting company ('firm') is expected to approximate this efficient, optimal level of care, because it tries to minimize its own costs and will refrain from taking inefficient, excessive precautions.⁶⁶⁶

If a purely fault-based liability would apply, an efficient outcome in terms of accident-prevention relies not only on whether only actual damage is awarded but also on whether the standard of care is set at the optimal level (see also *supra* nr. 107) and

⁶⁶⁴ M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 117, footnote 82. To the extent that such warranties are comprehensive, they have the same effect as a strict product liability rule would have, namely, to convince wary consumers to purchase the product if they value it at the offered market price. While this would reduce the additional accident-prevention efficiency resulting from the consumer overestimation, it would be efficient in terms of optimal consumption levels. See *infra* nr. 110.a.

⁶⁶⁵ K. Viscusi, 'Does Product Liability Law Make Us Safer?' in F. Buckley (ed.), *The American Illness: Essays on the Rule of Law* (Yale University Press 2013) 137.

⁶⁶⁶ S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 179-180; B. Deffains and S. Rouillon, 'Economics of Liability Precaution versus Avoidance' (2018) 128 *Revue d'Économie Politique* 41, 42; M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 44-45, 116. This means that, notwithstanding the fact that it leads to strict liability, the firm will decide to forego taking precautions exceeding the optimal level of care, because the associated costs outweigh the expected benefits in avoided liability (including potential reputational damage). This is of course a typically legal realist perspective, which discounts the possibility of a broader normative value which certain actors might attribute to legal rules. Admittedly, firms are the most economically rational category of actors.

whether a defendant's actual level of care is correctly assessed.⁶⁶⁷ If this is the case, rationally acting companies will adhere to this efficient standard of care.⁶⁶⁸

If necessary, price increases resulting from product liability's administrative costs can potentially provide an efficient correction in terms of accident-prevention by inducing defendants to take more care, up to the optimal level, if this would not happen otherwise. This might for example be useful when courts award less than the actual damage, because they set the standard of care too low or because they overestimate the defendant's actual level of care (see also *infra* nr. 111.b). This illustrates how the additional conditions make it in reality less likely that fault-based product liability is as efficient as strict product liability in terms of accident-prevention.⁶⁶⁹

- d. Note that product safety regulation can provide an alternative to product liability for the purposes of accident-prevention (see *supra* nr. 10). Of course, similar to fault-based product liability, it is necessary here that the regulator sets the required safety at the optimal level. Moreover, this alternative will always be imperfect, due to budgetary constraints limiting enforcement (corresponding with the administrative costs of this alternative), mistakes by regulators and the risk of regulatory capture.⁶⁷⁰
- e. To the extent that 'third parties'⁶⁷¹ are injured, the aforementioned prevention rationale for strict and fault-based product liability is even stronger. This is because truly independent third parties are not considered in the consumption decision and they can therefore never be protected in terms of accident-prevention through the alternative market mechanism.⁶⁷² As discussed above, consumers can contribute to accident-

⁶⁶⁷ S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 180; M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 45-46, 115-117. Note that observers like POSNER believe that the legal system by and large pursues this efficient level of care (R. Posner, *Economic Analysis of Law* (9th edn., Wolters Kluwer 2014) §§ 6.1-6.2, 8.1 ("the implicit economic logic of the common law"; it remains to be seen of course what Judge POSNER would think of the overall efficiency of other legal systems)).

⁶⁶⁸ See S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 180-181; M. Geistfeld, 'Products liability' in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.10; B. Deffains and S. Rouillon, 'Economics of Liability Precaution versus Avoidance' (2018) 128 *Revue d'Économie Politique* 41, 42.

⁶⁶⁹ See also M. Geistfeld, 'Products liability' in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.10 (discussing literature on challenges to enforce the optimal standard of care in defect cases and on possible court errors).

⁶⁷⁰ M. Polinsky and S. Shavell, 'The Uneasy Case for Product Liability' (2010) 123 *Harvard Law Review* 1437, 1453.

⁶⁷¹ See *supra* footnote 638 and *infra* nr. 159 on the concept of 'third parties' according to the efficiency analysis, which is slightly distinct from the concept according to the redistributive analysis.

⁶⁷² See M. Spence, 'Consumer Misperceptions, Product Failure and Producer Liability' (1977) 44 *Review of Economic Studies* 561, 561-562; M. Geistfeld, 'Products liability' in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.22; M. Polinsky and S. Shavell, 'The Uneasy Case for Product Liability' (2010) 123 *Harvard Law Review* 1437, 1490; M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 120-121. Third parties are therefore for purposes of accident-prevention equated with consumers who have no knowledge at all about expected product accident risks.

prevention by adding their own expected accident costs to the consumption price, to the extent that they happen to have (some) information about their accident risks and are able to rationally process and act on this information. Consumers will not do the same for the accident risks of completely independent third parties, who are for example not family members, other household members or employees.⁶⁷³

109. THE ECONOMIC UNDERSTANDING OF HOW PRODUCT LIABILITY CAN BE EFFICIENT AS AN ACCIDENT-PREVENTION MECHANISM, WHEN ALSO THE LEVEL OF CARE OF THE INJURED PARTY AND ACTIVITY-LEVELS DETERMINE ACCIDENT RISKS – Product accidents are of course not solely determined by the level of care taken by product liability defendants, in particular manufacturers. The economic analysis has over the years achieved a more refined understanding of this complexity, which not only looks at the level of care taken by the injured party but also the production and consumption levels of defendants and consumers.

- a. If injured parties, either consumers or ‘third parties’⁶⁷⁴, are to some extent able to prevent accidents by also taking care themselves, a combination of a strict or a fault-based liability rule with a defence of contributory fault, will be the most efficient rule. This assumes again that the standard of care for the contributory fault is set at the socially optimal level and that a judge can accurately determine the injured party’s actual level of care.⁶⁷⁵ In practice, many potential product accidents are such ‘bilateral accidents’ where both parties can theoretically reduce accident risks by taking care.
- b. In many cases, product accident risks are not only determined by the level of care taken by parties but also by their ‘activity level’. After all, at the society-wide level of the efficiency analysis, there will indeed be more overall accidents when more items (of a given product type) are produced and used. In the context of durable consumer goods, this leads in my opinion to an additional argument why a rule of strict liability paired with a contributory fault defence can be considered as more efficient than a fault-based liability rule. Strict liability induces companies to produce the optimal number of products in terms of accident-prevention based on the extent to which different consumers value those products.⁶⁷⁶ But strict liability also lets consumers engage in an excessive level of consumption which is inefficient in terms of accident-prevention, because these

⁶⁷³ See M. Geistfeld, ‘Products liability’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.22: “One who buys a product frequently contemplates that it will be used by others, typically family members, friends, or employees. In making the purchase decision, the buyer presumably gives equal consideration to the welfare of these other users, including employees (due to either liability concerns or the need to minimize the cost of compensating the employee for facing work-related risk).”

⁶⁷⁴ See *supra* footnote 638 and *infra* nr. 159 on the concept of ‘third parties’ according to the efficiency analysis, which is slightly distinct from the concept according to the redistributive analysis.

⁶⁷⁵ See S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 184-185, 200-202, 208-211; M. Geistfeld, ‘Products liability’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.20; M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 44-46, 54, 116-117.

⁶⁷⁶ See H.-B. Schäfer and C. Ott, *The Economic Analysis of Civil Law* (2nd edn., Edward Elgar 2022) 188, 211-212. See also S. Shavell, ‘Corrective Taxation versus Liability as a Solution to the Problem of Harmful Externalities’ (2011) 54 *Journal of Law & Economics* S249, S263.

consumers are certain that they will be compensated. The inverse is true if a fault-based liability rule applies in combination with a contributory fault defence, if the standard of care is set at the optimal level and all actors behave purely rationally. Under such fault-based rule, companies produce too many products in terms of accident-prevention, but on the flipside consumers do not engage in an inefficiently excessive consumption because they bear the risk of remaining product accidents which do not violate the standard of care.⁶⁷⁷ However, excessive consumption is not realistic for many durable consumer goods, because consumers need only one product, like a dishwasher, or at maximum a few ones, like dishes.⁶⁷⁸ This makes in my opinion the downside in terms of activity-levels of a more purely fault-based liability much more significant than the downside of stricter product liability rule.

- c. Note that this dissertation uses the term ‘contributory fault defence’ as encompassing both the rule called in US law ‘contributory negligence’, where in the event of the injured party’s fault liability is entirely excluded, as well as the rule US law calls ‘comparative negligence’, where in the event of the injured party’s fault, liability is proportionately reduced on the basis of the nature of each party’s fault or a causal share criterion.⁶⁷⁹ Although this has evolved over the years, the consensus in the economic analysis of law literature now seems to be that one rule cannot be considered as overall more efficient than the other.⁶⁸⁰
- d. Furthermore, the economic analysis of law literature traditionally holds that a defence of contributory fault is actually redundant if paired with a purely fault-based liability rule. This is premised on the assumptions that not only companies subject to liability for fault but also injured parties are fully rational actors and that the standard of care is

⁶⁷⁷ See A. Marino, ‘Products liability and scale effects in a long-run competitive equilibrium’ (1988) 8 *International Review of Law and Economics* 97, 104; S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 184-185, 196, 201-202.

⁶⁷⁸ See also M. Polinsky, *An Introduction to Law and Economics* (4th edn., Wolters Kluwer 2011) 119-120 (noting this point with regards to the moral hazard problem resulting from first-party accident insurance).

⁶⁷⁹ In the US, the traditional common law rule of pure ‘contributory negligence’ has been in many states completely or partially replaced by some form of a ‘comparative negligence’ rule. See, e.g., § 7 Joint and Several or Several Liability for Independent Tortfeasors, reporters’ note a) Restatement (Third) of Torts: Apportionment of Liability (American Law Institute 2000). Belgian, French and German law, like most other European legal systems, rather adopt a rule of ‘comparative negligence’ which can potentially result in a complete exclusion of liability akin to ‘contributory negligence’ (e.g. in case of an intentional fault by the injured party) but also in no reduction of liability (e.g. in case of an intentional fault by the liable party). See, e.g., *infra* footnotes 1152-1157 on the implementation of art. 8(2) PLD-1985.

⁶⁸⁰ E.g., O. Bar-Gill and O. Ben-Shahar, ‘The Uneasy Case for Comparative Negligence’ (2003) 5 *American Law and Economics Review* 433 (disproving the at-the-time prevailing case in favour of comparative negligence as more efficient); M. Artigot i Golobardes and F. Gómez Pomar, ‘Contributory and comparative negligence in the law and economics literature’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009), 46 (“Today, though, discussion on the relative efficiency properties is more parsimonious in terms of a global advantage, and scepticism prevails about deciding which rule is preferred.”).

set at the optimal level.⁶⁸¹ However, the latter is uncertain and it can be doubted that defendants and even more so injured parties in the absence of a contributory fault rule, are able to always rationally adopt the optimal level of care, among others because they tend to underestimate product risks (see *supra* nr. 108.b). Fault-based liability can therefore from a realist perspective be considered as more efficient in terms of accident-prevention when combined with a contributory fault defence than without such defence. Nevertheless, the need for a contributory fault defence is indeed greater under a purely fault-based than under a strict product liability rule, since in the former case injured parties must always bear their own losses when the defendant meets the applicable standard of care, yet an accident nevertheless occurs.

Some economic analysts suspect that courts are often too hesitant to find that an injured party has committed a contributory fault,⁶⁸² which seems to be at least somewhat plausible on grounds of empathy in the linear economic product accident context where injured individuals sue often large companies. If this is true, the result would be that fault-based product liability (in my opinion, still preferably paired with a contributory fault defence) is actually more efficient in inducing injured parties to take precautions than a combination of strict liability with a contributory fault defence, given the aforementioned greater role of this defence under the latter liability rule for purposes of efficient accident-prevention.⁶⁸³

- e. Finally, to the extent that injured parties enjoy first-party accident insurance or social insurance coverage and to the extent that the resulting ‘moral hazard’ problem cannot be completely avoided through premium-adaptations based on their behaviour, deductibles or co-insurance, then the amount of care taken by these injured parties will decrease even despite a contributory fault defence.⁶⁸⁴ This ‘first party insurance distortion’ is of course inefficient in terms of accident-prevention.

⁶⁸¹ This would mean that also those injured parties will choose to adopt the optimal level of care (i.e. taking efficient precautions), because they will always have to bear the losses of a still occurring accident given that liable parties are expected to comply with the optimal standard of care applicable to them (see *supra* nr. 108.c). See S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 186-187, 202; M. Polinsky, *An Introduction to Law and Economics* (4th edn., Wolters Kluwer 2011) 121.

⁶⁸² E.g., M. Faure, ‘Economic Analysis of Product Liability’ in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 640.

⁶⁸³ M. Faure, ‘Economic Analysis of Product Liability’ in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 640.

⁶⁸⁴ This ‘first-party insurance distortion’ in terms of accident-prevention has been first fully acknowledged by HANSON AND LOGUE (J. Hanson and K. Logue, ‘The First-Party Insurance Externalities: An Economic Justification for Enterprise Liability’ (1990) 76 *Cornell Law Review* 129). See also *supra* nr. 11.d on insurance’s ‘moral hazard’ problem. See also M. Polinsky and S. Shavell, ‘The Uneasy Case for Product Liability’ (2010) 123 *Harvard Law Review* 1437, 1462 (noting that this ‘first party insurance distortion’ does not apply to damage excluded from coverage, such as most non-economic damage in the US); Artigot-Golobardes, ‘Beyond European Product Liability’, 337.

§ 4. Function 3: Price-signalling (consumption level)

110. PRODUCT LIABILITY AS A MECHANISM TO ACHIEVE EFFICIENT ‘CONSUMPTION’ OR ‘INDUSTRY OUTPUT’ LEVELS – Besides the two aforementioned functions of allocating risk and preventing accidents, product liability has also a price-signalling function. Doctrinal legal sources do not discuss this effect of product liability rules, which admittedly can only be perceived in purely economic terms. Hence, it was also not included in this dissertation’s introduction (see Figure 1 *supra* nr. 4). Nevertheless, this price-signalling function offers significant societal benefits and it allows to make another distinction between the efficiency of different product liability rules. Moreover, as discussed *infra* nr. 148, the price-signalling function actually seems to be the key reason why a stricter product liability rule can also be considered as overall more sustainable than a fault-based rule.

- a. The point of departure to understand this function, is the fundamental economic proposition that it is efficient if consumers only consume a product if the value they attribute to it exceeds the total costs of the product, which consists most notably of its market price and potential expected accident costs (see *infra* nr. 122 on the possibility of internalizing costs related to sustainable development). In terms of welfare economics, social welfare is not maximized if an individual derives less utility from consuming a product than it has total costs for society.

If consumers would have perfect information about the expected accident risks and if they would act rationally, they only purchase a product if they personally value it more than those total costs. However, it is unlikely that the efficient level of ‘consumption’ or ‘industry output’ is achieved through this market mechanism which also operates as a potential alternative for accident-prevention, because consumers are rarely perfectly informed and their behaviour is not purely rational.⁶⁸⁵

If consumers instead underestimate product accident risks, which is more likely (see *supra* nr. 108. b), a strict product liability rule limited to repairing all actual damage would be efficient. This is because all expected accident costs will be added by the liable company to the product price and consumers thus avoid consuming too much of a product which they value less than those total costs.⁶⁸⁶ In much rarer cases where consumers would overestimate product accident risks, relying on the strict product liability rule can similarly help consumers to avoid refraining from consuming a product when the value they derive from it actually exceeds the product’s total costs.⁶⁸⁷

If, in contrast, the imposed product liability is a traditional fault-based rule, only the expected costs corresponding with accidents for which fault-based liability would still

⁶⁸⁵ See *supra* nrs. 9 and 108.b. See also M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 114-116.

⁶⁸⁶ See M. Faure, ‘Economic Analysis of Product Liability’ in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 639-640.

⁶⁸⁷ M. Polinsky and S. Shavell, ‘The Uneasy Case for Product Liability’ (2010) 123 *Harvard Law Review* 1437, 1460. This again assumes that injured parties receive full compensation, including for example for loss of time, emotional disutility and opportunity costs resulting from product liability litigation. Cf. *supra* nr. 108.c and *infra* nr. 111.a.

be imposed, will be added to product prices. As long as the fault's standard is not more stringent than the socially optimal level of care, economists even assume that in a sufficiently competitive market no such costs at all will be added to the price, since it is profitable for rationally acting liable parties to comply with such standard of care.⁶⁸⁸ This means that, in the likely scenario that consumers underestimate accident risks, they will inefficiently consume too much under a fault-based rule.⁶⁸⁹

Note how fault-based liability can be as efficient as strict liability in terms of preventing accidents,⁶⁹⁰ but it is certainly less efficient than strict liability in terms of setting product prices at a level which ensures an efficient level of 'consumption' or 'industry output'. Economists call this mechanism the 'price-signalling function' of strict product liability. Note additionally how this efficiency benefit is even greater to the extent that truly independent 'third parties'⁶⁹¹ risk being injured by product accidents, because consumers will never add those expected accident costs to their product price.⁶⁹²

- b. Product safety regulation can theoretically serve as an alternative to product liability for this price-signalling function. However, even when considering the limitations of this approach (see *supra* nr. 108.d), the outcome will be very similar to fault-based liability, since regulators will likely strive to set the required level of safety at the optimal level or at least not require absolute safety given the inefficiency and associated administrative costs of enforcement (see *supra* nr. 108.c). The accident costs corresponding with accidents meeting this regulatory level of safety will therefore not be reflected in product prices and not achieve the same efficiency in price-signalling as strict product liability.
- c. The remaining moral hazard problem from first-party accident insurance enjoyed by consumers and to a lesser extent from social insurance,⁶⁹³ can have a similar inefficient

⁶⁸⁸ S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 196; M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 46, 116-117. See also *supra* nr. 108.c. As product liability litigation demonstrates, companies are in reality of course regularly held liable under a fault-based product liability rule, which may or may not have been set at the optimal level. It therefore seems likely that a purely fault-based product liability rule still has some price-signalling potential.

⁶⁸⁹ See M. Geistfeld, 'Products liability' in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.10; M. Faure, 'Economic Analysis of Product Liability' in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 639-640; M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 46, 117.

⁶⁹⁰ For fault-based liability, this requires that the standard of care is set at the efficient (socially optimal) level and that courts can accurately determine a party's actual level of care. For strict liability, this only requires that liability is limited to repairing all actual damage. See *supra* nr. 108.

⁶⁹¹ See *supra* footnote 638 and *infra* nr. 159 on the concept of 'third parties' in the efficiency analysis, which is slightly distinct from the concept in the redistributive analysis.

⁶⁹² See M. Geistfeld, 'Products liability' in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.22; M. Polinsky and S. Shavell, 'The Uneasy Case for Product Liability' (2010) 123 *Harvard Law Review* 1437, 1490-1491.

⁶⁹³ Insurers can mitigate this moral hazard, through premium adaptations (in case of private accident

effect on consumption levels as consumers underestimating accident risks: they will consume products even when the total societal costs exceed their value to them, now simply because they have externalized at least some accident costs to their insurer. Hence, a strict product liability rule has another, smaller price-signalling benefit, since it compels also consumers covered by first-party insurance and social insurance to only consume if they actually value a product at its full price including all expected accident costs.⁶⁹⁴

- d. The magnitude of strict product liability's efficiency in terms of price-signalling compared to no liability or fault-based liability, thus depends on the extent to which consumers under- or overestimate accident risks, the magnitude of expected damage resulting from particular product accidents and, to a lesser extent, the extent to which consumers have first-party accident insurance coverage with a corresponding moral hazard.⁶⁹⁵
- e. Nevertheless, it is important to note that also strict product liability's price-signalling function is imperfect. Most notably, product liability's considerable administrative costs are also added to product prices and, consequently, distort the signalling of the actual price of these products, which consists of production and expected accident costs. This 'indirect administrative cost' of product liability, which ensures that consumers will consume too little from an efficiency perspective, is discussed *infra* nr. 111.b. Additionally, product liability's price-signalling function is also distorted when consumers receive more or less compensation than the damage they actually suffer. This can hypothetically even out the aforementioned administrative costs distortion in the event that consumers would be undercompensated, which would lower product prices and in turn increase consumption above the efficient level. Yet, economic analysts are traditionally more concerned about overcompensation, such as through punitive damages or too high non-economic damages, which would increase product prices too much and in turn reduce consumption below the efficient level.⁶⁹⁶ Such damages are of course typical for US law but less typical for most European legal systems.

insurance) and imperfect insurance (deductibles and co-insurance in case of private and social insurance), but not completely exclude it. See also *supra* nrs. nr. 11.d and 108, *in fine*.

⁶⁹⁴ See J. Hanson and K. Logue, 'The First-Party Insurance Externality: An Economic Justification for Enterprise Liability' (1990) 76 *Cornell Law Review* 129, 168; M. Polinsky and S. Shavell, 'The Uneasy Case for Product Liability' (2010) 123 *Harvard Law Review* 1437, 1461-1462. In the long run, this effect assumes that the insurer is subrogated in the injured consumer's product liability claim after compensating him. See also *supra* nr. 11.d.

⁶⁹⁵ See S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 197-198; M. Polinsky and S. Shavell, 'The Uneasy Case for Product Liability' (2010) 123 *Harvard Law Review* 1437, 1460-1462.

⁶⁹⁶ See, e.g., M. Polinsky and S. Shavell, 'The Uneasy Case for Product Liability' (2010) 123 *Harvard Law Review* 1437, 1472.

§ 5. Function 4: Direct and indirect administrative costs

111. THE DIRECT AND INDIRECT ADMINISTRATIVE COSTS OF PRODUCT LIABILITY – A final major function of product liability, although unintended in nature, are the costs for operating these liability rules, their so-called ‘administrative costs’. Doctrinal private law scholars only mention this aspect in passing and rightly emphasize how this is mostly determined by rules of civil procedure, the costs of legal representation and other factors largely beyond substantive rules of liability law. Economic analysts have logically always considered these costs,⁶⁹⁷ since they determine in combination with the aforementioned potential benefits, for which partial alternatives exist, the ultimate efficiency of a product liability rule. If these costs of a product liability rule would outweigh the benefits of the aforementioned risk-allocation, prevention and price-signalling functions, then such product liability rule would be overall inefficient, even when not considering the benefits and costs of the alternatives to product liability (see also *infra* nrs. 135 et seq. and 150 et seq.).

- a. First of all, such costs of product liability consist of ‘direct administrative costs’ like time and resources spent in negotiations and in court proceedings, up-front and ultimate costs in terms of attorney and court fees, all emotional costs and all resulting opportunity costs.⁶⁹⁸ These direct costs also encompass the share of product liability litigation in costs of the judiciary, court buildings and the system for enforcement of judgements. Product liability thus generates substantial administrative costs, which are indeed primarily determined by civil procedure, the market for legal services, legal culture, the efficiency of the court system, etc.⁶⁹⁹ Nevertheless, it must be considered that only a fraction of product accident cases result in lengthy, costly court proceedings and that, even if a claim is made, it can be voluntarily paid or settled after negotiations, which might be handled more efficiently when product liability is combined with liability and accident insurance. Only a relative low number of actual litigation is required for the product liability system to function (see also *supra* nr. 104.c), by requiring defendants to add expected liability costs to product prices.

Feedback mechanisms can be identified here. To the extent that the up-front costs or ultimate costs of litigation at the winning and/or losing side are too high, certain, namely poorer and more risk-averse⁷⁰⁰ actors will refrain from further pursuing a claim

⁶⁹⁷ E.g., CALABRESI called this the ‘tertiary accident costs’. See sources cited *supra* footnote 160.

⁶⁹⁸ S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 280-281.

⁶⁹⁹ See M. Polinsky and S. Shavell, ‘The Uneasy Case for Product Liability’ (2010) 123 *Harvard Law Review* 1437, 1469-1470; Artigot-Golobardes, ‘Beyond European Product Liability’, 334.

⁷⁰⁰ The extent to which injured parties are risk-averse vis à vis the prospect of paying to pursue a product liability claim in the hope of a bigger return (i.e. reparation and, depending on the legal system, a (partial) repayment of litigation costs), likely depends on whether this is perceived more as a ‘beneficial risk’ rather than a ‘detrimental risk’. See the references to risk-aversion and ‘prospect theory’ *supra* nr. 106.a-b. Additionally, to the extent a detrimental risk is perceived, the resulting risk-aversion is definitely amplified by how poor an injured party is in comparison with the feared loss in time, effort and futile litigation costs.

(or more rarely from pursuing a defence).⁷⁰¹ From an efficiency perspective, this means that the aforementioned benefits gained from product liability in relation to these actors is forfeited, which reduces the overall efficiency of product liability.⁷⁰² On the flipside, such decisions to abandon claims mitigate in turn the total administrative costs of the product liability system, which makes it slightly more efficient. From an equity perspective, such prohibitively high (up-front and/or ultimate) product liability enforcement costs for economically weaker actors are of course very problematic, as discussed *infra* nr. 112.

- b. Second, there are also indirect costs, which result from the fact that liable parties have to include the aforementioned direct administrative costs in product prices.

On the one hand, this most notably distorts product liability's price-signalling function (see *supra* nr. 110). Due to this artificial price increase, certain consumers will refrain from consuming a particular product although they actually value it at or above the price of its actual production and expected accident costs, which is economically inefficient.⁷⁰³

On the other hand, this artificial increase in product prices resulting from direct administrative costs, can occasionally turn out to be efficient in terms of accident-prevention.⁷⁰⁴ If courts would for example award less than the actual damage or if, in case of fault-based liability or the contributory fault defence, they would set the standard of care below the optimal level or would overestimate a party's actual level of care, then these artificial increases of the expected liability costs can help to set product prices higher to ensure that not too many consumers purchase relatively unsafe products. This contributes directly to accident-prevention, but in a sufficiently competitive

⁷⁰¹ Together with the fact that the (upfront and ultimate) administrative costs of pursuing a product liability claim may be prohibitive for poorer and more risk-averse actors, another element might be the lack of specialized knowledge of injured parties in general (and in particular defendants lacking access to sophisticated legal and technical counsel), especially in case of design defects. See M. Simon, 'Imperfect Information, Costly Litigation, and Product Quality' (1981) 12 *Bell Journal of Economics* 171, 181; M. Geistfeld, 'Products liability' in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.10.

⁷⁰² There is therefore also an argument to be made in favour of legal support from an efficiency perspective, although (entirely free) legal support creates a moral hazard problem as well. See, e.g., J. Ordover, 'Costly Litigation in the Model of Single Activity Accidents' (1978) 7 *Journal of Legal Studies* 243, 258 (arguing in favour of subsidisation of private litigation if administrative costs are not too high and arguing in favour of an alternative system to product liability of social insurance if those costs are too high).

⁷⁰³ M. Polinsky and S. Shavell, 'The Uneasy Case for Product Liability' (2010) 123 *Harvard Law Review* 1437, 1471.

⁷⁰⁴ R. Cooter and T. Ulen, *Law and Economics* (6th edn., Addison-Wesley 2016) 242. Note that this is a very complex topic, where various additional considerations must be considered in a more detailed analysis, such as the rate of settlement, the extent to which attorney fees are shifted to the losing party, the alternative and complementary function of reputational sanctions, etc. See, e.g., K. Hylton, 'Welfare Implications of Costly Litigation under Strict Liability' (2002) 4 *American Law and Economics Review* 18; S. Baker and A. Choi, 'Reputation and Litigation: Why Costly Legal Sanctions Can Work Better than Reputational Sanctions' (2018) 47 *Journal of Legal Studies* 45.

market this will induce defendants to take more care up to the optimal level, if that would not yet have been the case (see *supra* nr. 108.c).⁷⁰⁵ However, this is only an incidental outcome and, in probably as many if not more cases, the increase in expected liability costs resulting from product liability's administrative costs may overshoot what corresponds with the optimal level of care, which is no longer efficient in terms of accident prevention.⁷⁰⁶

- c. The literature seems to agree that between product liability rules, it cannot be generally determined which variant leads to higher administrative costs on average and is therefore less efficient in terms of administrative costs.⁷⁰⁷ On the one hand, it is held that a stricter product liability rule ultimately leads to a higher number of claims in total. This is because injured parties will then in comparison with a more purely fault-based liability more frequently estimate that they have a viable claim. On the other hand, it is held that among the fewer claims resulting from fault-based liability, more of them lead on average to more costly (lengthy) litigation instead of settlements. This is because a fault requirement is an element subject to more potential dispute in addition to damage and causation than a very strict liability requirement, like a manufacturing defect under the PLD-1985 (see *infra* nr. 174).⁷⁰⁸ A strict product liability rule combined with a contributory fault defence achieves a mixed result where both effects even each other out.

⁷⁰⁵ Note that if the price increase resulting from the administrative costs would be too great or if the aforementioned circumstances would not be present and the required standard of care is for example already set at or above the socially optimal level, costs-minimizing defendants will still only take the optimal, efficient level of care. See *supra* nr. 108.c.

⁷⁰⁶ See J. Ordoover, 'Costly Litigation in the Model of Single Activity Accidents' (1978) 7 *Journal of Legal Studies* 243; K. Hylton, 'Costly Litigation and Legal Error under Negligence' (1990) 6 *Journal of Law, Economics, & Organization* 433, 433-435.

⁷⁰⁷ Naturally, the rule of 'no liability' is by far the most efficient in this regard, because it excludes all administrative costs.

⁷⁰⁸ See S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 283; M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 54-55; H.-B. Schäfer and C. Ott, *The Economic Analysis of Civil Law* (2nd edn., Edward Elgar 2022) 216. But see T. Friehe, 'Precaution v. avoidance: A comparison of liability rules' (2009) 105 *Economics Letters* 214. FRIEHE argues that a defendant will engage under fault-based liability less in socially inefficient 'avoidance' strategies, which mainly consist of legal defences to dispute a correct liability claim. However, he seems to ignore the fact that fault-based liability offers more substantive legal grounds for such costly disputes.

Section D. Redistribution and sustainability, from the perspective of economic analysis

§ 1. Redistributive effects of product liability are also determined by these four functions

112. THE FOUR FUNCTIONS DETERMINE NOT ONLY EFFICIENCY BUT ALSO EQUITY – Given the arguments discussed *supra* nr. 104, the economic analysis of law literature rarely pays attention to ‘equity’ aspects of product liability rules and the four aforementioned functions are therefore almost exclusively studied in the literature in terms of ‘efficiency’. Nevertheless, this dissertation will adopt a normative perspective which is broader than economic efficiency, as discussed in the next Section. It is in this regard important to note that these same four⁷⁰⁹ functions of product liability of course also have redistributive effects.

The following sections summarise how these functions shape product liability’s impact in terms of ‘equity’. It must be noted, however, that these redistributing effects do not necessarily provide arguments against or in favour of certain product liability rules. This is because, as examined *supra* nr. 104, more comprehensive and precise redistribution can be achieved instead through the tax and transfer system in a generally more efficient manner.

113. RISK-ALLOCATION: PROFITS FOR CONSUMERS AND EVEN LARGER PROFITS FOR THIRD PARTIES, NORMALLY EXCLUSIVELY PAID FOR BY CONSUMERS – First of all, risk-averse consumers and ‘third parties’⁷¹⁰ individually derive utility and thus income from the fact that they have to bear no product accident risk under a hypothetically completely strict (‘risk-liability’) product liability rule.⁷¹¹ Since the average accident risk for an individual product is significantly higher for consumers than for third parties, this profit is larger for consumers. Crucially, however, third parties also gain in case of an accident the complete product liability reparation as a net profit, since they did not pay for the product liability through market prices.⁷¹² In both cases,

⁷⁰⁹ As generally remarked *supra* nr. 96, product liability rules can of course also have other functions with redistributive effects. But these four functions are the only ones common to all product liability rules and all durable consumer goods.

⁷¹⁰ ‘Third parties’ are understood in this redistributive analysis as all individuals, including household members of the consumer, who have not paid with their own assets for product liability through the price of a specific product. This excludes subsequent consumers of the same product, who are nevertheless ‘third parties’ in terms of the efficiency analysis. See *infra* nr. 159.

⁷¹¹ It is worth reiterating here that, while consumers overall tend to be risk-averse, third parties are by definition averse to the product accident risk for which they receive no benefit (e.g. utility from a product at lower prices) in return (see *supra* nr. 106.b). The odd individual consumer who would actually be risk-seeking relating to the detrimental product accident risk, receives a loss from product liability’s mandatory risk-allocation away from him for which he has to pay.

⁷¹² See M. Faure, ‘Economic Analysis of Product Liability’ in P. Machnikowski (ed.), *European Product*

to the extent that a more fault-based liability rule applies, this risk-allocation benefit, including full reparation for third parties, is lower and can theoretically be even entirely non-existent if the standard of care is not set above the optimal level (see *supra* nr. 106.b-c).

To the extent that those risk-averse consumers and third parties would already be covered by social insurance or private first-party accident insurance, they would no longer receive these additional profits from product liability (see also *infra* nr. 162 on how this might be more significant in a circular economic setting). Yet, such insurance is for practical reasons and due to the moral hazard problem never complete. And if we weigh from an equity perspective product liability against such social or private accident insurance, we must consider that insured parties also have to pay for it through taxes or premiums, including for the (admittedly lower) administrative costs of those systems. For third parties, this alternative can be considered as unattractive, because product liability has no costs for them. Hence, a product liability rule which is as strict as possible is by far the best outcome for third parties.⁷¹³

In contrast, consumers have to pay for product liability through price increases (see *supra* nr. 108.a), which include not only the expected accident costs for themselves and for third parties but also product liability's administrative costs. Hence, if those costs for third parties and administrative costs are sufficiently high, this can outweigh the risk-allocation profit gained by risk-averse consumers through product liability, especially if the latter is small to non-existent in case of a more fault-based liability (see *supra* nr. 106.c). Naturally, product liability offers also accident-prevention and price-signalling profits to consumers and this must be discounted towards those same costs (cf. *infra* nrs. 114-115).

Conversely, if defendants would be risk-averse as well, which some of them especially in a more circular economic context occasionally might be (see *supra* nr. 106.b and cf. *infra* nr. 140.a), they suffer disutility and thus losses from being required to bear the product liability risk. Under a stricter liability rule, this loss is again more significant. Under a more fault-based liability rule, this loss is again smaller and even non-existent if the defendant would effectively adhere to the standard of care (see *supra* nr. 106.c). Risk-adverse defendants can of course obtain third-party liability insurance,⁷¹⁴ which would remove this risk-bearing loss for them. Nevertheless, such insurance does not cover all liability costs, if only because of the moral hazard problem. And a very competitive market may require defendants to not charge at least the administrative costs component of the insurance premiums through price increases, which would then also constitute a loss for them in terms of equity. More problematically for defendants, under certain market circumstances there is a risk that some of them would be unable to fully charge the actual product liability costs (or the main component of the aforementioned premiums) through product prices, which would constitute a potentially significant loss of income for those defendants and a profit for the corresponding consumers.

Liability: An Analysis of the State of the Art in the Era of New Technologies (Intersentia 2016) 647; M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 158-159.

⁷¹³ See in particular M. Geistfeld, 'Products liability' in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nrs. 11.10, 11.22.

⁷¹⁴ Note that from an efficiency perspective, third-party liability insurance is generally considered as less efficient than first-party accident insurance. See *supra* footnote 641.

Finally, to the extent that social insurance operates as an alternative to product liability and is paid for by taxes, this would of course, depending on the taxation system, also be proportionately borne by consumers, third parties and defendants. For third parties and defendants, relying on the alternative system of product liability is therefore more profitable.

114. ACCIDENT-PREVENTION: PROFITS FOR CONSUMERS AND THIRD PARTIES, NORMALLY EXCLUSIVELY PAID FOR BY CONSUMERS – To the extent that consumers underestimate product accident risks, which is likely, or are otherwise incapable of acting on product safety information in their consumption behaviour, product liability rules can reduce accidents.⁷¹⁵ Third parties and consumers individually profit from the fact that consequently more accidents are prevented as a result of product liability, although this profit is proportionately larger for consumers since the avoided accidents would have had higher expected losses for them as consumers of the harmful product than for third parties.

For third parties, this is nevertheless again a net profit, since they did not have to pay for this product liability system.⁷¹⁶ In contrast, consumers have paid for this through product prices (see *supra* nr. 108.a). Whether consumers actually profit, depends therefore again on product liability's administrative costs in combination with the costs of protecting third parties. These might outweigh the profit a consumer made as result of product liability's accident-prevention function.⁷¹⁷ However, the risk-allocation and price-signalling profits consumers gain from product liability must also be weighed against those same costs to decide whether consumers have a net profit or loss (cf. *supra* nr. 113 and *infra* nr. 115).

Defendants do not profit from this accident-prevention function, at least not directly.⁷¹⁸ In the absence of product liability, they would not have had to bear the corresponding damage. Only if they would have had still suffered some damage, like reputational damage, this could now be considered as a profit for them from product liability's prevention function. Defendants are generally able to charge the expected liability costs or liability insurance premiums through product prices. However, to the extent that some defendants would be unable to do so due to market circumstances, they of course bear a significant loss of income and the corresponding consumers would receive a significant profit.

Finally, product safety regulation provides of course a partial alternative to product liability in terms of accident-prevention (see *supra* nr. 10), also when consumers would underestimate

⁷¹⁵ These must include a contributory fault defence if injured parties can also reduce accident risks by taking care. For a more fault-based liability to be as effective in this accident-prevention function as a stricter liability, more conditions must be fulfilled and, when considering the activity levels of parties, strict liability might be overall slightly more preferable. See *supra* nrs. 108-109.

⁷¹⁶ See M. Faure, 'Economic Analysis of Product Liability' in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 647; M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 158-159.

⁷¹⁷ These costs must be compared with the higher expected accident costs a consumer would have had to bear in the long run in the absence of product liability.

⁷¹⁸ Indirectly, defendants profit from the accident-prevention function due to its efficiency (see *supra* nr. 108), which can grow the economy and thus also demand for their products or services.

accident risks.⁷¹⁹ This mechanism is primarily⁷²⁰ paid for by taxes, which might be borne by both consumers, third parties and defendants, depending on the tax system. For third parties and defendants, this makes it more probable to rely instead on product liability for accident-prevention purposes.

115. PRICE-SIGNALLING: THE EXTENT TO WHICH PROFITS AND COSTS ARE BORNE BY CONSUMERS OR DEFENDANTS DEPENDS ON WHETHER CONSUMERS UNDERESTIMATE ACCIDENT RISKS – The price-signalling function, which is especially effective in case of stricter product liability but always remains subject to distortions, provides profits to consumers. If they underestimate product accident costs,⁷²¹ it helps consumers to avoid buying products which they actually did not value at the true product price, including the actual accident costs they would have had to bear in the absence of product liability. If consumers occasionally overestimate product accident costs, then their reliance on stricter product liability can help them to buy a product which they valued at the product's true price including the lower, actual expected accident costs (see *supra* nr. 110.a).

Consumers pay also for this price-signalling profit through product prices. Hence, this profit must together with the aforementioned risk-allocation and accident-prevention profits (cf. *supra* nrs. 113-114), outweigh the administrative costs of product liability and the costs for protecting third parties.

Third parties do not profit from this price-signalling benefit.

Defendants only profit from it in the rare cases where consumers overestimate product accident risks, since product liability's price-signalling can help in those cases to increase the consumption level to the efficient⁷²² level. Such increase in market demand increases profits at the supply side, although such profits will be limited if the market is highly competitive. In the more frequent cases where consumers underestimate product accident risks, the price-signalling actually lowers demand on the market and thus presents a loss. *Infra* nr. 148, it is discussed how this is product liability's main contribution to more sustainable development. Overall, defendants therefore slightly lose as a result of price-signalling. Again, to the extent

⁷¹⁹ If they would have perfect information about product accident risks or they would overestimate them and to the extent they are able to rationally act upon this information in their consumption behaviour, then the 'market mechanism' provides another alternative for accident-prevention. See *supra* nrs. 9 and 108.b.

⁷²⁰ Private product safety enforcement, which is most likely done by competitors, entails of course substantial costs for those actors but might also result in substantial profits through a compensation for unfair competition and/or eventually an increase in market share as a result of future compliance by the competitor with safety standards.

⁷²¹ As discussed *supra* nr. 110.b, product liability can have a similar price-signalling function for the consumption distortion resulting from first-party accident insurance's moral hazard. But since those corresponding extra accident costs are covered by insurance (this is at least what the consumer believes), those costs are effectively not borne by those consumers from an equity perspective. The consumption level distortion is therefore only problematic from an efficiency perspective.

⁷²² As discussed *infra* nr. 122, sustainable development externalities of additional consumption should actually be internalised in the product price. And, to the extent that this does not happen, additional consumption runs contrary to sustainable development and, at a certain level, is actually no longer socially optimal ('efficient') when considering all involved benefits and costs.

that defendants are unable to fully charge all product liability costs in the product price, this would present a much more significant loss for them and provide a significant profit to the corresponding consumers.

Finally, although not yet discussed, theoretical alternatives to product liability for the price-signalling function of course exist. Increased information on the market on product accident risks, whether on a voluntary or mandatory basis, is in a competitive market ultimately also paid for by consumers through product prices. Product safety regulation and other publicly financed actions like certain research, may indirectly also provide some information to consumers about product accident risks. This would again, depending on the tax system, be paid for by many actors and thus be most attractive as an alternative to product liability for consumers.

116. ADMINISTRATIVE COSTS NORMALLY EXCLUSIVELY PAID FOR BY CONSUMERS – The preceding sections all referred to the administrative costs of product liability, which constitute together with the costs of protecting third parties the actual price paid by consumers in return for the aforementioned benefits of product liability. And those benefits are enjoyed mainly by those same consumers but even more so by net-profiting third parties. As mentioned above, defendants and not consumers bear these same costs, to the extent that those defendants would be unable to fully charge product liability costs through product price increases. In such event, consumers receive profits from product liability which can even be greater than the net profits enjoyed by third parties.⁷²³

As discussed *supra* nr. 111.b, the indirect administrative costs of product liability distort the aforementioned price-signalling function and may help to correct in certain circumstances the accident-prevention function. The former predominantly results in a small additional loss for consumers, while the latter results in a small profit for consumers and third parties (cf. *supra* nrs. 114-115).

§ 2. Redistributive effects of product liability: winners and losers when considering social inequality and circular economy

117. EX ANTE WINNERS AND LOSERS – Although mostly ignored in the economic analysis literature due to the reasons of public policy design discussed *supra* nr. 104,⁷²⁴ it is worthwhile to dig a little bit deeper in the actual outcomes of income redistribution through product

⁷²³ If consumers would not have to pay anything for product liability protection, they receive the same net profits as third parties but their risk-allocation and accident-prevention profits are already proportionately greater and, unlike third parties, they additionally receive a profit from the price-signalling function. See *supra* nrs. 113-115.

⁷²⁴ This topic is to my knowledge also not explored by doctrinal scholars, which is logical given the requirement of adopting an economic perspective.

liability. After all, this can potentially be highly significant for constructing a normative framework relating to product liability. Who are thus the actual ‘winners’ and ‘losers’ of the product liability system, at least when adopting the society-wide *ex ante* perspective of distributive justice in terms of economic ‘equity’?⁷²⁵

The next section focuses on redistribution through inequalities in who has to pay for the mandatory product liability protection. The subsequent ones focus on the apparent redistribution from consumers to third parties, including in the context of circular economy.

118. PRODUCT LIABILITY ACTS AS A SOCIALLY REGRESSIVE SYSTEM, WHICH RESULTS IN REDISTRIBUTION MOSTLY FROM POOR TO RICH CONSUMERS – Three mechanisms can be identified which risk to make product liability a socially regressive system. The first two, interconnected mechanisms, result in redistribution from poor to rich consumers. The third mechanism, which is based on high administrative costs, can result in redistribution away from poorer consumers, away from poorer third parties and occasionally also away from economically weaker defendants.

- a. First of all, all consumers have to pay the same price increase resulting from product liability, which consists of the expected administrative costs and the expected costs required for repairing damage suffered by consumers and third parties (see *supra* nrs. 113-116). Nevertheless, the actual reparation costs will be substantially higher for some individual injured persons than for others, including for some consumers than for other consumers of the identical product. After all, the loss of income or property damage suffered by one person can be substantially higher than if another person with lower income and less valuable property would suffer the same accident. Hence, poorer consumers as a matter of fact subsidise richer consumers through product liability, if they consume the same products, as some scholars have already noted in the past.⁷²⁶

⁷²⁵ From the individual and *ex post* perspective of corrective justice (cf. *supra* nrs. 97 et seq.), countless other ‘winners’ and ‘losers’ can of course be identified, based on the applicable product liability rule and the factual circumstances of each case. For example, if a traditional fault-based liability is adopted, then the injured party who fails to obtain reparation because each defendant met the applicable standard of care, can be considered to lose out. Whether this person is a consumer who has paid less for the product due to lower expected liability costs or a third party who has paid nothing, is then disregarded since these are *ex ante* consideration disregarded within the framework of corrective justice (see *supra* nr. 99.c).

⁷²⁶ See M. Adams, ‘Produkthaftung: Wohltat oder Plage: Eine Ökonomische Analyse’ (1987) *Betriebsberater* 5, 6-7; G. Priest, ‘The Current Insurance Crisis and Modern Tort Law’ (1987) 96 *Yale Law Journal* 1521, 1559-1560 (discussing this redistributive effect from poor to rich consumers from the perspective of third-party liability insurance which parties subject to product liability normally acquire); Borghetti, *La responsabilité du fait des produits*, 594; M. Faure, ‘Economic Analysis of Product Liability’ in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 647. Note that consumers also generally subsidise third parties (see *supra* nrs. 113-114). But those third parties did not choose to engage in the risk-generating consumption and they did not derive any profit from the product, unlike (rich and poor) consumers. Crucially, all consumers as a class pay for the protection enjoyed by third parties as a result of product liability and this is enjoyed by all injured third parties as a class, without exacerbating existing inequities among

This socially regressive effect is mitigated by the fact that, even within product categories consumed by all consumers, there are often different brands where some cater to higher-income consumers while others do the opposite. Nevertheless, such differentiation in smaller product pools with smaller income-differences between consumers, is always imperfect and does not occur at all or only to a limited extent for many types of durable consumer goods.

- b. Second, another socially regressive effect is the fact that product liability actually compels poorer consumers to pay for the equivalent of first-party accident insurance at premium prices which they likely would not have chosen to pay on the basis of a voluntary insurance contract.⁷²⁷ Hypothetically, an element might be at play here of poorer consumers being slightly more willing to bear risk (less risk-averse), which would mean that they receive less utility from product liability's risk-allocation function. Much more certain is the fact that this unattractiveness for poorer consumers of mandatory insurance through product liability is at least partially a consequence of the prior mechanism, where poorer consumers have to pay average price increases which are too high for their individual potential for damage.
- c. Third, if the up-front or ultimate administrative costs required for product liability litigation or other enforcement means are too high, certain poorer, risk-averse consumers and third parties will be the first to refrain from pursuing a product liability claim, as discussed *supra* nr. 111.a. Especially in a more circular and collaborative economy, this may occasionally also force economically weaker defendants to no longer press a defence. While both events can help to reduce the total administrative costs borne in principle by all consumers (see *supra* nr. 111.a), it has of course a drastic redistributive effect on the affected individual parties.

If consumers or third parties refrain from a well-founded product liability claim, they dramatically lose out on the aforementioned risk-allocation profit, which includes for third parties also full reparation from an *ex ante* perspective.⁷²⁸ On the flipside, such lack of enforcement results in a profit, which is at least initially⁷²⁹ gained by the corresponding defendant, consisting of avoided liability.

individual third parties or between them and individual consumers. The subsidisation of third parties therefore has no socially regressive effect; third parties just profit from the risk-allocation and accident-prevention functions without becoming richer or poorer in relative terms.

⁷²⁷ See G. Priest, 'The Current Insurance Crisis and Modern Tort Law' (1987) 96 *Yale Law Journal* 1521, 1535, 1564. See also M. Polinsky and S. Shavell, 'The Uneasy Case for Product Liability' (2010) 123 *Harvard Law Review* 1437, 1467-1468.

⁷²⁸ For consumers, this is detrimental because they have already paid for this product liability protection. For third parties, this is detrimental because they of course obtained no utility whatsoever from the harmful consumption. Without enforcement *ex post*, consumers and third parties still profit from the *ex ante* accident-prevention function and consumers still profit from the *ex ante* price-signalling function. See *supra* nrs. 113-115.

⁷²⁹ In a sufficiently competitive market, it is possible that future consumers ultimately gain from it through lower product prices.

In the rare cases that defendants abandon their defence, they risk being held liable on an unfounded basis, which is a loss they might not be able to fully charge to consumers in a sufficiently competitive market. In those cases, a profit is on the flipside gained by the corresponding consumer or third party acting as a plaintiff, consisting of an unfounded product liability reparation award.

119. AND THE WINNERS ARE ... THIRD PARTIES? ONLY PERSONS WHO ON AVERAGE CONSUME FEWER PRODUCTS OR SAFER PRODUCTS PROFIT OVERALL FROM PRODUCT LIABILITY – The analysis in the preceding Paragraph ostensibly confirms that mainly ‘third parties’⁷³⁰ profit from product liability in terms of *ex ante* economic redistribution of income, because they greatly benefit from the risk-allocation function through a complete ‘reparation’, and they also benefit from the accident-prevention function, while they do not have to pay anything in return.⁷³¹ It therefore seems that, notwithstanding the aforementioned socially regressive redistribution among consumers, product liability as a system also redistributes income from consumers to third parties (see also *supra* nrs. 101.d and 104.a).

However, this is not entirely true when we consider that the classes of third parties and of consumers across all types of consumer goods largely overlap.⁷³² When adopting a perspective of distributive justice, like this economic analysis of product liability in terms of equity, it is incorrect to remain focused on liability for one particular product and one must look instead at a society-wide level (cf. *supra* nrs. 97 et seq.), which means the product liability system as a whole. And, barring the hypothesis of a self-sustaining hermit, persons who enjoy protection as third parties vis à vis the accident risks of a particular product will always also be consumers of other products.⁷³³ And in that capacity, those persons pay for the protection of other third parties vis à vis the risk of accidents caused by the products they consume, and so on. Hence, ‘third parties’ will in the long run no longer experience significant redistributive effects as a result of the product liability system, because they also pay for the same system as consumers of other products. This reinforces one of the key arguments raised *supra* nr. 104.a in favour of pursuing efficiency rather than equity in the design of product liability

⁷³⁰ See *supra* footnote 710.

⁷³¹ The price-signalling benefit enjoyed only by consumers is not substantial enough to outweigh the fact that consumers bear the costs for product liability and the fact that the risk-allocation profit enjoyed by third parties is (from the *ex ante* perspective of economic redistribution) much larger than the one enjoyed by consumers.

⁷³² This partially relies on the applicable product liability rule. For the PLD, which limits recoverable damage mostly to damage suffered by traditional consumers (see *infra* nrs. 176 and 190), such consumers are natural persons, just like most third parties injured by product accidents. For other liability rules which to a larger extent protect for example companies suffering damage resulting from product accident, it seems that it is much less likely that these companies also frequently suffer damage in a capacity as third parties. Consequential economic damage resulting from a product accident suffered by third party companies is generally recoverable on the basis of contractual liability (making it no longer third party damage, for which a product liability rule could provide a true profit).

⁷³³ This evokes the famous starting line from what is generally considered the foundational policy declaration for the field of consumer law, at both sides of the Atlantic: “Consumers, by definition, include us all. [...]” (President John F. Kennedy, ‘Special message to Congress on protecting consumer interest’, 15 March 1962, *Papers of John F. Kennedy. Presidential Papers. President's Office Files*, JFKPOF-037-028, 1).

law, namely that achieving redistribution of income is nigh impossible once a rule's scope of application includes a market.

Crucially, I see two hypotheses where this is different and a net redistribution of income towards third parties remains possible on the basis of product liability. First of all, persons who on average consume fewer products, which is certainly realistic in the context of durable consumer goods, can still make an overall profit from the product liability system. Such more frugal consumers will pay lower expected liability costs through product prices, while they still enjoy as third parties 'free' protection against the risks of the many products they do not consume. Second, persons who on average consume safer products, will also proportionately profit more. Again, this is because such more prudent consumers pay lower expected liability costs in the prices of the products they consume while they enjoy as third parties 'free' protection against the risks of all the more risky products consumed by others.

Hence, it actually pays off for consumers to not only consume safer products but to also consume less, even from an economic efficiency perspective in which all the 'costs' of unsustainable consumption patterns are not yet 'internalised' (see *infra* nr. 122).⁷³⁴

120. CONSUMERS WHO ENGAGE PROPORTIONATELY MORE IN CIRCULAR ECONOMY STRATEGIES CAN POTENTIALLY PROFIT FROM PRODUCT LIABILITY IF THESE STRATEGIES REDUCE MORE THE NUMBER OF PRODUCTS THEY CONSUME OVERALL THAN THAT THEY INVOLVE RISKIER PRODUCTS – The preceding section's insight leads to an interesting application in the circular economy context.

Engaging as a consumer in circular strategies, like 'refusing' consumption but also reusing, repurposing or repairing products, overall helps to consume fewer consumer goods (see *supra* nrs. 58-59). Consumers who participate more in circular economy may therefore proportionately receive more protection as third parties from the product liability system than that they pay for it as consumers.

However, there is a risk that products in a circular economy context are on average slightly less safe (see also *supra* nr. 42). To the extent that the distributors or service providers of circular strategies are immediately themselves subject to (more stringent rules of) product liability, they will on average add those higher expected liability costs to product prices. For example, a reseller of second-hand products who would be personally subject to a high product liability risk, will have to add higher expected liability costs to product prices than a seller of new products. This would mean that the consumers engaging in circular economy still pay overall more for the product liability protection of the fewer products they consume.

It therefore depends on the extent to which consumers engaging in circular economy consume fewer products overall and the extent to which these different strategies entail less safe

⁷³⁴ Of course, whether it truly 'pays off' for a consumer in terms of economic efficiency, would in case of consuming safer products still depend on the price of the safer products and the extent to which these would offer lower utility than less safe alternatives. In case of the lower consumption levels, this would depend on the extent to which the saved income together with the redistributive profit from product liability would outweigh the loss in utility from not consuming as much. For persons who now consume at unsustainable levels, a relative decrease in consumption might not result in a significant disutility, while it may provide utility due to feelings of altruism and of contributing to a collective goal.

products, whether consumers actually profit from the product liability system when they engage more in circular economy.

Finally, various circular strategies fall outside the scope of certain and especially the more stringent product liability rules, like many situations of product reuse and repurposing (see *infra* nrs. 220 et seq.). To the extent that there is indeed less product liability protection, consumers themselves have to bear the associated accident risks. In such case, those consumers will either not have to pay at all or have to pay lower expected liability costs for the products they consume according to these circular strategies, while they still enjoy as third parties protection from the product liability system for the products they not consume, which can be considered as a net profit (see *supra* nr. 119). Yet, such consumers will of course also miss the risk-allocation, accident-prevention and price-signalling benefits (see *supra* nrs. 106-110), to the extent that their consumption indeed falls outside the scope of more strict, specific product liability rules. It would thus be misleading to state that such consumers definitely overall ‘profit’ from the product liability system, because the lack of protection from this system corresponds with potentially high losses as well.

Section E. Sustainable development externalities

121. SUSTAINABLE DEVELOPMENT – In the build-up to our normative framework, there is one key aspect we must still turn to. Although given its overriding importance, it may seem weird to only consider it at this late stage, its direct pertinence to this specific research project remains relatively limited, as the following sections outline.

Humanity faces currently an immense challenge at a planetary and historic scale. On the one hand, it is rooted in the observation that human development threatens to exceed and in some instances is already exceeding specific ecological boundaries, often at local and regional levels but now also increasingly at the scale of the earth system.⁷³⁵ In addition to the challenge of anthropogenic climate change,⁷³⁶ these boundaries also include novel entities,⁷³⁷ biosphere integrity,⁷³⁸ land system change, freshwater scarcity, biogeochemical flows, ocean acidification, atmospheric aerosol loading and stratospheric ozone depletion. Only for the

⁷³⁵ See J. Rockström et al., ‘Planetary Boundaries: Exploring the Safe Operating Space for Humanity’ (2009) 14 *Ecology & Society* 32; W. Steffen et al., ‘Planetary boundaries: Guiding human development on a changing planet’ (2015) 347 *Science* 1259855; K. Richardson et al., ‘Earth beyond six of nine planetary boundaries’ (2023) 9 *Science Advances* eadh2458.

⁷³⁶ See Intergovernmental Panel on Climate Change, *Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (IPCC 2023).

⁷³⁷ See L. Persson et al., ‘Outside the Safe Operating Space of the Planetary Boundary for Novel Entities’ (2022) 56 *Environmental Science & Technology* 1510.

⁷³⁸ See E. Brondízio et al. (eds.), *Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services* (IPBES 2019).

last three, it is now assessed that current human development does not yet cross the planetary carrying capacity.⁷³⁹ Transgressing these boundaries is leading to dramatic degradation of the natural capital on which our welfare and those of future generations depends, which is of course merely the adverse impact of this ecological polycrisis in purely anthropocentric, instrumental terms. On the other hand, still hundreds of millions of members of our current generation miss out on one or several basic human needs,⁷⁴⁰ as defined in international human rights law and international development policy.⁷⁴¹ This has led to an understanding of ‘sustainable development’ as an overarching goal of global public policy for the following decades, which is traditionally defined as human economic development which “*meets the needs of the present without compromising the ability of future generations to meet their own needs.*”⁷⁴²

A growing group of legal scholars argues that the legal system, including private law, has a role to play in tackling this immense, intragenerational and intergenerational challenge. They argue that this is not only because private law is another potential instrument for what is necessarily a comprehensive, system-wide approach but also because many current legal rules, including rules of private law, risk to a large extent to operate as an obstacle to more sustainable development.⁷⁴³

Naturally, this great challenge of sustainable development is a highly pertinent policy goal for this dissertation’s normative framework, to the extent it pursues distributive justice. The fact that circular economy, as examined *supra* nr. 64, has a very close, although not clear-cut relationship with sustainable development, of course strengthens this relevance for the research project only further.

122. NEED TO INTERNALISE SUSTAINABILITY IN TERMS OF EFFICIENCY – When thinking about product liability law in terms of distributive justice, it indeed seems desirable as a policy goal to pursue more sustainable development, which can be understood in light of the

⁷³⁹ K. Richardson et al., ‘Earth beyond six of nine planetary boundaries’ (2023) 9 *Science Advances* eadh2458, 1-4.

⁷⁴⁰ See United Nations, *The Sustainable Development Goals Report 2023: Special Edition* (UN 2023); United Nations Office for the Coordination of Humanitarian Affairs, *Global Humanitarian Overview 2024* (UN 2023).

⁷⁴¹ See in particular UN General Assembly Resolution of 10 December 1948, ‘Universal Declaration of Human Rights’ (1948) A/RES/217/3; UN General Assembly Resolution of 25 September 2015, ‘Transforming our world: the 2030 Agenda for Sustainable Development’ (2015) A/RES/70/1.

⁷⁴² UN World Commission on Environment and Development, *Our Common Future* (UN doc A/42/427, 1987) 41. Although subject to some criticisms, this definition has remained a central point of reference in the growing field of ‘sustainability science’. See W. Clark and A. Harley, ‘Sustainability Science: Toward a Synthesis’ (2020) 45 *Annual Review of Environment and Resources* 331, 334.

⁷⁴³ See, e.g., U. Mattei and A. Quarta, *The Turning Point in Private Law: Ecology, Technology and the Commons* (Edward Elgar 2019); K. Pistor, *The Code of Capital: How the Law Creates Wealth and Inequality* (Princeton University Press 2019); R. Feltkamp, A. François and L. Cornelis, ‘Le droit privé au service d’une société durable: rêve ou réalité démocratique?’ in A. Van Hoe and G. Croisant (eds.), *Droit et durabilité / Recht en duurzaamheid* (Larcier Intersentia 2022) 119-160; S. Lanni, *Greening the Civil Codes: Comparative Private Law and Environmental Protection* (Routledge 2023). See also several chapters in the forthcoming volume M. Santos Silva et al. (eds.), *Routledge Handbook of Private Law and Sustainability* (Routledge 2024).

aforementioned ‘Brundtland definition’ as social welfare across intra-generational and inter-generational scales.⁷⁴⁴ Hence, it will figure in this dissertation’s normative framework, albeit only in terms of externalities that must be internalised in the efficiency calculus (see *infra* nr. 131).

Adverse impacts on the pursuit of sustainable development which we currently create and will continue to create if we let our society and economy operate on a ‘business as usual’ basis, are called in economic terms ‘external costs’ or simply ‘externalities’.⁷⁴⁵ These are costs borne by third parties of decisions taken by others, which those decision-makers fail to consider in their economic, public or other governance. For example, a supplier and consumer agree on a price for the sale of a good, but this price does not reflect all the environmental harm and social costs like human rights violations generated by the product throughout its lifecycle.⁷⁴⁶ Today, especially in the EU, there is a vast and growing regulatory framework which aims as much as possible to ‘internalise’ such sustainable development externalities, like emissions trading, taxes, sustainability due diligence and disclosure requirements garnering the attention of market participants. Actually, almost any rule from the fields of environmental, social and human rights law, broadly understood, also contribute to such ‘internalisation of sustainability externalities’. To the extent that the regulatory framework achieves this internalisation, such concerns about sustainability have to be included in the economic transaction process and are thus no longer externalities. In the aforementioned example, environmental and social impacts will be included in the product’s price. This can have as a consequence that reused, repaired, remanufactured or other circular product offerings become cheaper than alternatives, to the extent that these circular strategies align with sustainability (see *supra* nr. 64).

Obviously, given the challenge of sustainable development and the vested economic interests against various sustainable development policies, such internalisation remains for the time being very imperfect. Hence, it is necessary to not only rely on changes in the regulatory and fiscal framework in combination with the market mechanism but to also include, in another manner in our normative framework, substantial sustainable development externalities which still remain. This is why this dissertation proposes *infra* nr. 131 to achieve this by considering ‘remaining sustainability externalities’ as an additional category, which is to be included in the economic efficiency calculus of an applicable rule. However, considerations relating to sustainable development can in the particular context of product liability of course conflict with other concerns, which are equally included in the efficiency calculus, like accident-prevention or risk-allocation. Because of this, because of various

⁷⁴⁴ See P. Matson, W.C. Clark and K. Andersson, *Pursuing Sustainability: A Guide to the Science and Practice* (Princeton University Press 2016) 1-3; W. Clark and A. Harley, ‘Sustainability Science: Toward a Synthesis’ (2020) 45 *Annual Review of Environment and Resources* 331, 333.

⁷⁴⁵ See, e.g., M. Faure and R. Partain, *Environmental Law and Economics: Theory and Practice* (Cambridge University Press 2019) 82: “sustainability is another metaphor for ensuring that all of the consequences of one’s economic activities are fully reconciled and included in the decision making”. The term ‘external costs’ is more accurate, because a decision can also have ‘external benefits’. Yet, because we will not consider the latter in this dissertation, ‘externalities’ will be used to refer to ‘external costs’.

⁷⁴⁶ See R. Cooter and T. Ulen, *Law and Economics* (6th edn., Addison-Wesley 2016) 39; M. Faure and R. Partain, *Environmental Law and Economics: Theory and Practice* (Cambridge University Press 2019) 14.

methodological challenges⁷⁴⁷ and because product liability rules are a very imperfect way to capture and internalise such sustainability externalities, compared for example to specific regulation and taxes, this category will only fulfil a secondary role in the normative framework (see *infra* nr. 131).

123. UNDESIRABLE TO ATTEMPT TO PURSUE IN THE DESIGN OF PRODUCT LIABILITY RULES A REDISTRIBUTION IN FAVOUR OF MORE SUSTAINABLE DEVELOPMENT – The preceding section signalled that concerns about sustainable development will figure in the normative framework as an extension of the efficiency calculus. An alternative approach might be to integrate such concerns in an ‘equity’ approach (cf. *supra* nr. 103), which would attempt to directly redistribute resources to activities which are from the perspective of sustainable development considered as preferable. However, this runs into several fundamental problems, as explained below, which is why this option is rejected. A more nuanced view which integrates many insights from this and the following Chapter but which ultimately arrives at a similar outcome, is offered *infra* nrs. 143-146.

First of all, product liability rules are rules of private law involving a market-based transaction. As this and the preceding Section have demonstrated, this makes it virtually impossible to effectively ‘reward’ persons engaging in circular economy through this set of rules (see in particular *supra* nrs. 104.a and 113-119). As an illustration, if we would for example try to make (certain) circular consumption strategies more attractive by alleviating lingering safety concerns through a stricter product liability rule, this would result in higher expected liability costs being included in product prices. Likely, this would neutralize the pursued effect and possibly make the circular consumption options even less attractive than the now cheaper linear economic alternatives. Alternatively, if we would try to make engaging in circular economy at the supply side more attractive in the consumer goods sector by lowering the product liability risk, for example by excluding certain activities or actors, this might indeed help to increase the supply at lower product prices, which now no longer have to include (as many) expected liability costs. However, singling out these types of products as having lower product liability protection may make them less attractive to consumers, especially when this would exacerbate already existing safety concerns.⁷⁴⁸

⁷⁴⁷ There are many methodological challenges involved, which makes this integration of sustainable development externalities in the efficiency calculus for a rule of private law very difficult, although this cannot be in my opinion an excuse to completely disregard it. Even if we assume that we can at least roughly measure these externalities, there are also questions about whether decreases in natural or human capital can to some extent be offset by increases in other forms of capital (‘degree of substitution’) and about the extent to which efforts for future generations can be discounted depending on whether they will have a higher level of overall welfare than us (‘discount rate’). See S. Proost and S. Rousseau, *Inleiding tot de milieueconomie* (Acco 2012) 29. See also, e.g., R. Revesz, ‘Environmental Regulation, Cost-Benefit Analysis, and the Discounting of Human Lives’ (1999) 99 *Columbia Law Review* 941 (arguing that discounting might be allowed relating to environmental harm with long latency periods which still affects the current generation but that discounting is ethically unjustified for harms to future generations).

⁷⁴⁸ And, in most cases, buying second-hand products or choosing for product reuse or repair options is already more affordable than buying a new product. So making these products cheaper in return for

Second, as already outlined in general *supra* nr. 104.b, it is very difficult to precisely identify and isolate in the design of a rule of product liability the economic activities one might want to incentivize or disincentivize based on a particular policy goal like sustainable development. On the one hand, sustainable development is a very broad, multidimensional goal where often competing interests and complex dynamics are at play (cf. *supra* nrs. 64 and 121). On the other hand, even within one and the same circular strategy, there is a great variety between different concrete applications in terms of environmental, social and economic effects. Certain repairs may for example involve so much transportation of products, use of spare parts produced with a lot of environmental and social externalities and only achieve a very limited product life extension, that it is not necessarily more sustainable than several alternative options.⁷⁴⁹

And third, there is the overall consideration that, although circular economy is definitely an important instrument to achieve more sustainable consumption and production patterns, it can be disputed whether the current concept or at least the current implementation of circular economy, is truly sustainable. As discussed *supra* nr. 64, this is because of the neglect of sustainability's social dimension in many if not most circular applications, including in the consumer goods sector, because of the risk of economic 'rebound effects' (see also *supra* nr. 61) and because the now still dominant implementation of circular economy remains rooted in a 'green growth' paradigm and is thus contrary to a 'strong' understanding of sustainability which directly addresses excessive consumption. 'Refusing' and 'rethinking' consumption are theoretically prioritized at the top of the circular hierarchy, but this is especially in the consumer goods sector not reflected in the actual implementation of circular economy in practice (see *supra* nrs. 58 and 64).

The conclusion is that, if it would be a public policy goal to substantially 'advantage' certain activities on the basis of sustainable development policy, for example particular circular strategies in the consumer goods sector, then technical regulations, tax policy and direct subsidies are much more effective instruments. Pursuing such redistribution directly through a rule of product liability law, is not the right approach, in contrast to the aforementioned approach of 'internalizing' as much as possible in an efficiency calculus the remaining 'sustainability externalities'. This normative position is reconfirmed *infra* nrs. 143-146, where it is examined how specific product liability rules may help to reduce sustainability externalities.

reduced protection may not be beneficial for increasing demand.

⁷⁴⁹ Alternatives might be purchasing a new product, obtaining a product through an as-a-service model, repurposing another product or, most sustainable of all, rejecting a replacement and refraining from additional consumption. See Figure 4 *supra* nr. 58.

Section F. Reconciling corrective with distributive justice in a normative framework for product liability law

124. SEPARATING CORRECTIVE-DISTRIBUTIVE JUSTICE FROM FAULT-STRICT LIABILITY – Before taking a next step in constructing our normative framework, it is necessary to clarify the relationship between corrective and distributive justice, on the one hand, and fault and strict liability, on the other hand. There is no denying that the historical emergence of modern fault-based extracontractual liability is rooted in thinking in terms of corrective justice about ‘wrongs’ and ‘rectification’ (see *supra* nrs. 98-99.a) and that the more recent ‘distributive turn’ has coincided with the adoption of stricter grounds of civil liability, among which ‘specific’ product liability theories like the PLD-1985 (see *supra* nrs. 100 and 101.e). Nevertheless, it is incorrect to tie these two sets of concepts too rigidly together.⁷⁵⁰

Most importantly, among the possible applications of distributive justice, there are many which look under the right circumstances quite favourably upon fault-based liability. For example, the preceding overview of the economic analysis of product liability law identified fault-based liability as efficient in terms of accident-prevention, if the standard of care is set at the ‘optimal’ level, which is actually also the expected compliance level in practice when a more stringent strict liability is imposed. Moreover, the latter requires a fault-based defence of contributory fault in order to be efficient if the injured party’s level of care affects accident risks as well (see *supra* nrs. 108.c and 109). Fault-based liability does admittedly not have the same risk-allocation and price-signalling benefits of stricter forms of product liability. But particular alternatives exist for these potential functions of product liability which economists often consider as more efficient for these purposes, in particular social and private insurance for risk-allocation (cf. *supra* nrs. 106.d and *infra* nr. 162). Fault-based liability thus definitely has the potential to figure in a normative framework based on distributive justice.

The other combination, of truly objective (‘strict’) liability with corrective justice, is more problematic, as acknowledged by many proponents of a corrective justice approach.⁷⁵¹

⁷⁵⁰ See J. Knetsch, ‘La place de la responsabilité sans faute dans le système de responsabilité civile. Étude de droit comparé’ (2019) *Revue des Contrats* 196, 197. See also *supra* footnote 562

⁷⁵¹ See, e.g., J. Coleman, *Risks and Wrongs* (Oxford University Press 2002) 361-429; J. Goldberg and B. Zipursky, *Torts* (Oxford University Press 2010), 267; E. Weinrib, *The Idea of Private Law* (2nd Revised edn., Oxford University Press 2012) 171-203. See also G. Keating, ‘Distributive and Corrective Justice in the Tort Law of Accidents’ (2000) 74 *Southern California Law Review* 193, 195: “[...] the emphasis on corrective justice has led justice theorists to place great weight on the concept of wrongdoing. This emphasis, in its turn, has made strict liability difficult to justify and has led to overemphasizing the importance and attractiveness of negligence liability. A conception of justice that places less weight on considerations of corrective justice and more on considerations of distributive justice can help us to make sense of strict liability and to put negligence in its proper place.” See also relating to strict product liability D. DeWees, D. Duff and Trebilcock, *Exploring the Domain of Accident Law: Taking the Facts Seriously* (Oxford University Press 1996) 212-213.

However, in recent years, several extracontractual liability law theorists and doctrinal scholars focusing on product liability law, have put forward justifications of ‘strict liability’ in general and of stricter ‘specific’ theories product liability’, which are based on the ‘bilateral’ and *ex post* ‘rectification’ scheme of corrective justice but blend this with mostly risk-related notions of distributive justice.⁷⁵² This literature is discussed *infra* nr. 127. In doing so, these authors demonstrate that, if corrective justice is formulated in broader terms than moral connotations of ‘wrongs’, then it can also be applied to stricter forms of extracontractual liability, including specific theories of product liability.

125. COMBINATIONS OF CORRECTIVE WITH DISTRIBUTIVE JUSTICE IN PHILOSOPHY: NORMATIVE PRIORITY OF DISTRIBUTIVE JUSTICE WITH A PROTECTIVE ROLE FOR CORRECTIVE JUSTICE – The overview of corrective and distributive justice *supra* nrs. 97-101 paints a picture of two competing theoretical foundations of extracontractual liability law, which have historically been duelling with each other and which each have up to this day vigorous opponents and proponents. Yet, the distinction between both does not have to be understood in terms of black-or-white. In fact, both the underlying philosophical literature and its application in extracontractual liability and economic analysis of law scholarship, which is discussed in the next section, allow for possibilities to reconcile and combine corrective with distributive justice.

Returning to ARISTOTLE, observers argue that his distinction between corrective and distributive justice must not be taken in isolation as an absolute dichotomy, as done by some ardent corrective justice theorists,⁷⁵³ but instead applied to his other works and in particular the *Politics*.⁷⁵⁴ Then it becomes according to specialists apparent that in his political philosophy

⁷⁵² Consequently, corrective justice theorists might arrive at similar conclusion as for example economic analysts of law. See, e.g., the following observation by SCHWARTZ about the apparent state of the art in US tort law literature in 1980 (note that his influential thesis was that actually negligence lurks beneath the rise of ‘strict products liability’) G. Schwartz, ‘The Vitality of Negligence and the Ethics of Strict Liability’ (1980) 15 *Georgia Law Review* 963, 964: “Nearly all the leading scholars who profess to rely on the criterion of justice, as well as most of those who endorse the criterion of economic efficiency, seem eager to proclaim the wisdom of strict liability and the deficiencies of negligence.”

⁷⁵³ E.g., very clearly in E. Weinrib, ‘Legal Formalism: On the Immanent Rationality of Law’ (1988) 97 *Yale Law Journal* 949, 979, 981, 983; A. Beever, *Forgotten Justice: Forms of Justice in the History of Legal and Political Theory* (Oxford University Press 2013) 69-80. See for sharp criticism against BEEVER’s account D. Priel, ‘Private Law: Commutative or Distributive?’ (2014) 77 *The Modern Law Review* 308, 319-322. See also for a more nuanced distinction by a ‘rights-based’ corrective justice theorist S. Perry, ‘On the Relationship Between Corrective and Distributive Justice’ in J. Horder (ed.), *Oxford Essays in Jurisprudence: Fourth Series* (Oxford University Press 2000) 237: “Distributive justice often contributes to the legitimacy of an entitlement that corrective justice protects, and in that sense there is a normative connection between the two. But corrective justice does not protect the entitlement qua distributive share, and its purpose is not to maintain or preserve a distributive scheme as such. Rather it protects a legitimate entitlement because interference with the entitlement harms the entitlement-holder. In that sense, corrective and distributive justice are conceptually independent.” Most theorists who reject that distributive justice would be ‘normatively prior’ to corrective justice, do not imply that this was also ARISTOTLE’s view but rather that it is a more correct, contemporary understanding of both normative concepts.

⁷⁵⁴ Relating to the alleged normative priority of distributive over corrective justice, scholars mostly refer to various passages in Parts I, III and V of this work (Aristotle (translated by B. Jowett), ‘Politics’ *Internet Classics Archive MIT* (350 B.C.E.) <<https://classics.mit.edu/Aristotle/politics.html>>).

human welfare requires a 'fair' distribution of resources corresponding with distributive justice and that corrective justice serves to maintain this fair distribution, when someone has wrongly profited at another's expense.⁷⁵⁵

Various subsequent political philosophers have similarly considered a foundation of distributive justice as being 'normatively prior' to corrective justice.⁷⁵⁶ This dissertation is of course not a philosophical treatise, which is why I shall limit myself to pointing to the complementarity of two of the most influential recent political philosophical theories with a reconciliation of distributive and corrective justice. In RAWLS' liberal egalitarianism, the 'basic structure of society'⁷⁵⁷ does not directly regulate interactions between private individuals, but the morality of such interactions (including for example product accidents) does depend on the continued maintenance of this necessary background structure.⁷⁵⁸ SEN AND

⁷⁵⁵ J. Gordley, 'Tort Law in the Aristotelian Tradition' in *The Philosophical Foundations of Tort Law* (Oxford University Press 1997), 157. See also S. Heyman, 'Aristotle on Political Justice' (1992) 77 *Iowa Law Review* 851, 855-856 "[...], the law that governs corrective justice is not purely "private law," a law that focuses solely on the private interests of the parties. Instead, the law in corrective justice is inherently political, in the sense it is directed toward the good of the community. To put the point differently, for Aristotle, there is no such thing as relations of justice that consist in the purely immediate interaction of individuals. Instead, relations of justice are always mediated by the law and institutions of the polis, which are oriented toward the common good."; J. Rawls, *A Theory of Justice: Original Edition* (50th anniversary reprint) (Belnap Press 2005) 10-11: "Aristotle's definition clearly presupposes, however, an account of what is due to him. Now such entitlements are, I believe, very often derived from social institutions and the legitimate expectations to which they give rise. There is no reason to think that Aristotle would disagree with this, and certainly he has a conception of social justice to account for these claims."

⁷⁵⁶ See *supra* footnote 562.

⁷⁵⁷ J. Rawls (edited by E. Kelly), *Justice as Fairness: A Restatement* (Belknap Press 2001) 42-43: "[...] let us turn to a revised statement of the two principles of justice discussed in *Theory*, §§11-14. They should now read: (a) Each person has the same indefeasible claim to a fully adequate scheme of equal basic liberties, which scheme is compatible with the same scheme of liberties for all; and (b) Social and economic inequalities are to satisfy two conditions: first, they are to be attached to offices and positions open to all under conditions of fair equality of opportunity; and second, they are to be to the greatest benefit of the least-advantaged members of society (the difference principle)."

⁷⁵⁸ See J. Rawls, *Political Liberalism* (Columbia University Press 1993) 263-268. The consequences for extracontractual liability law theory are discussed by LIPPKE in R. Lippke, 'Torts, Corrective Justice, and Distributive Justice' (1999) 5 *Legal Theory* 149. E.g., *ibid.*, 156: "Rawls endorses the idea of a division of labor between distributive and corrective justice, though one in which the latter has a normatively subordinate role to the former. Corrective justice of the kind embodied in tort law plays a role in preserving free and fair transactions, but only under conditions that are the concern of distributive justice." See also the quote from *A Theory of Justice* *supra* footnote 755, where RAWLS understands ARISTOTLE'S distributive justice as normatively prior to corrective justice. But see also the following mutually exclusive interpretations, which together arguably hint that there is indeed an independent role for both distributive and corrective justice in RAWLS' framework, where the former is normatively prior to the latter A. Ripstein, 'The Division of Responsibility and the Law of Tort' (2004) 72 *Fordham Law Review* 1811 (providing an unorthodox interpretation based on RAWLS' 'division of responsibility' principle, considering corrective and distributive justice as normatively completely independent); K. Kordana and D. Tabachnick, 'On Belling the Cat: Rawls and Corrective Justice' (2013) 92 *Virginia Law Review* 1279 (arguing that RAWLS' distributive justice foundation does not allow for any remaining role of corrective justice, not even a normatively subservient one).

NUSSBAUM'S 'capabilities approach', which pursues a dignified life lived by each human in freedom and in cooperation with others,⁷⁵⁹ has also been interpreted as providing a distributive understanding of the conditions to which injured parties must be restored in cases of extracontractual liability according to a scheme of corrective justice.⁷⁶⁰

126. COMBINATIONS OF CORRECTIVE WITH DISTRIBUTIVE JUSTICE IN EXTRACTIONAL LIABILITY LAW THEORY AND IN ECONOMIC ANALYSIS OF LAW – Along these lines of 'normative priority' of distributive justice sketched in the preceding section, HONORÉ confirmed in his main work on extracontractual liability theory that "*corrective justice depends on distributive justice*".⁷⁶¹ Other theoretical legal scholars, have proposed completely different reconciliations between both forms of justice, where distributive justice is not necessarily 'normatively prior to' corrective justice. Arguably, this aligns better with the traditional dominance of corrective justice in modern extracontractual liability law in general (cf. *supra* nrs. 98-99).

SHEINMAN argues for example that corrective and distributive justice are in this legal field one and the same.⁷⁶² Somewhat comparably, CANE holds that distributive justice principles "*define the grounds and bounds of tort liability*", while corrective justice, which in his view is purely formal and has no substantive content, is "*applying those rules and principles to individual cases*."⁷⁶³

Alternatively, GARDNER argues that corrective justice provides the basic structure of extracontractual liability law and that distributive justice operates therein, first of all to distribute rights to be protected by corrective justice and secondly to effect distributions between parties brought together by corrective justice.⁷⁶⁴ LOTH proposes a relatively similar view, where distributive justice plays a role in determining the scope of liability as well as the required reparation within an overarching scheme of corrective justice.⁷⁶⁵

⁷⁵⁹ See, e.g., A. Sen, 'Capability and Well-being' in M. Nussbaum and A. Sen (eds.), *The Quality of Life* (Clarendon Press 1993) 30-53; M. Nussbaum, 'Capabilities as Fundamental Entitlements: Sen and Social Justice' (2003) 9 *Feminist Economics* 335, 33-59; E. Chiappero-Martinetti, S. Osmani and M. Qizilbash (eds.), *The Cambridge Handbook of the Capability Approach* (Cambridge University Press 2020).

⁷⁶⁰ M. Loth, 'Corrective and Distributive Justice in Tort Law: On the Restoration of Autonomy and a Minimal Level of Protection of the Victim' (2015) 22 *Maastricht Journal of European and Comparative Law* 788, 804-808.

⁷⁶¹ T. Honoré, *Responsibility and Fault* (Hart Publishing 1999) 80. See also H. Dagan, 'The Distributive Foundation of Corrective Justice' (1999) 98 *Michigan Law Review* 138.

⁷⁶² H. Sheinman, 'Tort Law and Distributive Justice' in J. Oberdiek (ed.), *Philosophical Foundations of the Law of Torts* (Oxford University Press 2014) 354-384.

⁷⁶³ P. Cane, 'Distributive Justice in Tort Law' (2001) *New Zealand Law Review* 401, 416. CANE takes care to point out that his approach is not a traditional approach of normative priority of distributive justice establishing entitlements to be protected by corrective justice. Instead, in his view, "*tort law itself consists of rules and principles of personal responsibility for harm that establish a pattern of distribution of risks of harm and obligations of repair within society*." (ibid., 416). Hence, I see a parallel with SHEINMAN'S view on the singularity of distributive and corrective justice in extracontractual liability.

⁷⁶⁴ J. Gardner, 'What is Tort Law For? Part 2. The Place of Distributive Justice' in J. Oberdiek (ed.), *Philosophical Foundations of the Law of Torts* (Oxford University Press 2014) 334-353.

⁷⁶⁵ M. Loth, 'Rechtvaardige aansprakelijkheid: Over herstel van autonomie, beginselen in het aansprakelijkheidsrecht, en de 'maatmens benadeelde' in X. (ed.), *Aansprakelijkheidsrecht en maatmens*.

The common denominator of all this scholarship is that extracontractual liability law is seen as “a mixed corrective/distributive institution”,⁷⁶⁶ which is a view that especially in the US many authoritative doctrinal scholars now explicitly adhere to when they reconcile corrective justice with a distributive goal of accident-prevention.⁷⁶⁷

Finally, it is worthwhile to also draw a parallel with the economically oriented literature. The pioneer of the economic analysis of extracontractual liability law, CALABRESI (see *supra* nr. 23), ultimately felt uncomfortable with focusing solely on his distributive framework of primary, secondary and tertiary accident costs and additionally looked at a fourth element of (corrective) ‘justice’.⁷⁶⁸ This has not been continued by subsequent economic analysts of law, but what they have done instead is broadening the efficiency analysis through the vast perspective of welfare economics. As occasionally already demonstrated in the preceding two Sections, this determines social efficiency by amalgamating all utility and disutility received by each individual person, including feelings of satisfaction, empathy, altruism, and so forth.⁷⁶⁹ In doing so, also notions of morality, possibly notions of corrective justice, can be ‘captured’ by the efficiency-, or rather, welfare-oriented economic analysis.⁷⁷⁰ A possible moral justification for this expansive normative perspective based on welfare economics

Preadviezen Vereniging voor Schadevergoedings- en Aansprakelijkheidsrecht (Wolters Kluwer 2016) 66.

⁷⁶⁶ P. Cane, ‘Distributive Justice in Tort Law’ (2001) *New Zealand Law Review* 401, 401. See also P. Verbruggen, ‘Theoretische rechtvaardigingen voor het personele toepassingsbereik van het voorstel voor een nieuwe Richtlijn productaansprakelijkheid’ (2023) 2023/40 *Nederlands Tijdschrift voor Burgerlijk Recht* 365, 366: “De heersende overtuiging in de nationale en internationale literatuur is dat overwegingen van corrigerende en verdelende rechtvaardigheid het aansprakelijkheidsrecht in samenhang legitimeren en begrenzen.”

⁷⁶⁷ E.g., G. Schwartz, ‘Mixed Theories of Tort Law: Affirming Both Deterrence and Corrective Justice’ (1997) 75 *Texas Law Review* 1801, 1834 (“Still, several important tort doctrines seem firmly grounded in both corrective justice and deterrence. As tort objectives, then, corrective justice and deterrence can be recognized as collaborators rather than competitors.”); K. Abraham, *The Forms and Functions of Tort Law* (3rd edn., Foundation Press 2007) 20 (“Tort law thus performs a ‘mixed’ set of functions. In some cases concern for corrective justice will dominate, but in others deterrence or concern for loss distribution will be the key.”); D. Dobbs, P. Hayden and E. Bublick, *Dobb’s Law of Torts* (Westlaw 2022 update) § 11 (“Although torts traditionally may emphasize justice or fairness far more than policy or utility, the two goals are in harmony in many cases. It is just that the wrongdoer must pay compensation for his wrong, and it is also good policy to deter wrongdoing. When policy goals are at odds with justice to individuals, different views have been advanced, and courts have sometimes emphasized justice, sometimes policy.”).

⁷⁶⁸ See G. Calabresi, *The Costs of Accidents: A Legal and Economic Analysis* (Yale University Press 1970) 291-308.

⁷⁶⁹ This has been most influentially argued by KAPLOW AND SHAVELL. See L. Kaplow and S. Shavell, ‘Fairness versus Welfare’ (2001) 114 *Harvard Law Review* 961; L. Kaplow and S. Shavell, *Fairness versus Welfare* (Harvard University Press 2002) 15-84; L. Kaplow and S. Shavell, ‘Fairness versus Welfare: Notes on the Pareto Principle, Preferences, and Distributive Justice’ (2003) 32 *Journal of Legal Studies* 331; S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 595-612. See also R. Fallon, ‘Should We All Be Welfare Economists?’ (2003) 101 *Michigan Law Review* 979.

⁷⁷⁰ E.g., I. Gilead, ‘Economic Analysis of Prescription in Tort Law’ in H. Koziol and B. Steininger (eds.), *European Tort Law 2007* (Springer 2007) 115: “On the positive side tort actions contribute significantly to the well-being of loss sufferers by providing them with tools to vindicate their rights when infringed by tortious activities. The feeling that one’s rights are recognized and protected by society is an important source of welfare.”

might be the argument that rational persons who do not know which role they would occupy in society (akin to RAWLS' 'veil of ignorance'), would choose the legal rules yielding the highest overall welfare in total.⁷⁷¹ Criticisms against this absolute social-welfare maximizing approach are in my opinion most salient in other contexts than product liability where the redistributive dimension of 'equity' would matter more (cf. *supra* nr. 104 and *infra* nr. 131). Nevertheless, what matters here is that feelings of corrective justice and other notions of morality which are different from distributive justice based purely on economic efficiency, can in this manner theoretically also be absorbed into the efficiency ('social welfare') analysis, at least on a liberal basis of amalgamated preferences of individuals.⁷⁷²

127. MIXTURES OF CORRECTIVE WITH DISTRIBUTIVE JUSTICE IN SCHOLARSHIP ON STRICT LIABILITY, IN PARTICULAR SPECIFIC PRODUCT LIABILITY THEORIES – The previous section's reconciliations of corrective with distributive justice in philosophy and general extracontractual liability law theory, were bound to also arise in the context of stricter liability.⁷⁷³

An early example is FLETCHER, who argued that a basis of, among others, strict liability is 'non-reciprocal risk-taking', which blends both forms of justice by *ex post* imposing liability when one risk-creator causes another person to bear more than his share according to a fair distribution of risk.⁷⁷⁴ HONORÉ justified strict liability on the basis of his 'outcome-liability' concept, which largely seems a synonym for 'risk-internalisation' (see *infra* nr. 128.c). It holds that society allows you to reap the benefits of risky activities, subject to the condition that you also bear responsibility when this activity misfires and causes damage to another.⁷⁷⁵ In his later work, he rephrased this as a normative priority of society's "*just distribution of risk*" which

⁷⁷¹ This is called the 'equiprobability model of moral value judgements' (J. Harsanyi, 'Morality and the Theory of Rational Behavior' in A. Sen and B. Williams (eds.), *Utilitarianism and Beyond* (Cambridge University Press 1982) 45-48). See also L. Kaplow and S. Shavell, *Fairness versus Welfare* (Harvard University Press 2002) 52-58; J. Rawls, *A Theory of Justice: Original Edition (50th anniversary reprint)* (Belnap Press 2005) 136-142.

⁷⁷² SHAVELL summarizes this approach as follows: "*The main points are, first, that because of the functionality of notions of morality, they should be inculcated and fostered – this raises social welfare overall. Second, because individuals have a taste for the satisfaction of the notions of morality (whether inculcated or inherited), there is a direct sense in which the notions have importance in the social welfare calculus; their satisfaction matters apart from the benefits they bring us through effects on our behavior. But third, the notions should not be given importance in social welfare evaluation beyond that associated with their functionality and with our taste for their satisfaction – no deontological importance should be accorded them – for doing so would conflict with social welfare and lead to its reduction.*" (S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 608).

⁷⁷³ See also for a different overview, which distinguishes between different possible justifications beyond the overall dichotomy between corrective and distributive justice applied in this dissertation P. Cane, 'Justice and Justifications for Tort Liability' (1982) 2 *Oxford Journal of Legal Studies* 30, 31-35, 47-48, 51-54.

⁷⁷⁴ See G. Fletcher, 'Fairness and Utility in Tort Theory' (1972) 85 *Harvard Law Review* 537, 547-551.

⁷⁷⁵ See T. Honoré, 'Responsibility and luck: the moral basis of strict liability' (1988) 104 *Law Quarterly Review* 530 538-542.

requires corrective justice to ensure that people are liable when their faultless but risk-taking conduct harms others.⁷⁷⁶

Turning to product liability, PRIEST argued in an influential but disputed⁷⁷⁷ 1985 article that so-called ‘enterprise liability’ underlying US strict products liability quickly became in vogue in the 1960’s because it combined benefits of ‘accident-prevention’, ‘risk-spreading’ and ‘risk-internalisation’.⁷⁷⁸ While all three notions and PRIEST’s intellectual historical reconstruction are rooted in distributive justice, ‘risk-internalisation’ also has corrective justice connotations (see *infra* nr. 128.c). In a follow-up, KEATING argued that enterprise liability can be seen as morally preferable to fault-based liability “*when enterprises are in a position to spread the costs of nonnegligent accidents across the class of those who benefit from the risk that inevitably issue in such accidents*”.⁷⁷⁹ He presented this as a corrective justice theory distinct from the common economic rationales for strict products liability, yet the ‘risk-spreading’ and ‘risk-internalisation’ principles he used do certainly also connect with distributive justice (see *infra* nr. 128.a.c).⁷⁸⁰ The most outspoken proponent of a pragmatic, ‘mixed’ theoretical justification for ‘specific’ product liability law, is arguably OWEN. He rejects the black-or-white debate between corrective and distributive justice and instead lists principles which can serve as a “*pluralistic moral framework*” to tackle the varied and complex issues which product liability has to deal with.⁷⁸¹

⁷⁷⁶ T. Honoré, *Responsibility and Fault* (Hart Publishing 1999) 80.

⁷⁷⁷ The fact that PRIEST adheres to the ‘strict liability’ label as the driving force behind the rise in ‘strict products liability’, has been rather successfully challenged, most notably by SCHWARTZ, by arguing that to a large extent negligence-based considerations underly specific products liability (see *supra* nr. 7). See G. Schwartz, ‘The Vitality of Negligence and the Ethics of Strict Liability’ (1980) 15 *Georgia Law Review* 963; G. Schwartz, ‘The Beginning and End of the Rise of American Tort Law’ (1991) 26 *Georgia Law Review* 601. Note, however, that this discussion about labels changes nothing about the normative rationales underlying this rise in ‘strict products liability’, which is discussed here.

⁷⁷⁸ G. Priest, ‘The Invention of Enterprise Liability: A Critical History of the Intellectual Foundations of Modern Tort Law’ (1985) 14 *Journal of Legal Studies* 461.

⁷⁷⁹ G. Keating, ‘The Idea of Fairness in the Law of Enterprise Liability’ (1997) 95 *Michigan Law Review* 1266, 1266.

⁷⁸⁰ More recently, KEATING seems to argue that ‘enterprise liability’ is justified based on a risk-internalisation rationale which he labels as a combination of corrective justice with ‘commutative justice’. The latter seems to mainly blend distributive with corrective justice. E.g., G. Keating, ‘Strict Liability Wrongs’ in *Philosophical Foundations of the Law of Torts* (Oxford University Press 2014) 308: “*Commutative justice distributes in accordance with benefit. Enterprise liability is fundamentally commutative because it holds that accidental losses should be borne in accordance with the benefit that people derive from the enterprise or activity in question.*”

⁷⁸¹ D.G. Owen, ‘The Moral Foundations of Products Liability Law: Toward First Principles’ (1993) 68 *Notre Dame Law Review* 427, 434: “[...] the principles of moral and political philosophy relevant to the issues of tort law generally, and products liability law in particular, are many, varied, complex, and that they cannot ultimately be reduced to a single, exclusive metatheory. Instead, most of the problems of products liability law are multidimensional, requiring a pluralistic analysis from various moral planes.” The ultimately proposed principles are more akin to a restatement of US strict products liability, with many references to “*reasonably possible*” and “*foreseeable*”, which are reflective of more fault-based liability (*ibid.*, 502). See also D.G. Owen, ‘Products Liability: Principles of Justice for the 21st Century’ (1990) 11 *Pace Law Review* 63.

In Europe, several⁷⁸² product liability scholars who have delved into this normative dimension, have similarly concluded that at least the PLD-1985's specific theory of stricter product liability mixes distributive with corrective justice. STAPLETON, who builds on the aforementioned 'outcome-responsibility' theory of HONORÉ, proposes a theory of "*moral enterprise liability*" based on the premise that a company profiting from a harmful activity must repair the resulting damage, even when not committing a fault.⁷⁸³ This blend of corrective with distributive justice is actually nothing more than the 'risk-internalisation' principle (see *supra* nr. 22 and *infra* nr. 128.c), which BORGHETTI has in his comparative treatise put forward as the principle which best reflects specific product liability theoretical structure, in particular harmonised product liability based on the PLD-1985.⁷⁸⁴ In a different approach, JANSEN ultimately recognizes in his interdisciplinary treatise strict 'enterprise liability' as an ancillary principle in the structure of liability law, in addition to overarching 'fault' and 'risk' principles, which he motivates based on arguments of 'risk-internalisation, 'loss-spreading', 'accident-prevention' but also the strong position of companies vis à vis consumers in a dispute.⁷⁸⁵

Finally, VERBRUGGEN explicitly argues that the PLD-1985 is "*legitimized and bounded by considerations of both corrective and distributive justice.*"⁷⁸⁶ For the distributive dimension, he refers to both 'accident-prevention', 'risk-internalisation' and 'risk-spreading' rationales of the Directive.⁷⁸⁷ For the corrective dimension, he refers first to the fact that the PLD-1985's liability is not completely strict as a result of the defect requirement, which is in my opinion a less

⁷⁸² But see, e.g., for an analysis and justification of EU harmonised product liability solely based on a perspective of distributive justice, mainly furnished by the economic analysis of law E. Büyüksagis, *La notion de défaut dans la responsabilité du fait des produits* (Schulthess 2005) 300-372. See also *supra* nr. 101.d.

⁷⁸³ J. Stapleton, *Product Liability* (Butterworths 1994) 182-187.

⁷⁸⁴ Borghetti, *La responsabilité du fait des produits*, 597-636.

⁷⁸⁵ N. Jansen, *Die Struktur des Haftungsrechts: Geschichte, Theorie und Dogmatik ausservertraglicher Ansprüche auf Schadenersatz* (Mohr Siebeck 2003) 626-627. Note that, although he does not employ these terms, JANSEN's arguments for 'enterprise liability' originate admittedly much more but not exclusively from distributive justice, while his presentation of the overarching fault principle and to a large extent also the risk principle, are more rooted in corrective justice like most of his treatise.

⁷⁸⁶ P. Verbruggen, 'Theoretische rechtvaardigingen voor het personele toepassingsbereik van het voorstel voor een nieuwe Richtlijn productaansprakelijkheid' (2023) 2023/40 *Nederlands Tijdschrift voor Burgerlijk Recht* 365 367.

⁷⁸⁷ *Ibid.*, 367.

persuasive argument.⁷⁸⁸ But he also convincingly refers to art. 1 PLD-2024.⁷⁸⁹ This foundational provision of the PLD-1985 indeed reflects a ‘correlative’ or ‘bilateral’ model and the need for an *ex post* ‘rectification’ of damage caused by the defendant.⁷⁹⁰

Section G. The traditional candidates for product liability’s normative foundation

128. REVISITING THE ‘RISK-SPREADING’, ‘ACCIDENT-PREVENTION’, ‘RISK-INTERNALISATION’ AND ‘COSTS-MINIMIZATION’ PRINCIPLES – The last section demonstrated that it is necessary, before synthesizing this dissertation’s normative framework, to return to four principles discussed in the Introductory Chapter *supra* nrs. 19-23. There, these principles were presented as the four competing, theoretical rationales for specific product liability law, which are debated in both the European and US literature. Now, it is possible to reassess these four principles in light of the much broader approach taken in the preceding Sections, which tracked back to the fundamental distinction between corrective and distributive justice and explored the latter through the lens of the economic analysis of product liability.

- a. The ‘risk-spreading’ or, as called by this dissertation, ‘risk-allocation’ principle is undeniably a rationale of mainly distributive justice, since it refers to the allocation of risk to actors who can be considered as more suitable to bear it.⁷⁹¹ This makes it different from the closely related rationale of ‘reparation’, which plays a central role in the traditional, corrective justice conception of liability. The economic analysis reveals how

⁷⁸⁸ Ibid., 367-368. To be clear, to the extent that the defect requirement involves notions of a ‘wrong’, it can be squarely connected with corrective justice (see *supra* nrs. 97-99.a) and VERBRUGGEN seems to argue in this sense (“*Wat de benadeelde mag verwachten is doorgaans het spiegelbeeld van dat wat in het maatschappelijk verkeer mag worden verwacht van een redelijk handelende producent.*” (ibid., 367)). Yet, it is incorrect to create the impression that (most conceptions of) distributive justice tend to argue for a purely objective ‘risk-liability’ without a defect requirement (or some of the defences which also insert fault-considerations in the harmonised product liability, cf. *infra* nrs. 173 and 193 et seq.). See, e.g. *supra* nr. 104.c how the economic analysis of law considers a societally ‘optimal level of care’, which is at least at a theoretical level closer to a fault-based than a strict liability, and even assumes that defendants subject to a purely strict liability will in practice adhere only to this ‘optimal level of care’. See also *supra* nr. 124.

⁷⁸⁹ Art. 1, first section PLD-2024: “*This Directive lays down common rules on the liability of economic operators for damage suffered by natural persons and caused by defective products, and on compensation for such damage.*”

⁷⁹⁰ Ibid., 368: “*Achter de grondregel van art. 1 van de richtlijn gaat derhalve óók een idee van corrigerende rechtvaardigheid schuil: hij brengt de producent en benadeelde bijeen nu deze laatste schade (letsel en privézaakschade) heeft geleden als gevolg van het gebrekkige product dat de eerste in het verkeer bracht. Voor die schadeveroorzakende gebeurtenis draagt de producent verantwoordelijkheid en daarom dient hij dat onrecht zoveel als mogelijk door middel van schadevergoeding te herstellen.*”

⁷⁹¹ At least if we ignore first-party accident insurance and forms of social insurance (see *supra* nr. 11 but see also *supra* nr. 106.d on limitations and adverse effects).

from an *ex ante* perspective, there is in most product liability cases only a shifting of 'risk' and no real 'reparation' paid for by a wrongdoing defendant, since product liability is in the long run only paid for through consumer prices. For third parties, there might still be an actual 'reparation', corresponding with a redistributive gain, although this can also be nuanced, as discussed *supra* nr. 119.

Nevertheless, even if we adopt these insights from the economic analysis and adopt an exclusively *ex ante* perspective, it can be said that also in the risk-allocation function of product liability a trait of corrective justice can still be found. After all, it is perhaps not a 'wrongdoing' but at least a 'risk-taking' defendant (cf. *supra* nr. 127) to whom, pursuant to corrective justice's basic scheme, the risk is shifted away from the injured party due to the harm suffered by the latter as a result of the risk-taking by the former. And this allocated risk can be effectively disastrous for certain defendants, who may have insufficient volume to finance a (serial) product liability claim or lack liability insurance coverage. Especially for defending prosumers, this can be potentially problematic.

- b. The 'accident-prevention' rationale, often referred to as 'deterrence', is even more so rooted in a distributive conception of justice. After all, it directly relates to a public policy concern to increase welfare by *ex ante* preventing accidents from occurring. The economic analysis reveals first of all how product liability delivers this function to the extent that consumers underestimate product accident risks. Secondly, it confirms that an 'optimal standard of care', where the costs of taking increased care equal the expected avoided accident costs, is most efficient, which is a potential validation of fault-based liability as well as the defect requirement in strict product liability, while the economic analysis also claims that a strict liability standard can be more stringent and still efficient since it will in practice only be complied with up to this optimal level.

An understanding of the accident-prevention rationale in terms of corrective justice seems difficult. Perhaps this is only possible when we consider that the risk-taking defendant does not receive a clear direct profit from it in redistributive terms, but he profits at least indirectly from it and, in most circumstances, it is the consumer who ultimately pays for the precautions taken by the defendant (see *supra* nr. 114).

- c. Third, there is product liability's 'risk-internalisation' rationale. The discussion in the previous section of in particular but not only⁷⁹² the works of HONORÉ, STAPLETON and BORGHETTI, showcased its attractiveness as a unifying principle of specific product liability theories, such as harmonised liability based on the PLD-1985. On the one hand, this can be explained by the fact that risk-internalisation has the potential to encompass the preceding risk-allocation and accident-prevention rationales. On the other hand, this is because it uniquely combines notions of distributive and corrective justice.

The distributive justice dimension in the risk-internalisation principle is tied first of all to the risk-allocation benefit. As discussed *supra* nrs. 106 and 128.a, it is in most cases literally only the 'risk' but not the full financial burden of repairing injured parties which is borne by defendants. At the same time, it is also tied to the accident-prevention

⁷⁹² See also the references to 'risk-internalisation' in the discussions of PRIEST, KEATING, JANSEN and VERBRUGGEN *supra* nr. 127.

effect of ensuring that risk-takers receive incentives to reduce accident risks by taking an ‘optimal level of care’, as discussed *supra* nrs. 108 and 128.b. BORGHETTI explains this as the risk-internalisation principle’s defining requirement that only ‘abnormal risks’ must be internalised by risk-takers, while other risks remain incumbent on the injured party as part of the general risks of life.⁷⁹³ This nuanced understanding of the principle allows to even capture the fact that the injured party’s level of care can also determine accident risks, which necessitates a contributory fault defence (see *supra* nr. 109).

The corrective justice dimension of the risk-internalisation principle is perceivable once we abandon the traditional requirement of a ‘wrong’ but instead see how also a ‘risk-taker’ bears a moral obligation to ‘rectify’ damage caused to another person by his permissible but dangerous activity from which he profits (see *supra* nrs. 124 and 127). This basic idea is reflected well in the age-old adages *ubi emolumentum, ibi onus* (“where the gain is, there is the burden”) and *cuius commoda, eius et incommoda* (“those to whom the advantages, to them also the disadvantages”). Again, an economic analyst might be sceptical that the product liability defendant actually bears the full financial burden in the long run, but he at least bears the risk (see *supra* nr. 128.a). And an economically informed understanding of this corrective justice foundation of the risk-internalisation principle may even argue that consumers are at least as much as companies the ‘risk-takers’, because they create the demand for potentially harmful products. In this sense, the fact that consumers actually finance product liability can still be seen as justified according to risk-internalisation as a reflection of corrective justice.

- d. Finally, the ‘costs-minimisation’ principle, a somewhat antiquated name for the economic analysis of product liability law, is of course firmly rooted in terms of distributive justice, due to its purely *ex ante* perspective of public policy in terms of ‘efficiency’ or ‘equity’ (see *supra* nrs. 23 and 100-103). There seems to be no substantive link with corrective justice whatsoever, although in practice an efficient outcome might for example happen to also satisfy notions of corrective justice.

The advantages of the economic analysis of product liability are manifold.

First of all, it can encompass and offer a refined understanding of the preceding risk-allocation and accident-prevention principles, which are indeed put forward by many scholars as key functions and potential normative foundations of product liability (see *supra* nrs. 105-109).

Second, it reveals price-signalling and the unwanted administrative costs as additional features of product liability (see *supra* nrs. 110-111), which are functions none of the other theoretical perspectives on product liability pay attention to.

Third, the economic analysis and in particular its redistributive perspective of ‘equity’ also reveals the ultimate consequences of the product market, namely that the product liability system ultimately redistributes to richer consumers but also to consumers who consume fewer and/or on average safer products (see *supra* nrs. 118-119).

⁷⁹³ Borghetti, *La responsabilité du fait des produits*, 601-610. Note, however, that the notion of ‘abnormal risk’ can be considered as hinting too much at the specific proof of *res ipsa loquitur*, instead of a more general liability requirement (see, e.g., *infra* nrs. 185 and 189 in the context of the PLD-1985).

And, fourth, the economic analysis can also tell something about the main alternatives to product liability (see Figure 1 *supra* nr. 4) and how these relate to product liability, at least in terms of economic efficiency.

129. ‘RISK-INTERNALISATION’: AN APT DESCRIPTIVE BUT LESS USEFUL NORMATIVE PRINCIPLE FOR SPECIFIC PRODUCT LIABILITY LAW, IN COMPARISON WITH THE ECONOMIC ANALYSIS – The preceding section and the relatively extensive analysis in the middle part of this Chapter give admittedly already away that the economic analysis of product liability law will figure prominently in the final normative framework. Yet, the past two sections have equally put a spotlight on the merits of the risk-internalisation principle, which has in common with the economic analysis that it is capable of simultaneously also encompassing the risk-allocation and accident-prevention principles as complementary theoretical rationales for product liability. Perhaps most importantly, it blends these notions of sound distributive public policy with a framework of corrective justice,⁷⁹⁴ which fits better with the traditional understanding of extracontractual liability law in general (see *supra* nr. 99). Moreover, compared to the economic analysis, the risk-internalisation principle is much simpler and, definitively for lawyers, more intuitive.⁷⁹⁵ The popularity of the risk-internalisation principle in the theoretical literature on product liability (cf. *supra* nr. 127) is therefore far from surprising.

I have to admit that the risk-internalisation principle, according to which so-called ‘abnormal’ risks, like a ‘defective product’, must be borne by the risk-generator, is the most coherent, versatile and comprehensive principle to serve as a single theoretical basis for specific product liability law (see in particular *supra* nr. 128.c). It is in this sense not comparable to the economic analysis, which is far from a single principle but rather a quite complex interdisciplinary domain with many competing functions and even two fundamentally different ‘efficiency’ and ‘equity’ perspectives (cf. *supra* nrs. 103 et seq.).

However, I mainly value the risk-internalisation principle as a construct to describe current specific product liability law but less as a normative principle to evaluate the current rules on a substantive basis or to provide recommendations *de lege ferenda*. This is not because the risk-internalisation principle is very general in nature and because it can, depending on factual interpretation, lead to diverging outcomes in concrete situations, which is a hallmark of liability law in general. The economic analysis of law can also lead to diverging recommendations, depending on whether you focus on efficiency or equity, which product liability function you look at, the extent to which alternatives are considered and whether

⁷⁹⁴ Cf. Borghetti, *La responsabilité du fait des produits*, 601: “La théorie de l’internalisation, elle, se comprend aisément et entre en résonance avec les conceptions traditionnelles de la justice.” See also *supra* nr. 128.c on the insight that, even if we consider that from an economic *ex ante* perspective actually consumers pay for product liability reparation, they can also be seen as the ultimate risk-generators, which may justify why they ultimately finance it, although they do not have to bear the risk individually thanks to product liability’s (mandatory) insurance system.

⁷⁹⁵ Of course, this simplicity does not mean that it is also always straightforward to implement in practice. Cf. Borghetti, *La responsabilité du fait des produits*, 598: “Bien que le principe d’internalisation des risques soit un principe fort simple, presque une règle de bon sens, sa mise en oeuvre est parfois occultée du fait de sa fréquente association à des considérations issues des théories de la mutualisation ou de la minimisation des coûts.”

there is more comprehensive and accurate empirical information to better guide the necessary assumptions and comparisons (cf. *supra* nrs. 106-123). The reason why is because the risk-internalisation principle fails to question current specific product liability law, which it will arguably time and time again evaluate as satisfactory, since it so effectively describes this current body of law. Only the assessment of what is an ‘abnormal risk’ and what remains part of the normal risks of life can shift over time, which makes it an effective, almost amorphous description of existing product liability law. In comparison, the economic analysis provides detailed insights on the conditions when more fault-based or stricter product liability rules are efficient for particular functions, which sometimes but not always validates existing legal rules.⁷⁹⁶ Moreover, it reveals the ultimate distributive effects of product liability and, crucially, it can also adopt a perspective ‘external’ to product liability law by simultaneously considering the economic efficiency and redistribution provided by its alternatives (see the following Chapter).

Therefore, for normative purposes, this dissertation prefers the approach of the economic analysis over the risk-internalisation principle.

Section H. Bringing it all together: operationalizing a normative framework

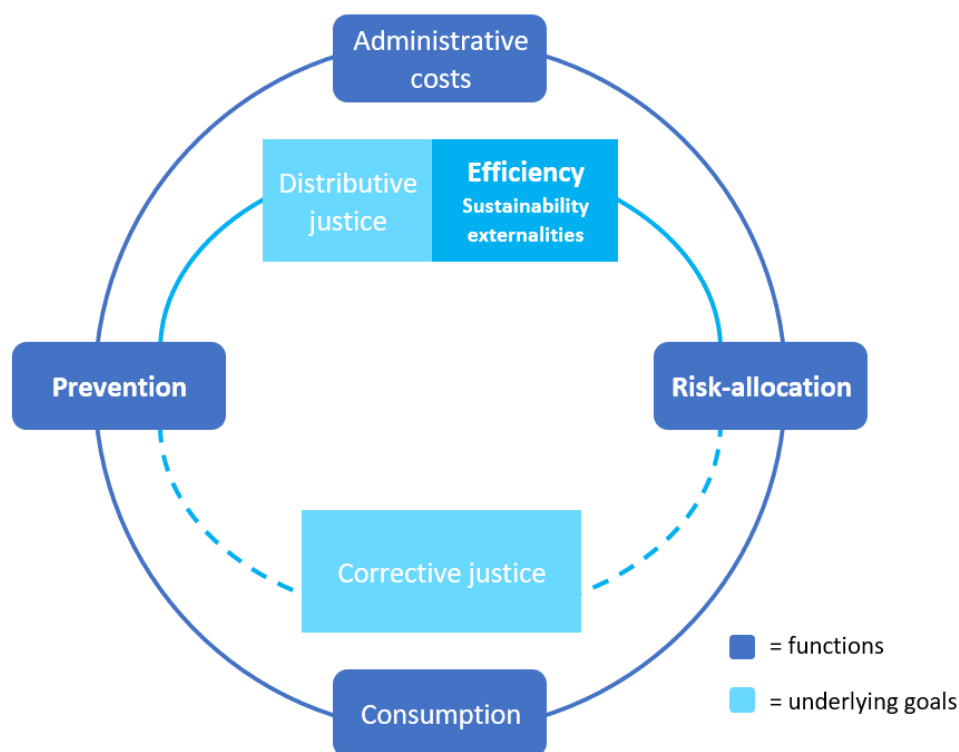


Figure 7: The ‘steering wheel’, a holistic normative framework for product liability

⁷⁹⁶ See in particular *supra* footnote 162.

130. THE FOUR GENERAL FUNCTIONS OF PRODUCT LIABILITY LAW, PRIORITIZING RISK-ALLOCATION AND ACCIDENT-PREVENTION – A normative framework to evaluate current product liability law and to recommend possible improvements, should in my opinion first of all look at its main functions. As discussed *supra* nrs. 105-111, these are the advantages of risk-allocation, accident-prevention and price-signalling as well as the disadvantage of product liability's administrative costs.

In terms of 'operationalization',⁷⁹⁷ the first two functions are prioritized. Superficially, this is because the risk-allocation (or, from an *ex post* perspective, 'reparation') and the accident prevention functions are most widely recognized in the product liability literature⁷⁹⁸ and, consequently, also have been put forward already in this dissertation's introduction (see *supra* nrs. 4, 105 and 107). More importantly, this is because they reflect the traditional risk-spreading and accident-prevention rationales of modern product liability law, which come together in the risk-internalisation principle (see *supra* nrs. 20-22 and 128). Nevertheless, as discussed below, the two functions are approached according to the economic efficiency analysis, which provides an in my opinion more sophisticated understanding (see *supra* nrs. 106 and 108-109). Most importantly, risk-allocation and accident prevention represent the main impacts a product liability rule has on society. This makes them very salient from a perspective of distributive justice, although it must be considered that also important partial alternatives to product liability exist for precisely these two functions (see Figure 1 see *supra* nr. 4). A subsequent third Chapter will further explore such 'external' normative perspective on product liability in the particular context of circular economy.

The price-signalling function's reduced role is thus motivated by the fact that the difference in efficiency (social welfare) between consumption levels with and without (strict) product liability is not as great as the efficiency potentially gained by product liability through allocating risk away from individual consumers and preventing more accidents from occurring. Additionally, the literature on the price-signalling function, which is only economic in nature, actually arrives overall at quite similar conclusions as with regards to the risk-allocation function (cf. *supra* nrs. 106 and 110), which makes it somewhat redundant to focus on both in equal measures. Nevertheless, the price-signalling function remain important to keep on our radar, not in the least because it will turn out to be the key reason why stricter product liability can also be considered as overall more sustainable than more fault-based product liability (see *infra* nr. 148).

With regards to the administrative costs of product liability, it must be emphasized how strongly the direct costs and thus also the indirect costs are determined by rules of civil procedure, the market for legal representation, legal culture and the functioning of the court system. These aspects fall outside this dissertation's scope, which focuses on substantive

⁷⁹⁷ See H. Tijssen, *De juridische dissertatie onder de loep* (Boom Juridisch 2009) 75-76; L. Kestemont, *Handbook on Legal Methodology: From Objective to Method* (Intersentia 2018) 62-63, 66-67.

⁷⁹⁸ Also in the economic analysis literature, the price-signalling and administrative costs functions of product liability tend to not receive the same amount of attention and prioritization as the risk-allocation and accident-prevention functions. Product liability's price-signalling function was also quite late integrated in the economic analysis literature.

product liability law. And it must be noted that any change to these factors affects countless more domains than product accidents, which make these administrative costs less salient when normatively scrutinizing only product liability rules. Additionally, it is worth noting that there is in terms of administrative costs no identifiable difference between the main product liability rules (excluding the ‘no liability’ rule) and that their effect is mainly a matter of externally comparing product liability to its partial alternatives (see *supra* nr. 111.c and *infra* nrs. 135-137).

131. A PERSPECTIVE OF DISTRIBUTIVE JUSTICE: ECONOMIC ANALYSIS IN TERMS OF EFFICIENCY, WHILE ALLOWING FOR A POSSIBILITY TO ALSO INTERNALISE SUSTAINABILITY EXTERNALITIES – The aforementioned focus on product liability’s four functions demonstrates how the normative framework is primarily conceived in terms of distributive justice. After all, a perspective of corrective justice would only correspond with an interpretation of the risk-allocation function limited to *ex post* ‘reparation’. It furthermore demonstrates how the economic lens of ‘efficiency’, maximizing overall societal welfare, is the preferred criterion to determine what is good *ex ante* public policy in product liability law.

This choice is mainly motivated by the refined and comprehensive understanding offered by the economic analysis of product liability, of which the analysis *supra* nrs. 106 et seq. only provides an overview. It is worth emphasizing that this overview remained limited to the most significant and firmly settled insights, while there are countless niche aspects of product liability which have also been examined in the economic analysis literature,⁷⁹⁹ some of which also figure in the next two Chapters. Choosing the economic analysis as the backbone of a normative framework thus also makes it in this sense scalable. Yet, even in the absence of clearly established findings in the specialized literature, the social welfare perspective of efficiency can also be employed independently,⁸⁰⁰ as demonstrated by its direct application to product liability in the context of circular strategies *infra* nrs. 138-142 and 151-164 and in the remainder of this dissertation.⁸⁰¹

Additionally, this is motivated by the basic features of product liability law discussed *supra* nr. 101.c-e, which make this legal field particularly suited to adopt the distributive justice outlook of economic efficiency and to largely discard traditional notions of corrective justice. The fact that product liability is always mediated through the harmful product, ensures that the connection between damage and the defendant’s conduct is only indirect. This relates to the fact that specific product liability theories tend to be relatively strict and associated with risk rather than the blame of traditional faults, which facilitates thinking in terms of

⁷⁹⁹ See for overviews M. Faure (ed.) *Tort Law and Economics* (Edward Elgar 2009); J. Arlen and N. Paige (eds.), *Research Handbook on the Economics of Torts* (Edward Elgar 2015).

⁸⁰⁰ Most doctrinal legal scholars proposing or applying a normative framework with different criteria, like legal coherence, legal certainty, particular legal principles, etc., also employ these in such an independent manner, since there are often no clear empirical findings or apt interdisciplinary insights to support the application of such normative criteria to a particular research object. The economic criterion of efficiency at least offers a relatively rich interdisciplinary literature in support, in particular in relation to product liability.

⁸⁰¹ See also the relatively original examination of the redistributive (‘equity’) effects of product liability *supra* nrs. 117-120.

distributive effects instead of corrective justice about rectifying wrongs. Most importantly, product liability is determined by the product market, which, as shown by the economic analysis, is the underlying driver of the risk-allocation, accident prevention and price-signalling functions. The ‘bilateral’ scheme of corrective justice where the wrongdoer must rectify the committed harm, actually falls apart here, because it is in most market circumstances the class of consumers and not the risk-taking companies who finance the product liability system, although the risk-takers must still bear the individual risk of a product liability claim (see *supra* nr. 113).

The focus on efficiency means that the normative framework disregards the redistributive dimension of ‘equity’. The fundamental reasons for this choice have been discussed *supra* nr. 104. Perhaps equally important is the fact that this Chapter has already established key insights on the redistributive effects of product liability, which are applicable in general, across different product liability rules and circular strategies. On the one hand, not only consumers but also third parties actually finance in the long run and across product categories the product liability system as a whole. An *ex ante* net profit is actually in the long run only possible for third parties who themselves consume fewer products or safer products on average, which are possibly consumers who participate more in circular consumption strategies if these tend to avoid extra consumption more than that they increase accident risks. On the other hand, product liability also has the potential to act as a socially regressive system which mainly redistributes income from poorer to richer consumers (see *supra* nrs. 117-120).

Finally, the normative framework broadens this efficiency assessment with otherwise not yet internalised sustainability externalities. This seems today indispensable in an approach based on distributive justice, given the overriding importance of sustainable development as a long-term, historic goal of public policy (see *supra* nr. 121). Yet, at the same time, this built-in ‘safety mechanism’ will in practice largely take a backseat and will only actively correct (or rather, through internalisation ‘enrich’) the efficiency analysis when it is clear that a particular product liability rule can overall clearly either harm or contribute to sustainable development, across its social and ecological, intra- and intergenerational dimensions. This last complexity ensure that many potential effects are often at least partially offset by other sustainability considerations.⁸⁰² Yet, the main reason for this limited role of sustainability externalities in a normative framework relating to product liability, is the market mechanism, which makes product liability or the lack thereof a two-cutting sword. It is unclear whether there would be an uptake or downturn in circular consumption strategies if the applicable product liability rule would either protect injured parties slightly more or would rather become slightly more defendant-friendly, simply because this determines the expected liability costs in the product prices. This has been discussed *supra* nrs. 122-123 and is also reflected in how redistributive public policy is nigh impossible to achieve through substantive product liability rules (see *supra* nrs. 101.d and 104). Yet, as the following two Chapters will

⁸⁰² See regarding the constituents and complex, adaptive system dynamics of sustainable development P. Matson, W.C. Clark and K. Andersson, *Pursuing Sustainability: A Guide to the Science and Practice* (Princeton University Press 2016) 14-82; J. Liu et al., ‘Systems integration for global sustainability’ (2015) 347 *Science* 1258832; W. Clark and A. Harley, ‘Sustainability Science: Toward a Synthesis’ (2020) 45 *Annual Review of Environment and Resources* 331 337-342.

demonstrate, it is nevertheless possible to obtain a more sophisticated understanding of how product liability rules can increase or decrease sustainability externalities. And precisely the preceding economic efficiency and equity analysis is instrumental for obtaining this more nuanced understanding.

132. A SUBSIDIARY ROLE FOR CORRECTIVE JUSTICE – This dissertation’s normative framework aims to be holistic and encompass not only different functions but also different conceptions of product liability’s ultimate moral foundation. This echoes other ‘mixed’ normative understandings of product liability (cf. *supra* nr. 127),⁸⁰³ which are characteristic of this particular field of law’s hybrid nature. Of course, to the extent that different normative criteria lead to diverging outcomes, a hierarchy is required. And this framework generally prioritizes the aforementioned perspective of distributive justice based on economic efficiency, which is fundamentally motivated by the particular features of product liability which make it different from general extracontractual liability law (see *supra* nrs. 4 et seq. and 101 et seq.). Nevertheless, specific product liability theories like the PLD-1985 and US strict products liability remain at their core also constituents of extracontractual liability, for which the traditional normative understanding is still rooted in notions of corrective justice. This relates to the ‘bilateral’ scheme of *ex post* reparation of damage caused by one person to another, the fact that the individual wealth and character of parties or other public policy considerations are theoretically irrelevant in a liability dispute and, perhaps most importantly, the rights-based, ‘internal’ legal understanding of product liability (see *supra* nrs. 98-99).⁸⁰⁴

Moreover, scholars have in recent years articulated theoretical understandings of specific, stricter product liability theories which combine notions of distributive with corrective justice, without resorting to purely fault-based ‘wrongs’. Especially influential in this regard is the aforementioned risk-internalisation principle, which is of course not really new but as a basic tenet indeed fully flourishes in the product liability setting. It holds that the risk-taker who profits from a risky activity which injures others, must repair the resulting damage when the taken risk was abnormal and thus not part of the general risks of ordinary life (see *supra* nrs. 127 and 128.c). While this dissertation ultimately chooses a less descriptive and more normatively instructive framework than solely relying on the risk-internalisation principle (see *supra* nr. 129), this same reconciliation between distributive and corrective justice seems indispensable for a comprehensive, holistic understanding of product liability.

⁸⁰³ See in particular the “*pluralistic moral framework*” argued for by OWEN (*supra* footnote 781) and the central role afforded to the mixed concept of ‘risk-internalisation’ by HONORÉ, STAPLETON, BORGHETTI and others (see *supra* nrs. 127 and 128.c).

⁸⁰⁴ See, e.g., J. Goldberg and B. Zipursky, ‘The Easy Case for Products Liability Law: A Response to Professors Polinsky and Shavell’ (2010) 123 *Harvard Law Review* 1919. In this article, GOLDBERG AND ZIPURSKY challenge the original ‘uneasy case for product liability’ thesis of POLINSKY AND SHAVELL. Many of their criticisms are based on a ‘straw man’ or are arguments which are incorrect from an economic perspective (M. Polinsky and S. Shavell, ‘A Skeptical Attitude About Product Liability Is Justified: A Reply to Professors Goldberg and Zipursky’ (2010) 123 *Harvard Law Review* 1949). Yet, the criticisms to which POLINSKY AND SHAVELL do not provide a convincing retort are precisely those based on corrective notions of justice.

Given these reasons, this dissertation integrates in its normative framework ‘corrective justice’ as a consideration that is subsidiary to distributive justice in terms of economic efficiency, as discussed above. This also echoes the ‘normative priority’ of distributive over corrective justice present in a lot of philosophical theory and in certain scholarship on extracontractual liability law (see *supra* nrs. 125-126). Unlike distributive justice, corrective justice is by itself sufficiently clear in terms of substantive requirements and outcomes to be directly operational in the product liability context (cf. *supra* nrs. 97-102).

133. CORRECTIVE JUSTICE AS A BALANCING MECHANISM – Three basic scenarios can help to understand precisely how corrective justice can fulfil the aforementioned subsidiary role in this dissertation’s normative framework.

- a. First of all, there are many situations where the efficiency-oriented conception of distributive justice guides us to similar product liability rules as corrective justice would, simply because the risk-allocation and accident prevention (as well as the price-signaling) functions of product liability all presuppose that liability is generally imposed on an ‘abnormal risk-taker’, pursuant to the hybrid risk-internalisation principle (see *supra* nrs. 99, 106, 108 and 128.c). In those plentiful cases, the alignment between efficiency and corrective justice only further amplifies the preference for a specific rule according to this dissertation’s normative framework.
- b. Second, there are situations where the efficiency analysis puts forward multiple outcomes, depending on which function of product liability is prioritized or depending on which factual factor is in reality most dominant, which might remain uncertain in the absence of clear empirical information. In such cases, the subsidiary criterion of corrective justice can serve as a tie-breaker, which ensures that ultimately the option is identified which has the additional benefit of fitting better with the bilateral scheme of *ex post* rectification by the risk-taker who profits from a harmful activity. Hence, it allows in those cases to create coherence with the traditional understanding of extracontractual liability law in general.
- c. And, third, the most important balancing role of the corrective justice mechanism is perhaps to ensure that there remains a place for product liability as a (synergistic)⁸⁰⁵ complement to its available, partial alternatives (see Figure 8 *infra* nr. 150). If, for example, the administrative costs of product liability would be so high that an efficiency analysis from a social welfare perspective would argue that it is better to completely do away with product liability and to solely rely on strengthening the alternatives, then corrective justice’s ‘external balancing role’ would rather insist that measures must instead be taken to lower those administrative costs, rather than to remove the product

⁸⁰⁵ As generally discussed *supra* nrs. 9-11, the main alternatives of the market mechanism, product safety regulation, private and social insurance also create important synergies in combination with product liability for the purposes of accident prevention and risk-allocation. From a purely efficiency perspective, it might therefore remain attractive to continue combining product liability with these alternatives, even when, taken in isolation, the combination of solely relying on the alternatives would overall more efficient than product liability.

liability system altogether. After all, compared with these alternatives, product liability offers major benefits in terms of corrective justice, since it ensures that defendants who profit from the harmful risks they generate, must at least transfer the accident risk away from individual injured consumers, if their risky, harmful activity is 'abnormal', such as when a product they placed on the market was defective and caused damage.

In a sharp contrast, the alternatives to product liability do not satisfy this sense of corrective justice. Injured parties have to pay themselves for first-party accident insurance, which leaves the risk-taking defendant entirely off the hook (in case of a hypothetical absence of liability). Everyone must pay for social insurance, depending on the tax system, which again lets the defendant off the hook. The market mechanism relies solely on (the limited knowledge and rationality of) the consumer, who is not the primary risk-taker and the actual injured party in most cases. And, product safety regulation, again financed by public resources, only targets from an *ex ante* perspective the risk-taking defendant, which would leave the injured party in the absence of product liability bereft of any *ex post* 'rectification'.

Chapter 2. The internal perspective: the nuanced case for stricter product liability with a contributory fault defence

134. INTRODUCTION – As a second Chapter in this normative Part of the dissertation, the preceding normative framework is applied at a very general level to product liability law. Mainly by drawing on the analysis in the preceding Chapter, this offers us important insights. The focus lies on distinctions between stricter, more purely fault-based and no product liability, since these create the clearest differences which are generally applicable across different product liability rules in practice. In contrast, other potential variations in product liability rules, like rules on causation, damage, the type of contributory fault defence, options of joint and several liability, etc., are often rules of more general liability law rather than specific product liability theories. Moreover, such variations overall lead to less pronounced differences in terms of efficiency or rather confirm the overall efficiency of existing basic rules of European liability law, like integral compensation of all actual damage but nothing more, not overly high awards of non-economic damage and the role of foreseeability.⁸⁰⁶

This Chapter applies an ‘internal’ perspective limited to product liability. Importantly, the main findings are largely similar regardless of whether product liability is applied in a traditional linear or in a more circular economic context. This contrasts with the next Chapter, where an ‘external’ perspective compares product liability in general with its main alternatives.

The outcome of this Chapter provides a nuanced case in favour of stricter product liability with a contributory fault defence. Overall, this is the most efficient legal rule, especially when focusing on the most traditional scenarios where consumers suffer accidents caused by durable consumer goods and when focusing according to this ‘internal’ perspective solely on product liability. Strict product liability with a contributory fault defence furthermore

⁸⁰⁶ See in general G. Maitre, *La responsabilité civile à l'épreuve de l'analyse économique du droit* (LGDJ 2005); O. Ben-Shahar, ‘Causation and foreseeability’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009); L.A. Kornhauser and R.L. Revesz, ‘Joint and several liability’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009); S. Lindenbergh and P. Kipppersluis, ‘Non pecuniary losses’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009); L. Visscher, ‘Tort damages’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009); M. Grady, ‘Causation and foreseeability’ in J. Arlen (ed.), *Research Handbook on the Economics of Torts* (Edward Elgar 2013) 114-148; K. Hylton, ‘Causation in tort law: A reconsideration’ in J. Arlen (ed.), *Research Handbook on the Economics of Torts* (Edward Elgar 2013) 97-113; H.-B. Schäfer and C. Ott, *The Economic Analysis of Civil Law* (2nd edn., Edward Elgar 2022) 142-334. See also *supra* footnotes 162 and 680.

constitutes the option which is seemingly most conducive to sustainable development, although the analysis in terms of sustainability externalities is not straightforward and must be substantially nuanced. Finally, stricter liability does not fit effortlessly with corrective justice, but the particular context of product liability still allows to a large extent to reconcile both.

Section A. In terms of efficiency in a linear context, strict product liability with a contributory fault defence is often but not always preferable to purely fault-based and definitely preferable to no product liability

135. IN AN ‘INTERNAL PERSPECTIVE’ LIMITED TO ORDINARY PRODUCT ACCIDENT SETTINGS, STRICTER PRODUCT LIABILITY WITH CONTRIBUTORY FAULT IS OVERALL MORE EFFICIENT THAN FAULT-BASED LIABILITY: THE ARGUMENTS IN FAVOUR – The traditional view in the economic analysis of law literature is that a purely objective (‘strict’) product liability is generally more efficient than a fault-based rule.⁸⁰⁷ This view has been nuanced in more recent literature. Yet, as discussed below, the arguments in favour of fault-based liability tend to be based on either specific circumstances or on partial alternatives to product liability. Hence, when we remain limited to ordinary circumstances and a purely ‘internal perspective’, an overall preference for stricter liability continues to hold.

First of all, stricter product liability is clearly more efficient than a fault-based rule in terms of risk-allocation when consumers are more risk-averse than defendants (see *supra* nr. 106.b-c).

Second, subject to some of the more specific considerations discussed at the end of this section, both rules can generally be considered as equally efficient for purposes of accident prevention, if consumers do not have perfect information about expected product accident risks or fail to rationally act on such information.⁸⁰⁸ Yet, this requires overall more factual assumptions in case of fault liability than in case of strict liability. The latter only requires that awarded reparation amounts to precisely the actual damage, which seems to be more

⁸⁰⁷ See, e.g., G. Calabresi, ‘Some Thoughts on Risk Distribution and the Law of Torts’ (1961) 70 *Yale Law Journal* 499, 500-534; G. Calabresi, *The Costs of Accidents: A Legal and Economic Analysis* (Yale University Press 1970) 244-308; M. Polinsky and W. Rogerson, ‘Products Liability, Consumer Misperceptions, and Market Power’ (1983) 14 *Bell Journal of Economics* 581, 585-589; W.M. Landes and R.A. Posner, ‘A Positive Economic Analysis of Products Liability’ (1985) 14 *Journal of Legal Studies* 535, 539-547; S. Shavell, *Economic Analysis of Accident Law* (Harvard University Press 1987) 7-32, 47-64, 206-215, 262-264.

⁸⁰⁸ To the extent that consumers have this ability, the market mechanism provides an alternative for accident prevention purposes (see *supra* nrs. 9 and 108.b), although this falls outside this Chapter’s ‘internal’ perspective.

problematic in the US than in continental European jurisdictions.⁸⁰⁹ While, in case of fault-based liability, courts rather than the defendant himself must additionally set the fault at the optimal level of care⁸¹⁰ and correctly assess the level of care actually taken by a defendant (see *supra* nr. 108.c).⁸¹¹ These extra requirements are quite challenging, which make stricter liability on average more efficient for accident prevention purpose than fault-based product liability. When injured parties can also minimize accident risks by taking care, which is typically the cases for most product accidents, then especially strict product liability must be paired with a contributory fault defence to continue to efficiently prevent accidents.⁸¹²

Third, an additional argument in favour of stricter product liability (with a defence of contributory fault) is the fact that it efficiently prevents accidents by inducing defendants to not excessively produce or distribute products, since lower market prices as a result of a bigger supply must still remain profitable considering the increased expected liability costs resulting from placing more products on the market. Conversely, the downside of strict liability and the upside of fault-based liability, which is preventing that consumers increase accident risks by engaging in excessive consumption, is in my opinion less disadvantageous in the context of product accidents involving durable consumer goods, since consumers can only consume one or a limited number of such items (see *supra* nr. 109.b).

Fourth, stricter product liability offers also an efficient price-signalling benefit in the likely scenario that consumers do not have perfect information about expected product accident risks or fail to rationally act on such information. In contrast, under fault-based product liability consumers will in such circumstances inefficiently consume too much since expected accident costs for accidents which still occur when defendants meet the standard of care, are no longer added to the product price (see *supra* nr. 110.a).

And fifth, the aforementioned arguments in favour of strict product liability with a contributory fault defence based on risk-allocation and price-signalling and to a lesser extent based

⁸⁰⁹ See, e.g., K. Viscusi, 'Does Product Liability Law Make Us Safer?' in F. Buckley (ed.), *The American Illness: Essays on the Rule of Law* (Yale University Press 2013) 138-154 (criticizing i.a. how US punitive damages make product liability less efficient in terms of accident prevention).

⁸¹⁰ For a judge, this may be more challenging than for a defendant who will under a strict liability rule be automatically incentivized to take precautions up to the optimal level of care (see *supra* nr. 108.c), simply because a professional company, especially a product manufacturer, has on average for his own particular products a better view on the actual costs of alternative designs and the resulting increases in safety. See S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 217-219; M. Geistfeld, 'Products liability' in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.10; B. Deffains and S. Rouillon, 'Economics of Liability Precaution versus Avoidance' (2018) 128 *Revue d'Économie Politique* 41, 42-43; H.-B. Schäfer and C. Ott, *The Economic Analysis of Civil Law* (2nd edn., Edward Elgar 2022) 217.

⁸¹¹ Especially the latter may be due to the 'hindsight bias' even more problematic for jurors in US product liability trials than for professional judges. See K. Viscusi, 'Does Product Liability Law Make Us Safer?' in F. Buckley (ed.), *The American Illness: Essays on the Rule of Law* (Yale University Press 2013) 138-154.

⁸¹² As discussed *supra* nr. 109.d, the traditional economic assumption that a contributory fault defence is redundant in case of fault-based product liability, is relaxed. As discussed *supra* nr. 109.c, both a rule where the defendant's liability is entirely excluded in case of a fault by the injured party and a rule where it is proportionately reduced have advantages and disadvantages from an efficiency perspective, to such an extent that it cannot be firmly stated which variant is more efficient than the other.

on accident prevention, are further strengthened when truly independent⁸¹³ third parties can be injured in a product accident. This is because third parties are by nature completely risk-averse vis à vis these risks and consumers will never add these corresponding accident costs to their product price (see *supra* nrs. 106.b, 108.e and 110.a).⁸¹⁴

136. IN AN ‘INTERNAL PERSPECTIVE’ LIMITED TO ORDINARY PRODUCT ACCIDENT SETTINGS, STRICTER PRODUCT LIABILITY WITH CONTRIBUTORY FAULT IS OVERALL MORE EFFICIENT THAN FAULT-BASED LIABILITY: THE ARGUMENTS AGAINST – As this section summarizes, arguments why fault-based product liability would be more efficient, tend to be more specific and conditional, deviate from the most typical circumstances of consumer product accidents or depend on the availability of accident insurance as a partial alternative to product liability. Especially when considering this dissertation’s focus on ordinary consumer product accidents and when limiting ourselves to this Chapter’s ‘internal’ approach, these arguments do not seem capable of offsetting the aforementioned arguments relating to the efficiency of strict product liability with a contributory fault defence.⁸¹⁵

- a. First of all, many arguments in favour of the efficiency of fault-based product liability require more specific, additional conditions, which make these overall less persuasive pursuant to ‘Ockham’s razor’ or the principle of parsimony.⁸¹⁶ Without extensively discussing every possible hypothesis raised in the literature, it is worthwhile to offer some illustrations.

For example, when injured parties can minimize accident risks by personally taking care, fault-based liability is more efficient when it would be correct that judges are in practice too hesitant to find a contributory fault according to the ‘optimal’ level of care, which would be especially problematic for accident prevention under a rule of stricter product liability.⁸¹⁷ To the extent that this would be correct and not just a matter of correctly lowering the standard of care for individuals with fewer resources to efficiently take care, it might still not overcome the aforementioned fact that, for fault-based liability to be efficient in accident-prevention, courts must correctly make many error-

⁸¹³ See *supra* footnote 673.

⁸¹⁴ See M. Faure, ‘Economic Analysis of Product Liability’ in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 639-640; M. Polinsky and S. Shavell, ‘The Uneasy Case for Product Liability’ (2010) 123 *Harvard Law Review* 1437, 1491.

⁸¹⁵ See also, e.g., the in my opinion not entirely convincing argument of FRIEHE relating to administrative costs, discussed *supra* footnote 708.

⁸¹⁶ It is worth noting that also in OCKHAM’s application of the principle his metaphysics, the alternative which requires more conditions (i.e. in this case the efficiency of fault-based product liability) is not necessarily untrue but rather an alternative which we should not choose without compelling reasons. See P. Spade and C. Panaccio, ‘William of Ockham’ *Stanford Encyclopedia of Philosophy* (2019) <<https://plato.stanford.edu/entries/ockham>> nr. 4.1.

⁸¹⁷ See *supra* footnote 683.

prone assessments,⁸¹⁸ as well as other arguments in favour of stricter product liability's efficiency discussed in the preceding section.

Another argument in favour of fault-based liability relates to situations where defendants are monopolists or have otherwise significant market power (see *infra* nr. 138 on 'monopolistic competition' in circular contexts). In such instances, prices tend to be too high due to restricted supply and the resulting inefficiency in consumption levels which are too low, can be offset by the fact that fault-based liability will not add all expected accident costs to the product price.⁸¹⁹ However, this of course applies only in those particular market circumstances and this advantage is limited to efficiency in consumption levels, while this dissertation's normative framework prioritizes the aforementioned benefits of strict liability in terms of risk-allocation and accident-prevention over the price-signalling function (see *supra* nr. 130). Furthermore, this point and other issues relating to market power are actually more effectively addressed through competition law,⁸²⁰ although this last counterargument exceeds this Chapter's 'internal' perspective.

- b. Furthermore, some of the arguments discussed in the literature in favour of fault-based liability are based on factual circumstances which deviate from this dissertation's focus on the core societal issue of accidents caused by durable consumer goods with major potential (serial) damage like personal injuries,⁸²¹ accident risks being primarily determined by opaque product design choices and injured parties who have limited information about and limited control over those risks (cf. *supra* nrs. 4-6).

For example, fault-based liability is for purposes of accident prevention sometimes considered as more efficient than strict liability with a defence of contributory fault, when accident risks are relatively clearly perceivable for consumers who can easily mitigate those through common maintenance and other precautions, when the level of care taken by consumers and injured third parties is more difficult to verify *ex post* than the care taken by product liability defendants like manufacturers or importers and when the additional precautions the latter can take can only marginal reduce accident risks.⁸²²

⁸¹⁸ To correctly apply the contributory fault defence (under a rule of stricter product liability), courts must admittedly make similar assessments. However, the argument raised here in favour of fault-based liability precisely presupposes that this contributory fault defence is ignored and thus no longer relevant in practice. See also S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 188-189.

⁸¹⁹ M. Polinsky and W. Rogerson, 'Products Liability, Consumer Misperceptions, and Market Power' (1983) 14 *Bell Journal of Economics* 581; M. Faure, 'Economic Analysis of Product Liability' in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 641.

⁸²⁰ See also M. Geistfeld, 'Products liability' in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.3.

⁸²¹ See S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 205: "[...] the use of strict liability rather than negligence rules in areas of behavior where activities create high risks, despite the exercise of reasonable care, has the advantage of tending to reduce in a desirable way participation in these activities."

⁸²² See S. Shavell, 'Strict Liability versus Negligence' (1980) 9 *Journal of Legal Studies* 1; S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 219-220; H.-B. Schäfer and C. Ott, *The*

These are not typical circumstances for most cases of consumer product accidents and are perhaps more easily associated with product accidents in the B2B context.⁸²³

- c. Finally, perhaps the main argument in favour of fault-based liability is the fact that it can be more efficiently paired with first-party accident insurance (see also *supra* nr. 11.c), which is then particularly helpful for accidents where no defendant has violated the applicable standard of care.⁸²⁴ Such insurance is for purposes of risk-allocation generally considered as more efficient than the third-party liability insurance which defendants subject to product liability will seek. This is because first-party accident insurance has a smaller adverse selection problem,⁸²⁵ it potentially has also a smaller

Economic Analysis of Civil Law (2nd edn., Edward Elgar 2022) 217-218. See also T. Miceli, K. Segerson and S. Wang, 'Products Liability when Consumers vary in their Susceptibility to Harm and may misperceive Risk' (2015) 33 *Contemporary Economic Policy* 468, 474 (fault-based liability is more efficient if consumers are heterogenous in their susceptibility to suffer greater damage and if they misperceive accident risks not too much, like in the case of allergies).

⁸²³ See also T. Miceli, K. Segerson and S. Wang, 'Products Liability when Consumers vary in their Susceptibility to Harm and may misperceive Risk' (2015) 33 *Contemporary Economic Policy* 468, 474: "[...] we can conclude that the historical trend in products liability law toward strict liability over the past century is consistent with efficiency for those products where consumer harm is the same across consumers, either in actual or expected terms. As has been emphasized in the literature, the increasing complexity of consumer products has made it more difficult for consumers to accurately assess their risk. This, coupled with the fact that behavioral economists have increasingly demonstrated that consumers systematically misperceive risk in general, makes a compelling case for the shifting of liability from consumers to producers based on the logic that producers are better able to evaluate risk and can accurately signal it to consumers through the product price."

⁸²⁴ See G. Priest, 'The Current Insurance Crisis and Modern Tort Law' (1987) 96 *Yale Law Journal* 1521; M. Geistfeld, 'Products liability' in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.10; M. Polinsky, *An Introduction to Law and Economics* (4th edn., Wolters Kluwer 2011) 119-120; M. Faure, 'Economic Analysis of Product Liability' in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 642.

⁸²⁵ Primarily, this is because the consumers and third parties who ultimately suffer damage are themselves better placed to assess their risks and the extent of their potential damage, which first-party insurers can better verify and subsequently offer more tailored, smaller risk pools which remain sufficiently satisfactory for the lower-risk insured individuals in each pool. In contrast, the adverse selection problem is much more significant in case of third-party product liability insurance, because the same information about the underlying risks of consumers cannot be directly verified in the same manner by liability insurers (greater information asymmetry), which requires them to make larger risk pools with average premiums which are too high for the low-risk potential defendants, who therefore refuse the insurance or leave. Consequently, the product liability insurer risks ending up with only the highest-risk defendants in his risk-pool, which requires him to increase premiums, which in turn further exacerbates the adverse-selection problem, which can ultimately unravel the risk pool entirely. See R. Epstein, 'Products Liability as an Insurance Market' (1985) 14 *Journal of Legal Studies* 645, 650-652, 665-669; G. Priest, 'The Current Insurance Crisis and Modern Tort Law' (1987) 96 *Yale Law Journal* 1521, 1557-1563; M. Faure, 'Economic Analysis of Product Liability' in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 642. See also on adverse-selection Artigot-Golobardes, 'Beyond European Product Liability', 342-344.

moral hazard problem⁸²⁶ and it does not force inefficient insurance for non-economic damage like product liability does.⁸²⁷ Moreover, first-party accident insurance has much lower administrative costs than product liability for the same risk-allocation benefit.⁸²⁸ However, fault-based liability, which thus requires accident insurance for additional risk-allocation, might on average still have the same administrative costs as stricter product liability (see *supra* nr. 111.c), while the latter does not require this additional insurance which individual persons may of course also fail to obtain in practice.⁸²⁹ Moreover, the moral hazard problem of first-party accident insurance creates significant inefficiencies in terms of accident prevention (see *supra* nr. 109.e) and in terms of consumption levels. This second distortion can precisely be counteracted by a stricter product liability rule (see *supra* nr. 110.c), which is an argument against fault-based liability. And, importantly for this particular Chapter, the argument in favour of fault-based product liability based on a potential combination with first-party accident insurance exceeds of course a purely ‘internal’ perspective limited to product liability itself.

137. IN AN ‘INTERNAL PERSPECTIVE’ LIMITED TO PRODUCT LIABILITY, ANY PRODUCT LIABILITY RULE IS DEFINITELY MORE EFFICIENT THAN NO LIABILITY – Regardless of the aforementioned potential differences in terms of efficiency between strict and fault-based product liability, it is clear, although rarely discussed explicitly,⁸³⁰ that either product liability rule is much more efficient

⁸²⁶ See R. Epstein, ‘Products Liability as an Insurance Market’ (1985) 14 *Journal of Legal Studies* 645, 653, 665-667; G. Priest, ‘The Current Insurance Crisis and Modern Tort Law’ (1987) 96 *Yale Law Journal* 1521, 1555 (discussing moral hazard mainly in terms of taking care to mitigate damage after an accident, such as relating to medical costs); M. Geistfeld, ‘Products liability’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.8. This seems to mostly rely on whether accident insurers can better observe the injured parties’ level of care than liability insurers can observe the level of care of product liability defendants.

⁸²⁷ G. Priest, ‘The Current Insurance Crisis and Modern Tort Law’ (1987) 96 *Yale Law Journal* 1521, 1552-1555; M. Geistfeld, ‘Products liability’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nrs. 11.8, 11.23; M. Polinsky and S. Shavell, ‘The Uneasy Case for Product Liability’ (2010) 123 *Harvard Law Review* 1437, 1467-1468. The basic economic idea is that, while insurance for non-economic damage (awards which are especially high in the US) results in higher premiums or product prices in case of product liability, such damage like pain and suffering does not actually create a monetary need however much they reduce a person’s wellbeing. Hence, individuals are paying for an imperfect remedy. In contrast, other forms of damage like physical injuries (medical bills), property damage or loss of income all generate a monetary need. See S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 269-272.

⁸²⁸ This is mainly because product liability and the defendant’s third-party liability insurance only provide reparation to the injured party after (potentially disputed) liability is established, while the party insured by accident insurance only has to prove the fact of suffered damage. See S. Shavell, *Economic Analysis of Accident Law* (Harvard University Press 1987) 262-264; M. Geistfeld, ‘Products liability’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.8.

⁸²⁹ Besides economic constraints (cf. *supra* nr. 118), individuals may for example also underestimate accident risks to such an extent that they are unwilling to pay for accident insurance (see *supra* nr. 106.d).

⁸³⁰ Not only few doctrinal sources but also few economic analysts seem to question product liability at this general level and, instead, most sources focus on specific sub-questions premised on the fact that

than a ‘no product liability alternative’. At least, this is true when we disregard, in contrast to the next Chapter’s ‘external’ perspective, the cumulative offering of product liability’s alternatives.⁸³¹

When we adopt this view, it becomes clear first of all that no product liability would be highly inefficient in terms of risk-allocation. It would only be efficient in this regard in the scenario that a defendant would be more risk-averse than an injured consumer, which is extremely unlikely and remains unlikely in a more circular economic context (see *supra* nr. 106.b and cf. *infra* nr. 140.a). With regards to third parties, who are completely risk-averse and receive not only the benefit of not bearing the accident risk but also receive from an *ex ante* perspective complete reparation (see *supra* nrs. 106.b and 113), abandoning product liability is by definition always highly inefficient in terms of risk-allocation.

It is equally clear that in the hypothetical absence of alternatives like the market mechanism, product safety regulation and criminal law, a no product liability rule would remove incentives for manufacturers and other defendants to efficiently prevent accidents, by taking care and by not placing excessive amounts of products on the market (cf. *supra* nrs. 108-109). This major moral hazard would be much more problematic than the small benefit in terms of accident prevention consisting of the fact that injured parties are under a no liability rule automatically induced to take care themselves at least to what they perceive as the ‘optimal level of care’ and to not engage in excessive consumption and product use in light of resulting increased accident risks.⁸³² After all, consumer product accidents are precisely defined by the fact that especially manufacturers and indirectly other defendants in the product’s distribution chain are much better placed to prevent accidents from occurring than consumers and injured third parties.⁸³³ And the former actors, the product liability defendants, are generally also better placed than the latter to assess accident risks in the long run and to rationally act on this information.

Additionally, the price-signalling efficiency benefit of in particular stricter product liability is also completely lost under a no-liability rule, which is in terms of efficiency all the more problematic when we ignore pursuant to this Chapter the market mechanism and product safety regulation as alternatives for this purpose (see *supra* nr. 110).

there is a product liability system. See, e.g., M. Polinsky and S. Shavell, ‘The Uneasy Case for Product Liability’ (2010) 123 *Harvard Law Review* 1437, 1487: “Hence, although there is a substantial body of writing about the economics of product liability, essentially no one attempts to assess its benefits and costs.”

⁸³¹ Regarding the market mechanism, which is automatically present and offers an alternative for risk-allocation and price-signalling, this assumes that consumers have no information whatsoever relating to a product’s expected accident costs.

⁸³² S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 183-184, 195. Qualifying this as a benefit in terms of efficiency assumes that injured parties are rational actors who will effectively take these measures to reduce their own accident risks up to the efficient level of care. However, this might not be the case, not only because of behavioural limitations but simply because consumers generally underestimate product accident risks (see *supra* nr. 108.b). See M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 118-119.

⁸³³ See *supra* nrs. 5 et seq. Partially indicative is also the fact that in case of actual product accidents, injured third parties are much more likely to claim diagonally against those typical ‘product liability defendants’ than on a horizontal basis against the consumer.

Conversely, the main benefit in terms of efficiency of a ‘no product liability rule’ is of course the corresponding absence of direct and indirect administrative costs (see *supra* nr. 111). Yet, some of these costs, like the operating costs of the court system, continue to generally exist and only product liability’s relatively small share in those costs disappears. These administrative costs are of course pertinent when arguing against product liability and in favour of a combination of some of its alternatives, as considered in the next Chapter. Besides the general argument made in this sense by POLINSKY AND SHAVELL discussed in the following Chapter,⁸³⁴ sometimes more specific arguments are made. For example, POLINSKY AND ROGERSON argue that if a true monopolist restricts supply too much, instead of a fault-based liability rule (see *supra* nr. 136.a) a ‘no liability rule’ might even become efficient to ensure more efficient consumption levels.⁸³⁵ However, this argument, for which competition law is a more direct remedy, presumes again the availability of alternatives to product liability for risk-allocation and accident prevention purposes.

In conclusion, when we consider product liability from a purely ‘internal perspective’, it is clear that the efficiency gained by doing away altogether with product liability and thus also with its administrative costs, clearly does not outweigh the loss of the aforementioned benefits.⁸³⁶

Section B. In terms of efficiency in the context of circular strategies, the preferences between strict, fault-based and no product liability do not really change

138. IN AN ‘INTERNAL PERSPECTIVE’, CIRCULAR ECONOMIC STRATEGIES OVERALL RETAIN THE PREFERENCE IN TERMS OF EFFICIENCY BETWEEN STRICT, FAULT-BASED AND NO PRODUCT LIABILITY – As we will see in the following Chapter, there are in the context of circular strategies surprising extra arguments which plead in favour of product liability and in particular for a stricter variant. This is because, from an ‘external’ perspective, the added efficiency of such product liability

⁸³⁴ See on their view of the social desirability of product liability in the US context, based on its administrative costs weighed against its added value when considering the available alternatives, M. Polinsky and S. Shavell, ‘The Uneasy Case for Product Liability’ (2010) 123 *Harvard Law Review* 1437, 1469-1476. See also *infra* nrs. 150 et seq.

⁸³⁵ M. Polinsky and W. Rogerson, ‘Products Liability, Consumer Misperceptions, and Market Power’ (1983) 14 *Bell Journal of Economics* 581.

⁸³⁶ See also *supra* nr. 111.a on how most cases are not disputed or reach after less costly negotiations an out-of-court settlement, which substantially reduces administrative costs. Note additionally that administrative costs are considerably lower in Europe than in the US, given the very expensive nature of litigation in the US (for society as a whole, not for an individual party when he only pays contingency fees).

in comparison with its alternatives becomes overall greater in a circular economic setting. In the ‘internal perspective’ to which we limit ourselves in this Chapter, there is not such a remarkable shift when the application context of product liability changes from a purely linear production and distribution model to one or more circular strategies. Instead, it seems that the overall efficiency of stricter product liability with a contributory fault defence compared to a purely fault-based rule in ordinary circumstances (summarised *supra* nr. 135) can largely be extended to the context of circular economy.

First of all, this results from the fact that circular strategies still allow sufficient competition to not upend the mechanisms which underly the basic economic analysis of product liability (see *infra* nr. 139). Second, this is because the ‘judgement-proof problem’ is perhaps not as pronounced in the context of circular economy as one might anticipate and because it can be challenged that this reduces the efficiency of stricter liability, at least when adopting a purely ‘internal’ perspective (see *infra* nr. 140). Third, also the fact that circular strategies which increase product lifetimes make it more likely that product liability are time-barred through mainly extinction periods, does not fundamentally alter the order of preference between stricter and more purely fault-based liability (see *infra* nr. 141). And fourth, the very limited possibility that the problem of judgement-proof defendants would make fault-based liability more efficient, is offset by the fact that the reduction in additional consumption which results from circular strategies makes strict product liability slightly more efficient in terms of accident-prevention than fault-based liability when considering the activity-levels of both defendants and consumers (see *infra* nr. 142).

139. SUFFICIENT MARKET COMPETITION IN THE CONTEXT OF CIRCULAR STRATEGIES TO RETAIN THE TRADITIONAL FUNCTIONING OF PRODUCT LIABILITY – At the outset, it is necessary to clarify how product liability in a more circular consumer goods economy relates to the important factor of market competition. This is because the most traditional version of the economic analysis of product liability, as explored *supra* nrs. 106 et seq., generally assumes a sufficiently competitive market. Effectively, it is true that a second-hand product which is retransferred, leased or borrowed or a repaired or refurbished product is no longer 100% identical to another newly manufactured product of the same brand and product type. However, it would be incorrect to therefore conclude that the preceding basic economic analysis of product liability no longer holds.

First of all, a monopolist will generally increase prices and lower consumption levels but has no direct incentive to lower product safety when he remains subject to a product liability rule.⁸³⁷ Thus mainly the consumption-level becomes inefficient, which still remains mitigated somewhat through product liability’s price-signalling function, while the risk-allocation and

⁸³⁷ See D. Epple and A. Raviv, ‘Product Safety: Liability Rules, Market Structure, and Imperfect Information’ (1978) 68 *American Economic Review* 80, 93; D. Sunding and D. Zilberman, ‘Allocating Product Liability in a Multimarket Setting’ (1998) 18 *International review of law and economics* 1, 2; M. Geistfeld, ‘Products liability’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.3 (admittedly, noting as well that the lower industry-output allows a monopolist to slightly lower product safety to the extent that accident risks are determined by his activity-level, such as in case of cumulative chemical exposure). See also M. Polinsky and W. Rogerson, ‘Products Liability, Consumer Misperceptions, and Market Power’ (1983) 14 *Bell Journal of Economics* 581.

accident-prevention⁸³⁸ functions prioritized by this dissertation (see Figure 4 *supra* nr. 130) remain unaffected.

More fundamentally, it seems incorrect to frame products consumed on the basis of one or more circular strategies as truly unique, non-substitutable products corresponding with an actual monopoly. Instead, this can at maximum be described as a market setting of ‘monopolistic competition’, where products are offered which are sufficiently similar although not perfect substitutes.⁸³⁹ For example, a consumer purchasing a specific second-hand bike will certainly compare this consumption option with a totally different second-hand bike and/or new bikes or even with alternative transportation products and services. A consumer who seeks a repair for his particular washing machine can as an alternative purchase a new device or lease one of the same or of a different type. In a setting of monopolistic competition, no company seems to have sufficient market power to fundamentally alter the efficiency benefits summarised *supra* nrs. 135-137 of stricter product liability over more purely fault-based liability and of either liability rule over a complete absence of product liability.⁸⁴⁰

140. IT IS UNCERTAIN THAT CIRCULAR STRATEGIES OVERALL RESULT IN A NET INCREASE IN ‘JUDGEMENT-PROOF DEFENDANTS’ AND IT CAN BE QUESTIONED WHETHER THIS WOULD MAKE MORE FAULT-BASED LIABILITY MORE EFFICIENT – Many circular strategies like retransfers, sharing and repairs tend to be offered on average by smaller companies and in some cases by prosumers. The assets of these parties tend to be smaller compared to the potential personal injuries and property damage resulting from a single consumer product accident. Hence, there is a risk of what economic analysts call the ‘judgement-proof problem’,⁸⁴¹ which largely corresponds with insolvency. In these circumstances, an injured party risks to no longer obtain full reparation even though liability is established after an accident, which diminishes the efficiency in risk-allocation if he is more risk-averse than the defendant (cf. *supra* nr. 106).

⁸³⁸ Note additionally that, even in the absence of sufficient competition, a monopoly or other position of market power might still be ‘contestable’ due to low barriers to entry. And this can offer additional guarantees that the monopolist as a product liability defendant will reduce accident risks (D. Spulber, ‘Products Liability and Monopoly in a Contestable Market’ (1988) 55 *Economica* 333, 340; V. Bodey, ‘Fast Food Products Liability: The Road to Change or Ruin: An Economic Market Structure Analysis’ (2008) 15 *Trinity Law Review* 1, 5-7). In the durable consumer goods sector, actual product monopolies (instead of cases of monopolistic competition) will often relate to low-tech, niche products, for which barriers to market entry are not overly high, notwithstanding the economies of scale enjoyed by the incumbent. This is particularly true for the durable consumer goods which are most suited to circular strategies like retransfers and repairs.

⁸³⁹ See on monopolistic competition S. Brakman and B. Heijdra, ‘Introduction’ in S. Brakman and B. Heijdra (eds.), *The Monopolistic Competition Revolution in Retrospect* (Cambridge University Press 2001) 1-37; W. Elsner, T. Heinrich and H. Schwardt, *The Microeconomics of Complex Economies* (Academic Press 2015) nr. 7.6.3.

⁸⁴⁰ See also V. Bodey, ‘Fast Food Products Liability: The Road to Change or Ruin: An Economic Market Structure Analysis’ (2008) 15 *Trinity Law Review* 1, 6-7.

⁸⁴¹ See generally the sources cited *supra* footnote 138. The term has been coined by SHAVELL (S. Shavell, ‘The Judgement Proof Problem’ (1986) 6 *International Review of Law and Economics* 45), although the problem has been studied earlier from an economic perspective (e.g. J. Summers, ‘The Case of the Disappearing Defendant: An Economic Analysis’ (1983) 132 *University of Pennsylvania Law Review* 145).

Simultaneously, the judgement-proof defendant risks to no longer fully consider his level of care and activity level up to the 'optimal' level because he cannot lose assets he does not have when he would be liable, which diminishes the accident-prevention function (cf. *supra* nrs. 108-109). However, this dramatic outcome must be nuanced at two levels, as discussed below.

- a. On the one hand, it can be challenged that the shift from a linear to a more circular consumer goods economy effectively increases the judgement-proof problem.

First of all, this problem is based on whether liability risks outweigh a defendant's assets, meaning that larger companies can also be judgement-proof when they are subject to larger liability risks.⁸⁴² Serial product liability damage for mass-produced goods in the linear economy, such as durable consumer goods containing substances which later turn out to be harmful, is a prime example which can also render large companies judgement-proof. In comparison, when an actor redistributes second-hand goods or refurbishes products, accident risks tend to be limited to individual products due to the inherent 'heterogeneity' of products subject to such circular strategies (see also *infra* nr. 152 on this key feature of circular economy). In other words, while the total assets of producers and distributors engaging in circular economy may on average decrease somewhat, the risk of a single large liability decreases in parallel, which can even out the risk of an overall increase in judgement-proof defendants.

Second, sophisticated companies who will be more prominent as defendants in the traditional, linear consumer goods economy, are able to make themselves to some extent judgement-proof in ways which are unavailable to defendants like prosumers in a more circular setting, such as by shielding assets in corporate restructuring, by transferring profits to shareholders, by liquidating and dissolving themselves and/or by financing their business with more secured debt than a prosumer or one-person business might be able to.⁸⁴³

Third, circular economy overlaps only to a limited extent with collaborative economy, as many if not most circular strategies are in practice offered by professional business entities (see in general Figure 5 *supra* nr. 69). This can be expected to be even more the case when the mainstream consumer goods economy becomes more circular by incorporating more circular strategies in its business models. Additionally, many cases of product accidents involving for example reused, retransferred or repaired products, continue to result mainly in product liability claims against the product's original manufacturer or importer, as explored in Part IV of this dissertation specifically in relation

⁸⁴² S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 231; T. Miceli and K. Segerson, 'A note on optimal care by wealth-constrained injurers' (2003) 23 *International Review of Law and Economics* 273, 273.

⁸⁴³ See A. Ringleb and S. Wiggins, 'Liability and Large-Scale, Long-Term Hazards' (1990) 98 *The Journal of political economy* 574; L. LoPucki, 'The Death of Liability' (1996) 106 *Yale Law Journal* 1, 14-37; J. Boyd and D. Ingberman, 'Fly by Night or Face the Music? Premature Dissolution and the Desirability of Extended Liability' (2003) 5 *American Law and Economics Review* 189; R. Mason, 'Dividends, safety and liquidation when liabilities are long-term and stochastic' (2004) 48 *European Economic Review* 1179. See also more generally K. Pistor, *The Code of Capital: How the Law Creates Wealth and Inequality* (Princeton University Press 2019).

to the PLD-1985. This is because product liability theories still facilitate in those circumstances claims against such defendants, who are the same as defendants in a purely linear consumer goods economy. And these defendants, who initially design and market products, indeed often exert significant control over accident risks when products are later in their lifecycle subject to circular strategies.

And fourth, the economic literature on the judgement proof problem is generally premised on a defendant being a company or other business which can be declared bankrupt with no lasting liability for the one-person owner, shareholders or directors. In contrast, natural persons actually do not enjoy the same level of protection when being insolvent and generally continue to bear long-term significant negative consequences of their indebtedness.⁸⁴⁴ This means that for example prosumers who are held liable for reused, share or self-repaired products, even if they do not sufficient assets to cover a specific case of established liability, are not to the same extent judgement-proof as a company would have been, since the latter can go truly bankrupt without lasting consequences for the persons behind the company. After a while, injured parties may still be able to obtain some reparation from new income of the liable prosumer, who cannot simply ‘walk away’ from his debt. This important feature reduces the inefficiency both in terms of risk-allocation and accident-prevention of prosumers and small companies engaging in circular strategies who may be insolvent in certain cases of liability.

- b. On the other hand, even if there would be an increase in truly judgement-proof defendants in a more circular consumer goods economy, which has been disputed by the prior counterarguments, this does not necessarily upend the established efficiency of the different liability rules. The economic analysis has from an ‘external’ perspective, clearly established that the dilution of the risk-allocation and accident-prevention functions resulting from the judgement-proof problem can be countered through alternatives to civil liability, like product safety regulation, criminal liability and forms of insurance (see *infra* nr. 156-157 and 162). This might be seen as an argument in favour of combining such alternatives with a ‘no liability’ rule which avoids product liability’s administrative costs. Yet, this Chapter is focused on a purely ‘internal’ perspective and, hence, such alternatives are disregarded here.

From such an ‘internal’ perspective, the economic analysis of liability law literature traditionally holds that judgement-proof defendants are in terms of accident-prevention more problematic for stricter liability (with a contributory fault defence) than for fault-

⁸⁴⁴ E.g., BELGIUM: bankruptcy of a business may result in the ‘release’ from liability of the one-person business operator (art. XX.173 Wetboek economisch recht / Code droit économique) and, in case of a company, shareholders and directors can only be held liable separately on narrow grounds. In comparison, a natural person who as a prosumer operated outside a business context and who is insolvent after being held liable, can only obtain more limited protection against creditors by relinquishing control over most of his assets and income to a court-appointed master and by complying with a repayment schedule agreed with creditors or based on a court decision (arts. 1675/1-1675/27 Gerechtelijk Wetboek / Code Judiciaire).

based liability.⁸⁴⁵ While early studies were focused on cases where taking care lowers the probability of an accident, the same view can be extended to cases, like most product accident settings, where taking care can also lower the magnitude of resulting damage.⁸⁴⁶

However, the view that fault-based liability is more efficient in terms of accident-prevention when defendants are judgement-proof, has in recent years been challenged in several ways.⁸⁴⁷ BEARD demonstrated that when taking care costs money, which is crucially the case for virtually all possible product safety precautions by a producer or distributor, it can for judgement-proof defendants who have substantial assets but just not enough to cover potential liability, also under a strict product liability rule be attractive to take care, sometimes even excessively more than the optimal level.⁸⁴⁸

⁸⁴⁵ This is because incentives to take care or to consider activity-levels can under a purely strict liability rule already be diluted (if causation is established) once the risk of damage is greater than the defendant's assets, while under a fault-based liability rule this only occurs once the assets are below a lower threshold corresponding with the resulting damage multiplied with the chance the defendant will be deemed to have committed a fault. See J. Summers, 'The Case of the Disappearing Defendant: An Economic Analysis' (1983) 132 *University of Pennsylvania Law Review* 145, 169-170; S. Shavell, 'The Judgement Proof Problem' (1986) 6 *International Review of Law and Economics* 45, 45; T. Miceli and K. Segerson, 'A note on optimal care by wealth-constrained injurers' (2003) 23 *International Review of Law and Economics* 273, 274, 277-279. See also B. Deffains and S. Rouillon, 'Economics of Liability Precaution versus Avoidance' (2018) 128 *Revue d'Économie Politique* 41, 45-53 (arguing in favour of fault-based liability when considering that defendants can take *ex ante* measures to evade liability).

⁸⁴⁶ G. De Geest and G. Dari-Mattiacci, 'Judgment Proofness under Four Different Precaution Technologies' (2005) 161 *Journal of Institutional and Theoretical Economics* 38, 40, 51-52.

⁸⁴⁷ strict liability might also become efficient in terms of accident-prevention vis à vis judgement-proof defendants when reparation is changed from integral compensation of all actual damage to overcompensation (punitive damages) or undercompensation (capped damages) (J. Boyd and D. Ingberman, 'Noncompensatory Damages and Potential Insolvency' (1994) 23 *Journal of Legal Studies* 895; G. De Geest and G. Dari-Mattiacci, 'Judgment Proofness under Four Different Precaution Technologies' (2005) 161 *Journal of Institutional and Theoretical Economics* 38, 48-51). However, this is not further explored here, given how (nothing more and nothing less than) integral compensation is firmly established in continental European civil liability systems and how this is a prerequisite for efficient accident-prevention if defendants are not judgement-proof (see *supra* nr. 108.c).

⁸⁴⁸ Intuitively, this can be understood by reasoning that taking care can help to avoid an accident for which the defendant is strictly liable, while it only partially reduces the defendant's limited assets which would all be forfeited anyhow in case of purely strict liability. Fault-based liability does of course not automatically apply in case of an accident, given the fault-requirement. There is furthermore also a causation requirement, which is however similarly applicable under both rules. See R. Beard, 'Bankruptcy and Care Choice' (1990) 21 *RAND Journal of Economics* 626, 633-634; T. Miceli and K. Segerson, 'A note on optimal care by wealth-constrained injurers' (2003) 23 *International Review of Law and Economics* 273, 274-279; T. Friehe, 'A note on judgment proofness and risk aversion' (2007) 24 *European Journal of Law and Economics* 109, 110-111. Another consequence is that such defendants start to take less care when their assets increase and they become less judgement-proof (R. Beard, 'Bankruptcy and Care Choice' (1990) 21 *RAND Journal of Economics* 626, 633). Additionally, the costs of litigation for the plaintiff must be considered, which can provide an additional reason for a defendant to take more care to lower assets so much that these fall below a plaintiff's litigation costs (T. Miceli and K. Segerson, 'A note on optimal care by wealth-constrained injurers' (2003) 23 *International Review*

Furthermore, other research has found that fault-based liability with the basic rule on causation which is most common in European legal systems, namely a *conditio sine qua non* based on alternative behaviour where only the fault is omitted, can actually be less efficient than stricter liability in dealing with the judgement-proof problem.⁸⁴⁹ Additionally, when taking care costs money and when judgement-proof defendants are risk-averse, which they are potentially more likely in a context of prosumers and one-man businesses engaging in circular strategies (cf. *supra* nr. 106.b and *infra* nr. 140.a), then a stricter product liability rule might also be more efficient than a fault-based rule in inducing such defendants to take more care despite their limited assets.⁸⁵⁰

141. THE FACT THAT CIRCULAR STRATEGIES RESULT ON AVERAGE IN MORE PRODUCT LIABILITY CLAIMS BARRED BY LIMITATION OR EXTINCTION PERIODS IS NOT NECESSARILY LESS EFFICIENT AND DOES NOT SEEM TO UPEND THE PREFERENCE BETWEEN DIFFERENT PRODUCT LIABILITY RULES – By nature, circular economic strategies aim to prolong the useful lifespan of durable consumer goods (see *supra* nrs. 56-59). It is therefore logical that potential product liability claims in this context are more often barred because of the expiration of applicable limitation or extinction periods. Part IV of this dissertation will pay particular attention to both time-limitations under the PLD-1985.

- a. At first sight, especially from a perspective that remains purely ‘internal’ to product liability, it may seem always inefficient to temporally restrict product liability rules through limitation or extinction periods, since this leads to a loss in risk-allocation, accident-prevention and price-signalling benefits for product accidents occurring after such period has expired.⁸⁵¹ However, this loss can be outweighed by gains in efficiency

of *Law and Economics* 273, 279-283). Incentives for judgement-proof defendants to take excessive precautions above the optimal level seem to result from the extent to which taking care reduces the probability of accidents but not the magnitude of resulting damage (G. Dari-Mattiacci and G. De Geest, ‘When will judgment proof injurers take too much precaution?’ (2006) 26 *International Review of Law and Economics* 336).

⁸⁴⁹ G. Dari-Mattiacci and B. Mangan, ‘Disappearing Defendants versus Judgment-Proof Injurers’ (2008) 75 *Economica* 749, 758.

⁸⁵⁰ Intuitively, this is because the liability risk is greater under stricter than under fault-based liability and the risk-averse defendant can thus reduce his risk-bearing costs more under strict liability by taking more care, while this only costs assets he loses anyhow in the event of liability. See R. MacMinn, ‘On the Judgment Proof Problem’ (2002) 27 *Geneva Papers on Risk and Insurance Theory* 143, 144-152; G. Dari-Mattiacci and B. Mangan, ‘Disappearing Defendants versus Judgment-Proof Injurers’ (2008) 75 *Economica* 749, 759. See also T. Friehe, ‘A note on judgment proofness and risk aversion’ (2007) 24 *European Journal of Law and Economics* 109, 117-118 (arriving at similar conclusions, considering that the marginal utility of taking care increases for solvent defendants when their assets increase, while this is not the case for judgement-proof defendants who always lose all remaining assets when being held liable).

⁸⁵¹ See T. Miceli, ‘Deterrence, litigation costs, and the statute of limitations for tort suits’ (2000) 20 *International Review of Law and Economics* 383, 383; I. Gilead, ‘Economic Analysis of Prescription in Tort Law’ in H. Koziol and B. Steininger (eds.), *European Tort Law 2007* (Springer 2007) 117-119; A. Ogus, ‘Regulation of prescription periods in an industrial context: justified or unjustified

resulting from a particular limitation or extinction period, due to various time-related effects.

Notably, with the increased passing of time, evidence may become scarcer and less dependable, which can increase the direct and indirect administrative costs of deciding product liability claims (see *supra* nr. 111) and which increases the risk of inefficient judgements or settlements which are factually (partially) incorrect.⁸⁵² This is related to the – for product liability crucial – fact that the increased passing of time makes it more likely that a product defect has a cause which is posterior to the moment when it was produced or distributed by a product liability defendant. This is discussed further *infra* nrs. 240, 292 and 415 in relation to the PLD-1985's posteriority defence applied to circular strategies like product reuse, retransfers and repairs).⁸⁵³ Hence, these defendants actually have no control over these accident risks and holding them liable for ensuing accidents is thus inefficient in terms of accident-prevention.⁸⁵⁴ Furthermore, a continued liability risk over a longer (unlimited) period of time creates costs relating to preserving evidence for a future defence, keeping substantial financial reserves, increased risk-bearing for risk-averse defendants or liability insurance premium payments as well as a slate of resulting opportunity costs.⁸⁵⁵ Moreover, the aforementioned disadvantages of judgements which incorrectly establish liability and the increased costs for defendants of extended periods of liability, may in turn lead to defendants taking inefficiently more care than the 'optimal' level ('over-deterrence').⁸⁵⁶

complexities?' (2011) 71 *Die Betriebswirtschaft* 235 237. Limitation and extinction periods, especially very short ones, may furthermore be inefficient as a consequence of strategic abuse by defendants who try to delay claims or increased costs for plaintiffs because they must initiate a claim last-minute (A. Ogus, 'Regulation of prescription periods in an industrial context: justified or unjustified complexities?' (2011) 71 *Die Betriebswirtschaft* 235 238).

⁸⁵² See M. Baker and T. Miceli, 'Statutes of Limitations for Accident Cases: Theory and Evidence' (2000) 19 *Research in Law and Economics* 47, 47-55; I. Gilead, 'Economic Analysis of Prescription in Tort Law' in H. Koziol and B. Steininger (eds.), *European Tort Law 2007* (Springer 2007) 116, 119; A. Ogus, 'Regulation of prescription periods in an industrial context: justified or unjustified complexities?' (2011) 71 *Die Betriebswirtschaft* 235 238.

⁸⁵³ See H. Lando, 'Why Cut off Buyers' Claims by a Limitation Period?' in T. Eger and others (eds.), *Internationalisierung des Rechts und seine ökonomische Analyse: Festschrift für Hans-Bernd Schäfer zum 65. Geburtstag* (Gabler 2008) 307: "First, a good that has endured for some period of time is, in general, likely to be closer to adequate quality than a good which breaks down shortly after purchase, and so the importance of the deterrent effect of allowing an early claim is larger than that of allowing a later claim, even when both claims are valid. Second, a larger fraction of claims that arise later is likely to be unwarranted, since the number of breakdowns that cannot be considered defects increase over time, and buyers are likely to mistake some of these breakdowns for defects."

⁸⁵⁴ *Ibid.*, 307-313.

⁸⁵⁵ See I. Gilead, 'Economic Analysis of Prescription in Tort Law' in H. Koziol and B. Steininger (eds.), *European Tort Law 2007* (Springer 2007) 115-116 (also emphasizing that these costs can be exacerbated as a result of the aforementioned risk of incorrect judgements); A. Ogus, 'Regulation of prescription periods in an industrial context: justified or unjustified complexities?' (2011) 71 *Die Betriebswirtschaft* 235 238.

⁸⁵⁶ See I. Gilead, 'Economic Analysis of Prescription in Tort Law' in H. Koziol and B. Steininger (eds.),

GILEAD concludes that “*there are good reasons to believe that relatively short prescription periods are efficient*”, because of the aforementioned reasons and because the risk-allocation and accident-prevention benefits can already be obtained under relatively short time limits, while longer periods only further contribute marginally to these efficiency benefits.⁸⁵⁷ Additionally, he argues that, even if some plaintiffs fail to timely initiate a valid claim and if defendants can estimate this likelihood, opportunistic defendants would still be unable to determine *ex ante* who these defendants will be, which makes it more difficult for them to reduce their precautions in a corresponding manner to ‘profit’ in an inefficient manner in terms of accident-prevention from a limitation or extinction period.⁸⁵⁸ There is also some empirical evidence from the US which hints at the efficiency of at least certain statutes of limitation and extinction in the context of liability for (product) accidents.⁸⁵⁹

Determining precisely which limitation or extinction period is efficient depends on various factors, like its length, rules on suspension and interruption, the administrative costs avoided by the temporal restriction and how efficient the temporally restricted liability rule was in terms of risk-allocation, accident-prevention and price-signalling.⁸⁶⁰ It suffices to conclude here that the fact that more circular economy leads to more time-barred product liability claims is far from being necessarily inefficient at a general level. Note, however, that this dissertation proposes *infra* nr. 247 a new extinction period for harmonised product liability law, which is argued to be overall more efficient than the current period of art. 11 PLD-1985 and art. 17 PLD-2024.

- b. For the purposes of this Chapter, the pertinent question is whether the fact that more product liability claims will become time-barred when product lifetimes are extended through various circular strategies, affects the relative efficiency of stricter product liability (with a contributory fault defence) compared to a more purely fault-based liability or a ‘no liability’ alternative.

Since the preceding discussion has clarified that such limitation and extinction periods can precisely help to ensure that product liability rules remain efficient, their increased prominence in a circular economic context does not seem to diminish the previously established overall inefficiency of a ‘no liability’ rule, especially when we disregard

European Tort Law 2007 (Springer 2007) 117. See *supra* nr. 108.c on the ‘optimal level of care’ from an efficiency perspective.

⁸⁵⁷ Ibid., 129.

⁸⁵⁸ Ibid., 118. See in the same sense, but relating to the need for temporal restrictions for contractual liability P. Dybvig and N. Lutz, ‘Warranties, Durability, and Maintenance: Two-sided Moral Hazard in a Continuous-Time Model’ (1993) 60 *Review of Economic Studies* 575, 575-577.

⁸⁵⁹ M. Baker and T. Miceli, ‘Statutes of Limitations for Accident Cases: Theory and Evidence’ (2000) 19 *Research in Law and Economics* 47, 55-63 (broad analysis of how different economic factors correspond with differences in State statutes of limitations); J. Shepherd, ‘Products Liability and Economic Activity: An Empirical Analysis of Tort Reform’s Impact on Businesses, Employment, and Production’ (2013) 66 *Vanderbilt Law Review* 257, 316 (extinction periods introduced in US product liability reform statutes are associated with statistically significant increases in economic activity).

⁸⁶⁰ See also I. Gilead, ‘Economic Analysis of Prescription in Tort Law’ in H. Koziol and B. Steininger (eds.), *European Tort Law 2007* (Springer 2007) 124-128.

alternatives to product liability (see *supra* nr. 137). With regards to the choice between stricter and more purely fault-based product liability, the limited relevant literature does not seem to point decisively in one direction or the other. DARI-MATTIACCI AND MANGAN find that fault-based liability with the basic *conditio sine qua non* rule of causation which uses a hypothetical factual alternative that omits the fault, is as inefficient as a purely strict liability rule in dealing with the ‘disappearing defendant’ problem which can result from limitation and extinction periods.⁸⁶¹ MICELI finds that it is more efficient to have slightly longer limitation periods under a fault-based than under a strict liability rule.⁸⁶² Partially because research in this area remains limited, no clear difference in the efficiency of both product liability rules can therefore be established in relation to the role played by limitation and extinction periods.

142. THE IMPACT OF CIRCULAR ECONOMY ON THE ACTIVITY-LEVEL OF CONSUMERS RESULTS IN A SMALL INCREASE IN EFFICIENCY IN TERMS OF ACCIDENT-PREVENTION OF STRICTER PRODUCT LIABILITY – Preceding considerations specific to a more circular consumer goods economy seem to not really change the relative efficiency of a stricter compared to a more purely fault-based product liability rule. Yet, a slight overall increase in efficiency of fault-based liability can perhaps still be argued for, especially when we consider the remaining possibility of an increase in judgement-proof defendants (see *supra* nr. 140.b). However, if so, this is arguably offset by the following argument, which makes stricter product liability slightly more efficient in a circular context by focusing on the impact of the activity-levels of both parties on accident-prevention.

As discussed *supra* nr. 109.b, strict product liability has the efficiency benefit of compelling defendants to fully internalise the increased accident risks resulting from their level of activity in terms of producing and distributing more products, while fault-based liability has the inverse benefit of letting consumers themselves fully internalise the increases in accident risks resulting from their level of consumption. Crucially, circular strategies like product reuse, retransfers, sharing, repairs and refurbishments actually further reduce the need for additional consumption of durable consumer products, because they instead extend or intensify the useful lifespan of products which are already in use. This proportionally decreases fault-based liability’s added value in preventing accident risks associated with extra consumption, while the added value of strict product liability in preventing accident risks resulting from the activity-level of defendants remains as relevant as in the linear economic setting. In

⁸⁶¹ G. Dari-Mattiacci and B. Mangan, ‘Disappearing Defendants versus Judgment-Proof Injurers’ (2008) 75 *Economica* 749, 754-758.

⁸⁶² T. Miceli, ‘Deterrence, litigation costs, and the statute of limitations for tort suits’ (2000) 20 *International Review of Law and Economics* 383. His reasoning is the following: “[...] the marginal benefit of lengthening the statute is higher under a negligence rule because, by increasing the length of time over which victims can file suit, deterrence is enhanced, which in turn reduces the likelihood that a given injurer will be found negligent. Thus, fewer victims file suits at each point in time because their chances of winning are reduced. As a result, litigation costs fall, which partially offsets the extra litigation costs when the statute is lengthened.” (ibid., 383). This does not necessarily make a fault-based rule more efficient than a strict liability rule, but only argues that a fault-based rule can become more efficient than before by making it subject to slightly longer limitation periods than what would be efficient under a strict liability rule.

other words, a more circular consumer goods economy makes stricter product liability slightly more efficient in terms of accident-prevention than purely fault-based liability.

Nevertheless, this argument only holds true to the extent that accident risks in products are similarly present in new, linear economic products as they are present in products consumed on the basis of the aforementioned circular strategies. This is the case for many manufacturing, design or information defects which manifest themselves relatively quickly during a product's initial use cycle. By avoiding additional consumption of new products and instead using existing products longer, total accident risks then indeed fall, while the added value in terms of activity-levels of fault-based liability decreases and of strict liability increases as discussed above. In contrast, this argument is no longer valid to the extent that accident risks actually increase by applying circular strategies instead of consuming new products, because reused, retransferred and/or repaired products would hypothetically be less safe than the linear economic alternatives of new products (see also *supra* nr. 42). If that would be true to a significant extent, then the added value of fault-based liability in reducing the consumer's activity-level would still in a more circular economic setting continue to be as relevant as in a linear economic setting discussed *supra* nr. 109.b. There would then not be a resulting accident-prevention efficiency of stricter compared to more purely fault-based product liability in a circular economic context.

Moreover, the aforementioned argument depends on the assumption that consumers will under strict liability generally not consume durable consumer goods as excessively as defendants would excessively produce or distribute products under a fault-based liability (see *supra* nr. 109.b). The argument's significance furthermore remains limited to the impact of activity-levels of both consumers and defendants on accident-prevention, which does not encompass the impact of levels of care and which does not consider any of the other functions of product liability.

Therefore, this remaining benefit does not seem certain and big enough to make strict product liability in a circular economic context certainly more efficient than fault-based liability, especially when also weighing it against preceding considerations, including the possibility of an increase in judgement-proof defendants and the possibility that this still makes fault-based liability marginally more efficient.

Section C. In terms of sustainability externalities in the context of circular strategies, stricter product liability with a contributory fault defence is overall preferable

§ 1. The erroneous path: trying to make circular consumption more attractive than the linear alternative through product liability rules

143. THE PREMISE WHICH IS ACTUALLY ONLY CORRECT DUE TO CONSUMERS' BEHAVIOURAL LIMITATIONS: THE MARKET MECHANISM GENERALLY PREVENTS DISTINGUISHING BETWEEN PRODUCT LIABILITY RULES IN TERMS OF SUSTAINABILITY EXTERNALITIES – Whether a stricter, a more fault-based or a 'no liability' product liability rule is applied to circular consumption strategies, does at first sight not seem to make a clear difference in terms of sustainability externalities which are not considered in the traditional efficiency calculus (see *supra* nr. 122). Even if we assume that more circular strategies in the consumer goods sector ultimately contribute to more sustainable development, which can to some extent be disputed but is overall convincing (see *supra* nr. 64), then the market mechanism still precludes establishing through product liability rules redistributive effects which make these circular strategies more attractive for consumers than linear consumption alternatives. For example, when the rule applicable to product accidents in a circular context would be more protective of injured parties, such as a very strict product liability rule, the associated increase in expected liability costs, possibly reflected in liability insurance premiums, will make these more sustainable consumption choices on average more expensive.⁸⁶³ Conversely, when the applicable rule would be less protective, such as the extreme case of an overall 'no liability' rule, then the associated products would become comparatively cheaper because liability costs must no longer be included in the price. Such rebound effect of the market mechanism presumes a sufficiently competitive market, which will generally also be present in the context of circular strategies since there is at least 'monopolistic competition' among different circular offerings and with linear alternatives, as discussed *supra* nr. 139.

This key argument has of course already been raised *supra* nrs. 104 and 123 against attempting to pursue redistribution ('equity') through product liability rules, including to try to stimulate in this way more sustainable development by means of more circular economy. Indeed, trying to determine which product liability rule applied to circular strategies reduces

⁸⁶³ Moreover, the price increase is much more readily perceivable for consumers than the possible benefits of more significant product liability protection resulting from stricter liability. This actually provides an argument against rather than in favour of stricter product liability. See *infra* nr. 146.

sustainability externalities the most, seems at first sight to come down to the largely futile attempt to make these circular strategies themselves more attractive than linear economic consumption by means of imposing different product liability rules. Nevertheless, an alternative approach based on reducing consumption in absolute terms through product liability rules, is examined *infra* nrs. § 2-148.

The underlying reality is slightly more complex than the above, relatively simplistic view premised on the market mechanism. On the one hand, it is necessary to appreciate the full repercussions of the in Chapter 1 already examined differences between different product liability rules in terms of efficiency. Ultimately, these make also for an individual consumer stricter product liability with a contributory fault defence more attractive, even when the corresponding product price increases are considered (see *infra* nr. 144). Chapter 1 has furthermore revealed that, in the economic long run, there might actually be some redistributive advantages for persons who as consumers engage more in circular consumption strategies, which increase under a stricter product liability rule (see *infra* nr. 145). On the other hand, it must be acknowledged that consumers are subject to behavioural limitations, which make these individual benefits they might gain from a stricter product liability rule difficult to perceive and act upon, especially in comparison with changes in product prices (see *infra* nr. 146). Consumers are therefore in practice unlikely to engage actually more in circular consumption when the applicable product liability rule would be economically more attractive for them.

144. THEORETICALLY, THE EFFICIENCY OF APPLYING ONLY TO CIRCULAR CONSUMPTION STRATEGIES A RULE OF STRICTER PRODUCT LIABILITY WITH A CONTRIBUTORY FAULT DEFENCE, WOULD MAKE THESE STRATEGIES ALSO FOR INDIVIDUAL CONSUMERS SLIGHTLY MORE ATTRACTIVE – The preceding section's premise that the market mechanism ensures that advantages for consumers of particular product liability rules specific to circular consumption are completely offset by corresponding increases or decreases in product prices, incorrectly assumes that these advantages and price changes are identical. To the contrary, these advantages for consumers can be bigger than the total expected liability costs with which defendants in the long run increase product prices. This is because the increased efficiency of certain rules can also overall grow the 'slice of the pie' of individual consumers (cf. *supra* nr. 103).

First, when consumers are on average more risk-averse than product liability defendants, which can also in the circular consumption context still be generally assumed (see *supra* nr. 106.b and *infra* nr. 162),⁸⁶⁴ then product liability provides a risk-allocation benefit to consumers which is bigger than the costs of risk-bearing by the less risk-averse defendant reflected in the product price. And this benefit is greater under stricter than under fault-based product liability and non-existent under a 'no liability' rule (see *supra* nr. 106.a.c).

Second, the fact that strict product liability with a contributory fault defence is overall as efficient in accident-prevention as fault-based liability and requires fewer factual assumptions (see *supra* nrs. 108-109 and 135), helps to make circular consumption options to which

⁸⁶⁴ See also *supra* nr. 106.a and *infra* footnote 909 on the fact that, even if a defendant of product liability law *sensu lato* in the circular economic setting would be very risk-averse, like a prosumer, he will by definition still remain less risk-averse than injured third parties protected by product liability.

this rule would be exclusively applied on average more attractive for individual consumers. Admittedly, these lower accident risks are difficult for consumers to correctly estimate (see *supra* nr. 108.b), although when a whole sector of circular consumption strategies is hypothetically subject to separate, more stringent product liability rules, this might over time be correctly associated with notions of increased safety. Yet, defendants and liability insurers are better placed to assess the resulting reduction in accident risks, which would in the long run lead to slightly lower prices. Consequently, these products become marginally more attractive to consumers than alternatives if these would be subject to different rules.

Third, if consumers were to know that they generally underestimate product accident risks (see *supra* nr. 108.b), then products would theoretically also be more attractive for individual consumers when they enjoy the protection of a stricter product liability rule. This is because strict product liability's price-signalling function will help them avoid consuming a product that they actually do not value at the price of its total costs, including expected accident costs (see *supra* nr. 110).

In conclusion, by applying to circular strategies an overall more efficient rule of strict product liability with a contributory fault defence (see for an overview *supra* nr. 135) and by applying a less efficient product liability rule in a linear economic setting, circular consumption strategies would theoretically become more attractive to rational individual consumers. This marginal benefit remains of course relatively small compared to the total product price and is nearly impossible for real, cognitively limited consumers to perceive and act upon, as discussed *infra* nr. 146. In comparison, tax and subsidy policies and well-designed *ex ante* command-and-control regulation are many times more efficient to stimulate more circular consumption or more sustainable development in general, as argued *supra* nr. 104.

145. THEORETICALLY, THE GREATER PROTECTION OF THIRD PARTIES UNDER A RULE OF STRICTER PRODUCT LIABILITY WITH A CONTRIBUTORY FAULT DEFENCE, WOULD MAKE CIRCULAR STRATEGIES MORE ATTRACTIVE TO CONSUMERS AS LONG AS THESE REDUCE CONSUMPTION MORE THAN THAT THEY INCREASE ACCIDENT RISKS – By diving into the redistributive effects of the product liability system, the previous Chapter has revealed that actually not all ‘third parties’ profit from the product liability system in the long run, since these persons simultaneously pay for the same system in their capacity as consumers of others products. Instead, persons who consume on average fewer and/or safer products, while they continue to profit for free as third parties, are the ones who in the long run benefit from product liability (see *supra* nr. 119). If circular strategies reduce the need for consuming additional products more than that they increase accident risks, then engaging more in those strategies allows consumers to contribute less to the product liability system, while they at the same time still benefit from it ‘for free’ as third parties. Consequently, persons who engage more in circular consumption will in the long run be subsidised through the product liability system by persons who engage less in circular strategies (see *supra* nr. 120).

This attractiveness for consumers of engaging more in circular consumption strategies, at least if these reduce additional consumption needs more than that they increase accident risks, is actually the biggest under a rule of strict product liability with a contributory fault defence, smaller under a purely fault-based rule and non-existent under a ‘no liability’ rule.

This is because the risk-allocation, including a ‘full reparation’, and the accident-prevention profits received by third parties from product liability (see *supra* nrs. 113-114), are generally greater under a rule of strict liability with a contributory fault defence (see *supra* nrs. 106, 108-109 and 135). The increased expected liability costs corresponding with a stricter product liability rule are of course borne by consumers and not by those third parties.

Contrary to the potential differences in efficiency discussed in the previous section, this advantage for individual consumers of engaging more in circular strategies does not require a difference in applicable product liability rules between circular consumption and the linear economic alternative. Undeniably, this is more practical, legally coherent and certainly more realistic. However, also this long-term redistributive benefit remains relatively small compared to the product price and very difficult for consumers to perceive and act upon, as discussed in the next section.

146. IN PRACTICE, CONSUMERS ARE UNLIKELY TO PERCEIVE AND ACT ON THESE ADVANTAGES OF ENGAGING IN MORE CIRCULAR CONSUMPTION UNDER A RULE OF STRICTER PRODUCT LIABILITY WITH A CONTRIBUTORY FAULT DEFENCE – The aforementioned risk-allocation, accident-prevention and price-signalling profits which individual consumers receive when they engage more in circular consumption, in the unlikely scenario that only circular strategies and not the linear economic alternative would be subject to a rule of stricter product liability with a contributory fault defence (see *supra* nr. 144), are theoretically very complex advantages which very few if any real-life consumers will be aware of and act upon. Likewise, consumers are in reality unlikely to consider the equally intricate fact that they receive in the long run a redistributive benefit in terms of income when they would engage more in circular consumption strategies, at least when those reduce the need for consuming additional products more than that they increase accident risks (see *supra* nr. 145). Moreover, even if we would assume that consumers have access to and understand this knowledge, their rationality is too cognitively bounded to make it probable that they will actually consider these elements when choosing whether to engage in circular or linear consumption strategies.⁸⁶⁵ Perhaps, these benefits can be conveyed to certain consumer groups as intuitive ‘profits of engaging in the circular economic model’, but whether this will make a discernible impact on the behaviour of mainstream consumers can be questioned.⁸⁶⁶ Moreover, these advantages remain quite small compared to the product price, which is of course a much more readily apparent consideration, just like for consumers essential product characteristics, such as functionality, safety, direct environmental benefits, etc.

⁸⁶⁵ See on the behavioural limitations of consumers to rationally understand and pursue such economic advantages i.a. C. Jolls, C. Sunstein and R. Thaler, ‘A Behavioral Approach to Law and Economics’ (1998) 50 *Stanford Law Review* 1471, 1476-1489, 1548-1550; J. Hanson and D. Kysar, ‘Taking Behavioralism Seriously: The Problem of Market Manipulation’ (1999) 74 *N.Y.U. Law Review* 630, 364-693. See more generally on some of the underlying processes D. Kahneman, ‘Maps of Bounded Rationality: Psychology for Behavioral Economics’ (2003) 93 *The American Economic Review* 1449; J. Baron, ‘Heuristics and Biases’ in E. Zamir and D. Teichman (eds.), *The Oxford Handbook of Behavioral Economics and the Law* (Oxford University Press 2014) 3-24.

⁸⁶⁶ See also sources cited *infra* footnotes 1657-1658.

It is therefore unlikely that consumers will in reality act on these specific economic gains they may receive from choosing circular consumption strategies under a stricter product liability rule with a contributory fault defence. Consequently, while such a product liability rule can theoretically make the circular consumer goods economy slightly more attractive than the linear alternative, consumers will in reality not change their behaviour on the basis of these considerations.

§ 2. The right path: reducing consumption through efficient product liability rules

147. IT WOULD NOT ONLY BE INEFFICIENT BUT ALSO NOT REALLY SUSTAINABLE TO TRY TO REDUCE CONSUMPTION IN GENERAL BY INCREASING PRODUCT LIABILITY'S ADMINISTRATIVE COSTS – As an alternative to the preceding approach of trying to make circular consumption strategies more attractive through product liability rules, more sustainable development might also be pursued through the blunter approach of reducing consumption in absolute terms. After all, this would not only align with the hierarchically highest circular strategy of 'refusing' consumption but also with the 'degrowth' approach to sustainable development (see *supra* nrs. 58 and 64).

The most straightforward method to achieve this through the design of product liability rules, would be to maximize the administrative costs of product liability as much as possible. However, this would first of all require changes to civil procedure, the court system and the market for legal services rather than changes to substantive product liability rules (see *supra* nr. 111), which is the focus of this dissertation. Secondly and more fundamentally, this would be an economically highly inefficient, indirect way of achieving a goal of reducing consumption. Depending on the extent to which some of these costs must be borne up-front by plaintiffs, this would furthermore increase the obstacles for injured parties to successfully claim reparation on the basis of product liability and thus lower corrective justice. Hence, this solution would go completely against several components of this dissertation's normative framework (see Figure 7 *supra* nr. 130). And, third, it could ultimately be questioned whether such a solution would truly contribute to more sustainable development, because it would reduce consumption only in a blunt, socially regressive manner, which would affect poorer consumers first. After all, they would be proportionately impacted most by higher product prices, which may compel them to cut subsistence rather than luxury consumption, while they might even be unable to bear the up-front or in case of an unsuccessful claim the ultimate costs of pursuing a product liability claim after being injured (cf. *supra* nr. 118). This approach would therefore completely ignore the social and intragenerational (fairness among the current generation) dimension of sustainable development (see *supra* nr. 121).

For these reasons, ramping up administrative costs must be rejected, although a different, more truly sustainable method of lowering consumption through product liability rules remains desirable.

148. IF CONSUMERS UNDERESTIMATE ACCIDENT RISKS, STRICTER PRODUCT LIABILITY IS MORE SUSTAINABLE BECAUSE ITS PRICE-SIGNALLING FUNCTION REDUCES INEFFICIENT CONSUMPTION THE MOST, FAULT-BASED LIABILITY IS LESS SUSTAINABLE AND ‘NO LIABILITY’ IS THE LEAST SUSTAINABLE – Product liability rules will of course never manage on their own to achieve more sustainable consumption and production patterns. Especially its underlying market mechanism prohibits this, while it is also exceedingly difficult to precisely identify and support sustainability in the design of product liability rules, even when we accept that circular strategies overall contribute to more sustainable development (see also *supra* nr. 123). However, the preceding section’s focus on reducing consumption overall, both linear and circular, showcases how product liability can still make some meaningful contribution in this regard. Instead of the inefficient and socially regressive tool of increasing administrative costs, product liability offers another lever to control consumption levels and this is its price-signalling function.

Behavioural science confirms that consumers generally underestimate less salient, low-probability risks like product accidents (see *supra* nr. 108.b). This means that they would in the absence of product liability consume products which they would not value at their actual total price, including expected accident costs. And product liability, in particular of the stricter variant, precisely helps to avoid this pitfall of excessive consumption, by including the expected accident costs in the product price. Fault-based liability offers this price-signalling benefit to a much smaller extent and a ‘no liability’ rule of course lacks this benefit (see *supra* nr. 110.a). Hence, a stricter product liability rule with a contributory fault defence⁸⁶⁷ helps to avoid excessive consumption, which overall contributes to more sustainable development given the ecological and social burdens resulting from current overconsumption in developed countries (see *supra* nrs. 63-64 and 121).

In contrast to the previous section’s drastic solution, the reduction in consumption resulting from product liability’s price-signalling function is efficient and is more socially desirable, since it precisely reduces consumption which an individual consumer would not have chosen had he known the involved expected accident costs. Also poorer consumers who can now consume even fewer products at market prices, would still be worse off if they in the absence of product liability would have engaged in extra consumption and subjected themselves to accident risks they would have actually been unwilling to take when added to the remaining product price and compared with the utility they receive from the product. Minimizing socio-economic inequality and ensuring that individuals retain access to basic goods, which is indispensable for sustainable development, requires interventions from different fields of policy than product liability law (see *supra* nr. 104). In contrast, the fact that stricter product liability is effective in ensuring that product accident risks are considered in consumption decisions, helps all consumers as well as third parties.

On the flipside, the administrative costs of product liability or the possibility that injured parties receive more or less compensation than their integral damage, distort this price-signalling function (see *supra* nr. 110.e). Those administrative costs and overcompensation

⁸⁶⁷ Combining strict product liability with a contributory fault defence does not really diminish its price-signalling function, since this only ensures that accident costs which injured parties themselves can avoid by taking care are not added to product prices, which would inefficiently suppress consumption slightly too much. Cf. *supra* nrs. 109-110.

further reduce consumption, but directly pursuing higher administrative costs or overcompensation is neither economically efficient nor desirable in light of sustainable development's social and intragenerational dimension, as discussed in the previous section.

Ultimately, the fact that the most significant contribution to sustainable development is stricter product liability's reduction of inefficient consumption through its price-signalling function, points to a convergence in the context of product liability law of economic efficiency and sustainable development. This reaffirms this dissertation's normative framework (see Figure 7 *supra* nr. 130), but it also strengthens the case presented in this Chapter's 'internal' analysis in favour of strict product liability with a contributory fault defence.

Section D. In terms of corrective justice, strict product liability with a contributory fault defence can in the product liability context approximate fault-based liability

149. IN TERMS OF CORRECTIVE JUSTICE, FAULT-BASED PRODUCT LIABILITY IS OPTIMAL, ALTHOUGH THIS CAN BE APPROXIMATED BY STRICTER PRODUCT LIABILITY WITH A CONTRIBUTORY FAULT DEFENCE IF IT MEETS ALL REQUIREMENTS OF THE RISK-INTERNALISATION PRINCIPLE – This dissertation's normative framework affords only a subsidiary, 'balancing' role to corrective justice (see *supra* nrs. 132-133), which makes the latter less important than the understanding of efficiency and sustainability discussed in the preceding sections. Yet, to complete our analysis of which product liability rule is preferable from an 'internal' perspective, it is worthwhile to also leave the perspective of distributive justice and turn to corrective justice as a complement. After all, when a person has produced or distributed a product which ultimately harms a consumer or third party, the basic scheme of corrective justice arises of a 'correlative' relationship between an injurer and a sufferer who seeks a 'rectification' of the damage (see *supra* nrs. 98-99).

The 'no liability' rule where the person injured in the product accident would have to bear his own loss, does not meet corrective justice,⁸⁶⁸ unless to the extent that this person has failed to take care and has personally caused the accident. This last hypothesis can still be addressed if product liability rules include a contributory fault defence, which leads to the conclusion that corrective justice always requires at least some product liability rule.⁸⁶⁹

Fault-based liability is by nature very apt to satisfy a need for corrective justice, since it connects the rectification of damage with notions of 'blame' and 'wrongdoing'. This has already

⁸⁶⁸ See also sources cited *infra* footnote 920.

⁸⁶⁹ This Chapter limits itself to a perspective 'internal' to product liability, but this statement can actually be expanded as well to the 'external' perspective. None of the main product liability alternatives actually fulfils corrective justice to the extent that product liability does. See *infra* nr. 165.

been discussed *supra* nr. 99.a, but is perhaps best illustrated by SHAVELL's conclusion after he integrates in his social welfare analysis the utility persons derive from notions of morality, which he equates in the context of extracontractual liability with corrective justice (but see *supra* nr. 124 on how these concepts should not be too rigidly associated with each other).⁸⁷⁰ This leads him to find that pursuant to such an expanded understanding of efficiency which considers the taste of individuals for corrective justice and with this assumption that corrective justice would require fault-based liability, the latter will more often be considered as efficient than would be the case under a more conventional efficiency analysis.⁸⁷¹

Stricter product liability definitely has more difficulties in satisfying corrective justice.⁸⁷² Nevertheless, it can approximate it on the basis of notions relating to liability for risk-taking which are particularly suited to the context of civil liability for consumer product accidents. Namely, as many scholars have argued in some form or another,⁸⁷³ a 'risk-internalisation' principle provides a rationale which can reconcile strict (product) liability with notions of corrective justice, pursuant to the adages *ubi emolumentum, ibi onus* and *cuius commoda, eius et incommoda*. It holds that if someone, who must not be a 'wrongdoer' but rather someone who takes risks from which he profits in some commercial capacity, causes damage to another through this risk-taking activity, then he must 'rectify' this damage if the risk-taking had been 'abnormal' rather than part of the ordinary risks of life which everyone must bear for himself (see *supra* nrs. 127 and 128.c). Naturally, this 'risk-internalisation' approach fits with strict product liability, since producing or distributing a 'defective' product in the course of a commercial activity can be equated with profiting from an activity which can potentially harm others.

This finding that stricter product liability can approximate fault-based product liability in terms of satisfying corrective justice as long as a principle of risk-internalisation is respected, does not appear to be restricted to a linear economic model. It equally applies to the context of circular consumption strategies, although it has important implications for where circular economy overlaps with collaborative economy. When prosumers engage in circular strategies like reuse, repurposing, retransfers or repairs, the risk-internalisation principle no longer fully applies if these prosumers act outside a commercial activity. Especially if they do not seek any profits at all when they engage in these circular strategies but arguably also if their activities lack the recurrence and organisation required for qualifying as a 'commercial' activity (see *infra* nrs. 197-198 in the context of the PLD), the '*ubi emolumentum*' or '*cuius commoda*' requirement for risk-internalisation is no longer fulfilled. This means that in such cases the corrective justice justification for stricter product liability starts to break down. Hence, in collaborative cases where profits are not even sought and arguably also where profits are only

⁸⁷⁰ S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 635. See also *supra* footnotes 769-772.

⁸⁷¹ *Ibid.*, 636: "Under the assumption just made about corrective justice, the negligence rule will be the optimal legal rule more often than I found it to be best under conventional measures of social welfare. [...] The degree to which the conclusions reached under conventional social welfare maximization should be altered depends on the strength of individuals' tastes for corrective justice."

⁸⁷² See sources cited *supra* footnote 751.

⁸⁷³ See authors like FLETCHER, HONORÉ, KEATING, STAPLETON, BORGHETTI and VERBRUGGEN cited *supra* footnotes 774-776, 779-780, 783-784 and 786-788.

sought on a purely occasional basis, outside the course of an organised commercial activity, only the rule of fault-based product liability rule can still meet societal expectations relating to corrective justice.

Chapter 3. The external perspective: the stronger case for product liability compared to its alternatives in a more circular economy

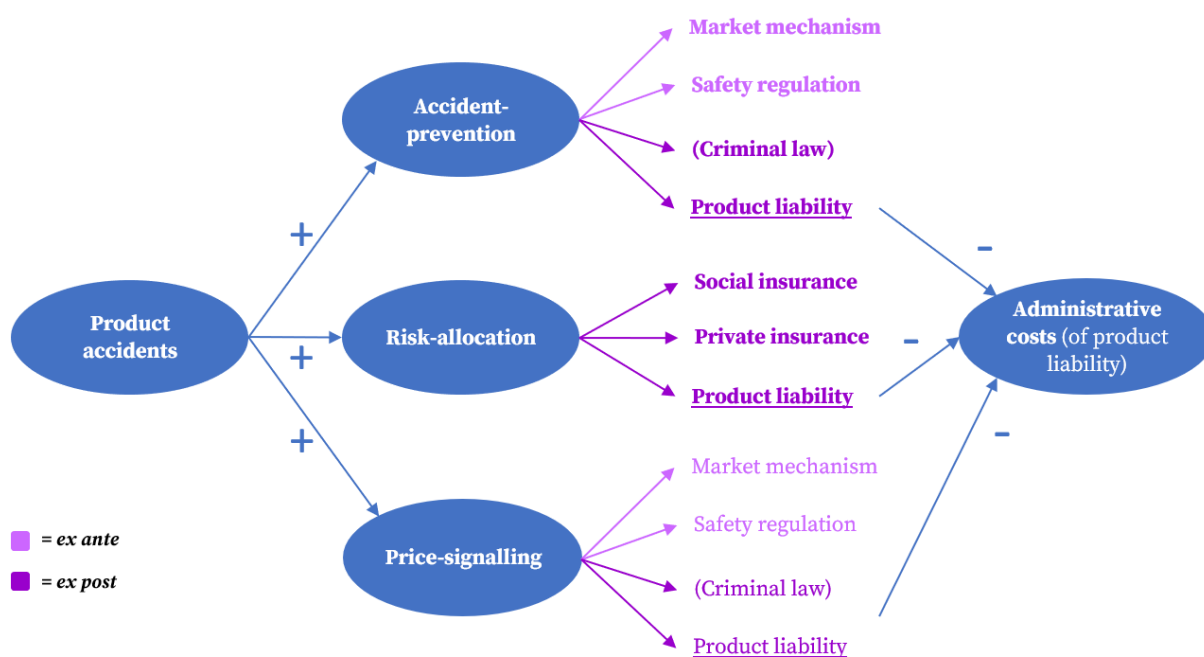


Figure 8: A bigger picture – prevention, risk-allocation, price-signalling and administrative costs as functions of product liability, in combination with its main alternatives.

150. INTRODUCTION – This last Chapter of Part III swaps the prior ‘internal’ normative perspective for an ‘external’ one, which looks at the added value of product liability in comparison with its different alternatives. The alternatives for product liability’s prevention and reparation functions were already identified at the outset of this dissertation (see Figure 1 *supra* nr. 4). Based on our more comprehensive economic analysis of product liability law *supra* nrs. 103 et seq., we can now complement this overview with the price-signalling function and the administrative costs of product liability. For the sake of clarity, the above Figure 8 does not emphasize the administrative costs of alternatives to product liability, but these

can range from being very substantial for product safety regulation to being quite limited for the market mechanism (cf. *supra* nrs. 9-10).

The preceding Chapter found that a stricter product liability rule with a contributory fault defence is the most efficient in both a linear and a circular economic setting and that it is also marginally the most sustainable, at least to the limited extent that product liability rules can make a difference in this regard. In terms of corrective justice, such a rule can approximate a purely fault-based product liability rule as long as it fully meets the risk-internalisation principle. For the sake of clarity and consistency in an 'external' perspective, the sections of this Chapter focusing on efficiency and sustainability will not further differentiate between stricter and more fault-based product liability rules. Instead, they simply contrast the overall added value and administrative costs of a product liability rule *sensu lato* (all possible product liability theories, see *supra* nr. 8) with its partial alternatives. Yet, based on the prior Chapter's conclusion, it can be generally assumed that at least in terms of economic efficiency the comparative added value is in ordinary circumstances greater for a stricter product liability rule with a contributory fault defence than for a purely fault-based rule.

This Chapter finds that the added value of product liability compared to its alternatives in terms of economic efficiency, somewhat surprisingly increases when the linear consumption model changes by integrating circular strategies. This crucial finding reveals that economically inspired attacks against product liability, which have so far always been premised on a linear economic model, are weaker with regards to product liability in a more circular economic context. Additionally, this finding strengthens the academic and societal relevance of this dissertation's subject matter (cf. *supra* nrs. 39-44). In contrast, the shift to a more circular consumer goods economy presents a risk that product liability's added value in terms of corrective justice might somewhat decrease, especially when a stricter liability rule applies. Nevertheless, this criterion only fulfils a subsidiary role in this dissertation's normative framework and this is merely a risk which can be mitigated through an appropriate implementation of product liability in a circular economic context.

Section A. Product liability's added value in terms of efficiency overall increases in a more circular economy

§ 1. Less efficient product safety regulation for accident-prevention and to a lesser extent for price-signalling

151. PRODUCT SAFETY REGULATION OFFERS OVERALL A SIGNIFICANT ALTERNATIVE FOR ACCIDENT-PREVENTION AND TO A LESSER EXTENT FOR PRICE-SIGNALLING PURPOSES, ESPECIALLY FOR 'WIDELY SOLD PRODUCTS' IN THE LINEAR ECONOMY – As outlined *supra* nr. 10, *ex ante* product safety regulation can serve at least as a partial alternative to *ex post* product liability law for the purposes of accident-prevention. It also offers a price-signalling benefit, since it compels producers and distributors to take indeed accident-preventing safety precautions, which raise the product price and therefore avoid a marginal overconsumption by consumers who underestimate accident risks and who effectively do not value the product at this more complete price. Yet, as discussed *supra* nr. 110.a-b, the regulatory level of safety will likely only require safety precautions up to the socially optimal level of care, akin to fault-based product liability, and not deliver a more comprehensive price-signalling benefit like stricter product liability does.

Although this remains a murky empirical question, there is some evidence, mostly from the US and focused on the more important accident-prevention benefit, which finds that the added value of product liability is in this regard actually quite limited,⁸⁷⁴ while product safety regulation would in many instances be much more beneficial.⁸⁷⁵ This might be comparatively

⁸⁷⁴ See, e.g., G. Priest, 'Products Liability Law and the Accident Rate in Liability: Perspectives and Policy' in R. Litan and C. Winston (eds.), *Liability: Perspectives and Policy* (1988) 187-194; J. Graham, 'Product Liability and Motor Vehicle Safety' in P. Huber and R. Litan (eds.), *The liability maze: the impact of liability law on safety and innovation* (Brookings Institution 1991) 120; D. DeWees, D. Duff and Trebilcock, *Exploring the Domain of Accident Law: Taking the Facts Seriously* (Oxford University Press 1996) 197-203, 415-419; S. Garber and J. Adams, *Product and Stock Market Responses to Automotive Product Liability Verdicts* (Brookings Institution 1998) 28-37; P. Rubin and J. Shepherd, 'Tort Reform and Accidental Deaths' (2007) 50 *Journal of Law & Economics* 221-235; M. Polinsky and S. Shavell, 'The Uneasy Case for Product Liability' (2010) 123 *Harvard Law Review* 1437, 1455-1459. But see also K. Viscusi, 'Does Product Liability Law Make Us Safer?' in F. Buckley (ed.), *The American Illness: Essays on the Rule of Law* (Yale University Press 2013) 138-154 (criticism against product liability's efficiency in accident-prevention to a large extent based on features of US law, like punitive damages and jury trials).

⁸⁷⁵ See, e.g., L. Robertson, 'Automobile safety regulations and death reductions in the United States' (1981) 71 *American Journal of Public Health* 818, 820-821; J. Graham, 'Product Liability and Motor Vehicle Safety' in P. Huber and R. Litan (eds.), *The liability maze: the impact of liability law on safety and*

illustrated by the more prominent role played by general and vertical product safety regulation in the EU, which occurs together with much less product liability litigation in the EU compared to the US.⁸⁷⁶ It is of course very difficult to isolate the separate added value of either instrument in terms of accident-prevention, since they co-exist and synergies are created by how they complement each other (see *supra* nr. 10.d-e). Moreover, the picture is further muddled by the simultaneously operating market mechanism, which serves as a third alternative and complement for both accident-prevention and price-signalling purposes (see Figure 8 *supra* nr. 150, but see also *infra* nr. 158). Conversely, budgetary and political restrictions of course exist, as well as the risk of ‘regulatory capture’, which can all reduce the efficiency of product safety regulation (see *supra* nr. 9, but see also *infra* nr. 156).

Quite persuasively, POLINSKY AND SHAVELL argue that, regardless of the absolute added value of product safety regulation compared to product liability *sensu lato*, “[s]afety regulation is likely to be more effective for widely sold products, [...] than for products whose distribution is limited”.⁸⁷⁷ They argue that this is first of all because regulators, who operate on the basis of limited budgets and resources, will be most concerned about accident risks involving products which are sold in high volumes. It indeed seems fair to assume that consumer good safety regulators want to reduce as many product accidents as possible rather than supervise all types of products on the market in equal measures. Secondly, they argue that this is because the same regulators will more frequently receive information about the hazards of a specific product, through complaints, accident reports or even (publicized) product liability claims, if said product is used more widely by more individual members of the public.⁸⁷⁸ This crucial distinction based on the ‘widely sold’ nature of a product, actually echoes a more general theme in the economic literature on regulation: ‘heterogeneity’ of the regulated subject matter

innovation (Brookings Institution 1991) 182-183. See also Fox, ‘Questioning the Social Desirability of Product Liability Claims’, 93-104; Civic Consulting, *Study for the preparation of an Implementation Report of the General Product Safety Directive: Final report - Part 1: Main report* (European Commission, 2020) 27-123. Some studies find a rebound effect where consumers partially ‘offset’ improvements in terms of safety by more risky conduct (e.g. C. Winston, V. Maheshri and F. Mannering, ‘An exploration of the offset hypothesis using disaggregate data: The case of airbags and antilock brakes’ (2006) 32 *Journal of Risk and Uncertainty* 83), while other studies do not observe this effect (e.g. J. Lee, ‘Offsetting or Enhancing Behavior: An Empirical Analysis of Motorcycle Helmet Safety Legislation’ (2015) 35 *Risk Analysis* 1820). To the extent that such ‘offsetting’ effect would exist, it seems to equally apply to safety improvements resulting from product liability law.

⁸⁷⁶ See G. Howells, ‘The Relationship Between Product Liability and Product Safety: Understanding a Necessary Element in European Product Liability Through a Comparison with the U.S. Position’ (2000) 39 *Washburn Law Journal* 305; C. Busch, ‘Rethinking Product Liability Rules for Online Marketplaces: A Comparative Perspective’ (2021) *TPRC49: 49th Research Conference on Communication, Information and Internet Policy*, 27-30. See also A. Cavaliere, ‘Product Liability in the European Union: Compensation and Deterrence Issues’ (2004) 18 *European Journal of Law and Economics* 299, 310-312; Artigot-Golobardes, ‘Beyond European Product Liability’, 258-327.

⁸⁷⁷ M. Polinsky and S. Shavell, ‘The Uneasy Case for Product Liability’ (2010) 123 *Harvard Law Review* 1437, 1452.

⁸⁷⁸ *Ibid.*, 1452.

creates information-related problems for *ex ante* regulation and makes *ex post* liability rules comparatively more efficient.⁸⁷⁹

152. IN A MORE CIRCULAR CONSUMER GOODS ECONOMY, PRODUCT SAFETY REGULATION BECOMES LESS EFFICIENT DUE TO THE INCREASED ‘HETEROGENEITY’ OF PRODUCTS IN COMBINATION WITH PRODUCT LIABILITY’S ‘ENFORCEMENT COSTS ADVANTAGE’ – Since the aforementioned analysis by POLINSKY AND SHAVELL is premised on a linear economic model, their reference to ‘not widely sold’ products simply relates to newly manufactured products which have only been produced and distributed in small quantities. Their argument furthermore focuses on the accident-prevention benefit of safety regulation, but whether products are ‘widely sold’ seems to be equally relevant for its more limited price-signalling benefit.⁸⁸⁰ Nevertheless, their finding that product safety regulation is for such products less efficient and that therefore ‘the case for product liability’ for such products becomes stronger,⁸⁸¹ can crucially be extended to products which have been subject to one or more circular strategies, even when these had been originally manufactured and distributed as ‘widely sold products’.⁸⁸² Moreover, the broader distinction in the economic literature based on choosing between *ex ante* regulation and *ex post* liability based on the ‘heterogeneity’ of the subject matter can equally be extended to product accidents in the context of circular consumption strategies. This is because reused, repurposed, second-hand, repaired and refurbished products all have in common that they start to slightly differ from their original, often mass-produced model, as a result of wear and tear, modifications, storage and use conditions, etc. Hence, products subject to circular strategies become

⁸⁷⁹ See, e.g., J. Hanson and K. Logue, ‘The Costs of Cigarettes: The Economic Case for Ex Post Incentive-Based Regulation’ (1998) 107 *Yale Law Journal* 1163, 1264-1278 (complexity of subject matter and lack of information *ex ante*, makes imposing general abstract standards more costly, while *ex post* incentives reduce information problems); B. Galle, ‘In Praise of Ex Ante Regulation’ (2015) 68 *Vanderbilt Law Review* 1715, 1729-1734 (the heterogeneity of externality producers creates an information deficit for *ex ante* regulators, but arguing that this can often be controlled). Heterogeneity of the regulated subject matter is especially raised as an argument against corrective taxes, which are akin to *ex ante* product safety regulation (see also *supra* nr. 10). See, e.g., S. Shavell, ‘Corrective Taxation versus Liability as a Solution to the Problem of Harmful Externalities’ (2011) 54 *Journal of Law & Economics* S249; V. Fleischer, ‘Curb Your Enthusiasm for Pigovian Taxes’ (2015) 68 *Vanderbilt Law Review* 1673, 1691-1694.

⁸⁸⁰ The reason why these esteemed authors do not reference the price-signalling benefit of product safety regulation, is likely not only its limited nature (see *supra* nr. 110.b). It seems that they make a similar reasoning as traditional economic analysis make about the price-signalling benefit of fault-based liability, namely that rational companies will choose to comply with the regulatory standard of care when it is not more stringent than the socially optimal level of care and that therefore no extra costs relating to potential non-compliance with product safety regulation will be added to the product price (see *supra* nr. 110.a).

⁸⁸¹ *Ibid.*, 1476: “[...] market forces and regulation are likely to be less effective in promoting safety for products that are not widely sold than for products that are widely sold. Hence, the safety benefit of product liability will generally be greater for such products. This observation strengthens the case for product liability for products that are not widely sold, [...]”

⁸⁸² Consequently, the added value of product liability in terms of accident-prevention is probably the greatest for products that were initially manufactured and distributed in small quantities and subsequently subject to one or more circular strategies.

more ‘heterogeneous’ and it becomes comparatively more efficient to regulate them through *ex post* product liability than through *ex ante* product safety regulation, due to the growing information-related challenges faced by the latter.

This is first of all because the economies of scale of existing product safety rules are premised on relatively homogeneous, newly manufactured products of a particular category, which are produced and distributed only once according to the linear economic model. Applying these standards to the myriad products within a product category after they have been subject to one or more circular strategies, requires more effort and gives rise to significant legal uncertainty (see also *infra* nrs. 153-154 on additional reasons relating to the increased heterogeneity of the actors involved). Moreover, even if identical products of the same linear manufacturer are subject to the same circular strategy, like a reuse or repair, these products still end up being heterogeneous, because individual products have in real-life different lifecycles, undergo distinct wear and tear processes, alternative components can break down and products can be repaired or refurbished in diverging manners. Creating more specific product safety rules for all these diverging products as a result of circular strategies, becomes nearly impossible and will certainly drastically increase the administrative costs of such a stubborn, increasingly complex *ex ante* regulation. Hence, when the consumer goods economy becomes more circular, product safety regulation becomes comparatively less efficient.

One might wonder why these challenges resulting from the transition from a linear to a circular economic context would make product safety regulation less efficient than product liability law. After all, these features of circular economy also pose challenges to the implementation of the latter, as examined further in this dissertation with a specific focus on the PLD-1985. The essential difference between the two is the so-called ‘enforcement costs advantage’ of the latter: *ex post* product liability rules *sensu lato* merely generate administrative costs when a product is not only unsafe but also causes damage and then leads to the actual filing of a liability claim, while the regulation and enforcement of *ex ante* product safety rules continuously generate administrative costs and immediately require legal certainty, whether or not damage effectively occurs in an individual case.⁸⁸³ Product liability continues to hold this ‘enforcement costs advantage’ over product safety regulation, even when the latter is enforced in a probabilistic manner with greater penalties to ensure continued deterrence even when the chance of enforcement is lower.⁸⁸⁴

⁸⁸³ See S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 98 (discussing how this advantage depends on the likelihood of damage and the ease with which regulatory compliance can be determined); S. Shavell, ‘A Fundamental Enforcement Cost Advantage of the Negligence Rule over Regulation’ (2013) 42 *Journal of Legal Studies* 275 (limiting the advantage to fault-based liability, which ignores that even the strictest liability rule still requires damage, causation as well as some objective liability requirement); H.-B. Schäfer and C. Ott, *The Economic Analysis of Civil Law* (2nd edn., Edward Elgar 2022) 350. See also on the same difference between taxation and liability as regulatory alternatives S. Shavell, ‘Corrective Taxation versus Liability as a Solution to the Problem of Harmful Externalities’ (2011) 54 *Journal of Law & Economics* S249. This relative advantage of product liability in terms of administrative enforcement costs does not diminish the fact that those costs are also substantial for product liability (see *supra* nr. 111).

⁸⁸⁴ S. Shavell, ‘A Fundamental Enforcement Cost Advantage of the Negligence Rule over Regulation’ (2013)

In conclusion, the heterogeneity of products subject to circular strategies described above, results in a greater increase in administrative costs of *ex ante* product safety regulation than of *ex post* product liability law, due to this ‘enforcement costs advantage’ of the latter.

153. IN A MORE CIRCULAR CONSUMER GOODS ECONOMY, PRODUCT SAFETY REGULATION BECOMES LESS EFFICIENT DUE TO THE INCREASED ‘HETEROGENEITY’ OF INVOLVED ECONOMIC ACTORS, AMONG WHICH PROSUMERS – The linear economic model of the durable consumer goods sector is characterized by mostly large, well-equipped companies which act as product manufacturers, importers and distributors. In contrast, circular consumption strategies are implemented by actors who are on average smaller, less well-equipped entities, like a small reseller or an independent repairer or refurbisher. Some circular reproducers and redistributors are not even traditional, profit-seeking companies, like charitable shops which resell donated second-hand products or non-profit repair cafés. And prosumers who lack the organisation and professional capabilities of companies may engage in circular strategies on an occasional, unorganised manner, which ensures that they act outside a commercial activity (see also *infra* nr. 198), like many prosumers who resell goods online, offer minor repair services or share equipment and tools with neighbours. Furthermore, many circular strategies do not even involve a product redistribution, like a consumer who reuses, repurposes or self-repairs his own product.

Circular economy thus results in increased ‘heterogeneity’ of the economic actors actively involved at the supply side, which reduces the efficiency of *ex ante* product safety regulation (see *supra* nrs. 151-152).

Attempting to further reduce accident risks in these more complex product lifecycles through product safety regulation, would mean first of all that regulators must supervise countless more actors and conduct in myriad circular strategy implementation context. The regulatory economies of scale of fixating on newly manufactured products placed on the market by a smaller number of professional, well-equipped companies, are therefore largely gone. Second, these small companies, non-commercial entities and prosumers who actively redistribute and reproduce products in this more heterogeneous context, generally lack the information necessary to efficiently comply with the complex *ex ante* product safety framework.⁸⁸⁵ The administrative costs of product safety regulation would skyrocket if every single reseller, repairer, refurbisher, let alone a prosumer who reuses or repurposes a product, would have to conduct a complete product safety conformity assessment according to all general and sectoral product safety rules and/or be subject to other product safety requirements.

Admittedly, this increased heterogeneity in a more circular consumer goods economy challenges the application of product liability law as well, which this dissertation further explores in the following Part specifically for EU harmonised product liability. Yet, the fundamental ‘enforcement costs advantage’ of product liability over product safety regulation (see *supra*

42 *Journal of Legal Studies* 275, 282-288. The use of probabilistic enforcement with higher penalties, to limit administrative costs, was first economically analysed by BECKER in his seminal paper G. Becker, ‘Crime and Punishment: An Economic Approach’ (1968) 76 *Journal of Political Economy* 169. See also *infra* footnote 897.

⁸⁸⁵ See sources cited *supra* footnote 879.

nr. 152) ensures that the administrative costs increase resulting from these factual challenges is significantly higher for *ex ante* product safety regulation than for *ex post* product liability law. This explains why current product safety regulation tends to exclude actors like most prosumers and other non-commercial actors from its scope of application and focuses generally on the traditional linear economic manufacturers and importers who can also be at the origin of a more complex, circular product lifecycle (see *infra* nr. 155). Indeed, the flexible approach of product liability law *sensu lato*, which requires enforcement only after an accident has occurred and a claim has effectively been lodged, is overall more efficient than product safety regulation in compelling the manifold ‘heterogeneous’ actors engaged in circular consumption strategies to reduce accident risks.

154. IN A MORE CIRCULAR CONSUMER GOODS ECONOMY, PRODUCT SAFETY REGULATION BECOMES LESS EFFICIENT DUE TO INCREASED ISSUES IN ITS DOWNSTREAM APPLICATION – The two preceding sections discussed the significant challenges encountered by product safety regulation to the extent that its main obligations would be directly extended to each time products are subject to circular strategies and to the redistributors and reproducers performing said strategies. However, a more circular product lifecycle poses also more indirect challenges to existing product safety regulation. Once more, these are more problematic for this regulatory approach than for the product liability alternative, due to the ‘enforcement costs advantage’ of the latter (see *supra* nr. 152).

Most importantly, in addition to the main safety conformity obligations incumbent on manufacturers and others who place products on the market, general product safety regulation simultaneously imposes obligations on the consecutive ‘distributors’ of those products, to verify that manufacturers or others who placed the product on the market have complied with various requirements, to ensure that storage and transport do not jeopardise product safety, to refuse making a product available on the market for which it has reason to believe that it lacks conformity with applicable safety requirements, as well as in the event of safety risks to inform upstream actors and market surveillance authorities or to cooperate with possible corrective measures like user warnings and recalls.⁸⁸⁶ These downstream obligations incumbent on distributors are indispensable for the effectiveness of product safety regulation, but these are premised on a linear economic model with relatively large, professional retailers who only distribute new products. Such retailers also have direct commercial relationships with their own suppliers and ultimately with the product’s manufacturer or importer upstream in the distribution chain. In contrast, a more circular consumer goods economy entails second-hand products which are retransferred one or multiple times after being used by a consumer and are often anonymous, products which are shared by prosumers and separate spare parts which are integrated in products by self- or independent repairers and refurbishers. This makes it much more difficult to apply and implement most of the aforementioned downstream product safety obligations, such as verifying upstream compliance,

⁸⁸⁶ Art. 12 General Product Safety Regulation 2023/988/EU.

informing the actors who have placed the product on the market in case of safety concerns and cooperating with corrective measures throughout the (re)distribution chain.⁸⁸⁷

This issue is not really present in the context of B2C use- and result-oriented PSS, like product-as-a-service contracts, where a professional PSS-provider who is often the product's manufacturer or importer or who has at least close commercial ties with the latter, is well-placed to comply with all the aforementioned product safety obligations of distributors. However, in these cases which can be part of the factual overlap between circular and functional economy (see *supra* nr. 71), another issue emerges. Especially in case of result-oriented PSS, it is no longer the consumer himself who chooses a particular product for his own individual use-context, who installs and maintains it. Crucial safety determinations relating to the particularities of a use context, like kids, pets, personal preferences, interacting activities or devices, must now be made by the PSS-provider rather than the consumer himself. It is very difficult to regulate these matters, which are more use-context-specific than product-specific, through general, *ex ante* product safety rules and standards. Again, this is a matter for which accident risks are more efficiently prevented through *ex post* product liability rules.

155. THIS LOSS OF EFFICIENCY OF PRODUCT SAFETY REGULATION IN A MORE CIRCULAR CONSUMER GOODS ECONOMY, IS OBSERVABLE IN PRACTICE – The above reasons which render product safety regulation less efficient in a circular economic context, are supported by the fact that existing product safety regulation disregards this domain to a considerable extent and concentrates mainly on the linear consumer goods economy.

Although circular economy has during the last decade become a focal point of broader regulatory activity in the EU (see *supra* nr. 65), product safety regulation specifically focused on circular strategies remains conspicuously limited. Only the for *ex ante* product regulation unavoidable question of when a product is 'substantially modified' to be considered a new product placed on the market, has been answered already years ago in Commission guidance and is now enshrined in general product safety law.⁸⁸⁸ For the rest, product safety rules and implementation policy remain focused on the linear economic model.⁸⁸⁹ A similar pattern can be observed in the US, where consumer product safety regulation and regulatory attention for circular economy is generally weaker.⁸⁹⁰

⁸⁸⁷ Digital product passports and other regulatory technology can in the future somewhat mitigate these issues, but the ambitions of the Ecodesign for Sustainable Products Regulation 2024 still rely on a lot of future implementing regulations and will always provide only a limited solution. See *infra* nrs. 343-346.

⁸⁸⁸ Cf. Commission, 'The 'Blue Guide' on the implementation of EU product rules' (2014) 18 with art. 13(2)-(3) General Product Safety Regulation 2023/988/EU.

⁸⁸⁹ Yet, there is considerable attention relating to product safety on online marketplaces. See, e.g., art. 22 General Product Safety Regulation 2023/988/EU; Civic Consulting, *Study to support the preparation of an evaluation of the General Product Safety Directive as well as of an impact assessment on its potential revision: Final report - Part 2: Impact assessment* (2021) 29-39.

⁸⁹⁰ But see Consumer Product Safety Commission Small Business Ombudsman, *Resellers Guide to Selling Safer Products* (US Consumer Product Safety Commission 2021). Such guidance on product safety for second-hand goods distributors seems absent in the EU.

To the extent that there is regulatory attention for issues relating to circular economy in EU product regulation, this remains limited to requirements for manufacturers and importers who initially place products on the market which may later be reused, retransferred, repaired or refurbished. Remarkably, the most significant and expanding rules now consist of Ecodesign requirements, which emphasize environmental performance in the design of new products (see *infra* nr. 251). Professional product resellers, repairers, refurbishers, PSS-providers, recyclers and remanufacturers do not seem to be main targets of product safety attention. And many prosumers as well as non-profit associations who engage in circular strategies in the consumer goods sector, even fall outside the scope of any possible general product safety requirements if they do not act in the course of a commercial activity.⁸⁹¹

These ‘gaps’ in the EU product safety framework vis à vis possible accident risks resulting from circular strategies in the consumer goods sector, seem rather logical in light of the arguments discussed in the preceding sections. Yet, this also means that product liability law *sensu lato* becomes all the more important as an alternative for accident-prevention purposes and to a much smaller extent for price-signalling purposes.

156. THIS LOSS OF EFFICIENCY OF PRODUCT SAFETY REGULATION IN A MORE CIRCULAR CONSUMER GOODS ECONOMY, IS ARGUABLY NOT OFFSET BY AN INCREASED ‘JUDGEMENT-PROOF PROBLEM’ OR A LOWER RISK OF ‘REGULATORY CAPTURE’ – Finally, the shift towards more circular strategies in the consumer goods sector does of course not solely create effects which decrease the efficiency of product safety regulation in terms of accident-prevention and to a much smaller extent in terms of price-signalling. Two counterarguments are discussed below.

First of all, *ex ante* product safety regulation is seen as one of the possible remedies for product liability’s judgement-proof problem.⁸⁹² After all, an actor with control over product accident risks might be insolvent in the event that he would be held liable *ex post* for one or more accidents with significant damage. Yet, he would still have to comply *ex ante* with properly enforced product safety regulation, to avoid that his products would be removed from the market and that he would be subject to other criminal or administrative penalties and measures. This would mean that, if there would be on average more judgement-proof product liability defendants in a more circular economic context, product safety regulation becomes more efficient in remediating the otherwise resulting decrease in accident-prevention. Nevertheless, as argued *supra* nr. 140.a, it can be questioned whether more circular economy effectively leads to a significant increase in judgement-proof product liability defendants.

⁸⁹¹ See art. 3(6)-(14) General Product Safety Regulation 2023/988/EU; Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 19. See also *infra* nr. 198 on the almost similar rules under the PLD-2024.

⁸⁹² See S. Shavell, ‘The Judgement Proof Problem’ (1986) 6 *International Review of Law and Economics* 45, 54; S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 232; H.-B. Schäfer and C. Ott, *The Economic Analysis of Civil Law* (2nd edn., Edward Elgar 2022) 350. See also B. Galle, ‘In Praise of Ex Ante Regulation’ (2015) 68 *Vanderbilt Law Review* 1715, 1738-1742.

Second, the risk of ‘regulatory capture’, which is generally recognised as a potential weakness of product safety regulation,⁸⁹³ is undoubtedly lower in a more circular consumer goods economy. The same reasons why the involved economic actors become more ‘heterogeneous’ (see *supra* nr. 153) mean at the same time that these actors are also on average less powerful, less sophisticated and less likely capable of systematically skewing regulatory outcomes in their favour. Nevertheless, also in a more circular consumer goods sector, there can still be some risk of regulatory capture.⁸⁹⁴ And the issue of ‘regulatory capture’, although far from negligible, seems due to the political clout of consumer interests not as problematic in current EU consumer goods safety regulation,⁸⁹⁵ that its lower risk in a circular economic context suddenly becomes a major reason to prioritize product safety regulation in this field.

The two aforementioned counterarguments, which have both been nuanced, do not seem together capable of offsetting the aforementioned, significant reasons why product safety regulation becomes proportionately less efficient in preventing accidents and price-signalling than product liability *sensu lato*.

§ 2. Less efficient criminal law for accident-prevention and to a lesser extent for price-signalling

157. IN A MORE CIRCULAR CONSUMER GOODS ECONOMY, PRODUCT LIABILITY ONLY BECOMES MORE EFFICIENT COMPARED TO CRIMINAL LAW – This dissertation has in its introductory Part briefly referred to the possibility of preventing consumer product accidents through criminal law. Obviously, criminal liability is a major enforcement tool for the *ex ante* product safety regulation discussed in the preceding sections. Yet, what we consider here are grounds of criminal liability after a product accident occurs, like crimes of involuntary manslaughter, battery or poisoning. This indeed constitutes another *ex post* instrument for accident-prevention purposes. But it should be noted that criminal law can additionally offer some price-signalling benefit (see Figure 8 *supra* nr. 150). Nevertheless, akin to product safety regulation, the price-signalling benefit will be severely limited in comparison with stricter product liability law (cf. *supra* nr. 110.a-b). As a more general limitation on the potential role played by criminal law in this context, enforcing potential criminal liability of producers and distributors for consumer product accidents is not a priority for resource-constrained criminal prosecutors, at

⁸⁹³ M. Polinsky and S. Shavell, ‘The Uneasy Case for Product Liability’ (2010) 123 *Harvard Law Review* 1437, 1453. See also for an overview E. Dal Bó, ‘Regulatory Capture: A Review’ (2006) 22 *Oxford Review of Economic Policy* 203.

⁸⁹⁴ First of all, large, powerful companies still remain present in this context by also adopting circular business models. Second, smaller economic actors can form collective interest and lobby groups, which may become influential when their collective economic power increases. Only prosumers are unlikely to act in this manner in relation to product safety regulation, if only because they are at the same time as consumers direct beneficiaries of more stringent regulation.

⁸⁹⁵ See on how organisation by ‘potential victims of accidents’ can be seen as a driving force behind increased safety regulation D. Keenan and P. Rubin, ‘Shadow interest groups and safety regulation’ (1988) 8 *International Review of Law and Economics* 21.

least when there is no evidence of intentional wrongdoing (see *supra* nr. 4). The role of criminal law relating to consumer product accidents therefore remains relatively limited.

This is the existing situation in the linear economic context. Yet, the same challenges for criminal law as an efficient instrument for preventing consumer product accidents continue to exist in a more circular consumer goods economy and it can be argued that they even become more problematic. The previously discussed issues of increased product heterogeneity, increased heterogeneity of economic actors who have a more scattered control over product accident risks and more problematic downstream relaying of safety information (see *supra* nrs. 152-154), likewise exacerbate the application of criminal law to product accidents. What constitutes ‘safety’ relevant for a criminal law qualification differs for example among second-hand and repaired products and is not the same as for a brand-new product. More actors who sometimes lack a professional or commercial capacity are involved in these circular strategies and will have had some more limited control over accident risks. In a circular product lifecycle, it furthermore becomes more difficult to assess which information should still be relayed downstream and who may have acted culpably in this regard (see for example *infra* nrs. 288 and 380-383).

In comparison with how it relates to product safety regulation (see *supra* nr. 152), civil product liability law has an even clearer ‘enforcement costs advantage’ over criminal law.⁸⁹⁶ Given the raised stakes, criminal procedure is compared to civil procedure more cumbersome involving extra steps and procedural rights of different parties and requires much more public operating costs, which result in significantly higher total administrative costs (cf. *supra* nr. 111). Hence, the aforementioned challenges posed by circular consumption strategies raise the administrative costs of criminal law proportionately more than those of civil product liability law. The latter’s accident-prevention (‘deterrent’) effect is not many times lower than criminal law’s, at least for ordinary consumer product accidents involving non-intentional conduct.⁸⁹⁷ And this continues to be true in the circular economic context, notwithstanding the point on the judgement-proof problem discussed below. Furthermore, civil product liability delivers for the same administrative costs simultaneously a significant risk-allocation benefit for more risk-averse injured parties, which criminal liability does not directly contribute to (see *supra* nr. 106 and Figure 8 *supra* nr. 150).

⁸⁹⁶ Only for rare cases of intentional harmful conduct by consumer good producers or distributors, does criminal law’s greater magnitude of deterrent effect, consisting of potentially lengthy prison sentence for individuals and the need for more rigorous fact-finding relating to intention, perhaps offset the greater administrative costs and become more efficient than civil product liability for accident-prevention purposes. This would also explain why these are in current practice the rare product accident cases where criminal law plays an important role.

⁸⁹⁷ The seminal paper in the economic literature on public enforcement of law, which balances sanction magnitude, enforcement probability and administrative costs, is G. Becker, ‘Crime and Punishment: An Economic Approach’ (1968) 76 *Journal of Political Economy* 169. See for an overview R. Posner, ‘An Economic Theory of the Criminal Law’ (1985) 85 *Columbia Law Review* 1193; M. Polinsky and S. Shavell, ‘Public Enforcement of Law’ in M. Polinsky and S. Shavell (eds.), *Handbook of Law and Economics* (North Holland 2007) 403-450; R. Cooter and T. Ulen, *Law and Economics* (6th edn., Addison-Wesley 2016) 454-484.

Given these costs and benefits, it can be concluded that civil product liability remains also in a more circular consumer goods economy much more efficient in preventing accidents and price-signalling than criminal law, at least for non-intentional harmful conduct. To a limited extent, this might be offset by the fact that criminal law is more efficient than civil product liability in deterring defendants who risk being judgement-proof.⁸⁹⁸ After all, non-monetary criminal sanctions, measures and the stigma of a criminal record can still fully deter actors who would be insolvent if held liable for repairing the damage of a product accident. This benefit of criminal law in terms of accident-prevention is perhaps most pronounced for precisely the small one-man businesses and prosumers active in circular strategies, who hypothetically present the biggest risk of being judgement-proof in the context of circular strategies (see *supra* nr. 140). Nevertheless, it can be doubted whether there is truly an increase in judgement-proof defendants when the consumer goods sector becomes more circular (see *supra* nr. 140.a), which undermines the argument that criminal law would given this issue become more efficient in this context.

§ 3. Less market forces for accident-prevention and price-signalling

158. IN A MORE CIRCULAR CONSUMER GOODS ECONOMY WITH MORE ‘HETEROGENEOUS’ PRODUCTS AND ACTORS, PRODUCT LIABILITY BECOMES MORE EFFICIENT COMPARED TO THE MARKET MECHANISM, BECAUSE CONSUMERS HAVE LESS ACCURATE INFORMATION ON EXPECTED ACCIDENT RISKS – As discussed *supra* nrs. 9, 108.a-b and 110.a, the so-called market mechanism can serve as an alternative to product liability for both the functions of accident-prevention and price-signalling. This alternative is subject to inherent limitations since it relies on minimally accurate information held by consumers on accident risks of products offered to them as well as the cognitive capacity of those consumers to rationally act on it by adding these costs to the product price and weighing this against the utility they would receive from said product. Additionally, there are often innumerable products on the market in a given product category, product accidents are numerous but often lead to relatively small, not widely reported damage and products are over time relatively quickly replaced by new versions and innovations, which all further hamper the market mechanism.⁸⁹⁹ Nevertheless, consumers can in particular in a physical store observe and perhaps test the physical state of a product and they can rely on brands which have a reputation to protect, product labels, certifications or product reviews, occasional mouth-to-mouth information and media reporting about product accident and litigation as well as various forms of B2C information made available by producers and distributors either voluntarily or based on legal requirements.⁹⁰⁰ This ensures that the market mechanism

⁸⁹⁸ See S. Shavell, ‘The Judgement Proof Problem’ (1986) 6 *International Review of Law and Economics* 45, 55; S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 232, 582.

⁸⁹⁹ See M. Geistfeld, ‘Products liability’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.6.

⁹⁰⁰ See the sources cited *supra* nr. 9.

should be far from discounted as an at least partial alternative for accident-prevention and price-signalling purposes, which diminishes the added value of product liability.

Moreover, although an effective market mechanism requires (more) costs relating to providing, seeking and processing direct and indirect information on product accident risks by different parties, these seem at least in current practice significantly lower than the administrative costs of product liability (cf. *supra* nr. 111).

POLINSKY AND SHAVELL argue that the market mechanism is as an alternative to product liability the strongest for ‘widely sold products’, while “*consumer knowledge about product risks should be less good for products that are not widely sold [...]*.”⁹⁰¹ Widely sold products are more likely to result in (more) product reviews, to have already been used by acquaintances, to have possibly already led to accidents or litigation and to be of greater interest to media, reviewers and regulators (see also *supra* nr. 151), which can in turn result in more information on product accident risks becoming available to consumers.

In contrast, circular strategies overall result in the antithesis of those widely sold products, typical for the linear economy. Resold second-hand products, repaired, refurbished or shared products are for example no longer identical and may have been subject to diverging forms of damage or wear and tear and might have become anonymous, which would preclude even a rough reliance on specific information relating to the original product or its brand. Furthermore, basing consumption decisions on the more indirect proxy of the reputation of a manufacturer or distributor becomes more challenging, due to the increase in small companies, even non-profit associations or prosumers who become active on the supply side. These crucial features of a more circular consumer goods economy are the increased ‘heterogeneity’ of products of involved economic actors with a more scattered control over product accident risks, which have already been discussed *supra* nrs. 152-153.

The result is that information on product accident risks available to consumers is significantly reduced in the context of circular strategies and, hence, the market mechanism is much weaker as an alternative to product liability for preventing accidents and ensuring efficient consumption-levels.

Only the possibility to observe and test an individual product remains unaffected as a useful source of information of consumers. Yet, many if not most product accident risks cannot be readily identified by physically observing and even briefly testing a product by a lay consumer. And this information source is particularly restricted when second-hand products are purchased online⁹⁰² and likely non-existent in result-oriented PSS where the PSS-provider chooses the products he makes available to a consumer.

Another possible mitigating factor is the fact that, when circular economy in the consumer goods sector grows, various circular strategies will probably be offered by larger companies

⁹⁰¹ M. Polinsky and S. Shavell, ‘The Uneasy Case for Product Liability’ (2010) 123 *Harvard Law Review* 1437, 1449.

⁹⁰² Technological solutions, like video’s, high-detailed photos, simulations and virtual reality, are on the rise which can help to mitigate this information deficit in e-commerce. See from the perspective of the right of withdrawal in EU B2C distance contracts E. Terryn and E. Van Gool, ‘The Role of European Consumer Regulation in Shaping the Environmental Impact of E-commerce’ (2021) *Journal of European Consumer and Market Law* 89, 96.

and the uniformity of their processes as well as their brand value will again strengthen the market mechanism. Nevertheless, a truly more circular economy will also over time arguably still entail more smaller companies and prosumers. And brand value or reviews of past product repairs or resales by the same, large companies remain merely indirect proxies for the safety of an individual product. Moreover, even in a hypothetically more professionalized and ‘recentralised’ circular consumer goods sector dominated by large companies, circular strategies like retransfers, repairs and refurbishing will still inherently lead to an increase in product ‘heterogeneity’ in comparison with the linear economic model.

§ 4. More injured third parties, making product liability more efficient for accident-prevention and price-signalling

159. DISTINGUISHING ‘THIRD PARTIES’ ACCORDING TO THE EQUITY ANALYSIS FROM ‘THIRD PARTIES’ ACCORDING TO THE EFFICIENCY ANALYSIS – When this dissertation talks about ‘third parties’ in terms of ‘equity’ or income distribution (see *supra* nr. 166), it refers to actual bystanders, persons who have never owned the product or obtained a right to use it as a ‘consumer’. These are the parties who gain a net income from product liability because they do not pay through product prices for the reparation they can receive from it (see *supra* nrs. 117-120).

However, the concept of ‘third party’ is slightly different in relation to the market mechanism, which underlies the efficiency analysis of product liability.⁹⁰³ On the one hand, members of a consumer’s household and perhaps some other of his close acquaintances are strictly speaking not third parties, at least if the consumer considers in his individual consumption decision the interest of these parties relating to product accident risks (see *supra* nr. 108.e).⁹⁰⁴ On the other hand, future consumers of the same product, who definitely pay for product liability through the product’s price and are thus not third parties in terms of equity, are actually third parties according to the efficiency analysis. This is because the original consumer ignores in his consumption decision the product accident risks borne by such strangers in the future. Importantly, a more circular consumer goods economy expands this last category of third parties, as the following section discusses.

160. IN A MORE CIRCULAR CONSUMER GOODS ECONOMY, THERE IS A SIGNIFICANT INCREASE IN ACCIDENT RISKS BORNE BY ‘THIRD PARTIES’ ACCORDING TO THE EFFICIENCY ANALYSIS – When a second-hand product is retransferred to a new consumer, this person, his household members and his other close acquaintances become significantly more than before exposed to the risk of

⁹⁰³ The market mechanism not only operates as an independent alternative to product liability for accident-prevention and price-signalling purposes but is also instrumental in how product liability can actually achieve itself these goals. See *supra* nrs. 9, *in fine*, 108.a and 110.a.

⁹⁰⁴ M. Geistfeld, ‘Products liability’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.22. In terms of ‘equity’, these members of the consumer’s household, close family members and friends are of course ‘third parties’ who receive a net income from product liability.

suffering damage from an accident caused by that particular product. The same holds true when a prosumer decides to share for free or lease his product. Moreover, when a product is being repaired or refurbished, either as a service or prior to being retransferred, the persons involved run a risk of being injured during the repair or refurbishment process because the product might not be safely repairable. The same holds true for product retransferors, who may be injured while transporting, storing, displaying or delivering a second-hand product.

All the aforementioned persons, who bear significantly increased accident risks as a result of circular strategies,⁹⁰⁵ are third parties in the eyes of the product's original, linear economic consumer.⁹⁰⁶ After all, other than occasional feelings of altruism, such an original consumer is only willing to pay more for a product when it will offer on average more safety to himself and probably also when it offers more safety to his household members and close acquaintances. Yet, such original consumer is from a purely economic perspective unconcerned with the extent to which the product offers safety to complete strangers, like the various third parties involved in the product's future, circular lifecycle phases.⁹⁰⁷ Likewise, in a subsequent transaction involving the same product, a prospective, new consumer will again only consider accident risks affecting himself and those personally close to him, but not accident risks affecting third parties during additional phases in the product's already circular lifecycle.

Admittedly, many concerns of accident risks posed by a product to the original consumer and his close acquaintances, will simultaneously also affect future consumers and other persons coming into close contact with the product during subsequent product lifecycle phases. Nevertheless, these concerns will not include risks specific to the use of the product after a retransfer by an unfamiliar, new consumer, nor risks particular to the fact that said product is shared or leased, nor risks specific to accidents which occur during repair, refurbishment or retransfer processes themselves. As following Chapters demonstrate, such accident risks specific to those circular strategies have their own particularities and are far from negligible.

161. THIS INCREASE IN 'CIRCULAR THIRD PARTIES' MAKES PRODUCT LIABILITY MORE EFFICIENT FOR ACCIDENT-PREVENTION AND PRICE-SIGNALLING PURPOSES – The aforementioned, significant increase in the number of third parties who come as a result of circular strategies into close contact with a product later in its lifecycle, makes a great difference when assessing the added value of product liability compared to its alternatives, in particular the market mechanism.

⁹⁰⁵ Only use- and result-oriented PSS like product-as-a-service contracts, which are not part of the core of circular economy (see *supra* nr. 71), do not seem to result in an increase in such third parties. This is because the PSS-provider has, even in the absence of liability law, direct economic incentives through the market mechanism to ensure that PSS-consumers and their household members do not suffer damage as a result of an accident caused by the product which is made available. Reuse and repurpose strategies which remain limited to a single use phase (see *supra* nrs. 83-84), of course do not increase accident risks for third parties either.

⁹⁰⁶ As discussed *supra* nr. 159, they are thus third parties in terms of efficiency but, among those persons, the consumers who have actually paid for owning or using the product are not third parties in terms of the equity analysis.

⁹⁰⁷ E.g., M. Polinsky and S. Shavell, 'The Uneasy Case for Product Liability' (2010) 123 *Harvard Law Review* 1437, 1490: "A pizza parlor would not be likely to experience diminished demand for its pizzas if its delivery vehicles hit pedestrians, but it would lose business if its pizzas caused food poisoning of its customers."

First of all, the market mechanism does not work as an alternative for preventing accidents which harm such third parties who are actively involved in circular strategies later in the product's lifecycle.⁹⁰⁸ As discussed *supra* nrs. 108.e, even when consumers have some information about the product's safety (see *supra* nr. 9 on the various sources of potential information), they will not add to the product price the expected accident costs suffered by the aforementioned 'circular third parties'. Hence, the producers and distributors of those products will not through the market mechanism feel an incentive to reduce accident risks to the extent that these are borne by such 'circular third parties'. In comparison, when a product liability rule applies to those accident risks borne by such 'circular third parties', these producers and distributors are compelled to either invest in corresponding product safety and raise the product price or to simply raise the product price with all initially expected liability costs, which in both cases proportionately reduces demand for the product in a sufficiently competitive market. Ultimately, product liability thus ensures that the original consumers must effectively pay for the expected liability costs from accidents suffered by those 'circular third parties' (see *supra* nrs. 108.a and 114).

Second, product liability, and in particular stricter liability, additionally offers a price-signalling benefit relating to the costs of accidents suffered by those 'circular third parties'. Without it, consumers would inefficiently consume too much, because they would themselves not add those costs to the product price even when they have corresponding information. As a result of product liability, consumers will refrain from additional consumption when they individually no longer value (another unit of) a product at its increased price, which includes the expected liability costs for accidents suffered by those 'circular third parties' (see *supra* nr. 110.a). This is why the price-signalling benefit of product liability is greater to the extent that third parties are injured.⁹⁰⁹

Note that, in addition to product liability, product safety regulation can provide similar accident-prevention and price-signalling benefits for the accident risks borne by such third parties who are actively involved in circular strategies later in a product's lifecycle (see *supra* nrs. 10, 151 and Figure 8 *supra* nr. 150). Nevertheless, *ex ante* product safety regulation is precisely in this more circular consumer goods sector subject to increased limitations, as discussed *supra* nrs. 152-156.

⁹⁰⁸ See M. Spence, 'Consumer Misperceptions, Product Failure and Producer Liability' (1977) 44 *Review of Economic Studies* 561, 561-562; M. Geistfeld, 'Products liability' in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.22; M. Polinsky and S. Shavell, 'The Uneasy Case for Product Liability' (2010) 123 *Harvard Law Review* 1437, 1490; M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 120-121.

⁹⁰⁹ See M. Polinsky and S. Shavell, 'The Uneasy Case for Product Liability' (2010) 123 *Harvard Law Review* 1437, 1491; M. Polinsky, *An Introduction to Law and Economics* (5th edn., Wolters Kluwer 2019) 120-121.

§ 5. But private accident and social insurance seem to become overall more efficient for risk-allocation

162. IN A MORE CIRCULAR CONSUMER GOODS ECONOMY, THERE ARE POSSIBILITIES OF MORE RISK-AVERSE DEFENDANTS, MORE ADVERSE-SELECTION IN PRODUCT LIABILITY INSURANCE AND MORE JUDGEMENT-PROOF DEFENDANTS – The shift to a more circular consumer goods economy does not solely give rise to arguments which make product liability comparatively more efficient than its alternatives. The main counterargument relates to the important goal of risk-allocation, which product liability pursues by protecting consumers against the risk of product accidents and by offering to injured third parties an *ex ante* completely ‘free’ reparation (see *supra* nr. 113). Product liability might become less efficient as a risk-allocation mechanism in the context of circular consumption strategies because of the following three reasons, which can all be questioned to some extent.

First of all, pursuant to the aforementioned feature of increased heterogeneity of involved actors, a more circular consumer goods economy has on average more small companies, non-profit organisations and prosumers who are potential defendants on the basis of product liability *sensu lato* (see *supra* nr. 153). It is possible that these defendants are on average more risk-averse than their counterparts in a linear economic product liability setting. To the extent that this would be true, this effectively reduces the efficiency of product liability as a risk-allocation mechanism, which is based on the extent to which injured parties are more risk-averse than potentially liable defendants (see *supra* nr. 106.a).⁹¹⁰ However, the mere fact that defendants in a more circular consumer goods economy have on average fewer assets, does not necessarily mean that they are more risk-averse.⁹¹¹ Although their linear economic counterparts tend to have more assets, they must also bear greater product liability risks on average, since a defect in a mass-produced and mass-distributed product can lead to significant serial damage. In comparison, due to the increased ‘heterogeneity’ of products in the context of circular consumption strategies (see *supra* nr. 152), widespread serial damage becomes much less likely and product accident cases will on average be more discrete and therefore more limited in terms of potential for damage (see also *supra* nr. 140.a).

Second, informational asymmetry about the underlying risk might be greater between insurers and product liability defendants who seek liability insurance in a circular economic context.⁹¹² After all, in the standard linear economic setting, a product liability insurer knows at least which products are offered, for which he might request technical product documentation relevant to expected liability risks, including tests and certifications, analyse collected

⁹¹⁰ For a prosumer, it can be argued that they might even be as risk-averse as an injured consumer. However, an injured third-party always remains more risk-averse, since he has (in contrast to both the prosumer-supplier and the consumer) nothing to gain from the risk-generating activity. See *supra* nr. 106.b.

⁹¹¹ Of course, when the magnitude of a detrimental risk remains constant, then a reduction in assets will indeed make an average person more risk-averse. See S. Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 258-259; R. Cooter and T. Ulen, *Law and Economics* (6th edn., Addison-Wesley 2016) 47.

⁹¹² See also *supra* nr. 11.b on the synergies between product liability and liability insurance.

information relating to the particular consumer goods sector and, on this basis, he might also estimate the wealth and damage potential of the specific product's average injured consumers and third parties. In contrast, the product 'heterogeneity' created by most circular strategies (see *supra* nr. 152), means that a product liability insurer cannot as easily request or find representative, objective information on the product liability risk *sensu lato* to which for example an individual reseller, repairer or refurbisher becomes subject. Hence, the product liability insurer will create too large risk pools. When the aforementioned defendants, who themselves have better knowledge about the safety of their second-hand, repaired or refurbished products, realize that the resulting average premium is too high for their individual lower-risk profile, for example because they invest more in quality and safety controls in their re-sale, repair or refurbishment processes, they will refuse the liability insurance. Consequently, the insurer will over time have to raise premiums because those remaining in the insurance pool have a higher risk on average, which further continues this adverse-selection problem.⁹¹³ The result is that product liability insurance becomes less viable as a risk-spreading alternative for product liability defendants in the context of circular strategies, who nevertheless may be themselves substantially risk-averse, as discussed above. Hence, the risk-allocation effects of product liability may become overall less efficient. In contrast, the alternatives of private first-party accident insurance and forms of social insurance, suffer comparably less from this adverse-selection problem, because the private first-party insurer has less informational asymmetry and the social insurance is simply mandatory and financed through public revenue (see also *supra* nr. 136.c).

Third, if there would be an increased judgement-proof problem in a more circular consumer goods economy, this would also make product liability less efficient in terms of risk-allocation.⁹¹⁴ However, whether the increased heterogeneity of smaller product liability defendants with fewer assets in the circular context truly increases the judgement-proof problem, has already been discussed and questioned *supra* nr. 140.a.

In summary, there are reasons to assume that product liability becomes for risk-allocation purposes less efficient in a more circular consumer goods economy. The added value in terms of risk-allocation of product liability has already been questioned in general, in light of the possibility of private first-party accident insurance⁹¹⁵ and the higher administrative costs of product liability compared to those for accident insurance.⁹¹⁶ At the same time, social

⁹¹³ See the sources cited *supra* footnote 825 on adverse-selection in product liability insurance. The literature on the economics of insurance is vast. The seminal paper by AKERLOF on the problem of adverse-selection in a market with asymmetric information is G. Akerlof, 'The Market for "Lemons": Quality Uncertainty and the Market Mechanism' (1970) 84 *The Quarterly journal of economics* 488.

⁹¹⁴ Artigot-Golobardes, 'Beyond European Product Liability', 334, 340-341. See also the sources cited *supra* nr. 140.

⁹¹⁵ Depending on subrogation rules, legal fees and the delayed nature of product liability reparation, the more immediate reparation by accident insurance will be more efficient, while the administrative costs for product liability (paid for by consumers) are more substantial. See M. Polinsky and S. Shavell, 'The Uneasy Case for Product Liability' (2010) 123 *Harvard Law Review* 1437, 1463-1469.

⁹¹⁶ Product liability only provides reparation to the injured party after liability is established, while the party insured by accident insurance only has to prove the fact of suffered damage. See S. Shavell,

insurance like public healthcare and social security offers similar benefits in terms of risk-allocation and thus also leaves more limited added value to product liability (see *supra* nr. 11). In this context, the aforementioned three arguments give reason to believe that the overall added value of product liability in terms of efficient risk-allocation,⁹¹⁷ indeed further decreases when shifting from a linear to a more circular consumer goods sector.⁹¹⁸

Section B. Product liability's added value in terms of sustainability slightly increases in a more circular economy

163. THEORETICALLY, PRODUCT LIABILITY CAN HAVE ADDED VALUE IN MAKING CIRCULAR CONSUMPTION MORE ATTRACTIVE FOR INDIVIDUAL CONSUMERS, BUT THIS REMAINS UNLIKELY TO INFLUENCE THEIR ACTUAL BEHAVIOUR IN PRACTICE – Along the arguments discussed in the preceding Section, there are two arguments why product liability *sensu lato* can be considered as more sustainable than its alternatives in how it makes circular consumption theoretically more attractive for an individual consumer. However, given the behavioural constraints of consumers, this potential of product liability makes no difference in practice, due to the behavioural constraints of consumers.

First and foremost, the increased 'heterogeneity' of products and involved economic actors as well as the increase in third parties in a more circular consumer goods sector, significantly reduce the accident-prevention and price-signalling benefits offered by the market mechanism, product safety regulation and criminal law alternatives (see *supra* nrs. 152-161). This means that, if product liability would hypothetically not exist, circular consumption strategies would become theoretically less attractive for individual consumers, since those consumers profit from the accident-prevention and price-signalling benefits which the aforementioned alternatives more efficiently provide in a linear than a circular consumption context (see also *supra* nr. 144). Based on this difference,⁹¹⁹ it can be argued that product

Economic Analysis of Accident Law (Harvard University Press 1987) 262-264; M. Geistfeld, 'Products liability' in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.8. See *supra* nr. 111 on the administrative costs of product liability.

⁹¹⁷ See *supra* nrs. 11 and 106.d on the more limited scope of compensation, the moral hazard problem, the risk of people being uninsured and other disadvantages of relying (solely) on private accident insurance and social insurance for risk-allocation purposes.

⁹¹⁸ As discussed *supra* nr. 136.c, this might from an 'internal' perspective present an argument in favour of more purely fault-based product liability. The discussion in this Chapter of course fixates on questioning the added value of product liability in general compared to its various partial alternatives.

⁹¹⁹ This argument is not offset by the increased efficiency in the circular consumption context of the private accident insurance and social insurance alternatives. The reason why is because an individual consumer does not care that defendants are on average less risk-averse or that product liability insurance suffers from more adverse-selection (see *supra* nr. 162), since these factors only affect the

liability theoretically has added value in fostering circular consumption, which can be assumed to contribute overall to more sustainable development (but see *supra* nr. 64).

Second, to the extent that choosing circular strategies reduces the need for additional consumption more than that it increases accident risks, product liability makes it theoretically more profitable for consumers to engage in such circular consumption rather than in the linear economic alternative, since circular strategies help them to contribute less to the product liability system while enjoying more often its protection ‘for free’ in a third party capacity (see *supra* nrs. 119-120). This purely theoretical increase in attractiveness for consumers of circular consumption, offers a second argument why product liability could theoretically have added value in contributing to more sustainable development, if more circular economy is assumed to contribute to the latter (see also *supra* nr. 145). After all, alternatives to product liability do not offer this redistributive mechanism which favours persons who consume on average fewer or safer products, for which circular consumption can help under the aforementioned conditions.

However, these two theoretical arguments why product liability would have significant added value in making more sustainable consumption choices more attractive to consumers, do not really hold up in practice. As discussed *supra* nr. 146, these benefits are too complex for cognitively limited, real-life consumers to perceive as well as too negligible in comparison with more significant and salient aspects, like product price and product characteristics, to be really considered by consumers in their daily consumption decision-making.

164. IN A MORE CIRCULAR CONSUMER GOODS ECONOMY, PRODUCT LIABILITY’S ADDED VALUE IN REDUCING CONSUMPTION THROUGH ITS PRICE-SIGNALLING FUNCTION INCREASES – As examined *supra* nr. 110.a, product liability helps to avoid inefficient, excessive consumption, to the overall likely extent that consumers underestimate accident risks. This is because product liability, in particular its stricter variant, compels producers and distributors to include in the product price the costs of their expected liability or of their safety investments, which ensures that consumers who no longer marginally value a product at that increased price, refrain from additional consumption. Such reduction in inefficient consumption provides a small but real contribution to more sustainable development (see *supra* nrs. 64, 147-148).

The added value of this sustainable price-signalling benefit of product liability increases in a more circular consumer goods sector. This is first of all because the latter leads to more ‘heterogeneity’ of products and involved economic actors, which makes product safety regulation, criminal law and especially the market mechanism less efficient as alternatives for providing similar price-signalling. Second, this is because circular consumption strategies lead to more ‘circular third parties’, for which the price-signalling alternative by the market mechanism does not work in contrast to product liability (see *supra* nrs. 152-161).

efficiency (from a social welfare perspective) of how product liability provides him with a risk-allocation benefit but not whether or not he personally receives this benefit. This is different for the alleged increase in judgement-proof defendants, which can threaten the reparation he ultimately receives *ex post*, but it can be questioned whether more circular consumption actually increases this risk (see *supra* nr. 140.a).

Moreover, if consumers enjoy private accident insurance or forms of social insurance, which admittedly become overall more efficient in risk-allocation compared to product liability in a more circular consumption context (see *supra* nr. 162), they will suffer to some extent a moral hazard, which the insurer cannot completely exclude and which will make these consumers again engage in inefficient, excessive consumption. However, product liability, in particular strict product liability, also avoids this excessive consumption, by compelling those insured consumers to nevertheless pay for the accident risk increase resulting from their consumption behaviour (see *supra* nr. 110.c).

Finally, the administrative costs of product liability are likely to increase in a circular consumption context, due to the increased complexity of applying general liability rules to more 'heterogeneous' products and defendants, as well as a possible increase in questions relating to contributory fault. These increased administrative costs distort product liability's price-signalling function, by further reducing consumption artificially. While this additional increase in consumption is neither efficient nor sustainable (see *supra* nrs. 147-148), it must be noted that the same features of circular consumption proportionately also increase the administrative costs of product safety regulation, criminal law and the market mechanism as price-signalling alternatives. Moreover, the latter entirely ignores the expected accident costs corresponding with the significant increase in vulnerable 'circular third parties', which is crucial in further strengthening the case for in particular stricter product liability's price-signalling function. Hence, especially strict product liability has substantial added value in price-signalling in a more a circular economic consumption sector, which contributes to more sustainable development.

Section C. Product liability's significant added value in terms of corrective justice risks to decrease in a more circular economy, depending on its practical implementation

165. IN A MORE CIRCULAR CONSUMER GOODS ECONOMY, THE ADDED VALUE OF PRODUCT LIABILITY IN TERMS OF CORRECTIVE JUSTICE REMAINS SIGNIFICANT BUT MIGHT DIMINISH SOMEWHAT – Product liability has major added value in terms of corrective justice, when compared to its alternatives. This is especially emphasized in relation to private and social insurance,⁹²⁰ which indeed offer only (incomplete) reparation of damage while they let the 'wrongdoer' walk away unaffected

⁹²⁰ See, e.g., P. Cane, 'Justice and Justifications for Tort Liability' (1982) 2 *Oxford Journal of Legal Studies* 30, 31-34, 46-49; D. DeWees, D. Duff and Trebilcock, *Exploring the Domain of Accident Law: Taking the Facts Seriously* (Oxford University Press 1996) 8-12, 212; G. Schwartz, 'The Ethics and the Economics of Tort Liability Insurance' (1990) 75 *Cornell Law Review* 313, 313; Artigot-Golobardes, 'Beyond European Product Liability', 337. See also *supra* nrs. 11.c-d, 127 and 149.

and therefore fail to provide actual ‘rectification’. On their part, product safety regulation and the market mechanism of course also fail to provide to the injured party any ‘rectification’ *ex post* (cf. *supra* nrs. 9-11 and 97-99). Nevertheless, the shift to more circular consumption strategies threatens to weaken this added value of product liability in terms of corrective justice. Three general risks can be identified, although none of them is insurmountable and product liability continues to be overall indispensable for purposes of corrective justice.

- a. First of all, as discussed *supra* nrs. 152-154, the increased ‘heterogeneity’ of products and of defendants with each having a more limited control over product accident risks, makes also applying product liability more challenging in a more circular consumption context. Reused, repurposed or repaired products have all underwent different lifecycles and are definitely not comparable with a brand-new product in terms of reasonable safety expectations, which is the centre of gravity for traditional product liability assessments. When product retransferors, lessors, repairers, refurbishers and the like enter the picture, the number of possible defendants increases, while original producers and distributors continue to play a significant role. Prosumers and non-commercial entities who engage in circular strategies, test the personal scope of application of specific product liability theories, further complicate the downstream relaying of information and are additional potential defendants with more limited capabilities than other actors involved in a product’s lifecycle. A more circular consumer goods economy furthermore increases the possibility that an injured consumer has himself acted imprudently, for example as a product repurposer, self-repairer or new user of a second-hand product. Although the last point can be addressed through a defence of contributory fault, which has already been identified as a prerequisite for corrective justice (see *supra* nr. 149), the fact that the injured party’s level of care becomes more prominent as well and, in doing so, replicates most of the aforementioned challenges, further complicates the overall liability assessment.⁹²¹

These myriad challenges are further illustrated by Part IV’s in-depth analysis of the application of EU harmonised product liability to circular strategies. What is crucial here, is the fact that these challenges increase the risk of legal errors. Either liability is not established where it should have been, for example a person has effectively caused a product accident by profiting from a harmful, abnormal risk, but the injured party fails to prove his claim due to the aforementioned challenges. Or someone is held liable on the basis of a product liability rule, although he is in reality not a ‘wrongdoer’ or a ‘risk-taker’ who has profited from a harmful risk or there is actually no causal connection. Corrective justice is harmed substantially in both instances.

The obvious way to attempt to reduce this increased risk of legal errors, is to invest more in the product liability adjudication process, which may consist of more intensive

⁹²¹ See also *infra* nr. 109.d on concerns that judges might be overly eager to overlook a contributory fault. To the extent that considerations relating to the capacity and wealth of parties would effectively play a role in the liability assessment, which would actually run contrary to a key feature of corrective justice (see *supra* nr. 99.c), this also becomes more complicated in a more circular consumer goods economy. This is because injured parties and defendants will on average become more alike due to the active role played by prosumers and non-profit entities in various circular consumption strategies.

proceedings, factually detailed technical examinations and similar changes in civil procedure which are strictly speaking beyond the scope of this dissertation (see *supra* nr. 36). Nevertheless, this would significantly increase the already substantial administrative costs of product liability. From the perspective of efficiency, which this dissertation's normative framework prioritizes, this would therefore not be desirable (see *supra* nrs. 111 and 132-133). Moreover, more thorough and comprehensive product liability adjudication can only help to mitigate the aforementioned increased risk of legal errors and will never completely overcome the aforementioned increase in complexity of applying product liability.

- b. Second, the more numerous and 'heterogeneous' product liability defendants in a circular consumption context (see *supra* nr. 153) are generally subject to a rule of joint and several liability.⁹²² This means that, when multiple defendants are held liable, the defendant will enforce the judgement by obtaining complete reparation from one of them. This defendant then bears the burden of successfully claiming in recourse against his co-defendants for their share in the joint and several liability. If unsuccessful, these co-defendants walk away, although they have caused harm by wrongdoing or by profiting from an abnormal risk, which would harm corrective justice. Alternatively, a potential defendant may have neither been directly targeted by the plaintiff nor been enjoined in the liability proceedings by a co-defendant claiming in recourse. For example, an intermediary might have not been identified, a prosumer might be considered potentially insolvent or another potential defendant might benefit from an apparent lack of evidence. Nevertheless, if such potential defendants have in reality causally contributed to the product accident by committing a wrong or by profiting from an abnormal risk, corrective justice is harmed when no successful recourse claim against such actually liable party eventually materializes.

In these cases, the harm to corrective justice does not necessarily consist of the fact that one co-defendant bears all costs of liability, since he has effectively committed a wrong or profited from a harmful, abnormal risk which would have sufficed for being held individually liable for all damage if others had not also causally contributed to the accident by conduct giving rise to liability. Instead, corrective justice is harmed by the fact that one or more 'wrongdoers' or risktakers who should be liable based on the 'risk-internalisation' principle, simply walk away. In this regard, the injured party might obtain complete reparation, but there is no complete 'rectification' in the comprehensive sense of corrective justice's 'correlative' scheme (cf. *supra* nr. 99.b).

The fundamental issue does not lie with the rule of joint and several liability, since a rule of several liability would be as problematic if not more from the perspective of corrective justice. After all, several liability would mean that the injured party runs the risk of not obtaining full reparation, which would put the loss with the injured party instead of with a person who is at least himself a wrongdoer or liable based on 'risk-internalisation'. The fundamental issue is simply that, when multiple parties are liable

⁹²² E.g., art. 5 PLD-1985; art. 12(1) PLD-2024. See *infra* nr. 191.

for the same accident, obtaining complete ‘rectification’ becomes more conditional.⁹²³ Under a rule of joint and several liability, successful recourse claims then become a necessity, while under a rule of several liability multiple successful direct liability claims would be required. And a more circular consumer goods sector exacerbates this underlying issue of having multiple (potentially) liable defendants.

- c. Third, since circular economy in the consumer goods sector partially overlaps with collaborative economy (see *supra* nr. 70), circular strategies are in practice often implemented by non-profit entities and prosumers. This presents in particular a risk in terms of corrective justice for stricter variations of product liability premised on the principle of ‘risk-internalisation’.⁹²⁴ As already emphasized *supra* nr. 149, this theoretical justification actually requires that a liable party has profited from a harmful, risk-generating activity. Such requirement is definitely not fulfilled for prosumers and entities who engage in circular strategies on a purely non-profit basis, like someone who provides repair services or who lends products for free or who donates second-hand goods. The same can also be questioned for a prosumer who pursues a profit merely on an unorganized, occasional basis. To satisfy corrective justice, strict product liability should actually not be extended to such cases and a more purely fault-based rule should be applied instead.

This presents an additional challenge relating to corrective justice that is characteristic of a more circular consumer goods sector. While it is perhaps clear at the abstract level how the personal scope of application of stricter product liability should be delineated in accordance with corrective justice, it is in practice far from easy to always correctly implement such rules. Hence, even with the correct rules, this is another feature of circular consumption which ultimately diminishes product liability’s contribution to corrective justice.

In conclusion, the aforementioned three risks make comprehensively achieving corrective justice much more challenging in a context of circular consumption. And this seems to be especially true for more strict forms of product liability, even with a contributory fault defence (see also *supra* nr. 149). Nevertheless, each of these risks can potentially be overcome in practice. And, more importantly, none of the alternatives to product liability comes even close to product liability in offering similar benefits in terms of corrective justice. The very limited added value of these alternatives is perhaps similarly challenged in a circular consumption context. Therefore, while the overall contribution of product liability to corrective justice might diminish somewhat, its added value in relative terms to this subsidiary criterion remains undeniably very significant.

⁹²³ In other words, corrective justice is easier to achieve in a more simple, ‘bilateral’ scheme with only one ‘wrongdoer’ at the passive side. A similar argument might be made for the active side, where for example complete corrective justice becomes more difficult to achieve in cases of widespread (serial) product-related damage with multiple injured parties. See also *supra* nr. 99.b.

⁹²⁴ This theoretical nexus, which finds a lot of support in contemporary product liability scholarship, has already been discussed. See in particular *supra* nrs. 127 and 128.c.

Part IV. Harmonised product liability law in a more circular economy

Chapter 1. Overview of EU product liability harmonisation

166. INTRODUCTION – This preliminary Chapter provides an overview of the rules of EU harmonised product liability law *sensu stricto* (see *supra* nrs. 7-8), as it has currently developed and is commonly understood pursuant to the dominant linear economic model of product production and distribution. This is necessary as a starting point to subsequently analyse how these should be applied to different circular consumption strategies.

The starting perspective of this Chapter is the existing, implemented Product Liability Directive, which was promulgated in 1985, referred to as ‘PLD-1985’. Not only does it constitute the harmonised product liability law applicable at the time of writing, it will also continue to apply in the future to products placed on the market or put into service before the entry into force of the new Directive (see *infra* nr. 167). Nevertheless, this Chapter simultaneously discusses the rules of the proposed new Product Liability Directive, according to the most recent and for all intents and purposes final version of its text, which has now been approved by negotiators of both the Parliament and the Council and has now been adopted by the Parliament in plenary session and by the Council’s COREPER, referred to as ‘PLD-2024’ (see *infra* nr. 167).

Given the intended objectives and EU-wide scope of this dissertation (see *supra* nrs. 29-30 and 37), this overview remains limited to general rules of EU product liability harmonisation. Necessarily, aspects of national law relating to causation, evidence and other limitations to the scope of harmonisation are also touched upon, for which insights are obtained from Belgian, French and German law. The PLDI of these three Member States is also more generally referenced to obtain insights in how EU product liability law has been implemented and functions in practice. This does of course not constitute a comprehensive comparative study representative of the EU as a whole, since this would have required a different research design and approach to the dissertation as a whole. For reasons of feasibility and the fact that this is merely a starting point for a subsequent examination specific to circular economy in

the consumer goods sector, the legal doctrinal overview in this Chapter also omits very detailed technical or extensive legal historical considerations.

The most important, first Section of this Chapter outlines the now existing rules of EU product liability harmonisation pursuant to the aforementioned limitations. The second Section examines the repercussions of the level and scope of EU product liability harmonisation, which have been interpreted in an increasingly expansive manner. In contrast to the first Section's general, EU-wide approach, the second Section critically studies how the PLD-1985's and PLD-2024's harmonisation impacts Belgian national product liability law.

Section A. Harmonised product liability law

§ 1. General considerations

a. Two Directives with goals of accident-prevention, reparation and harmonisation

167. STATUS AND STATED GOALS OF THE DIRECTIVES – After a lengthy legislative process⁹²⁵ the EU Council started on 25 July 1985 the era of EU product liability harmonisation by adopting the PLD-1985. During the following years, it has been implemented and entered into force in each

⁹²⁵ Already in 1968, in the aftermath of the Thalidomide tragedy, did the Commission start working on harmonised product liability rules. A first proposal in 1976 (Commission, 'Proposal for a Council Directive relating to the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products' [1976] OJ C241/9), was quickly overtaken by the substantively similar 1977 Strasbourg Convention, which became in turn a source of inspiration for the EU legislative project (see *supra* footnote 45). Hence, the Commission adopted in 1979 an amended proposal (Commission, 'Amendment of the proposal for a Council Directive relating to the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products' [1979] OJ C271/3). Only in 1985 did the Council eventually adopt the PLD, which can be seen as indicative of its politically sensitive nature and of the divergences between existing national solutions. See Taschner and Frietsch, *Kommentar*, 95-98 (first-hand account of the legislative process); T. Bourgoignie, 'The 1985 Council Directive on Product Liability and its implementation in the Member States of the European Union' in M. Goyens (ed.), *La Directive 85/374/CEE relative à la responsabilité du fait des produits: dix ans après* (Centre de Droit de la Consommation 1996) 23-26 (discussing reasons for lengthy legislative process).

Member State, although in some cases after noteworthy delays.⁹²⁶ It has also been implemented in the EEA-countries, in Switzerland and been copied elsewhere around the world.⁹²⁷ Up to the present, it has only been amended once relating to one, smaller aspect.⁹²⁸ As already discussed *supra* nr. 37, the PLDI has been traditionally less frequently invoked in most Member States than national liability regimes, but this trend appears to be gradually reversing for a number of reasons. Moreover, the Directive's maximum harmonisation may ultimately have far-reaching ramifications for national product liability law *sensu lato*, as the following Section examines. Additionally, whenever possible, sophisticated plaintiffs tend to invoke both the PLDI and other, national product liability theories.

On 28 September 2022, the Commission published its proposal for a new Directive (see also *supra* nr. 25.c).⁹²⁹ At the time of writing, a final text of the new Directive has been agreed on by both the Parliament and Council in interinstitutional negotiations.⁹³⁰ The Parliament has in its plenary session on 12 March 2024 formally adopted this new Directive (the final renumbered text, referred to in this dissertation as 'PLD-2024')⁹³¹ and a final adoption by the Council is expected soon.⁹³² The subsequent publication will determine the new Directive's entry into force twenty days later, which will start a transposition period of two years.⁹³³ At the end of

⁹²⁶ Most notoriously, France implemented the PLD-1985 only in 1998 (Loi nr. 98-389 du 19 mai 1998 relative à la responsabilité du fait des produits défectueux, *JORF* 21 mai 1998, nr. 117) after being convicted by the CJEU (CJEU 13 January 1993, C-293/91, *Commission v. France*, ECLI:EU:C:1993:4). The only member states that managed to implement the PLD-1985 prior to the transposition deadline of 30 July 1988 (art. 19(1) PLD-1985) were the United Kingdom, Greece and Italy. See Commission, 'First Report on the Application of Council Directive on the approximation of laws, regulations and administrative provisions of the Member States concerning liability for defective products (85/374/EEC)' COM(95) 617 final, 2-3; Borghetti, *La responsabilité du fait des produits*, 504-508.

⁹²⁷ See *supra* footnote 43.

⁹²⁸ Parliament and Council Directive 1999/34/EC of 10 May 1999 amending Council Directive 85/374/EEC on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products [1999] OJ L141/20 (removing the optional exemption for primary agricultural products and game from the material scope of application).

⁹²⁹ Commission, 'Proposal for a Directive of the European Parliament and of the Council on liability for defective products' COM(2022) 495 final.

⁹³⁰ A Word-document approved by interinstitutional negotiators on 24 January 2024 can be found at European Parliament, '2022/0302(COD) Liability for defective products' <[https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=en&reference=2022/0302\(OLP\)](https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=en&reference=2022/0302(OLP))>. But a more easily navigable text, still with track-changes compared to the 2022 Commission Proposal, has been attached to the following, later published Council document EU Council COREPER, 'Proposal for a Directive of the European Parliament and of the Council on liability for defective products (final compromise text, as communicated to the Parliament by letter of 24 January 2024)' 2022/0302(COD).

⁹³¹ EU Parliament, 'Legislative resolution of 12 March 2024 on the proposal for a directive of the European Parliament and of the Council on liability for defective products' P9_TA(2024)0132.

⁹³² The interinstitutional compromise text has been already approved by the Council's COREPER. See EU Council COREPER, 'Proposal for a Directive of the European Parliament and of the Council on liability for defective products (final compromise text, as communicated to the Parliament by letter of 24 January 2024)' 2022/0302(COD).

⁹³³ Arts. 22-23 PLD-2024.

this period, the now venerable PLD-1985 will be repealed but it “*it shall continue to apply with regard to products placed on the market or put into service before that date.*”⁹³⁴

The stated main goals of the PLD-1985 and the PLD-2024 are consumer protection and market harmonisation,⁹³⁵ as further discussed in the following sections. The CJEU has overall let the harmonisation goal take precedence when safeguarding the PLD-1985’s maximum harmonisation scope and when interpreting the preservation of national liability law (see *infra* nrs. 170-171).⁹³⁶ However, within this scope, the content of the PLD-1985 for the most part and the CJEU’s more recent interpretative case law clearly pursue what is commonly described as a goal of ‘consumer protection’.⁹³⁷

168. TRADITIONAL PRODUCT LIABILITY GOALS OF REPARATION AND ACCIDENT-PREVENTION, NOTWITHSTANDING ADDITIONAL ECONOMIC EFFECTS – The aforementioned goal of ‘consumer protection’, to which especially the PLD-1985’s recitals and most older literature refer, is somewhat a misnomer. Or, as BORGHETTI puts it, this stated goal is “*both misleading and ambiguous.*”⁹³⁸ This is because the PLD-1985 also allows injured, completely independent third parties who are neither consumers of the injurious product nor their family members or other close associates,⁹³⁹ to claim on a diagonal basis (see also *supra* nr. 5). Furthermore, natural persons injured by a product in a professional or commercial capacity can claim reparation of certain types of damage (see *infra* nr. 190).⁹⁴⁰ The PLD-1985 is therefore rather a part of civil liability than of consumer protection law, although most but far from all plaintiffs

⁹³⁴ Art. 21 *ibid.*

⁹³⁵ See recitals 1, 4-6, 8-9, 12-13 and 18-19 PLD-1985; recitals 1, 4, 8 and 64 PLD-2024. Various ancillary policy goals are stated in the recitals of the PLD-2024, which to a large extent relate to digital technologies (see *supra* nr. 32.c).

⁹³⁶ E.g., J.-S. Borghetti, ‘La responsabilité du fait des produits et la protection des intérêts professionnels’ (2009) *Recueil Dalloz* 1731, nr. 15 (when discussing how the PLD’s maximum harmonisation can result in more limited protection being offered to vulnerable natural persons than that national law can continue to offer with regards to damage to professional goods and other non-harmonised aspects): “*Voilà qui pourrait mener de l’eau au moulin de ceux qui reprochent à l’Europe de se soucier de la prospérité des entreprises plus que du bien-être des citoyens!*”

⁹³⁷ T. Verheyen, ‘Full Harmonization, Consumer Protection and Products Liability: A Fresh Reading of the Case Law of the ECJ’ (2018) *European Review of Private Law* 119. See, e.g., the following decisions clearly favouring injured parties CJEU 10 May 2001, C-203/99, *Henning Veedfald*, ECLI:EU:C:2001:258; CJEU 2 December 2009, C-358/08, *Aventis Pasteur v. OB*, ECLI:EU:C:2009:744; CJEU 5 March 2015, C-503/13-C-504/13, *Boston Scientific*, ECLI:EU:C:2015:148; CJEU 7 July 2022, C-264/21, *Fennia v. Philips NV*, ECLI:EU:C:2022:536. But see also, e.g., CJEU 25 April 2002, C-183/00, *González Sánchez v. Medicina Asturiana*, ECLI:EU:C:2002:255; CJEU 10 June 2021, C-65/20, *VI v. KRONE*, ECLI:EU:C:2021:471.

⁹³⁸ J.-S. Borghetti, ‘Taking EU Product Liability Law Seriously: How Can the Product Liability Directive Effectively Contribute to Consumer Protection?’ (2023) 1 *French Journal of Legal Policy* 136, 143. *Contra* T. Verheyen, *Eenzijdige beheersing van het aansprakelijkheidsrisico: Over waarschuwingen, instructies, disclaimers en andere technieken tot eenzijdige exoneration* (Intersentia 2021) 559.

⁹³⁹ See M. Geistfeld, ‘Products liability’ in M. Faure (ed.), *Tort Law and Economics* (Edward Elgar 2009) nr. 11.22.

⁹⁴⁰ See J.-S. Borghetti, ‘Taking EU Product Liability Law Seriously: How Can the Product Liability Directive Effectively Contribute to Consumer Protection?’ (2023) 1 *French Journal of Legal Policy* 136, 143. See also recital 8 PLD-2024: “[...] a high and uniform level of protection of consumers and other natural persons, [...]”

are in practice indeed consumers of an accident-causing consumer good. This is now better reflected in the PLD-2024, which refers in several recitals to “*injured person(s)*” rather than ‘consumer(s)’ and, as a result of amendments during the ultimate negotiations, now refers in several articles and recitals to a goal of “*protection for consumers and other natural persons*” or more simply “*protection of natural persons*”.⁹⁴¹

Regardless, this ‘protection of persons’ remains a rather vague description of what harmonised product liability more concretely aims to do. And this actually consists of pursuing two fundamental goals, common to all civil and corrective product liability theories *sensu lato* (see *supra* nr. 4), namely ‘preventing’ as many product accidents as possible and ‘repairing’ damage resulting from such accidents which nevertheless occur. This twofold objective is deeply rooted in the historical emergence of industrial mass manufacturing, more diverse and technologically complex products and longer product distribution chains (see *supra* nr. 14). Recitals 2, 3 and 4 of the PLD-1985⁹⁴² explicitly confirm this historic, economic and technological *raison d’être*, which is at least implicitly present in actually most of the PLD-2024’s countless recitals.

The economic analysis *supra* nrs. 108-109 and 135-137 has confirmed that the relatively strict theory of harmonised product liability, which includes a defence of contributory fault, is overall actually quite efficient in pursuing the goal of ‘accident-prevention’. It moreover confirmed that stricter liability is for the purposes of the ‘reparation’ goal actually the most efficient option, given the overall risk-aversion of consumers and third-parties (see *supra* nrs. 106 and 135-137). Nevertheless, from an *ex ante* perspective, a goal of ‘reparation’ is actually a misnomer for injured consumers, who pay themselves for product liability as a form of mandatory accident insurance through product prices. This is why this goal is more accurately described as ‘risk-allocation’, since it is the risk of an individual accident which is shifted to product liability defendants and only injured third parties receive a reparation ‘for free’ (see *supra* nrs. 105 and 113).

Characteristic of a purely doctrinal legal approach, neither the PLD-1985 nor the PLD-2024 explicitly refer to the additional social welfare it offers through its price-signalling function, which is nevertheless substantial given the more ‘strict’ nature of its liability (cf. *supra* nr. 110 and *infra* nr. 173). Neither do these Directives refer to the system’s substantial administrative costs, which are admittedly determined the most by non-harmonised rules of civil procedure, the functioning of the legal services market and of the justice system, as well as the fact whether or not there is (already) some rule of product liability. Precisely which type(s) of product liability rule applies or whether it has now been partially harmonised at the EU-level, matter much less in this regard (see *supra* nr. 111 and *infra* nr. 169). Additionally, neither the Directives nor the existing legal literature consider the more advanced redistributive effects of harmonised product liability. These are complex and nuanced but nevertheless benefit overall richer consumers as well as persons who consume in the long run fewer or safer

⁹⁴¹ Articles 1, 3 and 5 and recitals 1, 8, 16, 20, 25, 30, 36, 46, 53, 56, 59 and 64 PLD-2024.

⁹⁴² See in particular recital 2 PLD-1985: “*Whereas liability without fault on the part of the producer is the sole means of adequately solving the problem, peculiar to our age of increasing technicality, of a fair apportionment of the risks inherent in modern technological production;*”. See also the nearly identical recital 2 PLD-2024.

products (see *supra* nrs. 113-120). All these additional economic insights must nevertheless be kept in mind when appreciating the effect of these product liability rules on European society.⁹⁴³

169. A GOAL OF MARKET HARMONISATION? – The PLD-1985’s goal of market harmonisation was already heralded by its first recital and is intertwined with the Directive’s legal basis of art. 100 EEC Treaty, current art. 115 TFEU, which requires unanimity in the Council.⁹⁴⁴ However, it has been questioned, also during the PLD-1985’s adoption process,⁹⁴⁵ to what extent national differences in product liability rules truly constitute a sufficient obstacle to free movement of goods to justify this legal basis in light of the principles of subsidiarity and proportionality.⁹⁴⁶ Art. 115 TFEU requires that harmonisation is necessary to eliminate a negative effect on the internal market which is at least as significant as required for the now more popular art. 114 TFEU,⁹⁴⁷ for which the CJEU requires an “*appreciable distortion of competition*”.⁹⁴⁸ The economic analysis of law literature also questions the extent to which differences in *ex post* civil liability rules would create an obstacle to cross-border trade as well as whether legal harmonization in aspects of private law is actually economically efficient compared to legal competition and innovation.⁹⁴⁹ Moreover, the argument that the PLD-1985 would be necessary for completing

⁹⁴³ Naturally, since this is an EU harmonisation instrument, the additional administrative costs of the Directive are relatively limited, since all member states already had in place beforehand and/or would have had today some product liability rules *sensu lato*. Administrative costs are therefore most meaningfully examined for all product liability theories collectively, as this dissertation does *supra* nr. 111.

⁹⁴⁴ This requirement of unanimity in the Council helps to further explain the PLD-1985’s long legislative genesis as well as its compromise nature. See S. Whittaker, *Liability for Products: English Law, French Law, and European Harmonization* (Oxford University Press 2005) 436; Fairgrieve et al., ‘Product Liability Directive’, 26-27.

⁹⁴⁵ European Parliament Legal Affairs Committee, ‘Report on the proposal from the Commission of the European Communities to the Council (Doc. 351/76) for a directive relating to the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products’ PE 51.378/fin, 10 August 1978, document 246/78, 8-12. See also the sources cited in Howells, *Comparative Product Liability*, 23-28.

⁹⁴⁶ See S. Whittaker, ‘The EEC Directive on Product Liability’ (1986) 5 *Yearbook of European Law* 233, 234-235; G. Howells, ‘Product liability - a history of harmonisation’ in D. Fairgrieve (ed.), *Product Liability in Comparative Perspective* (Cambridge UP 2005) 203-207; J.-S. Borghetti, ‘Taking EU Product Liability Law Seriously: How Can the Product Liability Directive Effectively Contribute to Consumer Protection?’ (2023) 1 *French Journal of Legal Policy* 136, 145-147; J. Huet, ‘Fasc. 335: Responsabilité du fait des produits défectueux’ in X. (ed.), *JurisClasseur Contrats - Distribution* (Lexis360 2023 update) nrs. 13-14.

⁹⁴⁷ See generally D.-E. Khan and D. Eisenhut, ‘Articles 114-115’ in R. Geiger, D.-E. Khan and M. Kotzur (eds.), *European Union Treaties: A Commentary* (Hart 2015) 556-565; K. Lenaerts and P. Van Nuffel, *Europees recht* (7th edn., Intersentia 2023) 228-230.

⁹⁴⁸ CJEU 5 October 2000, C-376/98, *Germany v. Parliament and Council*, ECLI:EU:C:2000:544, nrs. 106-108. See also *ibid.*, nrs. 83-86; CJEU (Grand Chamber) 3 December 2019, C-482/17, *Czech Republic v. Parliament and Council*, ECLI:EU:C:2019:1035, nrs. 34-37; K. Gutman, *The Constitutionality of European Contract Law: A Comparative Analysis* (Oxford University Press 2014) 324-350.

⁹⁴⁹ See, e.g., R. van den Bergh and L. Visscher, ‘The Principles of Tort Law: The Right Path to Harmonization?’ (2006) 14 *European Review of Private Law* 511, 511-516; M. Faure, ‘Economic Analysis

the internal market, is particularly weakened by the many exceptions to its scope of harmonization and in particular its explicit preservation of national product liability law (see *infra* nr. 171).⁹⁵⁰ Furthermore, one can compare this to the seemingly unproblematic experience in the US with fragmented products liability law in an economically even more integrated market.⁹⁵¹

In my opinion, the need for market integration is indeed a weak justification for harmonising *ex post* product liability rules, when considering the Union's subsidiarity and proportionality principles. In contrast to *ex ante* product regulation, virtually no producers or distributors would in the absence of the PLD-1985 first conduct a comparative study of national product liability rules and, possibly, on the basis thereof either change their product's design or information or forsake intra-Union trade. The fact that the goal of harmonisation is not achieved at present, is ironically why the CJEU and now some national courts seem eager to interpret the Directive's scope of harmonisation in an increasingly extensive manner (see *infra* nrs. 170-171). Yet, it seems that achieving a meaningful, complete harmonisation would strictly speaking require abolishing the explicit rule on the preservation of national product liability law, which the EU legislator has refused to do both in 1985 and now in 2024.⁹⁵²

Notwithstanding these critiques, the PLD-1985's legal basis has never been formally challenged. The PLD-2024 is now based on art. 114 TFEU,⁹⁵³ which employs the ordinary legislative procedure and no longer requires unanimity in the Council. This provision also benefits from lenient CJEU case law on amending on the basis of this Treaty provision already harmonised rules of European law.⁹⁵⁴

of Tort Law and the European Civil Code' in A. Hartkamp and others (eds.), *Towards a European Civil Code* (4th edn., Wolters Kluwer) 979-996; F. Gomez, 'Some Law and Economics of Harmonizing European Private Law' in A. Hartkamp and others (eds.), *Towards a European Civil Code* (4th edn., Wolters Kluwer 2011) 412-422; M. Faure, 'The harmonisation of EU tort law' in P. Giliker (ed.), *Research Handbook on EU Tort Law* (Edward Elgar 2017) 417-438. See also L. Ribstein and B. Kobayashi, 'An Economic Analysis of Uniform State Laws' (1996) 25 *Journal of Legal Studies* 131.

⁹⁵⁰ Cousy, *Problemen van produktenaansprakelijkheid*, 376; Borghetti, *La responsabilité du fait des produits*, 429; S. Whittaker, *Liability for Products: English Law, French Law, and European Harmonization* (Oxford University Press 2005) 436-438; J.-S. Borghetti, 'La responsabilité du fait des produits et la protection des intérêts professionnels' (2009) *Recueil Dalloz* 1731 nr. 15; G. Howells, C. Twigg-Flesner and T. Wilhelmsson, *Rethinking EU Consumer Law* (Routledge 2018) 260.

⁹⁵¹ From an EU perspective, it is striking to observe the absence of a debate on federalizing US products liability law. A number of federal legislative proposals have failed to gain any traction. See *American Law of Products Liability*, 3rd edn., nr. 2:10.

⁹⁵² Cf. art. 13 PLD-1985; art. 2(4)b PLD-2024. See also *infra* nr. 171.

⁹⁵³ Recital 1 PLD-2024.

⁹⁵⁴ See CJEU 10 December 2002, C-491/01, *British American Tobacco (Investments) and Imperial Tobacco*, ECLI:EU:C:2002:741, nrs. 77-78; CJEU 8 June 2010, C-58/08, *Vodafone et al.*, EU:C:2010:321, nr. 34; CJEU (Grand Chamber) 3 December 2019, C-482/17, *Czech Republic v. Parliament and Council*, ECLI:EU:C:2019:1035, nrs. 38-39.

b. Level and scope of harmonisation

170. AN INCOMPLETE MAXIMUM HARMONISATION – Although the Directive’s text is not explicit on this point, which is not unusual given its venerable age, the CJEU has confirmed by now at many occasions that the PLD-1985 establishes a maximum level of harmonisation.⁹⁵⁵ Member States can therefore not derogate from its rules in principle. Nevertheless, three provisions afford implementation options⁹⁵⁶ and three explicitly carve-out some ancillary aspects from the scope of harmonisation.⁹⁵⁷ Additionally, there exists a range of matters which are necessary for operating the PLDI but which are implicitly left to the Member States, such as causation (see *infra* nr. 191) and most aspects of civil procedure, including evidence (see *infra* nrs. 205-206). All these elements continue to be freely determined by the Member States. The PLD-2024 continues this approach,⁹⁵⁸ although some of the options for Member States are removed and in some areas there is now a broader scope of harmonisation. Noteworthy, two industry-friendly implementation options are removed and several plaintiff-friendly rules of evidence are added to the scope of harmonisation (see *infra* nrs. 190.d, 200 and 206).

171. THE PARTIAL PRESERVATION OF NATIONAL PRODUCT LIABILITY LAW AND ITS (RESTRICTIVE) INTERPRETATION – The most important limitation to the PLD-1985’s scope of harmonisation is art. 13 PLD-1985’s explicit preservation of the rights that an injured person may enjoy on the basis of “*the rules of the law of contractual or non-contractual liability*” of a Member State or according to “*a special liability system existing at the moment when this Directive is notified*”. The EU legislator has chosen to further preserve both these categories of national liability rules, by explicitly integrating similar provisions in art. 2(4)b-c PLD-2024.

The less important second category applies to pre-existing national product liability regimes which are limited to specific product sectors, such as the German *Arzneimittelngesetz*.⁹⁵⁹ Curiously, the German legislator has within the scope of the latter completely abrogated the application of the PLDI,⁹⁶⁰ which seemingly violates the Directive.⁹⁶¹

⁹⁵⁵ CJEU 25 April 2002, C-52/00, *Commission v. France*, ECLI:EU:C:2002:252, nr. 16; CJEU 25 April 2002, C-154/00, *Commission v. Greece*, ECLI:EU:C:2002:254, nr. 12; CJEU 25 April 2002, C-183/00, *González Sánchez v. Medicina Asturiana*, ECLI:EU:C:2002:255, nr. 25; CJEU 10 January 2006, C-402/03, *Skov and Bilka*, ECLI:EU:C:2006:6, nr. 22; CJEU 4 June 2009, C-285/08, *Moteurs Leroy Somer v. Dalkia France*, ECLI:EU:C:2009:351, nr. 21; CJEU 7 July 2022, C-264/21, *Fennia v. Philips*, ECLI:EU:C:2022:536, nr. 28.

⁹⁵⁶ Arts. 8(2), 15(1)b and 16(1) PLD-1985; art. 13(2) PLD-2024.

⁹⁵⁷ Arts. 8(1), 9(2) and 10(2) PLD-1985; arts. 14 and 16(2) PLD-2024.

⁹⁵⁸ See in particular art. 3 PLD-2024 (explicitly confirming the maximum level of harmonisation).

⁹⁵⁹ CJEU 20 November 2014, C-310/13, *Novo Nordisk*, ECLI:EU:C:2014:2385, nr. 21. See Gesetz über den Verkehr mit Arzneimitteln vom 12 Dezember 2005, BGBl I, 3394. See also recital 10 PLD-2024: “[...], amendments to such special liability systems should not be precluded as long as they do not undermine the effectiveness of the system of liability provided for in this Directive or its objectives.” This codifies the CJEU’s answer to this question, debated in the German literature, in CJEU 20 November 2014, C-310/13, *Novo Nordisk*, ECLI:EU:C:2014:2385, nrs. 24-33.

⁹⁶⁰ § 15(1) Produkthaftungsgesetz *juncto* §§ 84-94a Gesetz über den Verkehr mit Arzneimitteln vom 12 Dezember 2005, BGBl I, 3394.

⁹⁶¹ Art. 13 and recital 13 PLD-1985 seem to allow only a parallel and not an exclusive application

The first category plays a pivotal role in determining the Directive's scope of harmonisation in general. It expresses the EU legislator's desire to leave general contractual and extracontractual liability law of Member States entirely unaffected.⁹⁶² This was an indispensable component of the compromise that led to the PLD-1985.⁹⁶³ However, the CJEU has given to this provision a restrictive interpretation, motivated by the plain fact that a maximum harmonisation is quite ineffective if it can be easily evaded through (changes in)⁹⁶⁴ national liability law which continues to apply in parallel (see also *supra* nr. 169). In a now continuous case law, the Court has ruled that this first category mentioned in art. 13 PLD-1985 only means that “the system of rules put in place by the Directive, which in Article 4 enables the victim to seek compensation where he proves damage, the defect in the product and the causal link between that defect and the damage, does not preclude the application of other systems of contractual or non-contractual liability based on other grounds, such as fault or a warranty in respect of latent defects.”⁹⁶⁵ Consequently, according to the CJEU, the PLD-1985 precludes rules of national liability law that are also based on a strict liability for damage caused by a defective product. Applying this in practice can be challenging, as illustrated by the debate about the impact of this interpretation of the Directive's scope of harmonisation on Belgian rules of product liability *sensu lato*, on which the next Section focuses. Art. 2(4)b PLD-2024 now codifies this interpretation, by

(concurrence), which art. 2(4)c PLD-2024 now ostensibly confirms. See Taschner and Frietsch, *Kommentar*, 445-446; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3612, 3-4; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 15, nr. 3. *Contra* Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 15, nr. 8. See also E. Van Gool, ‘Overview of German product liability law’ (2024) <<https://ssrn.com/abstract=4824956>>, 29-30.

⁹⁶² It is worth noting that recital 13 PLD-1985 explicitly links this parallel application of national liability rules to the objective of ‘consumer protection’. See also the early commentaries of the Directive's main author H.C. Taschner, *Produkthaftung: Richtlinie des Rates vom 25. Juli 1985* (Beck 1986) 147-149; Taschner and Frietsch, *Kommentar*, 459-460. See also G. Viney and P. Jourdain, *Les conditions de la responsabilité* (3rd edn., LGDJ 2006) 860.

⁹⁶³ J. Ghestin, ‘La directive communautaire du 25 juillet 1985 sur la responsabilité du fait des produits défectueux’ (1986) *Recueil Dalloz* 135, 136; Markovits, *La Directive C.E.E. du 25 juillet 1985*, 96; M. Fallon, ‘La loi du 25 février 1991 relative à la responsabilité du fait des produits défectueux’ (1991) 110 *Journal des Tribunaux* 465, 467; G. Viney and P. Jourdain, *Les conditions de la responsabilité* (3rd edn., LGDJ 2006) 860. See also the discussions of art. 13 PLD-1985 *in tempore non suspecto* by its main author, TASCHNER, cited *supra* footnote 962.

⁹⁶⁴ The CJEU has always held that the phrase in art. 13 PLD-1985 “existing at the moment when this Directive is notified” only relates to the second category of special liability systems and not the first category of general contractual and extracontractual liability law. See the decisions cited in the next footnote; A-G. Geelhoed, opinion C-52/00 and C-183/00, 18 September 2001, ECLI:EU:C:2001:453, nrs. 54, 56. A different interpretation would lead to absurd outcomes of freezing liability rules in time.

⁹⁶⁵ CJEU 25 April 2002, C-52/00, *Commission v. France*, ECLI:EU:C:2002:252, nr. 22; CJEU 25 April 2002, C-154/00, *Commission v. Greece*, ECLI:EU:C:2002:254, nr. 18; CJEU 25 April 2002, C-183/00, *González Sánchez v. Medicina Asturiana*, ECLI:EU:C:2002:255, nr. 31. See also CJEU 10 January 2006, C-402/03, *Skov and Bilka*, ECLI:EU:C:2006:6, nr. 47; CJEU 4 June 2009, C-285/08, *Moteurs Leroy Somer v. Dalkia France*, ECLI:EU:C:2009:351, nr. 23.

holding that the Directive does not affect national (extra)contractual liability claims “on grounds other than the defectiveness of a product as provided for in this Directive”.⁹⁶⁶

The CJEU’s more restrictive interpretation of art. 13 PLD-1985 can be seen as prioritizing market harmonisation over protecting the interests of injured parties,⁹⁶⁷ since the latter now lose possibilities to invoke certain rules when these would be more opportune for them than the PLDI. Nevertheless, the precluding effect of art. 13 PLD-1985 remains limited to the PLD-1985’s scope of harmonization.⁹⁶⁸ It is therefore essential to know the Directive’s precise scope of harmonization, which is far from a completely settled matter. For example, in the *Skov* decision, the CJEU ruled that a Danish national liability theory cannot hold suppliers liable for a defective product in the same manner as producers based on the PLDI, because the CJEU found that the absence of primary liability of suppliers (see *infra* nrs. 176-177) has been fully harmonised by the Directive.⁹⁶⁹ In contrast, in the *Leroy Somers* decision, the CJEU decided that damage to professional goods falls outside the PLD-1985’s scope of harmonisation and that claims for reparation of such damage can therefore still be based on a national liability theory with the same basis as the PLD-1985.⁹⁷⁰ Likewise, the CJEU has confirmed that defects in the provision of services fall outside the scope of harmonisation,⁹⁷¹ which means that resulting damage can be claimed through national liability theories which have the same basis as the PLD-1985.

Beyond these decisions, national practitioners, courts and legislators are left to figure out what is (not) part of the Directive’s scope. This dissertation examines *infra* nrs. 213 and 219 in more detail the precise extent of EU product liability harmonisation, both in terms of its personal scope of application, the period after the extinction and limitation periods, the potential absence of liability when the various defences apply as well as the possibility to still claim different of damage.

⁹⁶⁶ Art. 2(4)b PLD-2024. Note that the reference to damage and causation has been omitted, which is unlikely to make a difference in practice given the omnipresence of damage and causation requirements in product liability law. Note additionally that the final adopted version has affixed to the condition “on grounds other than the defectiveness of a product” the additional qualification “as provided for in this Directive” (cf. art. 2(4)b *ibid.*; art. 2(3)c PLD Proposal 2022). See also *infra* nr. 212.c.

⁹⁶⁷ Borghetti, *La responsabilité du fait des produits*, 513-514, 566; Brun, *Responsabilité civile extracontractuelle*, 5th edn., 522; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., 200.

⁹⁶⁸ See M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 166-170.

⁹⁶⁹ CJEU 10 January 2006, C-402/03, *Skov and Bilka*, ECLI:EU:C:2006:6, nrs. 31-45. See also CJEU 25 April 2002, C-52/00, *Commission v. France*, ECLI:EU:C:2002:252, nrs. 36-41; CJEU 5 July 2007, C-327/05, *Commission v. Denmark*, ECLI:EU:C:2007:409, nr. 1.

⁹⁷⁰ CJEU 4 June 2009, C-285/08, *Moteurs Leroy Somer v. Dalkia France*, ECLI:EU:C:2009:351, nrs. 24-32. *Infra* nr. 219, this dissertation argues that this case law also extends under the PLD-2024, despite a potential contrary interpretation of art. 3 *juncto* 6(3) PLD-2024.

⁹⁷¹ CJEU 10 June 2021, C-65/20, *VI v. KRONE*, ECLI:EU:C:2021:471, nrs. 37-38; CJEU 21 December 2011, C-495/10, *Thomas Dutrueux*, ECLI:EU:C:2011:869, nrs. 29-39. See *infra* nr. 213.a for more details on this limitation to the scope of EU product liability harmonisation and how this is in turn nuanced by the new arts. 8(2) and 11(2) PLD 2024.

c. An ‘extracontractual’ and ‘quasi-strict’ liability

172. AN ‘EXTRACONTRACTUAL’ LIABILITY – The PLD-1985 allows consumers to claim in a vertical manner directly against producers and other actors in the distribution chain of a product, who are not their direct counterparties. Moreover, it allows injured third parties to claim diagonally against these same actors (see *supra* nr. 6.c and *infra* nrs. 176-178). Harmonised product liability therefore belongs to the realm of extracontractual liability in accordance with its historical main sources of inspiration, strict liability in tort as a products liability theory in the US and German *Produzentenhaftung* based on § 823(1) BGB. This is also confirmed by its prohibition on contractual exonerations,⁹⁷² by its exclusion of claims for intrinsic damage to the defective product itself,⁹⁷³ as well as by the purely objective standard of product defectiveness, which is unrelated to subjective expectations of an individual consumer.⁹⁷⁴

In Belgium and France, harmonised product liability is often described as a form of ‘hybrid’ liability which is neither contractual nor extracontractual,⁹⁷⁵ although more and more authors now explicitly recognize the PLD-1985’s extracontractual nature.⁹⁷⁶ This can first of all be explained by the fact that the EU harmonised regime is not subject to the *non-cumul* principle,⁹⁷⁷ which makes it upend the traditional Belgian and French understanding of what constitutes extracontractual liability. Second, this can be explained by the possibility for Belgian and French consumers to claim vertically against producers or other parties higher up in a chain of ‘translative’ contracts directly (*action directe*) based on the hidden defects guarantee of sales

⁹⁷² Art. 12 PLD-1985; art. 15 PLD-2024.

⁹⁷³ Art. 9(b) PLD-1985; art. 6(1)b(i) PLD-2024. See also *infra* nr. 190.b.

⁹⁷⁴ Art. 6(1) PLD-1985; art. 7(1) PLD-2024. See also *infra* nrs. 179 and 216.b.

⁹⁷⁵ E.g., **BELGIUM**: M. Fallon, ‘La loi du 25 février 1991 relative à la responsabilité du fait des produits défectueux’ (1991) 110 *Journal des Tribunaux* 465, 470; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 499-500; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 216; T. Verheyen, *Eenzijdige beheersing van het aansprakelijkheidsrisico: Over waarschuwingen, instructies, disclaimers en andere technieken tot eenzijdige exoneratie* (Intersentia 2021) 550, footnote 2390. **FRANCE**: Borghetti, *La responsabilité du fait des produits*, 432; M. Bacache-Gibeili, *La responsabilité civile extracontractuelle* (3rd edn., Economica 2016) 885; Brun, *Responsabilité civile extracontractuelle*, 5th edn., 528; C. Caillé, ‘Responsabilité du fait des produits défectueux’ in X. (ed.), *Répertoire de droit civil* (Dalloz.fr 2018 update) nr. 5; J. Huet, ‘Fasc. 335: Responsabilité du fait des produits défectueux’ in X. (ed.), *JurisClasseur Contrats - Distribution* (Lexis360 2023 update) nr. 25.

⁹⁷⁶ These authors accurately describe the PLD-1985 as establishing an extracontractual liability regime which simply ignores the national rule of *non-cumul*. **BELGIUM**: B. Dubuisson et al., *La responsabilité civile. Chronique de jurisprudence 1996-2007, vol 1, Le fait générateur et le lien causal* (Larcier 2009) 267; Delforge, ‘Le défaut de sécurité au sens de la loi du 25 février 1991’, 303. **FRANCE**: P. Le Tourneau, *Responsabilité des vendeurs et fabricants* (5th edn., Dalloz 2015) nr. 22.63; Viney, Jourdain and Carval, *Les régimes spéciaux et l’assurance*, 4th edn., 29; P. Jourdain, ‘La responsabilité du fabricant du fait des produits défectueux: Rapport français’ in B. Dubuisson and P. Jourdain (eds.), *Les responsabilités et les garanties du vendeur en droit belge et en droit français* (Larcier 2024) 910.

⁹⁷⁷ Art. 1 PLD-1985 simply states that the producer is liable for ‘damage’ and art. 4 PLD-1985 that the ‘injured person’ as a plaintiff has to prove damage, defect and causation. There is no trace of the dichotomy made by French and traditional Belgian liability law between contractual and extracontractual liability. See also arts. 1 and 5 PLD-2024.

contracts.⁹⁷⁸ In Belgium, specialized sellers and producers have an obligation to discover and not sell goods impaired with hidden defects, of which the presumed violation necessary for claiming extrinsic damages based on art. 1645 Old CC BE is theoretically still refutable, while the parallel presumption in French law against professional sellers is irrefutable to the extent that only a lack of causation still offers a defence to this strict liability.⁹⁷⁹ In both countries, contractual exonerations are mostly excluded for those specialized or professional actors.⁹⁸⁰

⁹⁷⁸ Traditionally, the *action directe* by a purchaser or other acquirer of a product against the original or preceding links in a chain of ownership-transferring ('translative') contracts, in which extrinsic damage resulting from a product accident rather than the purchase price and transactional costs are claimed, is based on the hidden defects guarantee of general sales law in combination with the obligation of specialized sellers and producers in Belgium or professional sellers in France to discover the hidden defects (which, in case of a violation, equates them with sellers who effectively knew those hidden defects). The claim for compensation of extrinsic damages, which is allowed when the seller is presumed to have known the hidden defect, is traditionally believed to transfer along the chain of translative contracts as an 'accessory right'. See **BELGIUM**: arts. 1615 and 1645-1646 Old CC BE; art. 5.105 CC BE; Cass. BE 6 May 1977, *Arr.Cass.* 1977, 915, *Pas.* 1977, I, 907, *RCJB* 1979, 162, note M. Fallon, *RW* 1977-78, 657; Cass. BE 7 December 1990, *Arr.Cass.* 1990-91, 391, *Pas.* 1990, I, 346, *RW* 1992-93, 431, note T. Vansweevelt; Cass. BE 19 September 1997, *Arr.Cass.* 1997, 840, *Pas.* 1997, I, 883; Cass. BE 7 April 2017, C.16.0311.N, *TBBR* 2018, 168, note S. De Rey and B. Tilleman, *DAOR* 2017, 54, *RW* 2018-19, 347. **FRANCE**: arts. 1615 and 1645-1646 CC FR; Cass. FR civ. (1^e Ch.) 24 November 1954, nr. 54-07.171, *Bull.civ.* 1954, I, nr. 338, *JCP* 1955, II, 8565, note H.B.; Cass. FR civ. (Ass.plén.) 12 July 1991, nr. 90-13.602, *Bull.civ.* 1991, I, nr. 5; Cass. FR civ. (3^e Ch.) 9 February 2011, nr. 09-71.498, *Bull.civ.* 2011, III, nr. 24, *D.* 2011, 1328, note J-P. Storck; Cass. FR com. 19 March 2013, nr. 11- 26566, *ECLI:FR:CCASS:2013:CO00288*, *Bull.civ.* 2013 IV, nr. 45.

⁹⁷⁹ **BELGIUM**: See also the explanation and case law cited in the preceding footnote. Belgian case law allows the specialized seller or producer to still refute that he has violated his obligation to discover the defect, which underpins his liability for extrinsic damage (art. 1645 Old CC BE), by proving that the hidden defect was 'absolutely undetectable'. See Cass. BE 7 December 1990, *Arr.Cass.* 1990-91, 391, *Pas.* 1991, 346, *RW* 1991-92, 431, note T. Vansweevelt; Cass. BE 18 October 2001, *Arr.Cass.* 2001, 1721, *Pas.* 2001, 1659, *RW* 2003-04, 97; Cass. BE 7 April 2017, C.16.0331.N, *ECLI:BE:CASS:2017:ARR.20170407.3*, *Juportal*; J. Van Zuylén, 'L'ignorance invincible dans la vente de droit commun, une d'exonération aux accents de force majeure' in P. Foriers, R. Jafferli and E. Van den Haute (eds.), *Entre tradition et pragmatisme: Liber amicorum Paul Alain Foriers - Volume 1* (Larcier 2021) 757-795; Tilleman and Van Den Abeele (collab.), *Gevolgen van de koop*, 461. **FRANCE**: See the explanation and case law cited in the preceding footnote. Professional sellers and contractors can only still invoke external causes, like *force majeure* or contributory fault, as a possible defence. See, e.g., Cass. FR civ. (1^e Ch.) 16 June 1992, nr. 90-18.970, *CCC* 1992, comm. 197; Cass. FR civ. (1^e Ch.) 12 April 1995, nr. 92-20.747, *Bull.civ.* 1995, I, nr. 179, *JCP G* 1995, II, 22467, note P. Jourdain. However, even *force majeure* might theoretically be questioned now, because the *Cour de Cassation* has started to consider the claim for damages based on art. 1645 CC FR increasingly as a guarantee independent of general principles of contractual liability. See V. Mazeaud, 'La garantie des vices cachés dans la vente: Rapport français' in B. Dubuisson and P. Jourdain (eds.), *Les responsabilités et les garanties du vendeur en droit belge et en droit français* (Larcier 2024) 401, 402-405.

⁹⁸⁰ **BELGIUM**: exonerations in B2C-sales are prohibited by art. VI.83, 14^o Wetboek economisch recht / Code droit économique. See also the more general provisions against unfair, not specifically negotiated contract terms arts. VI.82 and VI.84 *ibid.*; art. 5.52 CC BE. More generally, however, the presumption of having violated the obligation to discover the defects (see *supra* footnote 978), means that specialized

French and later Belgian case law extended the *non-cumul* principle to this vertically indirect, theoretically contractual claim,⁹⁸¹ which thus excluded extracontractual liability in the intermediated relationship between a manufacturer or importer and a final consumer. In doing so, this emboldened those who sought to qualify claims between the same parties based on the PLD as being contractual or, as a minimum, ‘hybrid’ in nature. Note, however, that some authors in my opinion persuasively argue that this *action directe* against actors up in the product distribution chain actually has an extracontractual basis,⁹⁸² which removes the

sellers and producers can only exonerate themselves based on art. 1643 Old CC BE for those cases where the hidden defect had been ‘undetectable’ (see *supra* footnote 979). See Tillemans and Van Den Abeele (collab.), *Gevolgen van de koop*, 517; C. Hélas, ‘La garantie des vices cachés dans la vente: Rapport belge’ in B. Dubuisson and P. Jourdain (eds.), *Les responsabilités et les garanties du vendeur en droit belge et en droit français* (Larcier 2024) 362-363. **FRANCE:** Similar restrictions apply in France. On the one hand, there is a result of EU harmonisation a slate of legislative restrictions on exoneration clauses and unfair contract terms, in particular in B2C relationships. On the other hand, the presumption of knowledge about the defects in combination with art. 1643 CC FR ensures that professional sellers cannot exonerate themselves in most of the remaining instances. These are now only still accepted in contracts either between two professional parties with the same level of specialization or between two non-professionals. See arts. L212-1-L212-2, R212-1-R212-2 Code de la consommation; art. 1171 CC FR; Cass. FR (civ.) 17 May 1965, nr. 62-12.790, *Bull.civ.* 1965, I, nr. 324; Cass. FR (com.) 4 June 1969, *Bull.* 1968, IV, nr. 167, *D.* 1970, 51; Cass. FR (civ.) 5 May 1982, nr. 81-10.315, *Bull.civ.* 1982, I, nr. 163; Cass. FR civ. (3^e Ch.) 10 September 2013, nrs. 12-22.844, 12-23.033; Cass. FR civ. (com.) 19 March 2013, nr. 11-26.566, *Bull.civ.* 2013, IV, nr. 45, *D.* 2013, 1947, note A. Hontebeyrie, *RDC* 2013, 1360, note J.-S. Borghetti; Cass. FR civ. (1^e Ch.) 10 October 2019, nr. 18-19.463; P. Le Tourneau, *Responsabilité des vendeurs et fabricants* (5th edn., Dalloz 2015) 311-313; P. Delebecque and F. Collart Dutilleul, *Contrats civils et commerciaux* (11th edn., Dalloz 2019) 234, 268.

⁹⁸¹ **BELGIUM:** Cass. BE 2 October 2020, C.20.0005.N, *Jur.Prat.* 2023, 177, note J. Romain, *TBBR* 2021, 188, note M. Higny, *TBH* 2020, 939. This case law now seems to have been overruled by the abandonment of the *non-cumul* principle in art. 6.3, §1, first section CC BE. **FRANCE:** Cass. FR (1^e Ch.) 13 November 1984, nr. 83-13.020, *Bull.civ.* 1984, I, nr. 303; Cass. FR (2^e Ch.) 30 November 1988, nr. 86-14.325, *Bull.civ.* 1988, II, nr. 240; Cass. FR (2^e Ch.) 29 April 2004, nr. 01-17.321, *D.* 2004, 1430, *Gaz.Pal.* 2004, 2522.

⁹⁸² **BELGIUM:** This has been first argued by KRUIHTOF, who argues that the claim for extrinsic damages by a final purchaser (or principal of a contract for works) only arises after an accident occurs and cannot be transferred as an accessory right beforehand by a preceding seller, unlike the *actio redhibitoria* and *actio quanti minoris* of art. 1644 Old CC BE relating to intrinsic damage. Instead, producers and distributors have also vis à vis third parties (like consumers down the distribution chain) a general extracontractual fault-based obligation of (professional) diligence and quality controls, which is much more severe for specialized sellers and producers according to the adage *spondet peritiam artis, et imperitia culpa adnumeratur*. This serves as an alternative explanation for the (theoretically less convincing) transfer as an accessory right of the (future) claim for extrinsic damages against sellers and contractors with presumed knowledge of the hidden defects, as discussed in preceding footnotes. See M. Kruithof, ‘Aansprakelijkheid van verkopers voor schade veroorzaakt door verborgen gebreken: tijd voor een “decontaminatie” van artikel 1645 BW’ in N. Carette and B. Weyts (eds.), *Verantwoord aansprakelijkheidsrecht: Liber amicorum Aloïs Van Oevelen* (Intersentia 2017) 385-404; C. Borucki, ‘Samenloop tussen buitencontractuele en contractuele aansprakelijkheid bij schade veroorzaakt door een goed met verborgen gebreken’ (2022) *Tijdschrift voor Belgisch Burgerlijk Recht* 519, 522-527. See also Com. Bruxelles 22 March 1934, *RGAR*, nr. 1595 (cited *infra* footnote 1292); M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.),

complicated Belgo-French construction considering all indirect vertical product liability claims in contractual chains involving property-transfers as necessarily contractual in nature.

However, from at least the Belgian perspective, this debate on the nature of harmonised product liability now seems to have been settled for good, because the soon applicable, new Book 6 of the Belgian Civil Code abandons the *non-cumul* principle.⁹⁸³ This removes the core argument for those opposing a qualification of harmonised product liability (between contractual counterparties or other vertical claims across the contractual chain) as not purely extracontractual. This is admittedly a massive change in Belgian civil law, for which it is important to note that it does not affect the Belgian PLDI due to the Directive's maximum harmonising nature.⁹⁸⁴ Additionally, the new Book 6, which is devoted to extracontractual liability, now explicitly incorporates the Belgian PLDI, which until now consisted of a separate statute.⁹⁸⁵ This follows the example of the French legislator, who has from the onset integrated its PLDI in the French Civil Code's section devoted to extracontractual liability.⁹⁸⁶

173. A 'QUASI-STRICT' LIABILITY – Today, most authors agree that the PLD-1985 can be qualified as a 'mixed' liability which, depending on the circumstances, combines a stricter liability with

*Aansprakelijkheid, veiligheid en kwaliteit. PUC W. Delva nr. 40 (Kluwer 2015) 201-203; Tilleman and Van Den Abeele (collab.), Gevolgen van de koop, 496-497. FRANCE: In his dissertation, JAMIN seems to argue that the *action directe* is a corrective to the relativity of contracts which, if not extracontractual, is at least not limited to provisions of specific contract law like art. 1645 CC FR. See C. Jamin, *La notion d'action directe* (LGDJ 1991) nrs. 313-330. See also *ibid.*, nr. 328: "*L'action directe constitue un mécanisme correcteur des principes de relativité des conventions et d'égalité des créanciers, qui ne trouve son fondement ni dans un concept classique issu du Code civil ni nécessairement dans les termes d'une loi spéciale et qui permet à l'un de ces créanciers, pour des motifs d'équité et en vue d'un équilibre des patrimoines, d'obtenir, pour son propre compte, du débiteur de son débiteur, soit un paiement, soit la mise en œuvre d'une garantie, c'est-à-dire la sanction, respectant nécessairement le principe de prévisibilité contractuelle, de l'inexécution d'un contrat antérieur ou la mise en œuvre d'une garantie légale qui est attachée à ce contrat.*"*

⁹⁸³ Art. 6.3, §1, first section CC BE. Note that the contractual counterparty can still defend himself against extracontractual liability claims by invoking the exonerations and defences awarded to him by contract law or contractual provisions, except in cases of physical or psychological injuries or a fault committed with an intention to cause harm (art. 6.3, §1, second section *ibid.*). However, these new Belgian rules on the partially supplementary nature of extracontractual liability in contractual relationships are irrelevant to harmonised product, because of the Directive's maximum harmonising character and prohibition on contractual exonerations. See art. 12 PLD-1985; arts. 3 and 15 PLD-2024.

⁹⁸⁴ *E.g.*, note that a contractual counterparty can under the new Belgian rules on concurrence of contractual and extracontractual liability, still defend himself against extracontractual liability claims by invoking exonerations and defences awarded to him by contract law or by contractual provisions, except in cases of physical or psychological injuries or a fault committed with an intention to cause harm (art. 6.3, §1, second section CC BE). However, these rules are irrelevant to claims between Belgian contractual parties based on the PLDI, due to the Directive's maximum harmonising nature and its prohibition on contractual exonerations (art. 12 PLD-1985; arts. 3 and 15 PLD-2024). See also *supra* nr. 170.

⁹⁸⁵ Cf. Wet Productaansprakelijkheid / Loi Responsabilité Produits with arts. 6.41-6.55 CC BE.

⁹⁸⁶ Arts. 1245-1245-17 CC FR.

fault-based overtones.⁹⁸⁷ This was already pointed out in the explanatory report of the Strasbourg Convention,⁹⁸⁸ which created a very similar product liability theory on which the PLD-1985 was modelled after.⁹⁸⁹ Some French-speaking authors therefore aptly qualify it as a ‘quasi-objective’ liability.⁹⁹⁰ In contrast, some authors maintain the opinion, which was more prominent in early literature and can draw support from the PLD-1985’s and now also the PLD-2024’s own recitals,⁹⁹¹ that it establishes a purely faultless, a ‘strict’ or even a ‘risk-based’

⁹⁸⁷ See, e.g., BELGIUM: Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 499; Delforge, ‘Le défaut de sécurité au sens de la loi du 25 février 1991’, 302-303; Dubuisson et al., *Chronique de jurisprudence 2008-2020 – Volume 1*, 366-367. See also T. Verheyen, *Eenzijdige beheersing van het aansprakelijkheidsrisico: Over waarschuwingen, instructies, disclaimers en andere technieken tot eenzijdige exoneration* (Intersentia 2021) 550-551 (reporting without explicitly approving this view). See also sources cited *infra* footnote 990. FRANCE: Borghetti, *La responsabilité du fait des produits*, 639, 470-472; L.M. Kheir Bek, *Les fonctions de la responsabilité du fait des produits défectueux: Entre réparation et prévention* (PUAM 2011) 257; J. Knetsch, ‘La place de la responsabilité sans faute dans le système de responsabilité civile. Étude de droit comparé’ (2019) *Revue des Contrats* 196, 198; Bloch and Poumarède, ‘L’indemnisation des victimes de produits’, nr. 6311.22; J.-S. Borghetti, ‘Taking EU Product Liability Law Seriously: How Can the Product Liability Directive Effectively Contribute to Consumer Protection?’ (2023) 1 *French Journal of Legal Policy* 136, 172-174. See also sources cited *infra* footnote 990. GERMANY: H. Kötz, ‘Ist die Produkthaftung eine vom Verschulden unabhängige Haftung?’ in B. Pfister and M. Will (eds.), *Festschrift zum siebzigsten Geburtstag von Werner Lorenz* (Mohr Siebeck 1991) 109-122; Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 45, nrs. 5-9; Wagner, *MüKo BGB*, ‘Produkthaftungsgesetz’, § Einleitung, nrs. 18-23; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § ProdHaftG, nrs. 27-42. SEE ALSO: S. Whittaker, ‘The EEC Directive on Product Liability’ (1986) 5 *Yearbook of European Law* 233, 241-246, 278; J. Stapleton, ‘The conceptual imprecision of ‘strict’ product liability’ (1998) 6 *Torts Law Journal* 260; Artigot-Golobardes, ‘Beyond European Product Liability’, 36; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., 188, 330; P. Verbruggen, ‘Theoretische rechtvaardigingen voor het personele toepassingsbereik van het voorstel voor een nieuwe Richtlijn productaansprakelijkheid’ (2023) 2023/40 *Nederlands Tijdschrift voor Burgerlijk Recht* 365, 367-377.

⁹⁸⁸ Council of Europe, ‘Explanatory Report to the European Convention on Products Liability in regard to Personal Injury and Death’, 27 January 1977, *European Treaty Series* nr. 19, 4: “[...] that in its present form the system established by the committee was not one of absolute liability but a mixed system.”

⁹⁸⁹ See *supra* footnotes 45-46 and 925.

⁹⁹⁰ G. Viney, *Introduction à la responsabilité* (3rd edn., LGDJ 2008) 104-105; P. Le Tourneau, *Responsabilité des vendeurs et fabricants* (5th edn., Dalloz 2015) nr. 22.62; I. Lutte and J.-L. Fagnart, ‘Livre 33bis’ in X. (ed.), *Responsabilités. Traité théorique et pratique* (Kluwer 2020 update) 18. See also P. Le Tourneau, ‘La verdeur de la faute dans la responsabilité civile, ou de la relativité de son déclin’ (1988) *Revue Trimestrielle de Droit Civil* 505, 512: “Chassez la faute, elle revient au galop!”

⁹⁹¹ Recitals 2-3 PLD-1985 (“liability without fault”); recitals 2, 6, 42 PLD-2024 (“liability irrespective of fault”).

liability.⁹⁹² Nevertheless, this view is based on a very narrow reading of the PLD-1985 and seems to ignore key components of the operative part of the Directive as well as how it can only be meaningfully applied in practice.

First of all, several of the substantive defences of harmonised product liability imply considerations of culpability and fault,⁹⁹³ as discussed *infra* nrs. 193 et seq. This is particularly true for the not put into circulation, posteriority, development risk and component defences.

Second, the contributory fault rule of art. 8(2) PLD-1985 and art. 13(2) PLD-2024 results in a reduction or even an exclusion of the defendant's liability on the basis of "*the fault of the injured person*" (see *infra* nr. 191). This integral component determining the liability of harmonised product liability defendants, is undeniably fault-based.⁹⁹⁴ National rules on recourse in case of joint and several liability can further result in apportioning liability among co-defendants on the basis of fault and causation (see *infra* nr. 191),⁹⁹⁵ but this is only true at the secondary level of the defendant's perspective and does of course not affect the plaintiff's primary liability claim.

Third and foremost, the crucial product defect requirement for harmonised product liability (see *infra* nr. 179 et seq.) integrates many considerations which actually mimic traditional fault-based extracontractual liability. Despite the fact that this key liability requirement fixates on the objective status of a product rather than a person's conduct,⁹⁹⁶ it ultimately imposes liability on producers and distributors of products (see *supra* nr. 74) for their conduct which is appreciated in light of whether their product was defective when they placed it on the market or put it into service. In some cases, this conduct is appreciated in a rather strict manner, meaning that the producer's or distributor's factual connection to the harmful product suffices to establish liability. In other cases, the producer's or distributor's conduct is

⁹⁹² See, e.g., BELGIUM: H. Bocken, I. Boone and M. Kruithof, *Inleiding tot het schadevergoedingsrecht. Buitencontractueel aansprakelijkheidsrecht en andere schadevergoedingsstelsels* (2nd edn., Die Keure 2014) 165, 194; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 213-214; Tilleman and Van Den Abeele (collab.), *Gevolgen van de koop*, 949. FRANCE: M. Bacache-Gibeili, *La responsabilité civile extracontractuelle* (3rd edn., Economica 2016) 885; J. Huet, 'Fasc. 335: Responsabilité du fait des produits défectueux' in X. (ed.), *JurisClasseur Contrats - Distribution* (Lexis360 2023 update) nr. 20; P. Jourdain, 'La responsabilité du fabricant du fait des produits défectueux: Rapport français' in B. Dubuisson and P. Jourdain (eds.), *Les responsabilités et les garanties du vendeur en droit belge et en droit français* (Larcier 2024) 910 (but recognizing the fault-based overtones behind product defectiveness in many cases). GERMANY: Especially the PLD-1985's main author has continued to claim that the harmonised product liability regime is faultless and even 'unrelated to the defendant's conduct'. See, e.g., H.C. Taschner, 'La future responsabilité du fait des produits défectueux dans la Communauté européenne' (1986) *Revue du Marché Commun* 257, 258; Taschner and Frietsch, *Kommentar*, 105; H.C. Taschner, 'Produkthaftung – Noch einmal: Verschuldenshaftung oder vom Verschulden unabhängige Haftung?' (2012) *Zeitschrift für Europäisches Privatrecht* 560, 564-567.

⁹⁹³ See also L.M. Kheir Bek, *Les fonctions de la responsabilité du fait des produits défectueux: Entre réparation et prévention* (PUAM 2011) 266-270.

⁹⁹⁴ See also *ibid.*, 257; E. Rajneri, 'La notion de défectuosité du produit dans les jurisprudences des pays européens' (2015) 67 *Revue Internationale de Droit Comparé* 185, 196-199.

⁹⁹⁵ Art. 8(1) PLD-1985; art. 13(1) PLD-2024.

⁹⁹⁶ See *supra* nr. 101.c.e on how product liability is 'mediated' through products and how this ultimately makes this form of liability more suited to notions of distributive justice and therefore, indirectly, also stricter forms of liability.

rather appreciated according to a more forgiving standard of reasonable care in light of the specific circumstances of the case.⁹⁹⁷

The next section discusses how the defect typology is helpful to understand when the assessment of specifically the product defect requirement is stricter and when it is more fault-based. Nevertheless, this does not offer a complete picture of the multi-layered nature of the defect requirement. Two other, general observations, which are discussed more in detail *infra* nrs. 179-189, equally help to explain how the product defect concept reflects the ‘quasi-strict’ character of the harmonised product liability theory in general. First, the general definition of product defect in art. 6(1) PLD-1985 and art. 7(1) PLD-2024 moderates a test based on the safety expectations of the general public, which are on average relatively strict, by only accepting those expectations which the general public is “*entitled to expect*”, which moves in turn closer to fault-based expectations of safety in light of a reasonable standard of care.⁹⁹⁸ Second, art. 6(1)a-c(2) PLD-1985 and art. 7(2)(3) PLD-2024 add various supporting defect assessment criteria. Some of these clearly insert fault-based considerations into the defect assessment, such as the criterion on the product’s “*reasonably foreseeable use*” and the fact that defectiveness can only be assessed at the time when the product was originally placed on the market or put into service, which disregards posterior developments.⁹⁹⁹

174. STRICTER LIABILITY ASSESSMENT IN CASE OF MANUFACTURING DEFECTS AND MORE PURELY FAULT-BASED ASSESSMENT IN CASE OF DESIGN AND INFORMATION DEFECTS – The product defect typology developed in US products liability and subsequently integrated in German *Produzentenhaftung* case law based on § 823(1) BGB, helps to better understand how the defect requirement of EU harmonised product liability blends notions of stricter and more

⁹⁹⁷ See also sources cited *supra* footnote 987.

⁹⁹⁸ See also *infra* nrs. 174 and 179. Art. 7(1) PLD-2024 seems to open at the same time another dimension by also accepting that product defectiveness is established based on the “*safety [...] that is required under Union or national law*.” This novelty is discussed further *infra* nr. 180.

⁹⁹⁹ Art. 6(1)b-c(2) PLD-1985; art. 7(2)b,e(3) PLD-2024. See on these specific criteria *infra* nrs. 183 and 184. See also, e.g., art. 7(2)d PLD-2024: “*the reasonably foreseeable effect on the product of other products that can be expected to be used together with the product, including by means of interconnection;*”.

traditionally fault-based liability.¹⁰⁰⁰ Alternative views exist, but the more convincing ones turn out to be actually very close to the defect typology.¹⁰⁰¹

The core idea is the following: strict liability fits well with cases where damage results from manufacturing defects, while design and information¹⁰⁰² defects turn out to be assessed on the basis of considerations closely related to the reasonable standard of care of traditional fault-based liability (see also *supra* nr. 7).

In manufacturing defect cases, it is possible to adopt a strict liability due to two reasons. First of all, the standard of delivering the planned product design is clear, objective and suited to immediately lead to a finding of ‘defectiveness’ associated with product liability in case of

¹⁰⁰⁰ See on the continued relevance of the defect typology in harmonised product liability, despite the fact that the Directives do not explicitly refer to these concepts Borghetti, *La responsabilité du fait des produits*, 544 (discussing the PLD’s impact, collecting references to examples in UK, Austrian and German case law on the PLD-1985): “*La typologie traditionnelle des défauts reste ainsi présente, en filigrane.*”; D. Wuyts, ‘The Product Liability Directive - More than Two Decades of Defective Products in Europe’ (2014) 5 *Journal of European Tort Law* 1, 12: “*Although it has been demonstrated that the American tripartite approach is not required by the Directive, in practice it does seem to have had a certain influence on some national legislators and courts*”; M. dos Santos Silva et al., ‘Relevance of Risk-benefit for Assessing Defectiveness of a Product: A Comparative Study of Thirteen European Legal Systems’ (2021) *European Review of Private Law* 91, 127: “[...] *this distinction is referred to by legal scholarship in all legal systems. Additionally, courts of several MS, particularly France, Poland, Spain and Portugal have referred to this distinction in their cases, albeit sometimes unknowingly as is the case of France.*”

¹⁰⁰¹ E.g., E. Rajneri, ‘La notion de défectuosité du produit dans les jurisprudences des pays européens’ (2015) 67 *Revue Internationale de Droit Comparé* 185, 196-205. RAJNERI advocates in favour of a distinction between cases where the product accident was (i) foreseeable and avoidable; (ii) theoretically foreseeable but unavoidable; and (iii) unforeseeable and unavoidable. The first category centres around the contributory fault defence and the last around the development risk defence. Nevertheless, she analyses the crucial second category according to the distinction between manufacturing, design and information defects. And, ultimately, there seems to be no reason against elevating the defect typology distinction to the general level, because this remains relevant for her first and third categories as well. A contributory fault defence actually first requires the presence of a defective product (see also *infra* nr. 274) and is subsequently appreciated in light of the factual circumstances of each case. And the development risk defence, which avoids an overly strict liability, cannot be invoked for manufacturing defects.

¹⁰⁰² It is perhaps more useful, at least in the context of harmonised product liability, to perceive information defects just as a subset of design defects. This would fit with some of the main observations this dissertation makes relating to the relationship between the defect typology and the PLD (see in addition to this section e.g. also the subsidiary role of information to design in the ‘safety hierarchy’ discussed *infra* nr. 182 and the relationship between the typology and the posteriority defence discussed *infra* nr. 241).

a violation.¹⁰⁰³ Second, other than costs of investing in manufacturing quality,¹⁰⁰⁴ there are no obvious public policy drawbacks to additional efforts to reduce manufacturing defects.

In comparison, design and information defect cases do not inherently have a similarly objective standard as the intended product design in manufacturing defect cases. Accident risks can be intrinsically connected with a product's nature, meaning that reducing those, diminishes the product's utility. Or even other policy considerations than product performance during use and safety might be at stake, such as product durability and repairability. Furthermore, an alternative product design might only be safer in some regards, but not in others. Moreover, additional, clearer consumer information is not always conducive to safety and is often only a substitute for a safer design. This complexity of design and information defects is explored throughout this dissertation (see illustrations *infra* nrs. 182-183, 232, 236, 259 and 379-399). The bottom line is that a design defect implies that a product should have had, according to a fault-based standard of reasonable care, an alternative design, just like an information defect implies that a product should have been accompanied by different information, according to a similar fault-based standard.¹⁰⁰⁵

This differentiation in liability assessment on the basis of the threefold¹⁰⁰⁶ defect typology, to which I fully subscribe, has by now been observed by several scholars of harmonised product liability law.¹⁰⁰⁷ It is further supported by the fact that a similar distinction is also identified

¹⁰⁰³ E.g., Howells, 'strict liability', nr. 4.174: "It could be argued that it is an entirely legitimate expectations that all products offer the safety that would be expected of a product manufactured as intended."; J.-S. Borghetti, 'Taking EU Product Liability Law Seriously: How Can the Product Liability Directive Effectively Contribute to Consumer Protection?' (2023) 1 *French Journal of Legal Policy* 136, 173: "Manufacturing defects are typically proven by comparing the product that caused the damage with its intended design. The claimant thus does not have to demonstrate that the defendant breached a duty to behave in a certain way, meaning that liability for manufacturing defects is truly independent from fault, i.e. strict."

¹⁰⁰⁴ Hence, even for actually 'strict' liability for manufacturing defects, there remains from a social welfare (efficiency) perspective an underlying balancing of costs and benefits resulting in an 'optimal level of care' in terms of accident prevention. This confirms the economic analysis *supra* nr. 108.c.

¹⁰⁰⁵ See Howells, 'strict liability', nr. 4.175: "Product design often involves a range of factors [...]. The Consumer Protection Act 1987 does not impose liability for design choices that only prove to be unreasonable with the benefit of hindsight. [...] Design defects should either be left to negligence or defectiveness should adopt a reasonableness standard [...]."; J.-S. Borghetti, 'Taking EU Product Liability Law Seriously: How Can the Product Liability Directive Effectively Contribute to Consumer Protection?' (2023) 1 *French Journal of Legal Policy* 136, 173: "[...], proof of a design or instruction defect normally requires demonstrating that the product was not designed as it should have been or that the required information or instructions were not provided, i.e. that someone (though not necessarily the producer) did not behave as they should have and breached a duty to take reasonable care."

¹⁰⁰⁶ See *supra* nr. 7 on the defect typology. The fourth, main 'defect type' in the product liability context, liability for a violation of preventive or corrective 'post-marketing' obligations, is not of interest to harmonised product liability, which limits itself to the moment when a product is placed on the market or put into service (see *infra* nrs. 184 and 195). Nevertheless, this is now somewhat nuanced as a result of the new, limited exceptions to the posteriority defence of art. 11(2) PLD-2024 (see *infra* nrs. 196, 242, 248 and 413).

¹⁰⁰⁷ E.g., S. Whittaker, 'The EEC Directive on Product Liability' (1986) 5 *Yearbook of European Law* 233, 246 (very tentatively identifying manufacturing defect determinations as more strict and the design defect determination as more uncertain, open-ended); H. Kötz, 'Ist die Produkthaftung eine vom

in non-harmonised, national product liability theories, like extracontractual liability for fault and the so-called hidden defects guarantee in Belgian and French law. Also here, scholars observe that manufacturing defects generally result in a ‘stricter’ liability determination compared to design and warning defect, where liability tends to be based on less rigid, subjective considerations of reasonable care.¹⁰⁰⁸ When we additionally consider that the same distinction has already since many decades been generally accepted in US products liability,¹⁰⁰⁹ it

Verschulden unabhängige Haftung?’ in B. Pfister and M. Will (eds.), *Festschrift zum siebzigsten Geburtstag von Werner Lorenz* (Mohr Siebeck 1991) 109-122; Borghetti, *La responsabilité du fait des produits*, 545-554 (collecting many illustrations in national case law based on the PLD-1985); S. Lierman, *Voorzorg, preventie en aansprakelijkheid* (Intersentia 2004) 378-380; E. Büyüksagis, *La notion de défaut dans la responsabilité du fait des produits* (Schulthess 2005) 299-370; Howells, ‘strict liability’, nrs. 4.174-4.175; L.M. Kheir Bek, *Les fonctions de la responsabilité du fait des produits défectueux: Entre réparation et prévention* (PUAM 2011) 259-266; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 134-136; T. Verheyen, *Eenzijdige beheersing van het aansprakelijkheidsrisico: Over waarschuwingen, instructies, disclaimers en andere technieken tot eenzijdige exoneration* (Intersentia 2021) 575; J.-S. Borghetti, ‘Taking EU Product Liability Law Seriously: How Can the Product Liability Directive Effectively Contribute to Consumer Protection?’ (2023) 1 *French Journal of Legal Policy* 136, 173. See also Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § ProdHaftG, nr. 27 (listing German authors who subscribe to this distinction based on the defect typology, in addition to alternative views); E. Rajneri, ‘La notion de défectuosité du produit dans les jurisprudences des pays européens’ (2015) 67 *Revue Internationale de Droit Comparé* 185, 199-205 (largely following this distinction based on the defect typology; the way in which her analysis is different has already been discussed *supra* footnote 1001).

¹⁰⁰⁸ E.g., **BELGIUM:** Cousy, *Problemen van produktenaansprakelijkheid*, 293-296; H. Bocken, ‘Buitencontractuele aansprakelijkheid voor gebrekkige producten’ in X. (ed.), *Bijzondere overeenkomsten*. PUC W. Delva nr. 34 (Kluwer 2008) 346: “Vooraf bij schade door fabricagegebreken komt de rechtspraak de benadeelde ter hulp door een aansprakelijkheids criterium te hanteren dat meer aansluit bij een objectieve aansprakelijkheid dan bij de foutaansprakelijkheid, zij het dat de terminologie van deze laatste meestal gerespecteerd wordt. Voor schade door gebreken in het ontwerp van het product of in de informatie die erover verstrekt werd, vinden wij een normalere toepassing van deze zorgvuldigheidsnorm terug in de rechtspraak.” But see *infra* nr. 208.b, in fine on how the Belgian product liability case law on an ‘objective fault’ still technically applies identically to all three defect types. **FRANCE:** Borghetti, *La responsabilité du fait des produits*, 345-348; L.M. Kheir Bek, *Les fonctions de la responsabilité du fait des produits défectueux: Entre réparation et prévention* (PUAM 2011) 69-77. **GERMANY:** *Produzentenhaftung* based on § 823(1) BGB is not completely strict for *Fabrikationsfehlern*, due to a rarely (mostly only in the food, biomedical and agricultural sector) granted exemption for outliers (*Ausreißer*), which are manufacturing defects which cannot be avoided by taking the best available but still reasonable precautions by a professional manufacturer (BGH 26 November 1968, VI ZR 212/66, BGHZ 51, *Juris*, nr. 37; BGH 3 June 1975, VI ZR 192/73, NJW 1975, 1827, *Juris*, nr. 26; BGH 9 May 1995, VI ZR 158/94, BGHZ 129, 353, *Juris*, nrs. 15-18; BGH 17 March 2009, VI ZR 176/08, NJW 2009, 1669, nr. 11). Other than that, *Fabrikationsfehlern* indeed result overall in a stricter liability determination than *Konstruktionsfehlern* (for which there is i.a. a development risk exemption) and *Instruktionsfehlern*, similar to the equally more traditionally fault-based liability based on § 823(1) BGB for post-marketing *Produktbeobachtungspflichten*. See Foerste, ‘2. Deliktische Haftung’, § 24, nrs. 69-386; Hager, Staudinger, ‘BGB § 823 E-I’, nrs. F12-F24; E. Van Gool, ‘Overview of German product liability law’ (2024) <<https://ssrn.com/abstract=4824956>>, 6-9.

¹⁰⁰⁹ See in particular the extensive case law discussed in the Reporter’s Notes accompanying § 2 Restatement (Third) of Torts: Products Liability. See also M. Geistfeld, *Principles of Products Liability* (3rd edn., Foundation Press 2020) 84-88, 115-130, 146-164; Frumer, Friedman and Sklare, *Products Liability*, Chapters 11-12; Owen and Davis, *Products Liability*, 4th edn., nrs. 7:2-7:16, 8:2-8:28, 9:2-9:30.

becomes clear that this is arguably not just a specific doctrinal approach but rather a factual reality which underlies product liability in general.

Additionally, many European scholars argue that the ‘strictness’ of harmonised product liability must be determined according to whether the ‘consumer expectations’ or ‘risk-utility’ test apply (see *infra* nrs. 179 et seq. on the defect requirement). They argue that manufacturing defects remain strictly evaluated according to the – in terms of outcomes generally stricter – consumer expectations test, while design and information defects would be evaluated according to the – in terms of outcomes more fault-based – risk-utility test.¹⁰¹⁰ However, the relationship between these two tests and especially the role of risk-utility balancing continues to be disputed in harmonised product liability law.¹⁰¹¹ Moreover, it is actually a matter of interpretation and the factual circumstances of a case whether consumer expectations effectively turn out to be stricter than risk-utility considerations.¹⁰¹² And the argument that also US strict products liability would evaluate manufacturing defects based on the consumer expectations test and design and information defects based on risk-utility, is admittedly true for the most part but nevertheless constitutes an imprecise generalization.¹⁰¹³ Without wading too far in this debate, this dissertation suggests *infra* nr. 179 to adopt instead a single, integrated defect assessment, which combines the two aforementioned tests. Namely, risk-utility considerations can be integrated into the overall, objective consumer expectations test of art. 6(1) PLD-1985 and art. 7(1) PLD-2024, because these provisions explicitly limit the relevant safety requirements to those which consumers (“a person”) are “entitled to expect”, which opens the door for risk-utility based considerations of public policy. This more refined understanding of a consumer expectations test objectified by risk-utility considerations, can then be applied to all types of product defects, which negates the aforementioned distinction

¹⁰¹⁰ See, e.g., S. Lierman, *Voorzorg, preventie en aansprakelijkheid* (Intersentia 2004) 379 (only explicitly connecting design defects with risk-utility); Howells, ‘strict liability’, nrs. 4.174, 4.178; Fairgrieve et al., ‘Product Liability Directive’, 53; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 134-136; T. Verheyen, *Eenzijdige beheersing van het aansprakelijkheidsrisico: Over waarschuwingen, instructies, disclaimers en andere technieken tot eenzijdige exoneration* (Intersentia 2021) 575. See also Fairgrieve and Goldberg, *Product Liability*, 3rd edn., 340-343.

¹⁰¹¹ Virtually all harmonised product liability literature cited in this section dwells to some extent on the distinction between a consumer expectations or a risk-utility test for the defect requirement. Some examples of case law which explicitly rejects a risk-utility test is cited *infra* footnote 1066.

¹⁰¹² Howells, ‘strict liability’, nrs. 4.150.

¹⁰¹³ The consumer expectations test remains in some States the sole test for strict products liability and in others different ‘hybrid’ combinations of both tests are applied to design defects, notwithstanding the fact that indeed in a majority of States risk-utility considerations now indeed dominate design defect case law. See § 2, Reporters’ Notes comments d) et seq. Restatement (Third) of Torts: Products Liability; D. Owen, *Products Liability Law* (4th edn., West 2022) 488, 494, 519-533. Most States seem to apply to information defects traditional negligence principles relating to reasonable (‘adequate’) warnings and avoid both the risk-utility and consumer expectations tests altogether, even when the cause of action is strict products liability in tort. See J. Henderson and A. Twerski, ‘Doctrinal Collapse in Products Liability: The Empty Shell of Failure to Warn’ (1990) 65 *N.Y.U. Law Review* 265, 269 (although they advocate for a risk-utility test under strict liability, these authors of the Third Restatement acknowledge the commonly perceived suitability of negligence for warning defect cases); D. Owen, *Products Liability Law* (4th edn., West 2022) 564-567.

tying each of the two separate tests to different defect types. In each case, also this single, integrated test continues to result in defect assessment outcomes which are overall stricter for manufacturing defects and overall more purely fault-based for design and information defects.

Finally, this dissertation highlights *infra* nrs. 241, 293, 325 and 415 how it is generally easier for defendants to successfully invoke the posteriority defence with regards to manufacturing defects than with regards to design and information defects. This is because the latter two defect types remain more easily identifiable as having been already present when the product was placed on the market or put into service, while virtually all cases of damage, tampering and other posterior defect causes present themselves as apparent manufacturing defects. To some extent, this offsets in practice the overall ‘stricter’ liability for manufacturing defects and overall ‘less strict’ liability for design and information defects. Nevertheless, the examination in these sections reveals at the same time that precisely in the context of circular strategies like reuse, repurposing, retransfers and repairs, this must in turn be nuanced again, because such strategies can also lay at the origin of ‘posterior’ design and information defects.

§ 2. Scope of application

175. *RATIONE MATERIAE* – EU harmonised product liability applies to product accidents caused by ‘products’, which are defined as movable goods, including movable goods incorporated into another movable or immovable good.¹⁰¹⁴ An abundance of literature has discussed whether and under which conditions immaterial goods or data and software can be qualified as products.¹⁰¹⁵ Since this is a question beyond this dissertation’s scope (see *supra* nr. 32), it suffices to point out that the PLD-1985 explicitly includes electricity in the definition of a product and the PLD-2024 proposes to add digital manufacturing files and software, which are considered products irrespective how they are supplied, stored or used.¹⁰¹⁶

In contrast, the CJEU has recently excluded printed information from the regime’s scope, not because it might be immaterial but because it constitutes a service (see for a more detailed

¹⁰¹⁴ Art. 2 PLD-1985; art. 4(1) PLD-2024.

¹⁰¹⁵ See *supra* footnote 216. Note that the limitation to material goods in the Belgian PLDI (art. 2, first section Wet Productaansprakelijkheid / Loi Responsabilité Produits; art. 6.42, first section CC BE) has no direct support in the PLD-1985 itself. Note also that, in contrast to actual immaterial goods like ideas and rights, digital data and software actually still have a material reality consisting of electrons on network and data storage infrastructure (E. Van Gool, J. De Bruyne and M. Fierens, ‘De regulering van artificiële intelligentie (deel 2): Een analyse van buitencontractuele aansprakelijkheid’ (2021) *Rechtskundig Weekblad* 1003, 1011).

¹⁰¹⁶ Art. 2 PLD-1985; art. 4(1) PLD-2024. See also recitals 13-16 PLD-2024.

analysis *infra* 347 and 402).¹⁰¹⁷ A recital of the PLD-2024 now subscribes to this view and generally excludes information, including digital information and software source code, from being qualified as a product.¹⁰¹⁸

This ties into harmonised product liability's relationship with services, which is particularly relevant for several circular strategies, like original and independent repair services and PSS. The CJEU has clarified in a number of decisions that defects in the provision of services are excluded from the Directive's scope but that products continue to be subject to the liability regime when they are used in the course of providing a service.¹⁰¹⁹ Liability for defects in the actual manner in which a service is provided, remains purely a matter of national law.¹⁰²⁰

176. *RATIONE PERSONAE*: PRIMARY LIABILITY BASED ON THE PLD-1985 – The PLD-1985 has a multi-layered personal scope of application, which consists of the various defendant qualifications discussed here together with some of the defences discussed *infra* nr. 193. The PLD-2024 introduces a multitude of changes in this area, which are outlined in the next section.

All these rules mostly concern the defendant's side, since the PLD-1985 traditionally did not directly restrict which plaintiffs can claim on its basis. This was only achieved indirectly, by substantially restricting the heads of damage that can be claimed, as examined *infra* nr. 190. Nevertheless, art. 5(1) PLD-2024 now states explicitly that only a “*natural person who suffers damage caused by a defective product (the ‘injured person’)* is entitled to compensation in accordance with this Directive.”¹⁰²¹ Additionally, also natural and legal persons succeeded or subrogated to the rights of those natural persons as well as those who represent them, can act as plaintiffs.¹⁰²² This aligns with the factual focus of this dissertation on products accidents caused by consumer goods (see *supra* nrs. 4 and 33).

- a. Characteristic of the PLD-1985 is how it, at the defendant's side, channels liability towards the ‘producer’ of a product, who is defined as “*the manufacturer of a finished product, the producer of any raw material or the manufacturer of a component part and any person who, by putting his name, trade mark or other distinguishing feature on the product*

¹⁰¹⁷ CJEU 10 June 2021, C-65/20, VI v. KRONE, ECLI:EU:C:2021:471, nrs. 24-42. See on how the CJEU introduces here the product-service distinction where past scholarly discussions and A-G. HOGAN's opinion where dominated by a more antiquated material-immaterial distinction E. Van Gool, ‘Over de verhouding van informatie tot het toepassingsgebied van de productaansprakelijkheidsrichtlijn’ (2021) *SEW: Tijdschrift voor Europees en Economisch Recht* 677, 679-681.

¹⁰¹⁸ Recital 13 PLD-2024.

¹⁰¹⁹ CJEU 10 May 2001, C-203/99, *Henning Veddfald*, ECLI:EU:C:2001:258, nrs. 11-12; CJEU 21 December 2011, C-495/10, *Thomas Dutrueux*, ECLI:EU:C:2011:869, nrs. 18-39; CJEU 10 June 2021, C-65/20, VI v. KRONE, ECLI:EU:C:2021:471, nrs. 36-38.

¹⁰²⁰ See also *supra* footnote 243 on the withdrawn Commission proposal for a general EU service liability directive. Services are only studied in this dissertation to the extent that they are a circular product redistribution or reproduction method (see *supra* nr. 35).

¹⁰²¹ See critically European Law Institute, *European Commission's Proposal for a Revised Product Liability Directive: Feedback of the European Law Institute* (2022) p. 15. Perhaps, this novel, explicit limitation of allowed plaintiffs is meant as an imprecise way to offset the extension of recoverable property damage to all mixed use products (see *infra* nr. 190.d).

¹⁰²² Art. 5(2) PLD-2024. See also arts. 1 and 6 *ibid*.

presents himself as its producer".¹⁰²³ The first part of this definition makes clear that not only the manufacturer of the final product can be held liable. If the defect is situated in a product component or raw material, it is additionally possible to directly claim against the producer¹⁰²⁴ of this component or material, who acted in the production phase as a supplier to the final product manufacturer.¹⁰²⁵ In the context of circular reproduction strategies like remanufacturing and re-use, this rule is of particular importance (see *infra* nrs. 356-358).

- b. The second part of art. 3(1) PLD-1985 concerns the so-called 'quasi-producer', who is sometimes also called the 'apparent producer' or 'self-branding'. In accordance with the authentic interpretation given to the progenitor of this provision in the Strasbourg Convention,¹⁰²⁶ the dominant view used to be that the affixing of a distinguishing feature should make the average consumer believe that the identified person is the actual manufacturer of the product, as discussed *infra* nr. 304. However, the CJEU seems to have upended this interpretation in a recent decision, through ruling that there is no requirement that the person who has affixed a distinguishing feature to the product, additionally presents himself as the product's producer in some other way.¹⁰²⁷ This seemingly very broad interpretation makes the risk of a 'quasi-producer' qualification even more relevant to circular redistribution and reproduction strategies (see e.g. *infra* nrs. 305 and 432). Yet, both for reasons of efficiency and corrective justice, this interpretation is questionable and should be corrected in the future (see *infra* nr. 306). Additionally, a quasi-producer of a component is liable for defects in the component,¹⁰²⁸ similar to the component's actual producer.
- c. If a product is imported – or, according to a majority view under the PLD-1985, reimported¹⁰²⁹ – in the EU for purposes of distribution in the course of a business, it is on the

¹⁰²³ Art. 3(1) PLD-1985.

¹⁰²⁴ Actually this can be any defendant in the upstream distribution chain of the component that has not yet been integrated in a final product and placed on the market or put into service, such as an importer, quasi-producer or supplier. Art. 8(1) PLD-2024 confirms this regarding all possible defendants qualifications subject to primary liability. This dissertation argues to interpret art. 8(3) *ibid.* *de lege lata* in a sufficiently flexible manner to allow that also an 'upstream mere intermediary supplier' of components becomes subject to a secondary liability for defects in those components, and to *de lege ferenda* amend art. 8(3) *ibid.* in order to clarify this. See *infra* nr. 359.

¹⁰²⁵ These upstream sub-producers benefit from a specific defence, as discussed *infra* nr. 79.

¹⁰²⁶ See Council of Europe, 'Explanatory Report to the European Convention on Products Liability in regard to Personal Injury and Death', 27 January 1977, *European Treaty Series* nr. 91, 9.

¹⁰²⁷ CJEU 7 July 2022, C-246/21, *Fennia v. Philips*, ECLI:EU:C:2022:536, nr. 38.

¹⁰²⁸ Taschner and Frietsch, *Kommentar*, 324. See also *infra* nr. 359.

¹⁰²⁹ If a product is produced in the EU, exported and then imported again, the majority view on the basis of the PLD-1985 was that the last importer can be held liable, although EU-based producer has been identified and may simultaneously be held liable. See Taschner and Frietsch, *Kommentar*, 331; Graf von Westphalen, '3. Produkthaftungsgesetz', § 49, nr. 60; M. Kruithof, 'Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?' in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 155; Verhoeven, *Productaansprakelijkheid en*

basis of art. 3(2) PLD-1985 not only¹⁰³⁰ possible to claim against any of the aforementioned parties but also against the product's 'importer', who is equated with a producer for the purposes of the Directive. This provision, which aims to ensure that parties are not disadvantaged when they have been injured by a product manufactured outside the EU, has obtained additional relevance in the context of e-commerce. Finally, the importer of a component is also liable for a defect in the component,¹⁰³¹ just like the component's (quasi-)producer.

177. *RATIONE PERSONAE*: SECONDARY LIABILITY BASED ON THE PLD-1985 – All the aforementioned parties are 'primary' responsible, since they can be held directly liable. In contrast, the 'supplier'¹⁰³² of a product is subject to 'secondary' liability. Only if the producer of a product cannot be identified and the supplier fails to inform¹⁰³³ the injured person within a 'reasonable

productveiligheid, 71; Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 4, nr. 45; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 4, nrs. 68, 84. Note that this was commonly rejected in Belgian case law and literature based on a statement in the parliamentary proceedings of the original Belgian PLDI. See *Memorie van toelichting bij het Wetsontwerp betreffende de aansprakelijkheid voor producten met gebreken*, *Parl. St.* Kamer 1989-1990, nr. 1262/001, 10; Bruxelles 16 January 2012, RGAR 2012, nr. 14.843, *TBBR* 2013, 428; N. Estienne, 'Les personnes responsables. Rapport belge' in GRERCA (ed.), *La responsabilité du fait des produits défectueux* (IRJS 2013) 71. Art. 8(1)c PLD-2024 now seems to, perhaps unintentionally, confirm the Belgian reading, by excluding a reimporter from liability. See *infra* nr. 178.c.

¹⁰³⁰ If private international law makes the PLDI applicable, it remains theoretically possible to claim on this basis against the third-country producer of a product that has been later imported into the EU by another party, notwithstanding the more convenient possibility to claim against the importer (and the manufacturer's authorised representative or fulfilment service provider based on the PLD-2024). See, e.g., Howells, 'strict liability', nr. 4.96; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 531; Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 4, nr. 42.

¹⁰³¹ Taschner and Frietsch, *Kommentar*, 328. See also *infra* nr. 359.

¹⁰³² If the supplier is a wholly-owned subsidiary of the producer, it is possible to consider that the producer has determined the supplier's activity of putting a product into circulation and that the supplier substitutes the producer, for example in court proceedings necessary to suspend the extinction of rights period of art. 11 PLD-1985 (CJEU 2 December 2009, C-358/08, *Aventis Pasteur v. OB*, ECLI:EU:C:2009:744, nrs. 51-63). The 'supplier' concept is further examined *infra* nrs. 300-301, 430 and 433.a.

¹⁰³³ Some national case law has specified that the information provided by the supplier should be sufficiently complete and exact, to allow the injured party to effectively identify and contact the producer or preceding supplier. E.g., BELGIUM: Mons 13 January 2012, *DCCR* 2013, 105, note S. Vandemaele. GERMANY: LG Lübeck 3 September 1991, 5 O 197/91, *VersR* 1993, 1282.

time¹⁰³⁴ of the identity of either the producer or of his own supplier, does it become possible based on art. 3(3) PLD-1985 to hold such supplier liable for damage caused by such an ‘anonymous product’.¹⁰³⁵ Additionally, if a product has been imported and the injured party understandably does not want to sue a producer outside the EU, the supplier can also based on art. 3(3) PLD-1985 be held liable if the product does not indicate the importer’s identity, and if the supplier fails to inform the injured person regarding the importer’s identity within a reasonable time.¹⁰³⁶ It is important to note that recent, more stringent general product safety ‘traceability’ requirements decrease the likelihood that products placed on the market in the future turn out to be ‘anonymous’ and that a supplier can therefore still be held liable (see *infra* nr. 281).

To exonerate himself, the supplier does not have to fulfil any other requirement than informing the injured party of the identity of one of these persons within this reasonable time period. The risk of insolvency of the identified party, that he no longer exists or that he can successfully defend himself against a product liability claim, rests with the plaintiff and is not borne by the supplier.¹⁰³⁷

Although disputed, it does in my opinion not matter that the product was not yet anonymous at the time of the supplier’s involvement and, for example, lost its identifications through subsequent wear and tear or as a result of the accident. The product’s anonymous nature vis à vis the injured party at the time of the accident is relevant (see also *infra* nr. 302).

¹⁰³⁴ Various implementing legislations have further detailed this period. *E.g.* FRANCE: 3 months after receiving the injured party’s request (art. 1245-6 CC FR). GERMANY: 1 month after receiving the injured party’s request (§ 4(3) Produkthaftungsgesetz). BELGIUM: Art. 6.44, 2nd section CC BE merely reiterates the requirement of a ‘reasonable period’. Nevertheless, Belgian courts seem to also consider the time when the injured party communicates to the supplier his request based on 3(3) PLD-1985 as the starting moment (Brussel 30 juli 2019, *NJW* 2020, 269, 270, note J. Werbrouck). SEE ALSO: The CJEU holds that “*within a reasonable period*” means that the supplier has to inform the injured party “*on its own initiative and promptly*”, which should be determined by the national judge in light of the circumstances of the case (CJEU 2 December 2009, C-358/08, *Aventis Pasteur v. OB*, ECLI:EU:C:2009:744, nrs. 58-59). Additional examples of diverging national implementations of ‘within a reasonable period’ are discussed in C. Hodges, ‘Product liability of suppliers: the notification trap’ (2002) 27 *European Law Review* 758, 761-762. See also *infra* nr. 178.d on art. 8(3) PLD-2024.

¹⁰³⁵ See on the aim of protecting injured parties against ‘anonymous products’ PLD Explanatory Memorandum 1976, nr. 9; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 533-534.

¹⁰³⁶ See Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 535.

¹⁰³⁷ Taschner and Frietsch, *Kommentar*, 336; Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 49, nr. 107; M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 158; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 76; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 4, nr. 61; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 4, nr. 112

There is furthermore some uncertainty on which primary responsible parties are included in the second¹⁰³⁸ reference in art. 3(3) PLD-1985 to “*the producer*”. It is almost never confirmed explicitly that the supplier can exonerate himself by identifying the quasi-producer,¹⁰³⁹ but this can in my opinion be assumed in light of art. 3(1) PLD-1985 (but see *infra* nr. 178.d). Most of the sources that are explicit on the matter, simply state that it suffices for the supplier to identify the producer or importer.¹⁰⁴⁰ Given the structure of art. 3(3) PLD-1985, it is unclear whether this means that the supplier can simply identify the importer when the latter has already been identified on an imported product, when the injured party would actually want to claim against the unknown producer. Some German authors hold that only identifying the actual manufacturer can suffice for the supplier’s exoneration,¹⁰⁴¹ although this appears in my opinion contrary to the PLD-1985’s equalization of producer and importer and its aim of providing to the injured party a defendant within the EU.¹⁰⁴² Identifying only a component producer, is rejected, because this party is only potentially (see *infra* nr. 201) liable for defects in his particular components and suppliers should only be exempted from their secondary liability when they refer the injured party to a person who can be held liable for the entire product.¹⁰⁴³ Finally, a few English authors appear to consider that the injured party can determine in his request which primary parties he wants to have identified and that this would then determine the supplier’s requirement to be exempted from liability,¹⁰⁴⁴ which is in my opinion incorrect because the supplier can exempt himself by choosing whether he identifies the producer, importer or quasi-producer, if he is aware of their identity. Regardless of this interpretative issue, the Directive explicitly accepts that the supplier identifies his own supplier, which is often the easiest method of exoneration for suppliers of ‘anonymous products’.

¹⁰³⁸ This summary only discusses the reference to “*producer*” in art. 3(3) PLD-1985 that determines the supplier’s exculpation and is more significant in practice. However, there is also uncertainty whether quasi-producers, component producers or importers are included in the first reference to “*producer*” in art. 3(3) PLD, which determines whether “*the producer cannot be identified*” and the plaintiff can therefore turn to the supplier to begin with. See for an analysis of this second issue based on the PLD-1985 Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 49, nrs. 81-91. This issue is now clarified by art. 8(3) PLD-2024.

¹⁰³⁹ See for confirmations D. Fairgrieve and R. Goldberg, *Product Liability* (3rd edn., Oxford University Press 2020) nr. 9.120; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 4, nr. 59; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 4, nr. 104.

¹⁰⁴⁰ E.g., Mons 13 January 2012, DCCR 2013, 105, note S. Vandemaele; B. Dubuisson et al., *La responsabilité civile. Chronique de jurisprudence 1996-2007, vol 1, Le fait générateur et le lien causal* (Larcier 2009) 269; Artigot-Golobardes, ‘Beyond European Product Liability’, 68; Delforge, ‘Le défaut de sécurité au sens de la loi du 25 février 1991’, 349; Fairgrieve et al., ‘Product Liability Directive’, 69; D. Fairgrieve and R. Goldberg, *Product Liability* (3rd edn., Oxford University Press 2020) nr. 9.120; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 4, nrs. 57, 59.

¹⁰⁴¹ Taschner and Frietsch, *Kommentar*, 333; Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 49, nr. 98; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3605, 27, 29.

¹⁰⁴² See also P. Ehring, ‘§ 4 ProdHaftG’ in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 42.

¹⁰⁴³ Taschner and Frietsch, *Kommentar*, 334; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 4, nrs. 55, 57; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 4, nr. 113.

¹⁰⁴⁴ Howells, ‘strict liability’, 315-317; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., 236.

Finally, this dissertation argues *infra* nr. 359 that the secondary liability mechanism should also be extended to suppliers of components, including suppliers of products that are later re-used for components in (re)manufacturing. Moreover, *infra* nr. 301 some additionally niche theoretical questions relating to the secondary liability of suppliers are addressed which become particularly pronounced in more complex chains of second-hand product re-distribution.

178. *RATIONE PERSONAE*: PLD-2024 – The new Directive preserves the basic structure of the PLD-1985's personal scope of application.¹⁰⁴⁵ Nevertheless, it also introduces several novelties. Most of these result from the goal of streamlining EU harmonised product liability with concepts and definitions used in EU product regulation, in particular the General Product Safety Regulation 2023/988/EU (see *supra* nr. 25.c). Additionally, two of those novelties relate to goals of the PLD-2024 that have been implemented relatively late during the legislative process, namely to reduce frictions between harmonised product liability law, on the one hand, and repair activities and platform-based product distribution, on the other hand (see *supra* nr. 25.b-c).

- a. First of all, as already discussed *supra* nr. 176, art. 5 PLD-2024 explicitly limits the category of possible plaintiffs to natural persons injured in a product accident, persons who succeeded or subrogated to those claims of natural persons or the legal representatives of those natural persons.
- b. Second, art. 4(10) PLD-2024 replaces the term 'producer' with 'manufacturer' and defines the new key concept as "*any natural or legal person who (a) develops, manufactures or produces a product; (b) has a product designed or manufactured, or who, by putting their name, trademark or other distinguishing features on that product, presents themselves as its manufacturer; or (c) develops, manufactures or produces a product for that person's own use;*". Note that in the original proposal by the Commission, the new definition contained a different description of what could now be described as a 'quasi-manufacturer' or 'apparent manufacturer',¹⁰⁴⁶ but the final adopted text reverts back to a similar description as art. 3(1) PLD-1985. As discussed in more detail *infra* nr. 306, this does not help to solve the uncertainty created by the recent CJEU case law in relation to this last provision. Art. 4(10)c PLD-2024 furthermore recognizes as 'manufacturers', persons who produce products for their own use. This can be somewhat surprising because this is absent in the definition of manufacturer in art. 3(8) General Product Safety Regulation 2023/988/EU. Nevertheless, this is a necessary addition due to the fact that the new harmonised product liability regime is not limited to products that have been 'placed on the market' but also encompasses products that have been 'put into service',¹⁰⁴⁷ which is a concept that is absent in the General Product Safety Regulation 2023/988/EU but is

¹⁰⁴⁵ See arts. 4(10)(12)(14) and 8(1)a-c(i)(3).

¹⁰⁴⁶ Art. 4(11) in Commission, 'Proposal for a Directive of the European Parliament and of the Council on liability for defective products' COM(2022) 495 final.

¹⁰⁴⁷ Arts. 2(1), 4(9)(18) PLD-2024.

used in certain vertical EU product regulations.¹⁰⁴⁸ Consequently, products manufactured by a person and personally used in the course of a commercial activity (see also *supra* nr. 198 in relation to prosumers), are now also subject to harmonised product liability, as explicitly stated by arts. 4(9)-(10)c PLD-2024.¹⁰⁴⁹

- c. The ‘importer’ concept remains unchanged and its new definition in art. 4(12) PLD-2024 is unlikely to bring any change compared with how it is already applied on the basis of the PLD-1985. However, the explicit requirement in art. 8(1)c PLD-2024 that the importer is only liable if “*the manufacturer [...] is established outside the Union*”, overturns the liability for reimporting a product into the EU, which is mostly accepted on the basis of current law.¹⁰⁵⁰ The concept of an ‘authorised representative’ is a novelty in harmonised product liability and defined by art. 4(11) PLD-2024 as “*any natural or legal person established within the Union that has received a written mandate from a manufacturer to act on its behalf in relation to specified tasks*”. If he is present, the manufacturer’s authorised representative is according to art. 8(1)c(ii) PLD-2024 subject to the same liability as the importer.¹⁰⁵¹
- d. The term ‘supplier’ is replaced with ‘distributor’, which is now defined as “*any natural or legal person in the supply chain that makes a product available on the market, other than the manufacturer or importer of that product*,”.¹⁰⁵² Art. 8(3)a PLD-2024 now clarifies¹⁰⁵³ that the plaintiff can only turn to the distributor “*where an economic operator from among those referred to in paragraph 1 and established in the Union cannot be identified*”, which refers to all potential primarily liable defendants except the new substantial product modifier liable based on art. 8(2) PLD-2024. Furthermore, art. 8(3)b PLD-2024 now provides more uniformity across the EU by explicitly stipulating that the distributor must identify either his own distributor or one of the aforementioned defendants subject to primary liability “*within one month of receiving the request*”. Failing to adequately fulfil the identification requirement within that time period, irrevocably leads to secondary liability, even if in the concrete circumstance of a case a longer time period would have been ‘reasonable’ under art. 3(3) PLD-1985 (cf. *supra* nr. 177).

¹⁰⁴⁸ See, e.g., Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 23: “*The concept is used, for example, in the field of Lifts, Machinery, Radio equipment, Measuring instruments, Medical devices, in vitro diagnostic medical devices or products covered by the EMC or ATEX-Directives, in addition to placing on the market, and results in the scope of Union harmonisation legislation being extended beyond the moment of making available of a product.*”

¹⁰⁴⁹ Art. 4(9) PLD-2024: “*‘putting into service’ means the first use of a product in the Union in the course of a commercial activity, whether in return for payment or free of charge, in circumstances in which that product has not been placed on the market prior to its first use;*” Art. 4(10)c *ibid.*: “*‘manufacturer’ means any natural or legal person who: [...] (c) develops, manufactures or produces a product for that person’s own use;*”. See also art. 2(1) *ibid.*

¹⁰⁵⁰ See sources cited *supra* footnote 1029.

¹⁰⁵¹ Hence, an importer or authorised representative cannot be held liable if a product is manufactured inside the EU, exported and then imported again. See also *infra* nr. 298.a.

¹⁰⁵² Art. 4(14) PLD-2024.

¹⁰⁵³ See *supra* footnote 1038 on the uncertainty regarding when a plaintiff can turn to the supplier under the PLD-1985.

- e. Art. 8(4) PLD-2024 introduces a rule that can lead to imposing the same secondary liability as product distributors on online platforms that facilitate the conclusion of distance contracts between consumers and the actual product distributors. This occurs when the platform makes an average consumer believe pursuant to art. 6(3) of the new Digital Services Act that he transacts with the platform itself or with an entity which is under the platform's authority or control. This settles the debate whether and under which circumstances operators of platforms used to distribute harmful products, can be held liable on the basis of harmonised product liability. Additionally, art. 8(1)c(iii) PLD-2024 provides that in cases where no primary responsible party is established in the EU and a fulfilment service provider intervenes to deliver an imported product, this last person can be subject to primary liability. This provision is introduced to address the risk of EU consumers purchasing non-EU products via foreign webstores and online marketplaces, where they themselves actually import these products into the EU and the fulfilment service operator merely acts as an agent for transportation services.
- f. Finally, art. 8(2) PLD-2024 now imposes primary liability on persons who have outside the manufacturer's control 'substantially modified' a product that has already been placed on the market or put into service. As a result of amendments proposed by both the EU Council and the Parliament to the original Commission proposal,¹⁰⁵⁴ and as inspired by art. 13(3) General Product Safety Regulation 2023/988/EU, a more detailed definition of what concretely entails a 'substantial modification', is now provided in art. 4(18) PLD-2024 (see *infra* nrs. 444-446). Additionally, also as a result of a Council amendment,¹⁰⁵⁵ art. 8(2) PLD-2024 now explicitly confirms that such liability is only imposed if the substantially modified product is subsequently either put into service or made available on the market by the same person. This new, partial solution to issues surrounding repair and other potential modifications of existing products, is examined more in-depth in the Chapter on repairs and refurbishments.

¹⁰⁵⁴ Art. 10a amended draft PLD-Proposal-2022 in EU Council, 'Mandate for negotiations with the European Parliament on Proposal for a Directive of the European Parliament and of the Council on liability for defective products' 2022/0302(COD), 15 June 2023; art. 17(b) amended draft PLD-Proposal-2022 in EU Parliament, 'Report of 12 October 2023 on the proposal for a directive of the European Parliament and of the Council on liability for defective products' A9-0291/2023, 45.

¹⁰⁵⁵ Art. 7(4) amended draft PLD-Proposal-2022 in EU Council, 'Mandate for negotiations with the European Parliament on Proposal for a Directive of the European Parliament and of the Council on liability for defective products' 2022/0302(COD), 15 June 2023, 41.

§ 3. Liability requirements and remedies

a. Product defect

i. General principles

179. THE PRODUCT DEFECT REQUIREMENT – The characteristic requirement of ‘strict’ EU harmonised product liability, like its US counterpart, is that the plaintiff can suffice with proving that the product which caused the damage and for which the defendant can be held liable, was ‘defective’.¹⁰⁵⁶ The plaintiff does not have to prove the defect’s cause nor its anteriority to the moment when the defendant put the product into circulation, since the latter is presumed and the defendant has to prove instead as a defence that the defect originated after his involvement (see *infra* nr. 195). Based on art. 6(1) PLD-1985, a product is considered ‘defective’ “when it does not provide the safety which a person is entitled to expect”. Art. 7(1) PLD-2024 confirms this definition, although it adds as a seemingly separate ground of product defectiveness the violation of an EU or national product safety requirement. This second possibility is discussed separately in the next section. Here, it is worth raising a few general remarks regarding the traditional, pivotal definition of ‘product defectiveness’ cited above.

First of all, art. 6(1) PLD-1985 and art. 7(1) PLD-2024 make clear that the product ‘defect’ criterion is unconcerned with aspects of contractual conformity other than those relating to the safety of persons and other property.¹⁰⁵⁷ It therefore focuses solely on protecting against extrinsic damaging (*Integritätsinteresse*) and can be seen as a civil liability theory purely focused on ‘product liability’, according to this dissertation’s conceptualization (see *supra* nrs. 4-5).¹⁰⁵⁸

Second, this is an objective standard unconcerned with the individual knowledge, expectations and intentions of not only the defendant but also of the person injured in a particular case.¹⁰⁵⁹ The harmonised product liability defect concept fixates instead on “the safety which

¹⁰⁵⁶ Arts. 1 and 4 PLD-1985; arts. 1 and 5(1) PLD-2024.

¹⁰⁵⁷ PLD Explanatory Memorandum 1976, nr. 13; H.C. Taschner, ‘La future responsabilité du fait des produits défectueux dans la Communauté européenne’ (1986) *Revue du Marché Commun* 257, 260; A. Vignon-Barrault, ‘Le défaut. Rapport français’ in GRERCA (ed.), *La responsabilité du fait des produits défectueux* (IRJS 2013) 187-189; Delforge, ‘Le défaut de sécurité au sens de la loi du 25 février 1991’, 326; Fairgrieve et al., ‘Product Liability Directive’, 50-51; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 3, nr. 2.

¹⁰⁵⁸ See also Taschner and Frietsch, *Kommentar*, 262.

¹⁰⁵⁹ When a product is defective and the damage and causation requirements are also fulfilled, then the injured party’s individual conduct becomes nevertheless pertinent in the context of the contributory fault defence (see *infra* nr. 191).

the public at large is entitled to expect".¹⁰⁶⁰ Of course, to the extent that a product has a particular target group of users or a specific group of possibly vulnerable potential bystanders, then these factual circumstances determine the applicable safety expectations.¹⁰⁶¹ The fact that the product's target audience is theoretically only a supporting consideration for a single defect concept based on the safety expectations of the general public, is now explicitly confirmed by art. 7(2)h PLD-2024.¹⁰⁶²

Third, art. 6(1) PLD-1985 largely correspond with a 'consumer expectations' test,¹⁰⁶³ given that the perspective of the general public is considered rather than the perspective of experts who may have specialized knowledge or an overall public policy perspective that weighs overall societal costs and benefits. Nevertheless, this term is somewhat a misnomer since the interests of all members of the public potentially affected by the product have to be considered and not only the product's intended or actual consumers. The test therefore also includes other reasonably foreseeable users as well as potential bystanders who might be injured in a product accident.¹⁰⁶⁴ Especially this last category is theoretically significant, because diagonal claims by third parties are one of the key reasons why an extracontractual product liability theory is necessary as well as why it is generally efficient, in particular in a stricter variant.¹⁰⁶⁵

Moreover, this defect assessment based on consumer expectations must ultimately still consider 'risk-utility' policy considerations to some extent,¹⁰⁶⁶ which is the traditional alternative product defect test which approximates the economic 'efficiency' criterion employed in the

¹⁰⁶⁰ Recital 6 PLD-1985. See also A-G. Bot, opinion C-503/13 and C-504/13, 21 October 2014, ECLI:EU:C:2014:2306, nr. 29; H.C. Taschner, 'La future responsabilité du fait des produits défectueux dans la Communauté européenne' (1986) *Revue du Marché Commun* 257, 260; Howells, 'strict liability', nr. 4.154; Fairgrieve et al., 'Product Liability Directive', 51-52; Viney, Jourdain and Carval, *Les régimes spéciaux et l'assurance*, 4th edn., 37; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 223; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3604, 4; Bloch and Poumarède, 'L'indemnisation des victimes de produits', nr. 6313.42.

¹⁰⁶¹ E.g., CJEU 5 March 2015, C-503/13-C-504/13, *Boston Scientific*, ECLI:EU:C:2015:148, nr. 39. Some authors present this as an exception to the principle that a product defect is evaluated in light of the safety that the public at large is entitled to expect. In my opinion, however, this is rather a reflection of the fact that these legitimate safety expectations (of the general public at large) are concretely determined by the reasonably foreseeable use and the nature of the product in question (see *infra* nrs. 183 and 185 on these supporting defect assessment criteria). Society as a whole continues to have legitimate safety expectations regarding products that are mostly used or encountered by a particular subset of society.

¹⁰⁶² Art. 7(2)h PLD-2024: "In assessing the defectiveness of a product, all circumstances shall be taken into account, including: [...] (h) the specific needs of the group of users for whose use the product is intended;"

¹⁰⁶³ See Borghetti, *La responsabilité du fait des produits*, 433-436; Fairgrieve et al., 'Product Liability Directive', 51.

¹⁰⁶⁴ Howells, 'strict liability', nrs. 4.156-4.157; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3604, 6; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 3, nrs. 17-18, 61-2.

¹⁰⁶⁵ See *supra* nrs. 5, 106.b, 108.e, 110.a and 161.

¹⁰⁶⁶ But see as examples which quite explicitly reject a risk-benefit analysis (because it is less explicitly present in art. 6(1) PLD-1985 than the consumer expectations test and because harmonised product liability was traditionally claimed to be a completely strict liability) A-G. Bobek, opinion C-621/15, 7 March 2017, ECLI:EU:C:2017:176, nr. 87; Cass. FR civ. (1^{re} Ch.) 26 September 2012, nr. 11-17.738, *Bull.civ.* 2012, I, nr. 187, *D.* 2012, 2304, 2853, note J.-S. Borghetti; Cass. FR civ. (1^{re} Ch.) 10 July 2013, nr. 12-21.314, *Bull.civ.* 2013, I, nr. 157, *D.* 2013, 2306, 2312, note P. Brun, 2315, note J.-S. Borghetti.

previous Part of this dissertation to scrutinize the rules of product liability themselves (see *supra* nrs. 103 et seq.). This is because art. 6(1) PLD-1985 and art. 7(1) PLD-2024 do not require absolute safety but rather the legitimate expectations the public is “*entitled to expect*”, which signals room for public interest considerations as determined by a judge.¹⁰⁶⁷ The literature often calls this the ‘normative’ characteristic of the defect concept, but this is in my opinion a somewhat confusing label.¹⁰⁶⁸

In each case, determining what safety the public is “*entitled*” to, effectively necessitates a kind of peripheral ‘risk-utility’ balancing or rather a boundary in harmonised product liability’s consumer expectations test. The necessity of such a complement or corrective can be traced back to HUME’s problem that a normative value cannot be simply deduced from an empirical observation,¹⁰⁶⁹ meaning that we cannot simply establish the safety the public is “*entitled to expect*” from the safety it actually expects in practice.¹⁰⁷⁰ Additionally, it is worth noting that the ‘consumer expectation test’ is theoretically more inspired by contract and in particular sales law, while the ‘risk-utility’ test is theoretically closer to general extracontractual liability law.¹⁰⁷¹

Finally, while the product defect concept is abstract in nature, its appreciation is heavily determined by the particular circumstances of each individual case. The following Chapters of this dissertation offer several illustrations specific to the context of different circular strategies. Nevertheless, between the very abstract level of the general defect concept discussed

¹⁰⁶⁷ See S. Lierman, *Voorzorg, preventie en aansprakelijkheid* (Intersentia 2004) 368-369; Howells, ‘strict liability’, nrs. 4.149-4.151 and 4.178, 4.178; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 223-224; Wagner, *MüKo BGB, ‘Produkthaftungsgesetz’, § 3*, nrs. 6-7; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 3, nrs. 86-89; M. dos Santos Silva et al., ‘Relevance of Risk-benefit for Assessing Defectiveness of a Product: A Comparative Study of Thirteen European Legal Systems’ (2021) *European Review of Private Law* 91, 130-131; T. Verheyen, *Eenzijdige beheersing van het aansprakelijkheidsrisico: Over waarschuwingen, instructies, disclaimers en andere technieken tot eenzijdige exoneration* (Intersentia 2021) 575. But see A-G. Bobek, opinion C-621/15, 7 March 2017, ECLI:EU:C:2017:176, nr. 87.

¹⁰⁶⁸ See sources cited in the previous footnote. The reason why this is not an apt label to identify this particular characteristic of the harmonised product liability requirement, is because every liability standard is ‘normative’ in nature and still requires specification by a judge in each concrete case, including if the criterion would alternatively consist of ‘absolute safety’ or the unabated expectations of an individual consumer.

¹⁰⁶⁹ This is HUME’s famous ‘is-ought problem’, which he explores at length in Book III of his *A Treatise of Human Nature*. The core idea can be found in the following excerpt D. Hume, ‘A Treatise of Human Nature - Book 3: Of Morals - Part 1. Of Vice and Virtue in general - Section 2. Moral distinctions deriv’d from a moral sense’ *Hume Texts Online* (1740) <<https://davidhume.org/texts/t/3/1/2>> 475: “[...] nothing can be more unphilosophical than those systems, which assert, that virtue is the same with what is natural, and vice with what is unnatural. [...] ‘Tis impossible, therefore, that the character of natural and unnatural can ever, in any sense, mark the boundaries of vice and virtue.”

¹⁰⁷⁰ T. Verheyen, ‘On Behavioural Asymmetry in Product Liability Law: How Privatising Nudging Will Get European Product Liability Theory Back on Track’ (2021) 12 *Journal of European Tort Law* 40, 44.

¹⁰⁷¹ G. Howells, ‘Information and Product Liability - A Game of Russian Roulette?’ in G. Howells, A. Janssen and R. Schulze (eds.), *Information Rights and Obligations: A Challenge for Party Autonomy and Transactional Fairness* (Aldershot 2005) 156; T. Verheyen, *Eenzijdige beheersing van het aansprakelijkheidsrisico: Over waarschuwingen, instructies, disclaimers en andere technieken tot eenzijdige exoneration* (Intersentia 2021) 572. See also *supra* nr. 172 on the nature of harmonised product liability.

in this section and the case-specificity of applying it to particular product accident settings, there is also an intermediate level. This intermediate level are the recognized, partially codified ‘concrete defect assessment criteria’, which are outlined *infra* nrs. 181-188.

180. ART. 7(1) PLD-2024 SEEMS TO RECOGNIZE A VIOLATION OF A NATIONAL OR EU SAFETY REQUIREMENT AS AN AUTONOMOUS GROUND OF PRODUCT DEFECTIVENESS – The traditional defect concept of art. 6(1) PLD-1985, as discussed above, reconfirmed by art. 7(1) PLD-2024, which holds that “[a] product shall be considered defective if it does not provide the safety that a person is entitled to expect [...]”. However, as a result of an amendment proposed relatively late in the legislative process by the Parliament,¹⁰⁷² the final adopted version of this art. 7(1) PLD-2024 now adds “[...] or that is required under Union or national law.” This does not seem to be a merely superfluous reiteration of the aforementioned test of legitimate consumer expectations. Instead, art. 7(1) PLD-2024 seems to introduce an additional, separate ground of product defectiveness. Namely, when a product does not provide the safety required by EU or national product safety regulation or by other legal rules, it should be considered as automatically defective, even when it would hypothetically still provide the safety which the public is entitled to expect.

For Belgian and French lawyers, this is reminiscent of their dual understanding of the objective element of an extracontractual fault, which can consist either of conduct falling short of the general standard of care of a ‘normally prudent person’ or of a violation of a legal rule requiring specific conduct.¹⁰⁷³ Many other jurisdictions have in their extracontractual liability a similar ‘unitary theory’ where a violation of certain legal rules automatically qualifies as a fault (see also *infra* nr. 208.c), like the doctrine of ‘negligence per se’ in US tort law.¹⁰⁷⁴ New EU harmonised product liability now similarly seems to equate a violation of a product safety requirement with product defectiveness. Arguably, this does not make a huge difference in practice, since regulatory standards already constituted under the PLD-1985 an important yet not necessarily decisive indication of defectiveness (see *infra* nr. 187). Yet, as a separate

¹⁰⁷² Cf. art. 6(1) in Commission, ‘Proposal for a Directive of the European Parliament and of the Council on liability for defective products’ COM(2022) 495 final with art. 6(1) in amended draft PLD-Proposal-2022 in EU Parliament, ‘Report of 12 October 2023 on the proposal for a directive of the European Parliament and of the Council on liability for defective products’ A9-0291/2023, 47.

¹⁰⁷³ See BELGIUM: art. 6.6, § 1 CC BE; Cass. BE 22 September 1988, *Pas.* 1989, I, 83; Cass. BE 9 February 2017, C.13.0528.F, *JT* 2019, nr. 6756, 21, note F. Auvray; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 126; M. Kruithof, ‘Belgium’ in B. Weyts (ed.), *International Encyclopaedia of Laws: Tort Law* (Wolters Kluwer 2018) 45; Dubuisson et al., *Chronique de jurisprudence 2008-2020 – Volume 1*, 21, 55. See also *infra* nr. 208.c. FRANCE: G. Viney and P. Jourdain, *Les conditions de la responsabilité* (3rd edn., LGDJ 2006) 375-380; P. Jourdain, *Les principes de la responsabilité civile* (10th edn., Dalloz 2021) 47-52; J. Julien, P. Le Tourneau and M. Poumarède, ‘Titre 221 - Les régimes de responsabilité du fait personnel’ in P. Le Tourneau (ed.), *Droit de la responsabilité et des contrats – Régimes d’indemnisation* (13th edn., Dalloz 2023) nrs. 221.13, 221.05, 221.11. See also art. 1242 *Projet de réforme de la responsabilité civile* (Garde des sceaux 2017).

¹⁰⁷⁴ See § 288B(1) Restatement (Second) of Torts. See also, e.g., *le Couch v. Donahue*, 259 F.2d 325 (5th Cir. 1958) (Alabama law); *Hill v. London, Stetelman and Kirkwood, Inc.* 906F.2d 204 (5th Cir. 1990) (Mississippi law); M.S. Shapo, *Principles of Tort Law* (4th edn., West Academic 2016) 161-162; Owen and Davis, *Products Liability*, 4th edn., nrs. 2:17-2:19.

addition, such a ‘unitary approach’ undeniably facilitates the plaintiff’s burden of proof to establish a product defect somewhat and, in doing so, makes harmonised product liability marginally stricter in nature, which is overall more efficient (see *supra* nrs. 135-136). A unitary approach also seems to fit from a legal theoretical level even better with an overall stricter than with a more purely fault-based liability. Additionally, this novelty is undeniably another step in the convergence of product liability law and product safety regulation (see also *supra* nrs. 10.d-e and 25.c).

Nevertheless, it is important to realise that a purely ‘unitary’ approach where product defectiveness would hypothetically be solely determined by *ex ante* rules, would in an undesirable way make product liability much less flexible and arguably also less efficient. If harmonised product liability would rely exclusively on (an elaborate framework of) product safety regulation, it would lose its ‘enforcement costs advantage’, which is precisely in a circular consumption context even more significant (see *supra* nrs. 152-154). And if product safety rules would in such hypothetical scenario turn out to be incomplete or not require an optimal level of safety, which is to some extent unavoidable, in particular without incurring excessive administrative costs, then product liability would in those areas fail to offer its risk-allocation, accident-prevention and other benefits. It is therefore important that art. 7 PLD-2024 ensures that the traditional, open-ended product defect concept based on legitimate consumer expectations, continues to apply in parallel as a catch-all provision. This complementarity between both understandings of product defect can be effective at leveraging both complementarities and synergies between *ex post* product liability and *ex ante* product safety regulation (see *supra* nrs. 10 and 151-154).

Likely because this new, ‘unitary’ defect alternative was only at the eleventh hour inserted in current art. 7(1) PLD-2024, the consequences of this change seem to be not fully reflected in the rest of the adopted new Directive, which still contains slightly contradictory provisions from the original Commission proposal. Art. 7(2)f PLD-2024 refers to “*relevant product safety requirements, including safety-relevant cybersecurity requirements*” as a supporting, seemingly non-binding defect assessment criterion (see also *infra* nr. 187). Any violation of such requirements, at least those which are based on EU or national law and which require that a product provides a certain level of safety, should arguably already result automatically in a defect qualification based on art. 7(1) PLD-2024. And, perhaps more puzzlingly, art. 10(2)b PLD-2024 still creates a refutable presumption of defectiveness if a plaintiff can demonstrate “*that the product does not comply with mandatory product safety requirements laid down in Union law or national law that are intended to protect against the risk of the damage suffered by the injured person*” (see *infra* nr. 206.b).¹⁰⁷⁵ This last provision can only be still meaningfully understood in combination with art. 7(1) PLD-2024, as providing a refutable presumption in the rarer cases where a violated product safety rule does not require a certain level of substantive safety but imposes a procedural obligation, like a registration or ‘traceability’ requirement. However, precisely such requirements tend to not “*protect against the risk of the damage*” suffered by an injured party in a particular product accident, which makes them again irrelevant for the defect presumption of art. 10(2)b. Also art. 10(2)b PLD-2024 therefore seems to have become more or less redundant.

¹⁰⁷⁵ See also recital 34 PLD-2024.

An alternative interpretation would be to simply continue interpreting the new art. 7(1) PLD-2024 identically to how art. 6(1) PLD-1985 was previously understood (see *supra* nr. 179). However, this seems to go directly against the meaning of the added section in art. 7(1) of not providing “*the safety [...] that is required under Union or national law.*” It would make this amendment entirely meaningless. As discussed above, combining a unitary defect theory with a parallel application of the general, catch-all defect concept of art. 6(1) PLD-1985, is actually quite efficient. This dissertation thus chooses to interpret the new art. 7(1) at face value and accept that not providing the safety required by a product safety rule automatically leads to a defect qualification, while accepting that this makes arts. 7(2)f and 10(2)b PLD-2024 mostly meaningless.

ii. Concrete defect assessment criteria

181. NON-EXHAUSTIVE LIST OF CONCRETE DEFECT ASSESSMENT CRITERIA – Art. 6(1) PLD-1985 lists three non-exhaustive¹⁰⁷⁶ circumstances which should be taken into account, without them being necessarily decisive, when determining whether or not a product is defective. In practice, many other elements are additionally considered as part of this assessment. Art. 7(2) PLD-2024 considerably expands this list of supporting defect assessment criteria, although they clearly remain a non-exhaustive list of merely supporting criteria.¹⁰⁷⁷

182. THE PRODUCT’S PRESENTATION – FROM ‘AN EASY SOLUTION’ TO THE ‘SAFETY HIERARCHY’ – Art. 6(1)a PLD-1985 mentions as the first, more concrete, supporting defect assessment criterion “*the presentation of the product*”. Art. 7(2)a PLD-2024 further expands this to “*the presentation and the characteristics of the product, including its labelling, design, technical features, composition and packaging and the instructions for its assembly, installation, use and maintenance;*”. Courts indeed often afford particular importance to marketing content and the presence or absence of sufficient product use instructions and warnings. On the one hand, a finding that a product lacks or has insufficiently clear warnings or use instructions that would have avoided an accident risk or that a product bears information that turns out to be factually incorrect, often suffices for a qualification as a product defect.¹⁰⁷⁸ On the other hand, producers can often avoid that a product is deemed to be defective by providing sufficient and clear information to consumers.¹⁰⁷⁹ During many years, providing sufficient information to consumers was perceived as an easy way out for product designers which respected consumer autonomy.

¹⁰⁷⁶ Art. 6(1) PLD-1985 explicitly states “*taking all circumstances into account, including: [...]*”

¹⁰⁷⁷ Art. 7(2) PLD-2024 explicitly states “[...] *all circumstances shall be taken into account, including: [...]*” See also recitals 30-34 *ibid.*

¹⁰⁷⁸ See, e.g., **BELGIUM:** Liège 17 January 2013, *Con.M.* 2014, 81, note C. Delforge; Trib. Bruxelles 10 February 2005, *JLMB* 2006, 1193. **FRANCE:** Cass. FR civ. (1^{re} Ch.) 7 November 2006, nr. 05-11.604, *Bull.civ.* 2006, I, nr. 467; Cass. FR civ. (1^{re} Ch.) 9 July 2009, nr. 08-11.073, *Bull.civ.* 2009, I, nr. 176. **GERMANY:** OLG Düsseldorf 14 June 2002, 14 U 248/99, *RuS* 2004, 36, *Juris*; OLG Bamberg 26 October 2009, 4 U 250/08, *NJW-RR* 2010, 902, *Juris*.

¹⁰⁷⁹ See, e.g., if we limit ourselves to case law from **BELGIUM:** Antwerpen 4 december 2002, *T.Verz.* 2003, 833, 835-836; Antwerpen 26 September 2006, *RW* 2008-09, 618; Liège 25 October 2011, *RGAR* 2012, nr. 148.56, *Bull.ass.* 2013, 100; Liège 17 January 2013, *Rev.B.Domm.Corp.* 2014, 81, note C. Delforge.

Nevertheless, behavioural science proves that consumers overall have a limited ('bounded') cognitive capacity¹⁰⁸⁰ and therefore have limited capabilities to effectively perceive, process and act on warnings and use instructions relating to product accident risks,¹⁰⁸¹ in particular when they are unclear or too numerous. Indeed, especially for warnings, it is commonly accepted that there is a risk of 'overwarning',¹⁰⁸² which is harmful because it undermines not only the effectiveness of a redundant warning but also of more warranted warnings and use instructions for the same product that should receive the consumer's full attention. Recent scholarship is therefore increasingly cognizant that product information is only one of many criteria in the product defect assessment and cannot always suffice to ensure that a product is no longer defective.¹⁰⁸³ Overly relying on information provided to consumers also risks to conflate harmonised product liability with contractual liability, which has a different theoretical basis, which is not fixated on preventing or allocating risk relating to extrinsic damage and fails to overcome the 'privity problem' of actual product liability (see *supra* nrs. 5-6 and 172).

¹⁰⁸⁰ See *infra* footnote 2348 on 'dual-process theory', a framework from cognitive psychology which provides some understanding of the underlying reasons. See also *supra* footnotes 636-637 and 865 on other behavioural insights, showcasing how even attentive consumers will still rely on various, time-tested but imperfect heuristics and biases.

¹⁰⁸¹ See H. Latin, 'Good Warnings, Bad Products, and Cognitive Limitations' (1994) 41 *UCLA Law Review* 1193, 1206-1257; J. Robbennolt and V. Hans, *The Psychology of Tort Law* (NYU Press 2016) 174-182. See also M. Lehto and G. Salvendy, 'Warnings: a supplement not a substitute for other approaches to safety' (1995) 38 *Ergonomics* 2155; D. Lucas, 'Warnings: Do they really make a difference?' (1999) 17 *Safety and Health Practitioner* 18; K. Viscusi and R. Zeckhauser, 'Hazard Communication: Warnings and Risk' (1996) 545 *Annals of the American Academy of Political and Social Science* 106; O. Ben-Shahar and C. Schneider, *More Than You Wanted to Know: The Failure of Mandated Disclosure* (Princeton University Press 2014).

¹⁰⁸² See in the literature on the PLD S. Pape, *Warnings and product liability: Lessons learned from cognitive psychology and ergonomics* (PhD, Erasmus Universiteit Rotterdam 2011) 222-224; T. Verheyen, 'Modern Theories of Product Warnings and European Product Liability Law' (2019) 15 *Utrecht Law Review* 44, 55; T. Verheyen, 'On Behavioural Asymmetry in Product Liability Law: How Privatising Nudging Will Get European Product Liability Theory Back on Track' (2021) 12 *Journal of European Tort Law* 40, 45-46. See also in the safety-literature from ergonomics and related sciences P. Frantz et al., 'Potential Problems Associated with Overusing Warnings' (1999) 43 *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* 916; K. Main and P. Darke, 'Crying Wolf or Ever Vigilant: Do Wide-Ranging Product Warnings Increase or Decrease Sensitivity to Other Product Warnings?' (2019) 39 *Journal of Public Policy & Marketing* 62; M. Wogalter, C. Mayhorn and K. Laughery, 'Warnings and hazard communications' in G. Salvendy and W. Karwowski (eds.), *Handbook of Human Factors and Ergonomics* (5th edn., Wiley 2021) <<https://doi.org/10.1002/9781119636113.ch24>> accessed 2024/01/26.

¹⁰⁸³ C. Delforge, 'Médicaments dangereux: qui est responsable de quels défauts?' (2014) 41 *Revue belge du dommage corporel et de médecine légale* 79, 100, 105; M. Bacache-Gibeili, *La responsabilité civile extracontractuelle* (3rd edn., Economica 2016) 894; Fairgrieve et al., 'Product Liability Directive', 58; T. Verheyen, 'Modern Theories of Product Warnings and European Product Liability Law' (2019) 15 *Utrecht Law Review* 44, 45-48, 55; G. Wagner, 'Produkthaftungsgesetz' in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 3, nr. 51. See also already Taschner and Frietsch, *Kommentar*, 274-275. See also the sources cited in the next footnote. *Contra* I. Lutte and J.-L. Fagnart, 'Livre 33bis' in X. (ed.), *Responsabilités. Traité théorique et pratique* (Kluwer 2020 update) 39.

In cases where a warning or use instructions fail to provide the necessary safety and an alternative design had clearly been a preferable option, national courts have started to apply this ‘behavioural turn’ and qualify a product as defective in spite of provided relevant warnings or use instructions.¹⁰⁸⁴ And, as a result of an amendment proposed by the Council,¹⁰⁸⁵ recital 31 of the PLD-2024 now explicitly validates this view, by confirming that “*warnings or other information provided with a product cannot by themselves make an otherwise defective product safe, since defectiveness is determined only by reference to the safety that the public at large is entitled to expect. Therefore, liability under this Directive cannot be circumvented simply by listing all conceivable side effects of a product.*”

Following the persuasive dissertation of PAPE,¹⁰⁸⁶ more and more literature on the PLD-1985 has in recent years in the same vein recognized that warnings and other product information should be considered as only one component of a ‘safety hierarchy’ or ‘hierarchy of controls’. This hierarchy roughly prioritizes a safer product design that completely eliminates risks, then pursues measures that mitigate remaining risks like blocking mechanisms, safety guards or isolation and only, as a measure of last resort, accepts reliance on use instructions,

¹⁰⁸⁴ E.g., when limiting to case law from BELGIUM: Cass. BE 26 September 2003, RW 2004-05, 22, note B. Weyts; *JLMB* 2004, 260; Antwerpen 28 October 2009, *TBBR* 2011, 381, note D. Verhoeven; Trib. Arlon 23 February 2006, *JLMB* 2006, 1205. GERMANY: In German case law, the priority of design over warnings is particularly well established in the more numerous decisions relating to *Produzentenhaftung* based on § 823(1) BGB, for which the PLDI is on this point interpreted similarly. See, e.g., BGH 16 June 2009, VI ZR 107/08, *BGHZ* 181, 253, *Juris*, nr. 23; BGH 27 September 1994, VI ZR 150/93, *NJW* 1994, 3349, *BB* 1994, 2307, *Juris*, nrs. 9, 21-23. See from the perspective of the PLDI Taschner and Frietsch, *Kommentar*, 274-275; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 3, nr. 39; G. Wagner, ‘Produkthaftungsgesetz’ in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 3, nr. 51. SEE ALSO: Although the CJEU itself has never ruled on limitations to consumer information in the context of the PLD, it is worth noting that it has in more recent decisions on unfair commercial practices abandoned the assumption that an average consumer is always fully capable of rationally processing and acting upon provided textual or numerical information. See ECJ 4 June 2015, C-195/14, *Teekanne*, ECLI:EU:C:2015:361; CJEU 26 October 2016, C-611/14, *Canal Digital Danmark*, ECLI:EU:C:2016:800. See also K. Purnhagen and H. Schebesta, ‘The Behaviour of the Average Consumer: A Little Less Normativity and a Little More Reality in the Court’s Case Law? Reflections on *Teekanne*’ (2016) 41 *European Law Review* 590; G. Straetmans, ‘Case *Canal Digital Danmark*: On misleading practices, the limitations of the communication medium used and the divergent levels of attention of consumers’ (2016) *Revue Européenne de Droit de la Consommation / Journal of European Consumer Law* 335, 335-341.

¹⁰⁸⁵ Recital 22a amended draft PLD-Proposal-2022 in EU Council, ‘Mandate for negotiations with the European Parliament on Proposal for a Directive of the European Parliament and of the Council on liability for defective products’ 2022/0302(COD), 15 June 2023, 14.

¹⁰⁸⁶ S. Pape, *Warnings and product liability: Lessons learned from cognitive psychology and ergonomics* (PhD, Erasmus Universiteit Rotterdam 2011).

warnings and other product information.¹⁰⁸⁷ The ‘safety hierarchy’ is a useful rule of thumb which can serve as a basic product safety guideline.¹⁰⁸⁸ Nevertheless, it should also again be nuanced since there are many situations where product information and warnings are effective and an alternative product design is simply unnecessary, situations where a combination of strategies is necessary to control complex risks as well as situations where eliminating or mitigating risks through product design alternatives are very costly compared to the resulting, marginal safety benefits or where those alternatives have significant, different drawbacks.¹⁰⁸⁹

In conclusion, it is necessary to concretely determine in each case whether a specific product design measure should have been prioritised instead of relying on information. This assessment must consider how effective particular warnings or use instructions are in practice for a specific product, as well as how they are concretely crafted and presented (see *infra* nr. 382 on adequate warnings). The ultimate touchstone is the behaviourally informed effectiveness of concrete product information in actually making a specific product safer, compared to an alternative like a safer design, which must ultimately also consider the feasibility and potential disadvantages of these options. This comes down to the risk-utility limitations which according to this dissertation must be read in the particular consumer expectation test of art. 6(1) PLD-1985 and art. 7(1) PLD-2024 (see *supra* nr. 179). In other words, pursuing safety through adequate product information rather than through an alternative, safer product design is acceptable if this aligns with the safety expectations the general public “is entitled to expect”.¹⁰⁹⁰ VERHEYEN presents a theoretically different but in terms of practical

¹⁰⁸⁷ See S. Pape, *Warnings and product liability: Lessons learned from cognitive psychology and ergonomics* (PhD, Erasmus Universiteit Rotterdam 2011) 233-236, 342-376; Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 48, nr. 52; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 172-174, 393-394; T. Verheyen, *Eenzijdige beheersing van het aansprakelijkheidsrisico: Over waarschuwingen, instructies, disclaimers en andere technieken tot eenzijdige exoneration* (Intersentia 2021) 607-610; G. Wagner, ‘Produkthaftungsgesetz’ in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 3, nr. 51. See also C. Hodges, *European Regulation of Consumer Product Safety* (Oxford University Press 2005) 117-118; G. Howells, ‘Information and Product Liability - A Game of Russian Roulette?’ in G. Howells, A. Janssen and R. Schulze (eds.), *Information Rights and Obligations: A Challenge for Party Autonomy and Transactional Fairness* (Aldershot 2005) 158-163; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., 423-425; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 3, nr. 39. The same principle is generally recognized already for a long time in German *Produzentenhaftung* based on § 823(1) BGB. See Foerste, ‘2. Deliktische Haftung’, § 30, 426-427; Wagner, *MüKo BGB*, ‘§ 823’, nr. 973; E. Van Gool, ‘Overview of German product liability law’ (2024) <<https://ssrn.com/abstract=4824956>> nr. 3.c.

¹⁰⁸⁸ M. Wogalter, ‘Hazard Analysis and Hazard-Control Hierarchy’ in M. Wogalter (ed.), *Forensic Human Factors & Ergonomics: Case Studies and Analyses* (CRC Press 2019) 26.

¹⁰⁸⁹ See R. Barnett, ‘On the Safety Hierarchy and Hierarchy of Controls’ (2020) 8 *American Journal of Mechanical Engineering* 61; K. Ross, ‘Navigating the ‘safety hierarchy’” In *Compliance Magazine* (2021) <<https://incompliancemag.com/article/navigating-the-safety-hierarchy>>.

¹⁰⁹⁰ S. Pape, *Warnings and product liability: Lessons learned from cognitive psychology and ergonomics* (PhD, Erasmus Universiteit Rotterdam 2011) 312: “In other words, with regard to the test to determine defectiveness for no-warning claims it should be permitted to include risk-utility factors that balance the costs of providing the warning that is missing against the utility of having the warning present.” See *ibid.*, 364-365,

outcomes arguably comparable approach as a ‘behavioural risk-utility test’, which informs risk-utility balancing with the aforementioned behavioural limitations of consumers.¹⁰⁹¹

183. THE PRODUCT’S REASONABLY FORESEEABLE USE – Second, art. 6(1)b PLD-1985 refers to “*the use to which it could reasonably be expected that the product would be put*”, which is rephrased in art. 7(2)b PLD-2024 as the “*reasonably foreseeable use of the product*”, for which a last-minute amendment to recital 46 provides some additional guidance.¹⁰⁹² Partially, this relates to the fact that the public’s legitimate safety expectations are to a large extent determined by the target group of users, such as professionals or children,¹⁰⁹³ which art. 7(2)h PLD-2024 now confirms separately (see also *supra* nr. 179). However, more generally, it is always necessary to consider the reasonably foreseeable use of a product in the broadest possible sense, including both actions and omissions by users and third parties as well as environmental conditions, when determining whether a product is defective when it was placed on the market or put into service (see for example *infra* nrs. 232, 256 and 373 relating to product durability, repurposing and repairability).

Particularly important for this project’s subject matter is the principle that legitimate safety expectations also encompass situations of product misuse, even recklessness, as long as such misuse was reasonably foreseeable. This is implied in recital 6 PLD-1985 and, as the result of

375-376; T. Verheyen, ‘Modern Theories of Product Warnings and European Product Liability Law’ (2019) 15 *Utrecht Law Review* 44, 51, 55. See also Fairgrieve et al., ‘Product Liability Directive’, 58.

¹⁰⁹¹ T. Verheyen, ‘On Behavioural Asymmetry in Product Liability Law: How Privatising Nudging Will Get European Product Liability Theory Back on Track’ (2021) 12 *Journal of European Tort Law* 40, 53-64. By cutting ties with the consumer expectations test, unlike the approach followed by this dissertation here and *supra* nr. 179, VERHEYEN’S ‘behavioural risk-utility test’ seems – strictly speaking – to require an amendment to art. 7(1) PLD-2024, which explicitly adopts the (legitimate) safety expectations of the public as a starting point.

¹⁰⁹² Recital 46 PLD-2024: “[...] Reasonably foreseeable use covers the use for which a product is intended in accordance with the information provided by the manufacturer or economic operator placing it on the market, the ordinary use as determined by the design and construction of the product, and use which can be reasonably foreseen where such use could result from lawful and readily predictable human behaviour.” Note that this recital seems specifically focused on the new defect presumption of art. 10(2)c *ibid.* relating to obvious product malfunctioning (see *infra* nr. 206.b) and might therefore not be entirely pertinent for the purposes of interpreting art. 7(2)b *ibid.*

¹⁰⁹³ E.g., CJEU 5 March 2015, C-503/13-C-504/13, *Boston Scientific*, ECLI:EU:C:2015:148, nrs. 38-39 (cardio-vascular patients).

another last-minute amendment, included in recital 31 PLD-2024.¹⁰⁹⁴ Also the literature¹⁰⁹⁵ and national case law¹⁰⁹⁶ emphasize that defectiveness can consist of a lack of safety with regards to reasonably foreseeable misuse. Finally, the criterion of reasonably foreseeable product (mis)use means that unintended but reasonably foreseeable users, like children, have to be considered as well.¹⁰⁹⁷

184. TIME WHEN PRODUCT WAS ‘PUT INTO CIRCULATION’ – As a third supporting defect assessment criterion, art. 6(1)c PLD-1985 mentions “*the time when the product was put into circulation*” and art. 6(2) PLD-1985 adds that a product “*shall not be considered defective for the sole reason that a better product is subsequently put into circulation.*” Consequently, whether a product is defective must be strictly assessed from the perspective of the time when the product was ‘put into circulation’ (see regarding this key concept *infra* nr. 194) and more recent scientific, economic or regulatory developments should be rejected.¹⁰⁹⁸

This also confirms that the PLD-1985 does not extend to liability for post-marketing obligations: conduct relating to a product after it has been put into circulation is not a matter of direct concern to EU harmonised product liability (see also *supra* nr. 7 and *infra* nrs. 213.d

¹⁰⁹⁴ Note that an explicit confirmation that “*reasonably foreseeable [...] misuse*” is a relevant criterion for assessing a product’s defectiveness was originally included not in a mere recital but in the operative part of art. 6(1)b in Commission, ‘Proposal for a Directive of the European Parliament and of the Council on liability for defective products’ COM(2022) 495 final. Nevertheless, this omission in the final adopted version of art. 7(2)b PLD-2024 does not seem to make an actual difference in light of the pre-existing interpretation of art. 6(1)b *juncto* recital 6 PLD-1985 as well as recital 31 PLD-2024.

¹⁰⁹⁵ See, e.g., H.C. Taschner, ‘La future responsabilité du fait des produits défectueux dans la Communauté européenne’ (1986) *Revue du Marché Commun* 257, 261; S. Whittaker, ‘The EEC Directive on Product Liability’ (1986) 5 *Yearbook of European Law* 233, 244; Taschner and Frietsch, *Kommentar*, 277-278; T. Vansweevelt, ‘De Wet van 25 februari 1991 inzake produktenaansprakelijkheid (deel 1)’ (1992) *Tijdschrift voor Belgisch Burgerlijk Recht* 94, 115-116; Howells, ‘strict liability’, nrs. 4.167, 4.186; Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 48, nrs. 53, 58; Delforge, ‘Le défaut de sécurité au sens de la loi du 25 février 1991’, 331; Fairgrieve et al., ‘Product Liability Directive’, 59; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 151-156; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3604, 15-17; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 11.60; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 3, nr. 59; J. Taeger, ‘§ 3 ProdHaftG’ in P. Ehrling and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 40; G. Wagner, ‘Produkthaftungsgesetz’ in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 3, nrs. 25-27.

¹⁰⁹⁶ See, e.g., when limiting ourselves to BELGIUM: Cass. BE 26 September 2003, RW 2004-05, 22, 23, note B. Weyts, *JLMB* 2004, 260; Antwerpen 28 October 2009, *TBBR* 2011, 381, 383-384, note D. Verhoeven (in this case, the conduct by a kid was qualified as reasonably foreseeable use rather than misuse); Trib. Bruxelles 23 January 2001, *RGAR* 2002, nr. 13513.

¹⁰⁹⁷ Verhoeven, *Productaansprakelijkheid en productveiligheid*, 150-151.

¹⁰⁹⁸ S. Lierman, *Voorzorg, preventie en aansprakelijkheid* (Intersentia 2004) 372-375; Fairgrieve et al., ‘Product Liability Directive’, 60-61; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 180-181; Viney, Jourdain and Carval, *Les régimes spéciaux et l’assurance*, 4th edn., 38; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3604, 17-18, 28.

and 195).¹⁰⁹⁹ Instead, traditional extracontractual liability for fault governs both in Belgium, France and Germany potential liability of producers and distributors relating to post-marketing obligations, such as monitoring product use, issuing warnings or organising a recall. For the concrete application of this fault-based liability, it is particularly relevant that EU product safety regulation imposes on ‘economic operators’ various preventive and corrective post-marketing requirement relating to products that have already been placed on the market or made available by them (see also *supra* nr. 10.a,d). Logically, such fault-based post-marketing liability falls outside the scope of the PLD’s maximum harmonisation, precisely because the defect assessment goes back and is limited to the moment of marketing, which is further safeguarded by the posteriority defence (see *infra* nr. 195). Additionally, fault-based liability relating to post-marketing preventive and corrective measures is fundamentally a different ground of liability than “*the defectiveness of a product as provided for in this Directive*”, which means that the rule on preservation of different national liability theories applies.¹¹⁰⁰

The new Directive largely maintains this fundamental distinction between harmonised product liability and non-harmonised post-marketing (fault-based) liability. This is demonstrated, among others, in art. 7(3) PLD-2024, which reconfirms the principle of art. 6(2) PLD-1985. However, the new Directive introduces a significant nuance, which comes to bear in art. 7(2)e PLD-2024. This defect assessment criterion, which is the successor to art. 6(1)c PLD, refers to “*the moment in time when the product was placed on the market or put into service or, where the manufacturer retains control over the product after that moment, the moment in time when the product left the control of the manufacturer;*”. ‘Placing on the market’ and ‘putting into service’ are simply the new, more refined concepts replacing ‘putting a product into circulation’,¹¹⁰¹ which originate from EU product regulation (see in particular *infra* nrs. 194 and 318). In contrast, ‘when the product left the control of the manufacturer’ is a potentially later moment in time, which therefore slightly expands harmonised product liability into the domain of post-marketing liability.

The potential scope of this new, pivotal ‘manufacturer’s control’ concept, which creates a significant theoretical expansion of harmonised product liability, is examined in more detail *infra* nrs. 402-404. Nevertheless, it is worth outlining here that this dissertation argues that it must be interpreted restrictively as only operationalizing the novel rules of art. 11(2)a-c PLD-2024’s ‘digital exception to the posteriority defence’¹¹⁰² and arts. 8(2) and 11(2)d PLD-2024’s primary liability of ‘substantial product modifiers’.¹¹⁰³ Note that it can nevertheless be interpreted much more broadly as a result of the relatively open-ended definition of the

¹⁰⁹⁹ M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 180; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3604, 11; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 3, nr. 112. See also CJEU 25 April 2002, C-52/00, *Commission v. France*, ECLI:EU:C:2002:252, nrs. 42-47 (the original French PLDI had incorrectly made the compliance and development risk defences conditional on respecting the post-marketing surveillance obligation of general product safety regulation).

¹¹⁰⁰ Art. 13 PLD-1985; art. 2(4)b PLD-2024. See also *supra* nr. 171.

¹¹⁰¹ Art. 4(8)-(9) PLD-2024.

¹¹⁰² See *infra* nrs. 195, 295 and 327.

¹¹⁰³ See *supra* nr. 178.f and *infra* nrs. 402-405, 435-436 and 447-448.

‘manufacturer’s control’ in art. 4(5) PLD-2024 (cf. *infra* nrs. 402-403). Furthermore, note that this temporal expansion of the harmonised product liability risk of defendants remains in practice mostly limited to cases of secondary liability or cases of non-substantial post-marketing modifications which occur within the manufacturer’s control. This is because the new Directive’s authors have seemingly forgotten to refer to ‘the time when the product left the control of the manufacturer’ in the new posteriority defence of art. 11(1)c PLD-2024 (see *infra* nr. 404).

185. THE PRODUCT’S NATURE – Another consideration, which is particularly important in practice but which is not listed explicitly in art. 6 PLD-1985 or in art. 7 PLD-2024,¹¹⁰⁴ is the particular nature of a product. This revolves around the fact that certain products are inherently more dangerous than others and that product dangerousness and defectiveness are not necessarily the same.¹¹⁰⁵ On the one hand, this criterion is especially relevant for products which are so obviously dangerous as a result of their main functions, like knives or cars, or products for which certain safety risks are unavoidable while the product is necessary from a risk-utility perspective, like certain pharmaceuticals. Such products cannot be considered defective solely because of their inherent dangerousness.¹¹⁰⁶ On the other hand, to the extent that a product creates more serious, numerous or unexpected accident risks, it becomes necessary to take more precautions through product design and product information (but see *supra* nr. 182) to avoid a qualification of product defectiveness.¹¹⁰⁷

Additionally, a product’s nature can in some circumstances not only influence the substantive defect assessment but also the evidence required for it, as illustrated in *Boston Scientific*. In this decision, the CJEU accepted proof that already destroyed cardiovascular devices had been defective on the basis of merely the risk of ‘potential defects’ had been established in other devices of the same manufacturing series. This was motivated by the ‘abnormal

¹¹⁰⁴ But see art. 7(2)a PLD-2024 (“[...] and the characteristics of the product, [...]”); recital 33 and art. 7(2)i PLD-2024 (“in the case of a product whose very purpose is to prevent damage, any failure of the product to fulfil that purpose”).

¹¹⁰⁵ See Howells, ‘strict liability’, nrs. 4.181-4.185; Delforge, ‘Le défaut de sécurité au sens de la loi du 25 février 1991’, 322-323; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 186-187; I. Lutte and J.-L. Fagnart, ‘Livre 33bis’ in X. (ed.), *Responsabilités. Traité théorique et pratique* (Kluwer 2020 update) nrs. 78-79; Bloch and Poumarède, ‘L’indemnisation des victimes de produits’, nr. 6313.31.

¹¹⁰⁶ E.g., **BELGIUM**: Liège 25 October 2011, *RGAR* 2012, nr. 148.56, *Bull.ass.* 2013, 100 (sewage unblocking product, for which product information warns about its particular potency and corresponding risks, is not defective simply because of the force of its chemical reaction); Antwerpen 25 april 2018, *TBBR* 2020, 185, *NJW* 2018, 589, note T. Verheyen (toxicity of product to protect wood against insects and rotting); I. Lutte and J.-L. Fagnart, ‘Livre 33bis’ in X. (ed.), *Responsabilités. Traité théorique et pratique* (Kluwer 2020 update) nrs. 78-79. **FRANCE**: Cass. FR civ. (1^{re} Ch.) 5 avril 2005, nr. 02-11.947, nr. 02-12.065, *Bull.civ.* 2005, I, nr. 173, 146, *D.* 2005, 2256, note P. Brun (pharmaceutical product cannot simply be considered defective based on its inherent risks); M. Bacache-Gibeili, *La responsabilité civile extracontractuelle* (3rd edn., Economica 2016) 888-889. **SEE ALSO**: Taschner and Frietsch, *Kommentar*, 281-282; Howells, ‘strict liability’, nrs. 4.181-4.185; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3604, 19; G. Wagner, ‘Produkthaftungsgesetz’ in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 3, nr. 20.

¹¹⁰⁷ See Verhoeven, *Productaansprakelijkheid en productveiligheid*, 187-188 (considering this as part of the core of the defect concept); Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3604, 21-22.

potential for damage’ of these products, which necessitated a precautionary removal,¹¹⁰⁸ in addition to the fact that other evidence relating to the potential defectiveness of these individual devices was no longer obtainable. While this decision was mostly a far-reaching illustration of the lack of complete harmonisation of the applicable rules of evidence (but see *infra* nrs. 205-206), recital 30 of the new Directive now explicitly affirms the *Boston Scientific* ruling.¹¹⁰⁹

The particular nature of a product must be theoretically distinguished from a criterion based on the ‘abnormal functioning’ or ‘malfunctioning’ of a product, which is employed by certain Belgian and French courts and scholars who are seemingly inspired by their national case law on *la responsabilité du fait des choses*.¹¹¹⁰ While the nature of a product itself is pertinent for establishing a defect on the basis of the PLDI, as discussed above, the mere fact that a product has been involved in an accident or the spectacular or curious manner in which a product has malfunctioned, can at best be considered as *prima facie* or circumstantial evidence of a defect (see *infra* nr. 189).¹¹¹¹ Art. 10(2)c PLD-2024 now introduces a refutable defect presumption for accidents caused by obvious product malfunctions “during reasonably foreseeable use or under ordinary circumstances” (see *infra* nr. 206). Such more indirect forms of evidence must not be fully equated with the substantive defect criterion itself, including the product’s nature.¹¹¹²

¹¹⁰⁸ CJEU 5 March 2015, C-503/13-C-504/13, *Boston Scientific*, ECLI:EU:C:2015:148, nr. 40. See also A-G. Bot, opinion C-503/13 and C-504/13, 21 October 2014, ECLI:EU:C:2014:2306, nr. 30: “[...] Accordingly, the lack of safety does not stem from the danger that may be posed by the use of the product, as a product may be dangerous even without having a safety defect, but from the abnormal potential for damage that the product could cause to the person or to the property of its user. [...]”

¹¹⁰⁹ Recital 30 PLD-2024: “[...] Some products, such as life-sustaining medical devices, entail an especially high risk of causing damage to people and therefore give rise to particularly high safety expectations. In order to take such expectations into account, it should be possible for a court to find that a product is defective without establishing its actual defectiveness, where it belongs to the same production series as a product already proven to be defective.”

¹¹¹⁰ E.g., BELGIUM: Antwerpen 10 January 2000, *NJW* 2000-2001, 471 (glass bottle breaking when opening); Trib. Namur 21 November 1996, *JLMB* 1997, 104 (exploding glass soda bottle); Trib. Arlon 23 February 2006, *JLMB* 2006, 1205; Delforge, ‘Le défaut de sécurité au sens de la loi du 25 février 1991’, 322; F. George, ‘La responsabilité du fait des produits défectueux’ in F. George and R. Jafferali (eds.), *Manuel de droit de la responsabilité civile* (Anthemis 2022) 524; Dubuisson et al., *Chronique de jurisprudence 2008-2020 – Volume 1*, 392. FRANCE: E. Rajneri, ‘La notion de défectuosité du produit dans les jurisprudences des pays européens’ (2015) 67 *Revue Internationale de Droit Comparé* 185, 195; Viney, Jourdain and Carval, *Les régimes spéciaux et l’assurance*, 4th edn., 35; Brun, *Responsabilité civile extracontractuelle*, 5th edn., 533; C. Caillé, ‘Responsabilité du fait des produits défectueux’ in X. (ed.), *Répertoire de droit civil* (Dalloz.fr 2018 update) nr. 53. **BUT SEE ALSO**: the case law *infra* footnote 1125.

¹¹¹¹ See also Verhoeven, *Productaansprakelijkheid en productveiligheid*, 190.

¹¹¹² See BELGIUM: Verhoeven, *Productaansprakelijkheid en productveiligheid*, 190. FRANCE: Cass. FR civ. (1^{re} Ch.) 5 avril 2005, nr. 02-11.947, nr. 02-12.065, *Bull.civ.* 2005, I, nr. 173, 146, *D.* 2005, 2256, note P. Brun; Cass. FR civ. (1^{re} Ch.) 22 May 2008, nr. 06-18.848, *RTD civ.* 2008, 492, note P. Jourdain; M. Bacache-Gibeili, *La responsabilité civile extracontractuelle* (3rd edn., Economica 2016) 888-889; Bloch and Pouma-rède, ‘L’indemnisation des victimes de produits’, nr. 6313.31.

186. THE PRODUCT'S PRICE? – In recent literature, mostly German authors also refer to a product's price as a relevant consideration.¹¹¹³ To the extent that this is a proxy for the aforementioned presentation or inherent nature of a product, it is indeed relevant (see e.g. *infra* nrs. 287-288 relating to second-hand goods).¹¹¹⁴ But as an independent criterion, it should in my opinion be rejected since the safety that the public is entitled to expect is a minimum level of safety which has to be met by all products placed on the market or put into service, rather than a luxury.¹¹¹⁵ Moreover, also a legal economic analysis seems to caution against a price criterion. First of all, third parties also have to be protected by strict EU product liability, while they do not benefit from a reduced price (see also *supra* nr. 106.b, *in fine*).¹¹¹⁶ Second, this approach actually consists of relying proportionately more on the market mechanism for accident-prevention, which operates based on the premise that consumers add higher expected accident costs to a product's purchase price. And specific theories of product liability, like the PLD, have from an economic perspective precisely been developed because consumers generally have limited information on product accident risks and face behavioural obstacles to successfully act on the product safety signal which a lower price might communicate (see *supra* nr. 108.b). And in a circular consumption context, these market forces are even weaker, even when we do not consider the proportional increase in third parties and limit ourselves to the perspective of consumers engaging in circular strategies (cf. *supra* nrs. 158-161). Moreover, it is incorrect to assume that higher prices directly correspond with higher product safety, given that so many different factors determine each of these features of a product.¹¹¹⁷

187. STATUTORY RULES, REGULATION AND STANDARDS – Another defect assessment criterion, which art. 6 PLD-1985 does not list but is very important in practice, consists of potential violations of relevant EU or national product safety rules and implementation standards.¹¹¹⁸ Art. 7(2)f-g PLD-2024 explicitly codifies this criterion, by referring to “*relevant product safety requirements, including safety-relevant cybersecurity requirements*” and “*any recall of the product or any other relevant intervention by a competent authority or by an economic operator as referred to in Article 8 relating to product safety*”, respectively. Such recalls or other corrective measures

¹¹¹³ E.g., Taschner and Frietsch, *Kommentar*, 282; Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 48, nrs. 28-29; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 3, nr. 31; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3604, 23-24. See also older Belgian, Dutch and English authors cited in Verhoeven, *Productaansprakelijkheid en productveiligheid*, footnote 1148.

¹¹¹⁴ See Verhoeven, *Productaansprakelijkheid en productveiligheid*, 184-185.

¹¹¹⁵ Tellingly, when discussing the consideration of a product's price, many of these German authors add that every product should also have ‘a minimum level of safety’ (*Basissicherheit*). E.g., Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 48, nrs. 29-30; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 3, nr. 88; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3604, 24.

¹¹¹⁶ Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 3, nr. 86.

¹¹¹⁷ See also Verhoeven, *Productaansprakelijkheid en productveiligheid*, 184-185.

¹¹¹⁸ See Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3604, 22-23; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 3, nr. 29; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 3, nrs. 94-96. Note also that harmonised standards merely provide a presumption of compliance with the actually binding safety rules (see *supra* nr. 12.a).

are normally required because a product is unsafe, which can relate to either purely post-marketing obligations or to the fact that a product was effectively already defective when it was placed on the market or put into service, which is decisive for liability based on the PLDI (see *supra* nr. 184 and *infra* nr. 195). Other forms of binding product regulation, like Ecodesign requirements in support of various circular strategies, can have a similar effect, as examined throughout this dissertation.¹¹¹⁹

The PLD-1985 did not equate a violation of (specific) statutory or regulatory provisions automatically with defectiveness. As a result, the role of product safety and other regulatory rules and standards was largely comparable to non-harmonised industry standards and other ‘soft law’, which are of course pertinent considerations to assess product defectiveness in practice but are far from automatically decisive.¹¹²⁰ Art. 7(2)f-g PLD-2024, which is part of a list of merely indicative, not necessarily decisive defect assessment criteria,¹¹²¹ seems to confirm this view together with art. 10(2)b PLD-2024, which provides a still refutable presumption of defectiveness if a product safety requirement has been violated which precisely protected against the occurring risk of damage.¹¹²²

However, the final adopted version of art. 7(1) PLD-2024 now upends this more nuanced view by declaring categorically that “[a] product shall be considered defective if it does not provide the safety [...] that is required under Union or national law.” As discussed *supra* nr. 180, this dissertation takes this provision at face value and accepts that under the new Directive, defectiveness is proven once it is established that a product has violated a binding rule of EU or national law which required the product to provide a certain level of safety. Consequently, such substantive product safety rules will now be decisive for future defect assessment and their effect is no longer comparable to merely indicative, non-binding standards and best practices.

At the other side of the spectrum, both binding and ‘soft law’ rules and standards can also be invoked by a defendant as evidence that the product he placed on the market or put into service effectively offered the safety that the public was entitled to expect. Both the PLD-1985¹¹²³ and the PLD-2024 afford to such regulatory compliance only an indicative value, which is in itself not necessarily sufficient to disprove a product’s alleged defectiveness (see also *supra* nr. 10.d). Only art. 7(d) PLD-1985 and art. 11(1)d PLD-2024 accept a very narrowly

¹¹¹⁹ See, e.g., *infra* nrs. 237, 251, 289 and 393 et seq.

¹¹²⁰ See Verhoeven, *Productaansprakelijkheid en productveiligheid*, 193-202; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., 364-366; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 3, nrs. 27-28.

¹¹²¹ See recital 34 PLD-2024: “[...] it should be clarified that relevant product safety requirements, including safety-relevant cybersecurity requirements, and interventions by competent authorities, such as issuing product recalls, or by economic operators themselves, should be taken into account in the assessment of defectiveness. Such interventions should, however, not in themselves create a presumption of defectiveness.”

¹¹²² See art. 10(5) *ibid.* See also on this defect presumption *infra* nr. 206.b.

¹¹²³ See, e.g., art. 1245-9 CC FR: “Le producteur peut être responsable du défaut alors même que le produit a été fabriqué dans le respect des règles de l’art ou de normes existantes ou qu’il a fait l’objet d’une autorisation administrative.” See also Borghetti, *La responsabilité du fait des produits*, 449; Howells, ‘strict liability’, nr. 4.172; Viney, Jourdain and Carval, *Les régimes spéciaux et l’assurance*, 4th edn., 39; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3604, 21; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., 361-363.

interpreted, fully exonerating ‘compliance defence’, for which a defendant must prove that the product defect which caused the damage is a direct consequence of compliance of the product with binding legal requirements (see *infra* nr. 198).

188. ADDITIONAL DEFECT ASSESSMENT CRITERIA LISTED IN ART. 7(2) PLD-2024 – In addition to the aforementioned criteria, art. 7(2) PLD-2024 includes a few more considerations in its still non-exhaustive¹¹²⁴ list.

Art. 7(2)c PLD-2024 refers to concerns about artificial intelligence and autonomous technologies, by explicitly listing “*the effect on the product of its ability to continue to learn or acquire new features after it is placed on the market or put into service*”.

Art. 7(2)d PLD-2024 identifies as another defect assessment criterion “*the reasonably foreseeable effect on the product of other products that can be expected to be used together with the product, including by means of interconnection*”. This similarly demonstrates the new Directive’s focus on new digital technologies, but it has also a broader potential relevance. Non-digital products like accessories and tools can equally determine the overall safety of a main product, which is examined in the repair context *infra* nrs. 389-392 and 399.

And art. 7(2)i PLD-2024 concludes the list by referring to “*in the case of a product whose very purpose is to prevent damage, any failure of the product to fulfil that purpose*”. This relates for example to a fire alarm which is insufficiently loud or reacts too late to increasing levels of smoke. Such product does not cause damage directly but indirectly by failing to provide its intended accident-prevention function. To strengthen the protection of injured parties, this new provision wants to short-circuit any discussion by explicitly confirming that such a failed function to prevent another accident constitutes in itself a product defect.

189. PROOF OF DEFECTIVENESS, PRODUCT MALFUNCTION – Although national law of evidence remains even under the new Directive overall relatively free to determine how the injured party can fulfil his burden of proving a product’s defective nature (see *infra* nrs. 205-206), national courts mostly require a direct, concrete proof of defectiveness. For example, the mere fact that a product caused a (spectacular) accident, is normally insufficient in itself although this might establish a beginning of proof.¹¹²⁵ Consequently, *prima facie* evidence is only accepted in case of compelling circumstances, such as an abnormal reaction of a product like an explosion or other malfunction without potential alternative causes or cases where a closer examination of such causes has become impossible,¹¹²⁶ the fact that a product accident occurs

¹¹²⁴ See *supra* footnotes 1076-1077.

¹¹²⁵ See BELGIUM: Trib. Com. Verviers 17 June 1997, *JLMB* 1997, 1430; Delforge, ‘Le défaut de sécurité au sens de la loi du 25 février 1991’, 332. FRANCE: Cass. FR civ. (1^{re} Ch.) 5 April 2005, nr. 02-11.947, nr. 02-12.065, *Bull.civ.* 2005, I, nr. 173; Cass. FR civ. (1^{re} Ch.) 22 October 2009, nr. 08-15.171, *Lexis360*, CCC 2010, nr. 61, note G. Raymond; CA Versailles 10 April 2012, nr. 10/05759, *Lexis360*. See in particular Cass. FR civ. (1^{re} Ch.) 29 May 2013, nr. 12-20.903, *Bull.civ.* 2013, I, nr. 116: “[...] la participation du produit à la survenance du dommage est un préalable implicite, nécessaire à l’exclusion éventuelle d’autres causes possibles de la maladie, pour la recherche de la défectuosité du produit et du rôle causal de cette défectuosité, sans pour autant que sa simple implication dans la réalisation du dommage suffise à établir son défaut au sens de l’article 1386-4 du code civil ni le lien de causalité entre ce défaut et le dommage [...]”. GERMANY: OLG Dresden 23 May 1996, 7 U 1317/95, *VersR* 1998, 59, *Juris*.

¹¹²⁶ See, e.g., *supra* nr. 185 on the case underlying the CJEU’s *Boston Scientific* decision.

immediately after the first use of a product or the fact that multiple accidents occur involving products from the same manufacturing batch or product design type.¹¹²⁷ As discussed further *infra* nr. 206.b, art. 10(2)c PLD-2024 now introduces for one of these instances a formal but still refutable defect presumption, namely when an accident is caused during an obvious product malfunction while the product was used under ordinary circumstances in a reasonably foreseeable manner.

b. Damage

190. DAMAGE – The PLD-2024 now recognizes only “*natural persons*” as plaintiffs as well as those who either succeeded or subrogated to their rights or act on their behalf (see *supra* nr. 176). The PLD-1985 did not include any such restrictions at the plaintiff-side, but achieved similar results through restricting the types of damage that can be claimed.¹¹²⁸ Now, the PLD-2024 also extends these same limitations relating to damage. Nevertheless, neither Directive regulates the concept of damage exhaustively. There are, for example, no rules at all regarding the precise assessment of damage or the precise method of reparation.¹¹²⁹ Instead, only a few, generally described heads of damage are recognised, which are importantly part of the maximum harmonisation pursued by both Directives.¹¹³⁰

In *Veedfald*, the CJEU specified that the latter means that Member States can determine their precise content but must ensure pursuant to the principle of effectiveness that “*full and proper compensation*” is available if someone is injured in respect of these heads of damage.¹¹³¹ Based on the *Leroy Somers* decision (see *supra* nr. 171), it still seems possible to claim on the basis of national product liability theories akin to the PLD-1985 totally different heads of damage than those recognized by the PLD, such as pure economic loss, damage to professional goods, damage to the defective product itself or damage either below the threshold or above the maximum cap of the PLD-1985. Despite a possible contrary interpretation of art. 3 *juncto* art. 6(3) PLD-2024, this dissertation argues *infra* nr. 219 that this principle of non-harmonisation of other heads of damage continues under the new Directive.

¹¹²⁷ E.g. **BELGIUM**: Trib. Namur 21 November 1996, *JLMB* 1997, 104. **FRANCE**: CA Nancy 8 April 2003, *JCP G* 2004, nr. 3038. **GERMANY**: OLG Frankfurt-am-Main 16 February 1995, 1 U 31/94, *NJW* 1995, 2498. See also regarding the German *Anscheinsbeweis* in this context E. Van Gool, ‘Overview of German product liability law’ (2024) <<https://ssrn.com/abstract=4824956>> nr. 22.

¹¹²⁸ This is another illustration of the dominance of German rather than French or Belgian law in the Directive’s genesis. See J.-S. Borghetti, ‘Le dommage réparable en matière de responsabilité du fait des produits défectueux’ (2008) *Recueil Dalloz* 2318, nr. 7.

¹¹²⁹ See recital 23 PLD-2024: “While Member States should provide for full and proper compensation for all material losses resulting from death or personal injury, or from damage to or destruction of property, including the destruction or corruption of data, the rules on calculating compensation should be laid down by Member States.” See also *infra* nr. 192 relating to the remedy a plaintiff can obtain.

¹¹³⁰ Markovits, *La Directive C.E.E. du 25 juillet 1985*, 235; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 226-227.

¹¹³¹ CJEU 10 May 2001, C-203/99, *Henning Veedfald*, ECLI:EU:C:2001:258, nr. 27. See also Verhoeven, *Productaansprakelijkheid en productveiligheid*, 227.

- a. A first head of damage recognized by art. 9(1)a PLD-1985, is “*damage caused by death or by personal injuries*”. As the Explanatory Memorandum confirms, this includes consequential damage such as support for relatives of the deceased, medical costs or loss of earning capacity.¹¹³² The CJEU held in *Boston Scientific* that this encompasses all costs necessary to eliminate harmful consequences and to restore the required level of safety, such as the costs of replacing a medical device through surgery.¹¹³³ There are no limitations to claims for death and personal injuries. Only art. 16(1) PLD-1985 offers Member States an implementation option to set a maximum of not less than 70 million ECU on the total liability of a producer for only this type of damage, if these personal injuries or death result from a single defect in one product or in identical products of a manufacturing series. A few Member States, among which Germany,¹¹³⁴ have implemented such an industry-friendly maximum cap but its precise application causes theoretical difficulties.¹¹³⁵ Nevertheless, this is no longer a concern under the new Directive due to the removal of this optional damage cap (see *infra* nr. 190.d).
- b. As a second head of damage, art. 9(1)b PLD-1985 recognizes destroyed or partially damaged ‘goods’¹¹³⁶ if a few conditions are met. It is assumed that consequential damage, which still consists of damage to existing goods, is also accepted here, similar to death and personal injuries.
- First, only damage to other goods than the defective ‘product’¹¹³⁷ itself (‘extrinsic damage’) can be claimed, which confirms EU harmonised product liability’s nature as a ‘pure’ product liability theory (see *supra* nrs. 5-7).
- Second, those goods must be “*of a type ordinarily intended for private use or consumption*”. This objective requirement excludes products of a commercial nature that end up being used by consumers (‘migrated products’). Products that are frequently used professionally but that are still ordinarily intended to be used privately, remain within scope.¹¹³⁸
- Third, those goods must furthermore have been effectively “*used by the injured person mainly for his own private use or consumption*”. This subjective requirement accepts ‘mixed use products’ if a majority of use is deemed to have been for private purposes (but see *infra* nr. 190.d on how the PLD-2024 upends this). The current French PLDI

¹¹³² PLD Explanatory Memorandum 1976, nr. 17.

¹¹³³ CJEU 5 March 2015, C-503/13-C-504/13, *Boston Scientific*, ECLI:EU:C:2015:148, nrs. 49-50.

¹¹³⁴ § 10 Produkthaftungsgesetz.

¹¹³⁵ See Howells, ‘strict liability’, nr. 4.226; Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 52, nrs. 20-34; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3608, 7-13; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 10, nrs. 1-15.

¹¹³⁶ ‘Good’ in art. 9(1)b PLD-1985 and ‘property’ in art. 6(1)b PLD-1985 are broader concepts than ‘product’ in art. 2 PLD-1985 and art. 4(1) PLD-2024 (see *supra* nr. 175). This means that reparation can for example be claimed for all damage to immovable goods caused by a product accident (e.g. a fire or explosion).

¹¹³⁷ See *infra* nr. 367 on the debate whether reparation can be claimed based on the PLD-1985 of other parts of a product when the defect was limited to one or more product components.

¹¹³⁸ Howells, ‘strict liability’, nr. 4.238; R. Steennot, ‘De vergoedbare schade bij schade ingevolge onveilige en gebrekkige producten’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 230.

disregards these limitations, by explicitly stating that damage to any good can be claimed based on harmonised product liability law.¹¹³⁹

Finally, as an extra requirement, art. 9(1)b PLD-1985 imposes a threshold of 500 EUR, which appears to be generally interpreted to apply to the total damage to multiple goods claimed by one plaintiff.¹¹⁴⁰ In most Member States, including Belgium, France and Germany,¹¹⁴¹ this is interpreted as a ‘deductible’ which the injured party always has to bear.¹¹⁴² This is presented as an instrument to combat moral hazard, although the contributory fault defence already pursues this goal in arguably a more targeted and effective manner (see *supra* nr. 109 and *infra* nr. 191), unless the goal would rather be to prevent some excessive litigation.¹¹⁴³ In a few Member States, this is interpreted as a mere ‘excess’ threshold which blocks claims of lower value but still allows full compensation when exceeded. This seems to better suit recital 9 PLD-1985’s stated aim of protecting injured parties,¹¹⁴⁴ while it still helps to avoid excessive litigation.

- c. Art. 9(2) PLD-1985 explicitly leaves non-economic damage at the discretion of the Member States. Belgian, French and since 2002 also German law allow claims for reparation of non-economic damage based on EU harmonised product liability.¹¹⁴⁵
- d. Art. 6 PLD-2024 largely confirms the aforementioned rules on damage of the PLD-1985.

¹¹³⁹ Art. 1245-1, section 2 CC FR. Hence, the French legislator has used the fact that the absence of liability for damage to professional goods is not harmonised by the PLD-1985 (CJEU4 June 2009, C-285/08, *Motors Leroy Somer v. Dalkia France*, ECLI:EU:C:2009:351). The 2017 reform proposal proposed to revert back to the PLD-1985’s limitations to damage to goods (art. 1290, 2nd section *Projet de réforme de la responsabilité civile* (Garde des sceaux 2017)), but this is no longer part of the *Proposition de réforme de la responsabilité civile* (Sénat 2020).

¹¹⁴⁰ E.g., R. Steennot, ‘De vergoedbare schade bij schade ingevolge onveilige en gebrekkige producten’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit. PUC W. Delva nr. 40* (Kluwer 2015) 231-232; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 11, nr. 4. While this is a plaintiff-friendly interpretation, it seems somewhat contrary to the literal text of art. 9 PLD-1985.

¹¹⁴¹ BELGIUM: art. 6.51, § 2, 3rd section CC BE; art. 11, § 2, 3rd section *Wet Productaansprakelijkheid / Loi Responsabilité Produits*. FRANCE: art. 1245-1, 2nd section CC FR. GERMANY: § 11 *Produkthaftungsgesetz*.

¹¹⁴² This is supported by the use of the words “*déduction*”, “*franchise*”, “*Selbstbeteiligung*” and other synonyms in the non-English language versions of recital 9 and art. 9 PLD-1985. See also Taschner and Frietsch, *Kommentar*, 383.

¹¹⁴³ Determining harmonised product liability, including a raised defence of a contributory fault on the part of the injured party, undeniably entails substantial administrative costs (see *supra* nr. 111.a.c). Some injured parties who have only suffered relatively low damage in a product accident, might refrain from pursuing their claim based on art. 9(1)b PLD-1985’s threshold.

¹¹⁴⁴ This is supported by the use of the word “*threshold*” and the phrasing of recital 9 and art. 9 PLD-1985. In *obiter dictum* of the *Commission v. Greece* decision, the CJEU also appears to have implicitly endorsed the ‘excess’ rather than the ‘deductible’ interpretation (CJEU 25 April 2002, C-154/00, *Commission v. Greece*, ECLI:EU:C:2002:254, nrs. 23, 30).

¹¹⁴⁵ BELGIUM: art. 6.51, § 1 CC BE; art. 11, § 1 *Wet Productaansprakelijkheid / Loi Responsabilité Produits*. FRANCE: art. 1245-1, 1st section CC FR. See also Viney, Jourdain and Carval, *Les régimes spéciaux et l’assurance*, 4th edn., 47. GERMANY: § 8 *Produkthaftungsgesetz*.

Nevertheless, art. 6(1)a now explicitly awards “*medically recognised harm to psychological health*”,¹¹⁴⁶ while other non-economic damage is still left to the national legislator.¹¹⁴⁷ Art. 6(1)b(ii) PLD-2024 confirms that the exclusion of damage to the defective product itself also extends to other parts of a product that have become defective as a result of a defective component.¹¹⁴⁸ This rebuffs various authors who have argued in the past that a component is a separate product and it is thus possible to claim based on the PLD the damage it causes to other parts of the main product.¹¹⁴⁹

Most importantly, art. 6(1)b(iii) PLD-2024 now only still excludes damage to goods that are “*used exclusively for professional purposes*”. In comparison with art. 9(b)ii PLD-1985, this extends the recoverable head of damage to all ‘mixed use’ goods, which substantially expands the economic significance of the harmonised product liability theory. Nevertheless, art. 5(1) PLD-2024 offsets this extension somewhat by limiting the category of potential plaintiffs to natural persons (see *supra* nr. 176).¹¹⁵⁰ Finally, art. 6(1)c PLD-2024 now explicitly recognizes as a head of damage the “*destruction or corruption of data that are not used for professional purposes*”. Recitals 20 and 22 PLD-2024 provide additional guidance on how to interpret this provision.

c. Causation

191. CAUSATION, JOINT LIABILITY AND CONTRIBUTORY FAULT – Both Directives regulate the liability requirement of causation only to a limited extent. Art. 4 PLD-1985 confirms that the plaintiff bears the burden of proof for establishing “*the causal relationship between defect and damage*.” Art. 5 PLD-1985 holds that multiple persons liable for the same damage are subject to joint and several liability, while further details on recourse and apportionment are left to national law. Art. 8(1) PLD-1985 stipulates that EU product liability cannot be reduced when the damage is caused both by a defective product and the conduct of third parties, while it reconfirms that national law determines recourse and apportionment.

Art. 8(2) PLD-1985 holds that, considering all circumstances, liability may be either reduced or excluded in the event that both the product defect and the injured party’s fault have contributed to the damage (‘contributory fault’). This is an option that Belgium, France and Germany like other Member States have chosen to integrate. The German PLDI refers on this

¹¹⁴⁶ See also recital 21 PLD-2024: “[...] that affects the victim’s general state of health and could require therapy or medical treatment, taking into account, inter alia, the International Classification of Diseases by the World Health Organization.”

¹¹⁴⁷ Recital 23 *ibid*.

¹¹⁴⁸ See critically European Law Institute, *European Commission's Proposal for a Revised Product Liability Directive: Feedback of the European Law Institute* (2022) 13. This is discussed in more detail *infra* nr. 367 in the context of spare parts used in repair and refurbishment processes.

¹¹⁴⁹ Especially German scholars have debated this question due to the influence of the ‘*weiterfressender Mangel* theory’, which is part of German *Produzentenhaftung* based on § 823(1) BGB (see E. Van Gool, ‘Overview of German product liability law’ (2024) <<https://ssrn.com/abstract=4824956>>, nrs. 1.c, 18). But also some other authors have advocated in favour of this view. See Markovits, *La Directive C.E.E. du 25 juillet 1985*, 243; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 522-523.

¹¹⁵⁰ The EU legislator motivates this choice in recital 25 PLD-2024.

point to the general rules of German law on *Mitverschulden*,¹¹⁵¹ which might imply an interpretation of art. 8(2) PLD-1985 as an optional provision that derogates from the Directive's maximum harmonisation (see *supra* nr. 170).¹¹⁵² In contrast, the French and Belgian PLDI transpose the literal text of art. 8(2) PLD-1985,¹¹⁵³ which might imply that art. 8(2) PLD-1985 is seen as a direct rule that is part of the Directive's scope of maximum harmonisation. This would mean that national legislators indeed just have to copy art. 8(2) PLD-1985 and that the "may" is directed at the national judge rather than at the national legislator.¹¹⁵⁴ Nevertheless, since the PLD-1985 does not provide detailed rules, it still remains necessary in the Belgian and French PLDI to refer to national liability law when trying to operate the national, literal implementation of art. 8(2) PLD-1985.¹¹⁵⁵ Note that art. 13(2) PLD-2024 adopts an almost identical phrasing and extends the uncertainty about whether the "may" is directed at the national legislator or at national judges, although the latter (Franco-Belgian) interpretation seems most convincing in the broader context of the new Directive.¹¹⁵⁶

The most striking consequence in the Belgian PLDI is that it allows judges in cases where both the product defect and the defendant's fault have causally contributed to the damage, to either completely disregard the injured party's fault or to completely exclude the defendant's liability, which is normally not possible based on the Belgian strict *conditio sine qua non* theory

¹¹⁵¹ GERMANY: § 6(1) Produkthaftungsgesetz.

¹¹⁵² However, it should be noted that the general German rules on *Mitverschulden* allow for all the possibilities that art. 8(2) PLD-1985 offers to national courts (see E. Van Gool, 'Overview of German product liability law' (2024) <<https://ssrn.com/abstract=4824956>>, 42-43). It can therefore still be argued that § 6(1) Produkthaftungsgesetz correctly implements art. 8(2) PLD, when considering the fact that more detailed implementing rules are left to the discretion of the member states.

¹¹⁵³ BELGIUM: art. 6.50, § 2, 1st section CC BE; art. 10, § 2, 1st section Wet Productaansprakelijkheid / Loi Responsabilité Produits. FRANCE: art. 1245-12 CC FR.

¹¹⁵⁴ This is also how TASCHNER AND FRIETSCH present art. 8(2) PLD-1985: "*Ob Haftungs-minderung oder Haftungsausschluß anzunehmen ist, hängt vom Einzelfall ab. Der Richter hat bei der Abwägung der beiden Schadensursachen alle Umstände zu berücksichtigen. Die Richtlinie weist ihn ausdrücklich darauf hin.*" (Taschner and Frietsch, *Kommentar*, 369). Since the final version of art. 8 PLD-1985 is the result of late changes in the legislative process, the legislator's intent is not immediately apparent. It is surprising how the literature generally just adheres to a nationally dominant interpretation of art. 8(2) PLD, without considering this interpretative uncertainty.

¹¹⁵⁵ See Howells, 'strict liability', nr. 4.304; M. Bacache-Gibeili, *La responsabilité civile extracontractuelle* (3rd edn., Economica 2016) 908-909; Fairgrieve et al., 'Product Liability Directive', 87-88; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 247; Viney, Jourdain and Carval, *Les régimes spéciaux et l'assurance*, 4th edn., 79-80.

¹¹⁵⁶ First of all, the PLD-2024 has removed almost all transposition options for member states compared to the PLD-1985 and derogations from the maximum harmonisation principle should arguably now be even more unequivocal than under the PLD-1985 (cf. art. 3 PLD-2024). Second, recital 55 PLD-2024 also seems to imply the Franco-Belgian interpretation: "[...] it should be possible to reduce or disallow the economic operator's liability where injured persons themselves have negligently contributed to the cause of the damage, for example where the injured person negligently failed to install updates or upgrades provided by the economic operator that would have mitigated or avoided the damage."

of causation.¹¹⁵⁷ However, Belgian case law has in recent years increasingly confirmed that the effect of a contributory fault or the defendant's liability must be completely excluded if the other party has committed a fault with the intention to cause damage,¹¹⁵⁸ which is now codified in the new art. 6.20, § 3 CC BE.¹¹⁵⁹ By applying this case law, pursuant to the adage *fraus omnia corrumpit*, it becomes in my opinion possible to interpret and apply this provision in the Belgian PLDI fully in accordance with current general Belgian rules on apportionment in case of contributory fault.¹¹⁶⁰

All other aspects of causation, joint liability and contributory fault remain non-harmonised and are determined by national law.¹¹⁶¹ Hence, one must refer here in general to the corresponding general rules of Belgian, French and German liability law.

Arts. 1, 8, 10(1) and 12-13 PLD-2024 entirely reaffirm the aforementioned principles, including repeating the “*may be reduced or disallowed*” of art. 8(2) PLD-1985 in the identical, new rule on contributory fault of art. 13(2) PLD-2024, as discussed above. Nevertheless, it is worth noting that some extra rules are now proposed to alleviate the plaintiff's burden of proof relating to causation (see *infra* nr. 206). Additionally, art. 12(2) PLD-2024 now introduces an exception to the right of recourse of liable final product manufacturers against software component

¹¹⁵⁷ **BELGIUM:** Art. 6.50, § 2, 1st section. See regarding this curiosity from a Belgian law perspective L. Cornelis, ‘Aansprakelijkheid voor gevaarlijke produkten’ (1987) *Rechtskundig Weekblad* 1139, 1148; D. Wuyts, ‘Productaansprakelijkheid: een Richtlijn voor (n)iets?’ (2008) *Tijdschrift voor Belgisch Burgerlijk Recht* 3, 18; I. Boone and S. Guiliams, ‘Productaansprakelijkheid en productveiligheid’ in B. Tilleman and E. Terryn (eds.), *Beginselen van Belgisch Privaatrecht XIII: Handels- en economisch recht: Deel 1: Volume B* (Kluwer 2011) 1350; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 243; Dubuisson et al., *Chronique de jurisprudence 2008-2020 – Volume 1*, 406. **FRANCE:** In French law, complete liability despite a fault of the injured party or a total exclusion of liability, are possible either if the defendant's liability or the injured party's fault constitute *force majeure* or if the injured party committed an intentional fault. See also M. Bacache-Gibeili, *La responsabilité civile extracontractuelle* (3rd edn., Economica 2016) 909.

¹¹⁵⁸ See i.a. Cass. BE 6 November 2002, *Arr.Cass.* 2002, 2383, *JT* 2003, 579, note J. Kirkpatrick, *RCJB* 2004, 267, note F. Glansdorff, *RW* 2002-03, 1629, note B. Weyts; Cass. BE 6 November 2007, *RW* 2007-08, 1716; Cass. BE 2 March 2016, *JT* 2017, 400, *RGAR* 2016, 15.336.

¹¹⁵⁹ Art. 6.20, § 3, 3rd section CC BE adds that in the scenario where both parties have committed a fault with the intention to cause damage, the basic principle of apportionment of liability according to causal shares applies (art. 6.20, § 1 *ibid.*; Cass. BE 4 November 2008, *RW* 2009, 1561, note B. Weyts).

¹¹⁶⁰ See also Verhoeven, *Productaansprakelijkheid en productveiligheid*, 246-247. An alternative interpretation would be to restrict the complete exoneration of the defendant to situations where there is no defect (Delforge, ‘Le défaut de sécurité au sens de la loi du 25 février 1991’, 355-356; Dubuisson et al., *Chronique de jurisprudence 2008-2020 – Volume 1*, 406). This seems nonsensical when the argument of these authors would be taken literally as an interpretation of contributory fault in the Belgian PLDI. If there is no defect, there can be no harmonised product liability to begin with and there is therefore also no possibility for a contributory fault defence.

¹¹⁶¹ See Taschner and Frietsch, *Kommentar*, 124-126; Delforge, ‘Le défaut de sécurité au sens de la loi du 25 février 1991’, 333; Fairgrieve et al., ‘Product Liability Directive’, 86; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 239-240; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 1, nr. 33. *Contra* Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 46, nrs. 31-34 (claiming that causation has been fully determined by the PLD-1985's maximum harmonization and that, given the Produkthaftungsgesetz' text, there is no room for additional limitation of factual causes).

manufacturers who either qualified as a small or micro-enterprise or who obtained a contractual exemption.

d. Remedies

192. REMEDIES – The PLD-1985 does not specify the remedies which the injured party can obtain in case of a successful claim. How the suffered damage is repaired is therefore a matter of national law.¹¹⁶² Of course, monetary compensation will be awarded in most cases. Art. 5(1) PLD-2024 states that the injured party “*is entitled to compensation*”.¹¹⁶³

§ 4. Defences

a. Substantive defences

193. DEFENCES: GENERAL OBSERVATIONS AND *FORCE MAJEURE* – The defences which a defendant can invoke other than contributory fault (see *supra* nr. 191) and the limitation and extinction periods (see *infra* nrs. 202-203), are listed in art. 7 PLD-1985 and art. 11 PLD-2024. Pursuant to the principle *actori incumbit probatio*, the defendant naturally bears the burden of proving these defences (see *infra* nr. 205) and, pursuant to the Directive’s goal of protecting injured parties, they must be interpreted restrictively.¹¹⁶⁴ As a general principle, art. 12 PLD-1985 and art. 15 PLD-2024 prohibit defendants to invoke any limitations or exclusions of liability based on their contractual relationships with an injured party. Such clauses are entirely unlawful and ineffective.¹¹⁶⁵ This is intrinsically tied to the nature of EU harmonised product liability as a ‘specific’ product liability theory, which is mostly extracontractual to overcome the vertical and diagonal privity problems and strives to protect both vulnerable consumers and third parties (see *supra* nrs. 5-6, 168 and 172).

It can be questioned whether other defences can be invoked than those explicitly listed in the Directives. Especially *force majeure* – understood broadly as encompassing various national equivalents like ‘*overmacht*’ or ‘*Höheren Gewalt*’ – is referred to as a possible defence against harmonised ‘strict’ product liability by certain national legislators, courts and

¹¹⁶² Fairgrieve et al., ‘Product Liability Directive’, 81.

¹¹⁶³ See also recital 23 PLD-2024: “While Member States should provide full and proper compensation for [...], rules on calculating compensation should be laid down by Member States.”

¹¹⁶⁴ CJEU 10 May 2001, C-203/99, *Henning Vedfeldt*, ECLI:EU:C:2001:258, nr. 15; CJEU 9 February 2006, C-127/04, *Declan O’Byrne*, ECLI:EU:C:2006:93, nr. 25. This is in accordance with the PLD’s goal of protecting injured parties (see *supra* nr. 168).

¹¹⁶⁵ Naturally, there is sometimes a thin line between contractual exonerations, which are not permitted, and warnings or restrictive product use instruction, which are permitted and can be effective in determining product defectiveness (see *supra* nr. 95.a). See T. Verheyen, *Eenzijdige beheersing van het aansprakelijkheidsrisico: Over waarschuwingen, instructies, disclaimers en andere technieken tot eenzijdige exoneratie* (Intersentia 2021) 577-662.

scholars.¹¹⁶⁶ If *force majeure* can be considered a part of national rules on causation, such as often held in French law, it arguably falls beyond the scope of harmonisation of either Directive (see *supra* nrs. 170 and 191).¹¹⁶⁷ A reference in the explanatory memorandum of the original PLD-1985 proposal appears to support this view.¹¹⁶⁸ A harmonised product liability defendant can therefore invoke such a version of *force majeure* that is an integral part of national rules on causation, at least to the extent that it respects the rule on joint and several liability (see *supra* nr. 191).¹¹⁶⁹ In contrast, if *force majeure* is rather a defence relating to the liability standard, then the maximum level of harmonization of the current Directive (see *supra* nrs. 170-171) precludes in my opinion its application. In current Belgian civil liability law, *force majeure* is most often applied in relation to the liability standard, which the new Book 6 of the Civil Code also confirms.¹¹⁷⁰ Nevertheless, it is traditionally also recognized as a defence that can negate legal causation ('external cause'),¹¹⁷¹ which would then still be applicable to the Belgian PLDI. Finally, it is worth noting that many cases of *force majeure* in the product

¹¹⁶⁶ See BELGIUM: Memorie van toelichting bij het Wetsontwerp betreffende de aansprakelijkheid voor producten met gebreken, *Parl.St.* Kamer 1989-1990, nr. 1262/001, 16 (holding that *force majeure* applies to harmonised product liability because it is part of the determination of (an absence of) causation); Liège 7 June 2018, *RGAR* 2018, nr. 15508 (*ibid.*); Delforge, 'Le défaut de sécurité au sens de la loi du 25 février 1991', 356 (*ibid.*). FRANCE: Markovits, *La Directive C.E.E. du 25 juillet 1985*, 301-302; Borghetti, *La responsabilité du fait des produits*, 497. See also the sources cited *infra* the next footnote. GERMANY: Taschner and Frietsch, *Kommentar*, 154-155. See also Graf von Westphalen, '3. Produkthaftungsgesetz', § 51, nrs. 14-15.

¹¹⁶⁷ See for arguments that *force majeure* breaks causation in French liability law, which therefore makes it fall outside the scope of the PLD's maximum harmonisation Markovits, *La Directive C.E.E. du 25 juillet 1985*, 301-302; P. Le Tourneau, *Responsabilité des vendeurs et fabricants* (5th edn., Dalloz 2015) nr. 22.301; M. Bacache-Gibeili, *La responsabilité civile extracontractuelle* (3rd edn., Economica 2016) 908; Viney, Jourdain and Carval, *Les régimes spéciaux et l'assurance*, 4th edn., 85-86; Bloch and Poumarède, 'L'indemnisation des victimes de produits', nr. 6313.131.

¹¹⁶⁸ PLD Explanatory Memorandum 1976, nr. 16. See also Taschner and Frietsch, *Kommentar*, 154.

¹¹⁶⁹ But see M. Bacache-Gibeili, *La responsabilité civile extracontractuelle* (3rd edn., Economica 2016) 910. This French author argues that, if *force majeure* consists of an act by a liable third party, a defendant would be able to totally exonerate himself from harmonised product liability. Yet, causation is only left to national law to the extent that there is no derogation from the rules included in the Directives. And this application of *force majeure* as part of national rules on causation, violates in my opinion the maximum harmonisation of art. 8(1) PLD-1985 and art. 13(1) PLD-2024.

¹¹⁷⁰ See art. 6.7 CC BE; M. Van Quickenborne, *Oorzakelijke verband tussen onrechtmatige daad en schade* (Kluwer 2007) 134-137; I. Samoy and D. Vervoort, 'Knelpunten inzake overmacht' in A. De Boeck and others (eds.), *Knelpunten in het buitencontractueel aansprakelijkheidsrecht* (die Keure 2013) 144-145; T. Vansweevel and B. Weyts, 'Overmacht in het buitencontractueel aansprakelijkheidsrecht' in J. Rozie, S. Rutten and A. Van Oevelen (eds.), *Overmacht* (Intersentia 2015) 45-46; B. Goffaux, 'Les faits justificatifs' in F. George and R. Jafferali (eds.), *Manuel de droit de la responsabilité civile* (Anthemis 2022) 325-327. See, e.g., Cass. BE 22 February 2010, *Pas.* 2010, 534, nr. 118.

¹¹⁷¹ See Vansweevel and Weyts, *Handboek aansprakelijkheidsrecht*, 841-848; R. Jafferali, 'Les causes étrangères' in F. George and R. Jafferali (eds.), *Manuel de droit de la responsabilité civile* (Anthemis 2022) 334-335; Dubuisson et al., *Chronique de jurisprudence 2008-2020 – Volume 1*, 600-601. See, e.g., Cass. BE 7 March 2008, *Pas.* 2008, 627, nr. 160. See also the Belgian sources cited *supra* footnote 1166.

liability context can qualify under one of the defences recognized by the Directives,¹¹⁷² which are discussed below. And factual circumstances supporting *force majeure* can potentially even lead to a finding that a product is not defective to begin with, since this is not absolutely strict and must be appreciated in light of the legitimate expectations of the public (see *supra* nrs. 179-180).¹¹⁷³

194. ‘NOT PUT INTO CIRCULATION DEFENCE’ – As a first defence, art. 7(a) PLD-1985 holds that a producer is not liable if he proves “*that he did not put the product into circulation*”. ‘Putting a product into circulation’ is a key concept which is also used elsewhere in the PLD-1985.¹¹⁷⁴ Notwithstanding some varying descriptions in some PLDI’s like in Belgium or France,¹¹⁷⁵ it has ultimately been defined by the CJEU in *Declan O’Byrne* as the moment when a product “*is taken out of the manufacturing process operated by the producer and enters a marketing process in the form in which it is offered to the public in order to be used or consumed*.”¹¹⁷⁶ Hence, the producer’s intention is decisive and a product in a distribution process has already been put into

¹¹⁷² Verhoeven, *Productaansprakelijkheid en productveiligheid*, 248-249 (discussing overlap between *force majeure* and PLD-1985 defences, using this as an argument against the application of *force majeure* in EU strict product liability).

¹¹⁷³ Brun, *Responsabilité civile extracontractuelle*, 5th edn., 540. This is most likely for design or information defects (see also *supra* nr. 174).

¹¹⁷⁴ See *supra* nr. 184 (art. 6(1) PLD-1985) and *infra* nrs. 195 (art. 7(b) PLD-1985), 200 (art. 7(e) PLD-1985), 203 (art. 11 PLD-1985) and 225 (art. 17 PLD-1985).

¹¹⁷⁵ Both provisions still appear to be largely compatible with current CJEU case law. However, the statement in the French definition holding that a product can only be put into circulation once, is deeply problematic when trying to apply some of the PLD-1985’s defences vis à vis other defendants than the original producer or importer (see *infra* nrs. 310-311). **BELGIUM:** art. 6.46 CC BE: “[...] *de eerste daad waaruit de bedoeling van de producent blijkt om aan het produkt de bestemming te verlenen die hij aan dat produkt geeft door overdracht aan derden of door gebruik ten behoeve van laatstgenoemden*.” See also Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 538. **FRANCE:** art. 1245-4 CC FR: “*Un produit est mis en circulation lorsque le producteur s’en est dessaisi volontairement. Un produit ne fait l’objet que d’une seule mise en circulation*.” Note that this definition is no longer part of arts. 1289-1299-3 *Projet de réforme de la responsabilité civile* (Garde des sceaux 2017) (the French PLDI is not part of the *Proposition de réforme de la responsabilité civile* (Sénat 2020)). See also Brun, *Responsabilité civile extracontractuelle*, 5th edn., 536-538.

¹¹⁷⁶ CJEU 9 February 2006, C-127/04, *Declan O’Byrne*, ECLI:EU:C:2006:93, nr. 32. See also A-G. Trstenjak, opinion C-358/08, 8 September 2009, ECLI:EU:C:2009:254, nr. 51: “*To prevent an unjustified shortening of the limitation period to the detriment of consumers, the Court in O’Byrne, interpreting the expression ‘put into circulation’ as the event which starts the period running, focused primarily not on the physical transfer of the product by the producer to another entity but rather on the manufacturing process operated by the producer and the control exercised in that context. [...]*” Note that the CJEU in the related case *Aventis Pasteur* allowed to substitute the producer for the supplier in court proceedings still timely initiated against the latter, if within a corporate group this producer in fact determined the ‘putting into circulation’ by the supplier, its subsidiary (see *infra* nr. 203). However, note that both the *Declan O’Byrne* and *Aventis Pasteur* cases actually concerned not art. 7(a) PLD-1985 but rather the extinction period of art. 11 PLD-1985, which refers to the moment when the product is ‘put into circulation’ as its starting date (see *infra* footnotes 1239 and 2005-2006).

circulation by the producer.¹¹⁷⁷ Merely delivering a product to a separate quality control entity, prior to actual distribution, does not constitute putting it into circulation.¹¹⁷⁸ The repercussions thereof are discussed in more detail *infra* nrs. 323 and 412 in the specific context of product retransfers, repairs and refurbishments. Earlier, the CJEU had already clarified that it is not always necessary that the product has left the producer's premises or otherwise left the producer's sphere of control, by deciding in *Veedfald* that a product self-manufactured by a hospital is put into circulation when it is directly administered to a patient in the course of providing a medical service.¹¹⁷⁹

There are, however, uncertainties on how to interpret the moment when a product is 'put into circulation' vis à vis other defendants than producers and with regards to spare parts, which is discussed in more detail *infra* nrs. 317 et seq. and 433.

Art. 11(1)a PLD-2024 retains the defence for manufacturers and importers but replaces 'putting into circulation' with the more detailed concepts 'placing a product on the market' and 'putting a product into service'.¹¹⁸⁰ Art. 11(1)b PLD-2024 specifies that distributors enjoy a similar defence if they prove that they did not 'make a product available on the market'.¹¹⁸¹ These new concepts, which replace 'putting into circulation', originate from EU product safety law (see also *supra* nr. 25.c). Whether these novelties make a difference with regards to various alternative production and distribution methods, is examined *infra* nrs. 323, 412 and 460 et seq. For reasons of brevity and because the PLD-2024 has not yet entered into force, this dissertation continues to use the name 'not put into circulation defence' as a shorthand for both art. 7(a) PLD-1985 and art. 11(1)a-b PLD-2024.

195. 'POSTERIORITY DEFENCE' – Second, art. 7(b) PLD-1985 states that the producer is not liable if he proves "*that, having regard to the circumstances, it is probable that the defect which caused the damage did not exist at the time when the product was put into circulation by him or that this defect came into being afterwards*". This is a crucial provision, since it confirms that EU harmonised product liability, contrary to many other product liability theories, presumes the defect's anteriority and burdens the generally more knowledgeable defendant to prove the

¹¹⁷⁷ See Howells, 'strict liability', nrs. 4.257-4.261; P. Le Tourneau, *Responsabilité des vendeurs et fabricants* (5th edn., Dalloz 2015) nrs. 22.131-132; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 255-256; Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 1, nrs. 24-27. See also CJEU 10 May 2001, C-203/99, *Henning Veedfald*, ECLI:EU:C:2001:258, nr. 16; Mons 7 February 2013, DCCR 2013, 76, note D. Verhoeven.

¹¹⁷⁸ A-G. Geelhoed, opinion C-127/04, 2 June 2005, ECLI:EU:C:2005:349, nr. 36.

¹¹⁷⁹ CJEU 10 May 2001, C-203/99, *Henning Veedfald*, ECLI:EU:C:2001:258, nr. 17.

¹¹⁸⁰ Art. 4(8) PLD-2024 defines 'placing on the market' as "*the first making available of a product on the Union market*". Art. 4(9) PLD-2024 defines 'putting into service' as "*the first use of a product in the Union in the course of a commercial activity, whether in return for payment or free of charge, in circumstances in which the product has not been placed on the market prior to its first use*".

¹¹⁸¹ Art. 4(7) PLD-2024 defines 'making available on the market' as "*any supply of a product for distribution, consumption or use on the Union market in the course of a commercial activity, whether in return for payment or free of charge*".

contrary.¹¹⁸² Nevertheless, the seemingly revolutionary nature of this shifting of the burden of proof regarding defect anteriority must be nuanced in two ways. On the one hand, as BORGHETTI remarks in his comparative study, most judges applying non-harmonised, national product liability theories tend to easily accept that the plaintiff has proven the anteriority of a defect.¹¹⁸³ On the other hand, art. 7(b) PLD-1985 makes clear that the producer, in order to prove this ‘posteriority defence’, has to meet only a reduced evidentiary standard of probability in light of all circumstances of a case (cf. *infra* nr. 205).¹¹⁸⁴

This reduced standard of proof is a balancing measure which has been introduced during the original Directive’s negotiation process to avoid making harmonised product liability too strict.¹¹⁸⁵ According to an often-cited German decision, it suffices that a producer establishes a sequence of events that, based on general life experience, makes the conclusion about the time when the defect originated appear plausible.¹¹⁸⁶ Nevertheless, this standard of probability remains a substantive bar and should not result in a *de facto* re-reversal of the burden of proof relating to defect anteriority (see also *infra* nrs. 205-206). The Belgian *Cour de Cassation* has for example ruled that a producer who only alleges that the cause of damage is uncertain, does not succeed in proving the defence.¹¹⁸⁷

This ‘posteriority defence’ actually confirms that the Directive does not harmonise post-marketing liability (see also *supra* nrs. 7 and 184). It also ensures that defendants can escape liability for treatment and alterations of a product after the moment when they have put it into circulation.¹¹⁸⁸ As a consequence, it is highly pertinent in the context of different circular reproduction and to a lesser extent redistribution strategies, as further examined *infra* nrs. 239-243, 255-259, 291-295 and 413-419. Such ‘positive’ evidence of a posterior origin of a defect constitutes the most straightforward and effective method for the producer to meet this aforementioned standard of probability. Alternatively or additionally, the defendant can also try to invoke ‘negative’ evidence by arguing that it is impossible that the defect was already present at the time of putting the product into circulation as a result of preventive measures, like

¹¹⁸² See also *supra* nrs. 6, *supra* nrs. 14 on different product liability theories and the role played by increasing asymmetry between parties, *supra* nrs. 19 et seq. on the general theoretical foundations of specific (modern) product liability law and *supra* nr. 173 on the ‘quasi-strict’ nature of EU strict product liability specifically.

¹¹⁸³ Borghetti, *La responsabilité du fait des produits*, 469-470.

¹¹⁸⁴ See Verhoeven, *Productaansprakelijkheid en productveiligheid*, 260-261; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 1, nr. 38.

¹¹⁸⁵ Cf. art. 5 Commission, ‘Proposal for a Council Directive relating to the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products’ [1976] OJ C241/9, 11 (defendant has to prove defect anteriority) with art. 5(b) Commission, ‘Amendment of the proposal for a Council Directive relating to the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products’ [1979] OJ C271/3, 8 (adding “*having regard to all the circumstances*”) and with art. 7(b) PLD-1985 (additionally lowering standard of proof to probability).

¹¹⁸⁶ OLG München 21 June 2002, 21 U 4952/01, OLGR München 2003, 4, *Juris*, nr. 23.

¹¹⁸⁷ Cass. BE 4 June 2007, RW 2007-08, 1283, note D. Wuyts.

¹¹⁸⁸ Howells, ‘strict liability’, nr. 4.273; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3602, 19-20.

production process protocols, certifications and records of product test samples.¹¹⁸⁹ However, as argued by at least some German and French courts¹¹⁹⁰ as well as mainly German scholars, such negative evidence of posteriority can never in itself be decisive like *prima facie* evidence. Obviously, this is a matter of appreciating the required evidence for proving the posteriority defence. Yet, substantively, this is also connected to the ‘quasi-strict’ nature of harmonised product liability, which allows to hold defendants liable for manufacturing defects that were impossible to foresee or prevent (cf. *supra* nr. 174).¹¹⁹¹

As this dissertation argues *infra* nrs. 239 and 414, such more decisive ‘positive’ evidence on a posterior defect origin consists, on the one hand, of proof that a post-marketing circumstance effectively caused the damage and, on the other hand, of proof that said post-marketing circumstance had not been reasonably foreseeable when this particular product was put into circulation.

Furthermore, uncertainties exist again on how to interpret especially the posteriority defence of art. 7(b) PLD-1985 when it is invoked by other defendants than producers, which is discussed in more detail *infra* nrs. 317 et seq.

Art. 11(1)c PLD-2024 retains the ‘posteriority defence’, although it uses the aforementioned new concepts which replace ‘putting into circulation’ (cf. *supra* nr. 194) and it explicitly identifies which defendants can invoke the defence (see *infra* nrs. 317-322). Yet, the more important innovation brought by the new Directive consists of how it provides for the first time limited exceptions to the posteriority defence, as the next section discusses.

196. A SMALL REVOLUTION: ART. 11(2) PLD-2024 INTRODUCES ‘DIGITAL’ AND ‘SUBSTANTIAL PRODUCT MODIFICATION’ EXCEPTIONS TO THE POSTERIORITY DEFENCE – As an important part of updating the EU product liability harmonisation to digital technologies (see *supra* nr. 25.b-c), art. 11(2)a-c PLD-2024 now stipulates that the posteriority defence can no longer be invoked with regards to defects relating to ‘provided digital services, software or the lack of software updates or

¹¹⁸⁹ See on positive and negative evidence in support of the posteriority defence H.C. Taschner, ‘La future responsabilité du fait des produits défectueux dans la Communauté européenne’ (1986) *Revue du Marché Commun* 257, 261; Taschner and Frietsch, *Kommentar*, 191; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 541-542; D. Verhoeven, ‘Het redelijkerwijze voorzienbaar gebruik van een product en het later ontstaan van gebreken in de wet productenaansprakelijkheid (note Antwerpen 28 October 2009)’ (2011) *Tijdschrift voor Belgisch Burgerlijk Recht* 388, 395; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 259. That both types of evidence are accepted, can be directly read in the text of art. 7(b) PLD-1985 and now also of art. 11(1)c PLD-2024.

¹¹⁹⁰ E.g., OLG Koblenz 24 June 1999, 5 U 1668/98, *MDR* 2000, 30, *Juris*, nr. 11 (even claiming that such product quality management measures are entirely irrelevant); CA Versailles (3^e Ch.) 8 June 2007, nr. 06/03125, *Lexis360* (quality control at end of production process is insufficient for successful posteriority defence). But see OLG München 21 June 2002, 21 U 4952/01, *OLGR München* 2003, 4, *Juris*, nrs. 24-32 (defect posteriority is proven based on negative evidence relating to quality control processes in combination with positive evidence on the nature of the defect and on the long period of use prior to the accident); Howells, ‘strict liability’, nr. 4.278 (discussing English case from 2006, *Piper v JRI (Manufacturing) Ltd*, where court seems to have granted the posteriority defence solely based on quality assurance measures).

¹¹⁹¹ See Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 55, nr. 18; Wagner, *MüKo BGB*, ‘Produkthaftungsgesetz’, § 1, nr. 37; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 1, nr. 78.

upgrades necessary to maintain safety’, to the extent that these elements are ‘within the manufacturer’s control’. This new, ‘digital exception to the posteriority defence’ is discussed further *infra* nrs. 242 and 248.

Likewise, art. 11(2)d PLD-2024 now provides an exception to the posteriority defence for ‘substantial product modifications’ occurring ‘within the manufacturer’s control’, to avoid a loophole now that independent substantial product modifications give rise to a separate primary liability on the basis of art. 8(2) PLD-2024. Since both articles are crucial new rules for the application of harmonised product liability to various circular strategies, especially repair and refurbishment, they are discussed extensively further in this dissertation (see in particular *infra* nrs. 402-404 and 449-450 on the interpretation of ‘within the manufacturer’s control’ and *infra* nrs. 444-446 on the interpretation of ‘substantial modification’).

These two new exceptions to the posteriority defence are fundamental, because they expand – albeit in a still modest manner – the PLD’s temporal scope of application to the realm of ‘post-marketing’ obligations. The latter have traditionally not been harmonised and left to national liability law, in particular extracontractual liability for fault (see *supra* nrs. 7 and 184). Now, through these two exceptions to the posteriority defence, harmonised product liability which has always been ‘statically’ limited to the moment when a product is placed on the market or put into service, becomes a little bit more ‘dynamic’. In light of how product ‘reproduction’ plays a central role in this dissertation’s subject matter (see also *supra* nrs. 74 and 85-95), it can alternatively be argued that these are perhaps not so much exceptions to the posteriority defence for an original product but rather cases of (new) product liability for slightly ‘new’ products being placed on the market or put into service.

197. ‘NEITHER FOR-PROFIT NOR PROFESSIONAL DEFENCE’ IN THE PLD-1985: MOST PROSUMERS SUBJECT TO HARMONISED PRODUCT LIABILITY – Third, according to art. 7(c) PLD-1985, the producer is not liable if he proves “*that the product was neither manufactured by him for sale or any form of distribution for economic purpose nor manufactured or distributed by him in the course of his business*”. This defence has two relatively stringent requirements, which both need to be evaluated separately and both need to be proven by the defendant according to the regular standard of proof (see *infra* nr. 205).

On the one hand, the product should have been produced for another purpose than economic distribution. According to A-G. COLOMER, the absence of any profits is decisive.¹¹⁹² This might also be indirect, like the distribution for free of self-manufactured samples by a company hoping to win customers or the distribution of promotional gifts.¹¹⁹³ A first situation where this condition is met, is when someone self-manufactures a product for his own use,¹¹⁹⁴ like a prosumer making a dollhouse for his kids. A second situation is where a self-

¹¹⁹² A-G. Colomer, opinion C-203/99, 14 December 2000, ECLI:EU:C:2000:697, nr. 26: “[...] namely, that the product was not manufactured for economic purposes, in other words for financial gain, [...]” See also Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 46, nr. 44; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 1, nr. 91.

¹¹⁹³ See Verhoeven, *Productaansprakelijkheid en productveiligheid*, 262; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 1, nr. 93.

¹¹⁹⁴ See Verhoeven, *Productaansprakelijkheid en productveiligheid*, 261.

manufactured product is distributed but only for a strictly non-economic purpose. The primordial example thereof is donating a self-manufactured product for free, for purely benevolent and non-commercial reasons. Costs of manufacturing can likely still be claimed, but there should not be any motive for direct or indirect, long-term profits when the product was manufactured.¹¹⁹⁵ Public financing does not have to mean that an activity is no longer economic in nature, as the CJEU confirmed in *Veedfald* in relation to a public hospital.¹¹⁹⁶ Hence, a hobby craftsman ('collaborative producer') who makes a piece of furniture for his neighbour with only the material expenses being reimbursed, might still be able to prove this first condition. Importantly, however, it does not matter for this first condition whether a "*distribution for economic purpose*" happens to have a totally unorganised, non-professional character and has a very incidental nature.¹¹⁹⁷ Hence, if the same craftsman, only once a year finishes a piece of furniture and sells it for a small profit, then he will be unable to successfully invoke the defence of art. 7(c) PLD-1985.¹¹⁹⁸ The condition is similarly not fulfilled when a non-profit organisation or family member sells self-baked or self-crafted products for fund-raising. And also a prosumer who happens to resell a single time online a second-hand product for a profit, might be subject to secondary liability without being able to successfully invoke this defence.¹¹⁹⁹

On the other hand, the defendant must additionally prove that he has not produced or distributed the product in the context of his business. The non-English language versions of art. 7(c) PLD-1985 clarify that this is to be understood as an activity of a professional nature,¹²⁰⁰ which can pursue an economic but also a non-economic purpose.¹²⁰¹ The fact that the manufacturing or distribution of a particular product is entirely ancillary to the producer's professional activity, is insufficient to meet this requirement. Hence, if for example a professional carpenter crafts a piece of furniture and donates it to a friend, he fails the defence, or when someone cooks for a prospective business partner.¹²⁰² The same applies if a company distributes promotional materials, like merchandise, which are unrelated to the company's own key economic activities.¹²⁰³

This last example refers to the fact that questions can also be asked about how to interpret this defence when invoked by other defendants than producers, which is discussed in more detail *infra* nrs. 317 et seq.

¹¹⁹⁵ Taschner and Frietsch, *Kommentar*, 137-140; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 262; Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 1, nrs. 40, 42.

¹¹⁹⁶ CJEU 10 May 2001, C-203/99, *Henning Veedfald*, ECLI:EU:C:2001:258, nrs. 19-22.

¹¹⁹⁷ Verhoeven, *Productaansprakelijkheid en productveiligheid*, 262-263.

¹¹⁹⁸ Oechsler, Staudinger, 'Produkthaftungsgesetz', § 1, nr. 93.

¹¹⁹⁹ E. Van Gool, 'De nieuwe richtlijn productaansprakelijkheid en circulaire economie' (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 412.

¹²⁰⁰ E.g., "*ni fabriqué ou distribué dans le cadre de son activité professionnelle*"; "*noch is vervaardigd of verspreid in het kader van de uitoefening van zijn beroep*"; "*noch im Rahmen seiner beruflichen Tätigkeit hergestellt oder vertrieben hat*".

¹²⁰¹ Howells, 'strict liability', nr. 4.268; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3602, 25.

¹²⁰² See Verhoeven, *Productaansprakelijkheid en productveiligheid*, 264.

¹²⁰³ Howells, 'strict liability', nr. 4.267.

This dissertation further refers to art. 7(c) PLD-1985 as the ‘neither for-profit nor professional defence’. The discussion of the two separate conditions makes clear that in practice, actually very few prosumers who engage in (re)producing or (re)distributing a product, will be able to successfully invoke this defence. Hence, although injured parties seem based on reported case law hesitant to claim against non-professional prosumers on the basis of ‘quasi-strict’ harmonised product liability, the PLD-1985 generally allows it. Only when a prosumer manages to prove that he acted for a non-economic purpose and, at the same time, also entirely outside a professional capacity, can he still avoid being held liable for accidents caused by defects in the product.

Finally, it is worth noting that French law has only implemented the first limb of this defence (art. 1245-10(3°) CC FR) and stipulated the second limb, the professional capacity, as part of the personal scope of application (art. 1245-5, 1st section CC FR), which is a seemingly incorrect derogation from the Directive’s maximum harmonization that can make a small difference, since the plaintiff must prove the initial liability requirements but the defendant should bear the burden of proving the defence of art. 7(c) PLD-1985.

198. A ‘COMMERCIAL ACTIVITY’ AS A LIABILITY REQUIREMENT IN THE PLD-2024: MOST PROSUMERS NO LONGER SUBJECT TO HARMONISED PRODUCT LIABILITY – Perhaps inspired by this French example but likely more motivated by the pursuit of coherence with EU product safety regulation (see *supra* nr. 25.c), the PLD-2024 abolishes the ‘neither for-profit nor professional defence’ and takes a fundamentally different approach by instead requiring that the defendant has acted in the course of a commercial activity for liability to app. This is because art. 2(1) PLD-2024 and the various defendant definitions in art. 4(10)-(15) PLD-2024 all ultimately are based on the concepts of ‘making available on the market’ and ‘putting into service’, both of which require that the person in question acted “*in the course of a commercial activity, whether in return for payment or free of charge*”.¹²⁰⁴ The new, crucial ‘commercial activity’ requirement is further discussed below. The second part refers to the fact, already previously recognised under art. 7(c) PLD-1985, that someone can still act for economic purposes although a product is distributed for free, such as a promotional gift (see *supra* nr. 197).

This new approach by the PLD-2024 is in a twofold manner a radical departure from the previous solution of art. 7(c) PLD-1985.¹²⁰⁵ First of all, by regulating this as a requirement for establishing liability under the PLD-2024 rather than a defence, the burden of proof shifts from the defendant to the injured party. It remains to be seen how this will be applied in practice, although it can be expected that courts will relatively quickly look at defendants to disprove that they acted in the course of a ‘commercial activity’. Second, rather than the stringent dual requirement for exoneration of art. 7(c) PLD-1985’s ‘neither for-profit nor professional defence’ (see *supra* nr. 197), now only a single requirement applies that is more flexible in nature. In practice, this will mean that many more defendants will be able to

¹²⁰⁴ Art. 4(7)(9) PLD-2024. See also the definition of ‘placing on the market’ in art. 4(8) *ibid.*, which is based on ‘making available on the market’.

¹²⁰⁵ See also E. Van Gool, ‘De nieuwe richtlijn productaansprakelijkheid en circulaire economie’ (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 412.

escape from liability under the PLD-2024 due to acting outside a commercial capacity, while they would have been unable to successfully prove art. 7(c) PLD-1985.

The ‘making available on the market’ and the derivative ‘placing on the market’ concepts, which are thus the new key liability requirements that impose that the defendant must have acted “*in the course of a commercial activity*”, can also be found in the General Product Safety Regulation 2023/988/EU.¹²⁰⁶ It can be expected that an entirely similar interpretation under the new PLD-2024 as under *ex ante* product safety rules will be pursued. Yet, both these concepts and the concept of ‘putting into service’, which the PLD-2024 now also uses, were first developed in EU product regulation in general. Hence, the guidance offered by the Commission in the ‘Blue Guide’ will likely turn out to be particularly relevant. While discussing the concept of ‘making available’, the Commission states the following “*Commercial activity is understood as providing goods in a business related context. Non-profit organisations may be considered as carrying out commercial activities if they operate in such a context. This can only be appreciated on a case by case basis taking into account the regularity of the supplies, the characteristics of the product, the intentions of the supplier, etc.*”¹²⁰⁷ Hence, a non-profit, publicly financed entity or a prosumer might still engage in a commercial activity, but this relies among others on ‘the regularity’ of the activity, as well as the nature of the particular product and on intentions. Importantly, the Commission then adds “*In principle, occasional supplies by charities or hobbyists should not be considered as taking place in a business related context.*” This confirms the importance of how regular and organised an activity is. In other words, a hobby craftsman who every few months sells a small self-manufactured product, might evade liability. If it is a very expensive self-created product, which also takes a lot of time to create, then this factual assessment might change.

In addition to the Blue Guide, also the CJEU’s *Kamenova* case law on the interpretation of the concept of ‘trader’ in Unfair Commercial Practices might be instructive, because it can shed a light on when an activity of prosumers, especially those acting on online marketplaces, becomes sufficiently profit-seeking, organised and regular to potentially also qualify as ‘making available’ or ‘putting into service’ under the PLD-2024: “[...] the referring court will, in particular, have to verify whether the sale on the online platform was carried out in an organised manner, whether that sale was intended to generate profit, whether the seller had technical information and expertise relating to the products which she offered for sale which the consumer did not necessarily have, with the result that she was placed in a more advantageous position than the consumer, whether the seller had a legal status which enabled her to engage in commercial activities and to what extent the online sale was connected to the seller’s commercial or professional activity, whether the seller was subject to VAT, whether the seller, acting on behalf of a particular trader or on her own behalf or through another person acting in her name and on her behalf, received remuneration or an incentive; whether the seller purchased new or second-hand goods in order to resell them, thus making that a regular, frequent and/or simultaneous activity in comparison with her usual commercial or business activity, whether the goods for sale were all of the same type or of the same value, and, in

¹²⁰⁶ Art. 3(6)-(7) General Product Safety Regulation 2023/988/EU.

¹²⁰⁷ Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 19.

*particular, whether the offer was concentrated on a small number of goods.*¹²⁰⁸ The Court itself emphasized that this remains a factual, case-specific assessment and that none of these criteria is necessary decisive.¹²⁰⁹

199. ‘COMPLIANCE DEFENCE’ – Fourth, art. 7(d) PLD-1985 stipulates that the producer is not liable if he proves “*that the defect is due to compliance of the product with mandatory regulations issued by the public authorities*”. This regulatory ‘compliance defence’ (see also *supra* nr. 10.d) related to the ‘*ordre de la loi*’ in French and Belgian liability law, requires that the defect has been directly and inevitably caused by compliance with mandatory government rules. Excluded are, for example, binding rules of private organizations, mere regulatory approvals or harmonised but not directly binding product safety standards which constitute the bulk of all more detailed product safety specifications (see *supra* nr. 10.a).¹²¹⁰ Whether this defence can be invoked by other defendants than producers, is discussed *infra* nrs. 317 et seq.

Art. 11(1)d PLD-2024 retains this ‘compliance defence’ in a virtually unchanged version.¹²¹¹ An amendment proposed by the Parliament to additionally require that the defendant must have additionally exercised all reasonable care,¹²¹² was not adopted in the final text. This would have further accentuated the fault-based overtones present in harmonised product liability (see *supra* nr. 173), but it would have been mostly redundant since the existing defence is already interpreted in such a way that the defendant’s level of care no longer matters because the accident has to be solely caused by the regulatory compliance.

Although the compliance defence is rarely invoked in current practice, it gains relevance to the extent that national and EU legislators restrict the freedom to design products for other policy reasons than product safety, such as to make products more repairable, without providing an exception to those restrictions when certain design features would be necessary for reasons of accident-prevention (see *infra* nrs. 379.d, *in fine* and 393). Furthermore, the French legislator has adopted a variant of the compliance defence specific to liability of producers for subsequent accident risks during or after self-repair activities by product users,¹²¹³ which seems to violate the maximum harmonisation of the PLD (see *infra* nr. 398).

200. ‘DEVELOPMENT RISK DEFENCE’ – Fifth, according to art. 7(e) PLD-1985, the producer is not liable if he proves “*that the state of scientific and technical knowledge at the time when he put the product into circulation was not such as to enable the existence of the defect to be discovered*”.

¹²⁰⁸ CJEU 4 October 2018, C-105/17, *Evelina Kamenova*, ECLI:EU:C:2018:808, nr. 38.

¹²⁰⁹ *Ibid.*, nr. 39.

¹²¹⁰ See Howells, ‘strict liability’, nrs. 4.251-4.253; Brun, *Responsabilité civile extracontractuelle*, 5th edn., 541; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 264-266; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3602, 25-27; Wagner, *MüKo BGB*, ‘Produkthaftungsgesetz’, § 1, nrs. 43-49.

¹²¹¹ The “*mandatory regulations issued by the public authorities*” in art. 7(d) PLD-1985 is changed to “*legal requirements*” in art. 11(1)d PLD-2024.

¹²¹² Art. 10(1)d amended draft PLD-Proposal-2022 in EU Parliament, ‘Report of 12 October 2023 on the proposal for a directive of the European Parliament and of the Council on liability for defective products’ A9-0291/2023, 58.

¹²¹³ Art. L441-5 Code de la Consommation.

Especially but not only in France,¹²¹⁴ a lot of scholarly activity after the PLD-1985 adoption has been singularly fixated on this ‘development risk defence’,¹²¹⁵ which originates from German *Produzentenhaftung*.¹²¹⁶ This is an optional defence under the PLD-1985,¹²¹⁷ which has been implemented by most Member States, including Belgium, Germany and France, although the latter rejects the defence for products originating from the human body.¹²¹⁸ Yet, Member States who choose to implement it are not free to alter the defence’s stringent requirements, in light of the Directive’s maximum harmonizing nature (see *supra* nr. 170).¹²¹⁹ Additionally, it is worth noting that this optional defence was another amendment to the original PLD-1985 proposal, inserted during negotiations to address industry concerns about an overly strict liability.¹²²⁰

Notwithstanding the flurry of academic attention that it received, the most important thing to know about the development risk defence is its very restrictive scope. As confirmed by the CJEU in *Commission v. United Kingdom*, the defence’s standard is the most advanced level of existing knowledge that is theoretically accessible for the producer when putting the product into circulation.¹²²¹ This is evaluated at the global level and across economic sectors, meaning

¹²¹⁴ E.g., O. Berg, ‘La notion de risque de développement en matière de responsabilité du fait des produits défectueux’ (1996) *La Semaine Juridique: Édition Générale* 271; P. Oudot, *Le risque de développement: contribution au maintien du droit à réparation* (EUD 2005); L. Tran and G. Etier, ‘Responsabilité du fait des produits: le risque de développement’ in C. Chappuis and B. Winiger (eds.), 2018 (Schultess 2016); J.-S. Borghetti, ‘La Cour de cassation admet pour la première fois le jeu de l’exonération pour risque de développement (note Cass. 1re civ., 5 mai 2021, n° 19-25102)’ (2021) *Revue des Contrats* 27; M. Cartapanis, ‘Faut-il repenser l’exonération pour risque de développement?’ (2021) *Revue Trimestrielle de Droit Civil* 523. See also Fondazione Rosselli, *Analysis of the Economic Impact of the Development Risk Clause as provided by Directive 85/374/EEC on Liability for Defective Products: Final Report* (EU Commission 2014).

¹²¹⁵ Often, art. 7(e) PLD-1985 is also called the ‘state-of-the-art defence’. However, the latter is also frequently used for cases where a risk is known but products are considered to be not defective to begin with because the state of the art did not have a reasonable alternative design (see *supra* nrs. 174 and 179 et seq.). See, e.g., G. Howells, ‘Introduction’ in G. Howells (ed.), *The Law of Product Liability* (2nd edn., Butterworths 2007) nrs. 1.17-1.18. The ‘development risk defence’ more clearly refers to art. 7(e) PLD-1985, where a product is already defective but the defect was impossible to know.

¹²¹⁶ BGH 16 June 2009, VI ZR 107/08, BGHZ 181, 253, *Juris*, nrs. 22, 27-31; Foerste, ‘2. Deliktische Haftung’, 419-421; E. Van Gool, ‘Overview of German product liability law’ (2024) <<https://ssrn.com/abstract=4824956>>, 6-7.

¹²¹⁷ Art. 17(1)b PLD-1985.

¹²¹⁸ BELGIUM: art. 6. 48(e) CC BE; art. 8(e) Wet Productaansprakelijkheid / Loi Responsabilité Produits. GERMANY: § 1(2)5 Produkthaftungsgesetz. However, note that there is liability for development risks in Germany’s special liability regime for pharmaceutical products (§ 84 Gesetz über den Verkehr mit Arzneimitteln vom 12 Dezember 2005, BGBl I, 3394). FRANCE: arts. 1245-10, 4° and 1245-11 CC FR.

¹²¹⁹ CJEU 25 April 2002, C-52/00, *Commission v. France*, ECLI:EU:C:2002:252, nr. 47.

¹²²⁰ Cf. art. 1(2) Commission, ‘Proposal for a Council Directive relating to the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products’ [1976] OJ C241/9, 11 (explicitly holding the producer liable for the development risk) with art. 7(e) PLD-1985.

¹²²¹ CJEU 29 May 1997, C-300/95, *Commission v. United Kingdom*, ECLI:EU:C:1997:255, nrs. 26-29. See also Borghetti, *La responsabilité du fait des produits*, 465-467.

it disregards regional practices or particular industry standards.¹²²² Practical and financial obstacles to understanding and to acting on this knowledge or the fact that the knowledge is uncertain or disputed are irrelevant in this objective test.¹²²³

There nevertheless continue to exist some significant uncertainties, such as on the required degree of accessibility or the required link between knowledge and particular product defect.¹²²⁴ Furthermore, it can again be questioned if and how other defendants can invoke the defence of art. 7(e) PLD-1985, which is further discussed *infra* nrs. 317 et seq. Finally, it is worthwhile to emphasize that the rare defendant who can successfully invoke the development risk defence, still remains subject to non-harmonised, generally fault-based post-marketing liability and corresponding post-marketing product safety obligations, which may require him to issue warnings or even organize a product recall (see *supra* nrs. 10.d and 184).

Art. 11(1)e PLD-2024 retains the ‘development risk defence’ and, during the legislative process, it seemed that it would become a mandatory part of EU product liability harmonisation that would no longer be an implementation option for Member States, as the Commission had put forward in the PLD Proposal 2022.¹²²⁵ At the eleventh hour, however, negotiations between the Council and Parliament resulted in an extra art. 18 PLD-2024, which nevertheless creates two possible exceptions. First of all, Member States are allowed to maintain such exceptions when these are already a part of their current PLDI. Concretely, this means that they can choose to continue to hold defendants liable “*even if they prove that the objective state of scientific and technical knowledge at the time the product was placed on the market or put into service, or during the period in which the product was within the manufacturer’s control was not such that the defectiveness could be discovered*”.¹²²⁶ Second, Member States can also introduce similar exceptions to the development risk defence, even when those are not present in their current

¹²²² See Howells, ‘strict liability’, nrs. 4.293; M. Bacache-Gibeili, *La responsabilité civile extracontractuelle* (3rd edn., Economica 2016) 915; Bloch and Poumarède, ‘L’indemnisation des victimes de produits’, nr. 6313.95.

¹²²³ See Howells, ‘strict liability’, nrs. 4.286-4.292; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 271-273; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3602, 28-31. Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 1, nrs. 58-59. See also Cass. BE 6 April 2006, *NJW* 2007, 460, note I. Boone.

¹²²⁴ See Borghetti, *La responsabilité du fait des produits*, 464-468; Howells, ‘strict liability’, nrs. 4.293-4.295; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 273-276.

¹²²⁵ See art. 10(1)e PLD-2022.

¹²²⁶ Art. 18(1) PLD-2024. Such member states must notify the text of these measures to the Commission within 24 months after the Directive’s entry into force (art. 18(1), 2nd section *ibid.*). See, e.g., **FRANCE**: The exception for products originating from the human body (art. 1245-11 CC FR) seems to be a prime candidate for maintaining such a derogation and might even be an important reason why a political compromise could only be reached based on a text that included art. 18 PLD-2024.

PLDI.¹²²⁷ Yet, such novel exceptions must meet three requirements to ensure they are justified, proportionate and limited to specific product categories.¹²²⁸

This end-result illustrates once more the development risk defence's political sensitivity, notwithstanding the fact that its relevance remains relatively modest in actual practice.

201. 'COMPONENT DEFENCE' – Finally, art. 7(f) PLD-1985 exempts the producer of a product component from liability if he proves "*that the defect is attributable to the design of the product in which the component has been fitted or to the instructions given by the manufacturer of the product*". This 'component defence' specifically protects upstream suppliers of defective components according to two alternative option.

In the first option, they must prove that the only reason why their component is deemed defective is due to the manner how the final manufacturer has integrated it in the final product. In the literature, it is generally remarked that in such case the component was not defective to begin with when it was 'put into circulation', which is the moment of supply to a downstream manufacturer. This makes the defence seem partially superfluous.¹²²⁹ The defence based on this hypothesis fails if the final producer is not exclusively responsible and there was already some defect when the component was supplied, which may consist of a failure to warn the final manufacturer about a particular risk.¹²³⁰

In the second option, the component producer must prove that, although the component was in hindsight already defective when it was initially supplied to the final manufacturer, this was solely due to exact and binding instructions provided by the latter.¹²³¹ It is worth pointing out that this final manufacturer does not benefit from a mirror defence, since he is liable based on strict EU product liability for using a defective component or material in the final product which he put into circulation and he cannot invoke that he solely acted according to instructions of a downstream distributor.¹²³²

¹²²⁷ Art. 18(2) PLD-2024. A notification to the Commission is again required, although there is no time limit to introduce such new exceptions. The Commission then receives a 6 month period to issue an opinion on whether the proposed exception(s), which are meanwhile suspended, satisfy the conditions discussed in the next footnote (art. 18(4)-(5) *ibid.*). An opinion finding a violation of those conditions by a new, national exception, which is nevertheless still implemented, can subsequently of course lead to enforcement proceedings before the CJEU.

¹²²⁸ Art. 18(3) *ibid.*

¹²²⁹ Some authors incorrectly reject the defence in its entirety based on this observation, without distinguishing that it only relates to the first option and that the defence remains pertinent in the second hypothesis. *E.g.*, S. Lierman, *Voorzorg, preventie en aansprakelijkheid* (Intersentia 2004) 393; Brun, *Responsabilité civile extracontractuelle*, 5th edn., 544 (emphasizing its incoherence with art. 1245-7 CC FR); Verhoeven, *Productaansprakelijkheid en productveiligheid*, 280; I. Lutte and J.-L. Fagnart, 'Livre 33bis' in X. (ed.), *Responsabilités. Traité théorique et pratique* (Kluwer 2020 update) nr. 167.

¹²³⁰ Howells, 'strict liability', nr. 42.99; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3602, 34-36; Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 1, nr. 68.

¹²³¹ Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3602, 34-36 (also discussing how the component producer is therefore operating in the context of harmonised EU product liability in a subordinate role in which he is only liable for a more limited sphere of risks).

¹²³² See also Oechsler, Staudinger, 'Produkthaftungsgesetz', § 1, nrs. 144, 147.

Art. 11(1)f PLD-2024 retains the ‘component defence’. Based on the language of art. 7(f) PLD-1985 and art. 11(1)f PLD-2024, it is clear that this defence can only be invoked by upstream ‘component suppliers’, for which this dissertation argues that these can be all possible defendant qualifications subject to not only primary but also secondary liability in the upstream distribution of a component before it arrives at the product manufacturer who integrates this component in the final product he places on the market or puts into service (see also *infra* nr. 359). The role this defence plays in the context of repairs, refurbishments, remanufacturing and re-use, is examined further *infra* nrs. 354.b, 364 and 434.

b. Limitation and extinction period

202. LIMITATION PERIOD OF THREE YEARS – Art. 10(1) PLD-1985 provides that proceedings to claim based on harmonised product liability have to be initiated within *a limitation period of three years*” starting on “*the day on which the plaintiff became aware, or should reasonably have become aware, of the damage, the defect and the identity of the producer*”. Although this is a relatively short limitation period, it is an integral part of the Directive’s maximum harmonisation, which for example means that the derogation in the Belgian PLDI for claims by public authorities relating to environmental damage violates the Directive.¹²³³ Art. 14(2) PLD-1985 confirms that national law determines the suspension and interruption of this limitation period. The starting point is the moment when the plaintiff has become cumulatively aware of the damage, the product defect as well as the defendant’s identity or when he reasonably should have become aware of those elements, which is interpreted according to a standard of normal negligence.¹²³⁴ This also means that the plaintiff after an accident must take reasonable efforts to retrieve such information.¹²³⁵ Although this is sometimes disputed, a majority view holds that different limitation periods can start at different points in time for claims by one plaintiff against different defendants for the same damage (see *infra* nr. 329).¹²³⁶ Art. 16 PLD-2024 explicitly supports this view and also generally confirms the aforementioned principles of the 3-year limitation period.

¹²³³ **BELGIUM:** art. 6.52 CC BE still includes an exception referring to art. 2277ter Old CC BE, which provides longer limitation periods for claims by public authorities to recuperate costs for preventing and remediating environmental damage. See also J.-L. Fagnart, *La responsabilité du fait des choses* (Kluwer 2017) nr. 158.

¹²³⁴ Taschner and Frietsch, *Kommentar*, 412-413, 418-419; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 549-550; Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 53, nr. 3; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3609, 1-2; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 12, nr. 3.

¹²³⁵ Verhoeven, *Productaansprakelijkheid en productveiligheid*, 282; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 12, nr. 5.

¹²³⁶ Taschner and Frietsch, *Kommentar*, 413; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 282-283; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3609, 3; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 12, nr. 10; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 12, nr. 8. See also Liège 26 June 2014, *JLMB* 2015, 603, 605; C. Caillé, ‘Responsabilité du fait des produits défectueux’ in X. (ed.), *Répertoire de droit civil* (Dalloz.fr 2018 update) nr. 96.

203. EXTINCTION PERIOD OF TEN YEARS – Art. 11 PLD-1985 adds to the ‘relative’ limitation period of art. 10(1) PLD-1985 an ‘absolute’ extinction period, according to which injured parties lose their liability claims “upon the expiry of a period of 10 years from the date on which the producer put into circulation the actual product which caused the damage, unless the injured person has in the meantime instituted proceedings against the producer.”¹²³⁷ In other words, if not being summoned in court proceedings ten years after the specific product or product component has been put into circulation (see *supra* nrs. 194 and 201), there is no longer a risk of being subject to EU harmonised product liability.¹²³⁸ In *Aventis Pasteur*, the CJEU recognised that, if court proceedings have been timely initiated against a not liable supplier, if such supplier is a wholly-owned subsidiary of the actual producer and if the putting into circulation was in fact determined by this producer, the latter can still according to national law be substituted for the subsidiary in the court proceedings.¹²³⁹ The ten-year extinction period can neither be suspended nor interrupted, with the exception of a suspension resulting from the initiation of court proceedings.¹²⁴⁰ Given its relatively brief length and inflexible nature, this extinction period tends to play a particularly prominent role in a more circular consumer goods economy (see in particular *infra* nrs. 244-248 and 334-337).

Art. 17(1) PLD-2024 retains the ten-year extinction period, while it specifies the starting point as the moment when either the harmful product “was placed on the market or put into service” or “in the case of substantially modified products, the date on which that product was made available on the market or put into service following its substantial modification”. This clarifies the extinction period’s starting point for claims against different defendants, which is another neglected issue leading to uncertainty under the old Directive (see *infra* nrs. 331-333). Given

¹²³⁷ See *infra* nr. 244 on the goals underlying this extinction period.

¹²³⁸ **FRANCE**: in apparent violation of the Directive’s maximum harmonisation, art. 1245-15 CC FR stipulates that the extinction period does not apply in case of the producer’s fault. Some eminent French authors suggest that it is permitted due to art. 13 PLD-1985’s partial preservation of national liability law (Viney, Jourdain and Carval, *Les conditions de la responsabilité*, 4th edn., 65). However, this seems to be misguided because it jumbles together two distinct liability theories and because the CJEU consistently confirms the PLD-1985’s maximum harmonising nature within its scope of application (see *supra* nr. 170). Moreover, such a provision would raise additional interpretative difficulties when the defendant is another party than the original producer (cf. *infra* nrs. 331-332). See also Brun, *Responsabilité civile extracontractuelle*, 5th edn., 546, footnote 175.

¹²³⁹ CJEU 2 December 2009, C-358/08, *Aventis Pasteur v. OB*, ECLI:EU:C:2009:744, nrs. 51-63. A-G. TRSTENJAK categorizes the required level of control (‘determining the putting into circulation’ according to the Court) relatively broadly and even accepts a presumption that this is the case when a supplier is a wholly-owned subsidiary. See A-G. Trstenjak, opinion C-358/08, 8 September 2009, ECLI:EU:C:2009:254, nrs. 38-42.

¹²⁴⁰ CJEU 2 December 2009, C-358/08, *Aventis Pasteur v. OB*, ECLI:EU:C:2009:744, nr. 45; Taschner and Frietsch, *Kommentar*, 421-422; Markovits, *La Directive C.E.E. du 25 juillet 1985*, 151; N. Estienne, ‘L’action en responsabilité et la prescription. Rapport belge’ in GRERCA (ed.), *La responsabilité du fait des produits défectueux* (IRJS 2013) 374; P. Le Tourneau, *Responsabilité des vendeurs et fabricants* (5th edn., Dalloz 2015) nr. 22.342; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 284; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3610, 5; I. Lutte and J.-L. Fagnart, ‘Livre 33bis’ in X. (ed.), *Responsabilités. Traité théorique et pratique* (Kluwer 2020 update) nr. 154. *Contra* G. Pignarre and S. Pimont, ‘L’action en responsabilité et la prescription. Rapport français’ in GRERCA (ed.), *La responsabilité du fait des produits défectueux* (IRJS 2013) 357.

the sometimes sorrowful outcomes in practice of this absolute extinction period of merely ten years, especially in case of toxic products and other long-term or secretly accumulating damage (see also *infra* nr. 246), art. 17(2) PLD-2024 extends it to 25 years when a person “*due to the latency of a personal injury*” has been unable to initiate proceedings within 10 years.¹²⁴¹

§ 5. Procedural aspects

204. REPRESENTATIVE ACTIONS (‘CLASS ACTIONS’) – The PLD-1985 is listed in Annex I of Directive 2020/1828/EU on representative actions for the protection of collective consumer interests.¹²⁴² Hence, EU strict product liability can be enforced through ‘class actions’, which is a traditional staple of US product liability litigation, albeit one that is on the decline.¹²⁴³ With regards to civil liability, this tends to be a novelty in most European legal systems. Other, non-harmonised product liability claims *sensu lato* in Belgium, France and Germany can for the time being only be enforced through individual actions by injured parties or those substituted in their rights. The peculiarities of this representative action procedure and the varieties in its implementation are outside this dissertation’s scope (see *supra* nr. 36). Moreover, for the time being it appears to be rarely used in European product liability litigation, notwithstanding its

¹²⁴¹ Note that in the original Commission proposal, this extension was merely limited to 15 years (art. 14(3) in Commission, ‘Proposal for a Directive of the European Parliament and of the Council on liability for defective products’ COM(2022) 495 final). Note also how the current art. 17(2) PLD-2024 is a compromise between the positions of both parts of the EU legislature. The Council proposed to extend the period to 20 years (art. 14a(2) amended draft PLD-Proposal-2022 in EU Council, ‘Proposal for a Directive of the European Parliament and of the Council on liability for defective products: Mandate for negotiations with the European Parliament’ 2022/0302(COD), 15 June 2023). The Parliament proposed to extend the period to 30 years but additionally required that the injured party’s inability to initiate court proceedings within the 10-year period must be “*despite exercising all due due care*” (art. 14(3) amended draft PLD-Proposal-2022 in EU Parliament, ‘Report of 12 October 2023 on the proposal for a directive of the European Parliament and of the Council on liability for defective products’ A9-0291/2023, 62). Art. 17(2) PLD-2024 omits again this last requirement and evaluates, instead, the injured party’s inability to timely initiate court proceedings “*due to the latency of a personal injury*” in a more purely objective manner.

¹²⁴² Parliament and Council Directive 2020/1828/EU of 25 November 2020 on representative actions for the protection of the collective interests of consumers and repealing Directive 2009/22/EC [2020] OJ L409/1, 22.

¹²⁴³ See in particular Rule 23 U.S. Federal Rules of Civil Procedure (2007, U.S. Supreme Court), <<https://www.federalrulesofcivilprocedure.org/frcp/title-iv-parties/rule-23-class-actions/>>. Most State courts have similar rules to enable class litigation. See generally Frumer, Friedman and Sklare, *Products Liability*, nrs. 19:01-19.12; Owen and Davis, *Products Liability*, 4th edn., nrs. 22:1-22:17. Note, however, that especially federal courts have become increasingly reluctant to certify class actions in general and that federal and State rules have become more restrictive, resulting in an overall decline in class actions in also the product liability context. See R. Klonoff, ‘The Decline of Class Actions’ (2013) 90 *Washington University Law Review* 729; Owen and Davis, *Products Liability*, 4th edn., nr. 22:2: “*It is fair to say that the heyday of the mass tort product liability class action has come to an end, for the time being at least.*”.

potential to reduce the inherent asymmetry between litigants and to increase the success rate of especially more technical claims.

Precisely in a more circular economic context, the relevance of representative actions decreases, because products and involved parties become more heterogeneous (see *supra* nrs. 18 and 152-154). Representative actions are undeniably most useful for a linear model of production and distribution with countless consumers using identical, mass-produced goods. Nevertheless, two general observations are raised here.

First, Directive 2020/1828/EU emphasizes the possibility of pursuing injunctive remedies ('anticipatory claims').¹²⁴⁴ Representative actions might indeed be the most realistic format for anticipatory product liability claims, which are now virtually non-existing (see *supra* nrs. 4 and 36). Consequently, this seems to be a promising combination. However, the most suitable application for collective anticipatory claims, is undoubtedly post-marketing liability for risks emanating from products that are already on the market. This type of liability precisely falls outside the PLD-1985's scope and is pursued through extracontractual liability for fault (see *supra* nrs. 7 and 184). Hence, the liability theory for which representative actions might be most useful, does in the absence of specific national rules on class actions, currently not benefit from this possibility and can only be enforced through individual claims.

Second, the EU rules on representative actions focus on the collective protection of consumer interests. The EU harmonised product liability regime does not fit well in this framework, given that its essential goal is the protection of all types of product users as well as third parties when they are injured in product accidents (see *supra* nrs. 5, 168, 176 and 190). Nevertheless, the traditional EU term 'consumer' used in Directive 2020/1828/EU might theoretically also encompass third parties who have been injured in a product accident outside a professional capacity, since it is negatively defined as "*any natural person who acts for purposes which are outside that person's trade, business, craft or profession.*"¹²⁴⁵ Hence, based on a sufficiently broad interpretation, qualified entities can also be able to represent in a harmonised product liability claim such non-professional third parties, although they were not as genuine 'consumers' part of any B2C-transaction relating to the injurious product in question. However, there remains a fundamental issue with persons injured by a product in a professional capacity, either as B2B-users of a product or as injured third parties who were acting professionally such as employees or self-employed bystanders.¹²⁴⁶ Under the PLD-1985, these persons can claim for personal injuries, death and certain damage to goods (see *supra* nr. 190). Yet, due to their professional capacity, there is currently in Belgium, France and Germany no possibility for them to pursue such claims through a representative action.¹²⁴⁷ This disparity is now reduced by the PLD-2024, which explicitly limits its scope to only natural persons (see *supra* nr. 176). Of course, these might still be natural persons acting in a

¹²⁴⁴ Art. 8 Parliament and Council Directive 2020/1828/EU of 25 November 2020 on representative actions for the protection of the collective interests of consumers and repealing Directive 2009/22/EC [2020] OJ L409/1, 15-16.

¹²⁴⁵ Art. 3(1) *ibid.*

¹²⁴⁶ See Verhoeven, *Productaansprakelijkheid en productveiligheid*, 294-295.

¹²⁴⁷ This is notwithstanding the possibility of sectoral legislation that establishes collective actions for particular products.

professional capacity, who may suffer personal injuries or other damage covered by the PLD but which cannot be claimed through a representative action.

205. EVIDENCE: BASIC PRINCIPLES – Notwithstanding EU product liability’s goal of harmonisation and the fact that these rules are crucial for its operation in practice, rules of evidence have only to a very limited extent been harmonised by the PLD-1985. The new Directive changes this to some¹²⁴⁸ extent, as discussed in the next section, but the procedural autonomy of Member States continues to be a fundamental feature of harmonised product liability law.

Art. 4 PLD-1985 stipulates that the “*injured person shall be required to prove the damage, the defect and the causal relationship*”. This basic rule following the adage *actori incumbit probatio*, is reaffirmed by art. 10(1) PLD-2024. According to the CJEU, this means that Member States are precluded from completely reversing the burden of proof concerning these three liability requirements¹²⁴⁹ or from applying other rules of evidence which “*in practice [...] introduce, to the detriment of the producer, unjustified presumptions liable to infringe Article 4 of Directive 85/374 or even undermine the very effectiveness of the substantive rules laid down in that directive.*”¹²⁵⁰ Consequently, especially rules of national law that would directly allow a reversal of the burden of proof, like the Belgian art. 8.4, 5th section CC BE, are inapplicable in the context of EU harmonised product liability.¹²⁵¹ Only the harmonised rules of the Directives themselves can allocate the burden of proof differently, as the new Directive illustrates with the range of refutable presumptions discussed in the next section.

In contrast, the defendant clearly bears the burden of proving the defences listed in art. 7 PLD-1985 and art. 11 PLD-2024.¹²⁵² In other words, once the plaintiff proves a product defect, damage and causation, there is in effect a refutable presumption that the defendant has put the product into circulation, that the defect is anterior to this moment in time, that he acted for-profit or in a professional capacity and that the requirements for the compliance,

¹²⁴⁸ See, e.g., recital 43 PLD-2024: “*This Directive harmonises rules on disclosure of evidence only in so far as such matters are regulated by it.*”

¹²⁴⁹ CJEU 20 November 2014, C-310/13, *Novo Nordisk*, ECLI:EU:C:2014:2385, nrs. 27-28; CJEU 21 June 2017, C-621/15, *Sanofi Pasteur*, ECLI:EU:C:2017:484, nrs. 27, 29.

¹²⁵⁰ CJEU 21 June 2017, C-621/15, *Sanofi Pasteur*, ECLI:EU:C:2017:484, nr. 34. See also *ibid.* nr. 27: “[...] *the national rules governing how evidence is to be adduced and appraised must not be such as to undermine either the apportionment of the burden of proof as provided for under Article 4 [...].*”

¹²⁵¹ See Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3602, 39; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 1, nrs. 78, 82; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 1, nr. 153. See also Bloch and Poumarède, ‘L’indemnisation des victimes de produits’, nr. 6313.61.

¹²⁵² See also Taschner and Frietsch, *Kommentar*, 187; Markovits, *La Directive C.E.E. du 25 juillet 1985*, 292-293, 303-304; T. Verheyen, ‘Full Harmonization, Consumer Protection and Products Liability: A Fresh Reading of the Case Law of the ECJ’ (2018) *European Review of Private Law* 119, 128; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 1, nr. 86.

development risk or component defences are not fulfilled (see *supra* nrs. 194-201).¹²⁵³ Moreover, although the PLD-1985 does not confirm this explicitly, the defendant bears the burden of proving the defence of contributory fault or the procedural exception of expiration of the limitation or extinction periods (see *supra* nrs. 191 and 202-203).¹²⁵⁴

In practice, product liability proceedings are of course dynamic in nature and parties tend to attempt to anticipatively refute legal or factual elements for which the opposing party still has to meet his initial burden of proof.¹²⁵⁵ Nevertheless, the aforementioned rules on the burden of proof remain crucial, since they decide the so-called ‘evidentiary risk’, namely which party loses when the evidence brought forward by either party is inconclusive regarding any of the liability requirements or defences.

The PLD-1985 does not regulate other aspects of evidence than the burden of proof, like the standard of proof or the admissibility and effect of different types of evidence, which are therefore left to national law. The only exception is the reduced standard of probability for the defendant’s posteriority defence, which has already been discussed *supra* nr. 195. The CJEU has confirmed in the harmonised product liability context its general case law on the procedural autonomy of Member States, which requires among others that the applicable national rules of evidence respect the principles of equivalence and effectiveness.¹²⁵⁶ Especially the latter is pertinent in factually challenging product liability cases, because it means that the exercise of rights conferred by the PLD-1985 may not be rendered “*practically impossible or excessively difficult*” and the effectiveness of the Directive’s system of liability may not be undermined.¹²⁵⁷ As for example held in *Sanofi Pasteur*, this means that national law can neither rule out any recourse to circumstantial evidence nor demand a standard of scientific certainty for proving causation in cases where research is unable to either confirm or rule out a causal link.¹²⁵⁸

206. EVIDENCE: NEW, MAXIMALLY HARMONISED RULES OF THE PLD-2024 ON DISCLOSURE OF EVIDENCE AND REFUTABLE PRESUMPTIONS OF DEFECT AND CAUSATION – It is a truism that the burden of proof, especially regarding product defectiveness and causation, is frequently very challenging for parties injured by product accidents, due to their comparative lack of technical

¹²⁵³ Especially this presumption of anteriority of the product defect (art. 7(b) PLD-1985) is particularly valuable to plaintiffs. See R. Steennot, ‘De vergoedbare schade bij schade ingevolge onveilige en gebrekkige producten’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 236-237; Viney, Jourdain and Carval, *Les régimes spéciaux et l’assurance*, 4th edn., 51. See also *infra* nrs. 317-322 regarding the interpretation of these defences vis à vis different defendants.

¹²⁵⁴ See regarding contributory fault Taschner and Frietsch, *Kommentar*, 502; Markovits, *La Directive C.E.E. du 25 juillet 1985*, 299.

¹²⁵⁵ See also W. Vandenbussche, *Bewijs en onrechtmatige daad* (Intersentia 2017) 85-89, 726.

¹²⁵⁶ CJEU 21 June 2017, C-621/15, *Sanofi Pasteur*, ECLI:EU:C:2017:484, nr. 25.

¹²⁵⁷ *Ibid.*, nrs. 26-27.

¹²⁵⁸ *Ibid.*, nr. 30. See also, e.g., the CJEU’s acceptance of proof that already destroyed cardiovascular devices had been defective, on the basis of only ‘potential defects’ in other devices of the same manufacturing series, supported by the “*abnormal potential for damage*” of these products, as already discussed *supra* nr. 185 (CJEU 5 March 2015, C-503/13-C-504/13, *Boston Scientific*, ECLI:EU:C:2015:148, nr. 40).

expertise and resources.¹²⁵⁹ Driven by concerns that injured parties will become even more frequently unable to prove a potentially meritorious claim (called situations of ‘evidentiary deficiency’, ‘bewijsnood’, ‘Beweisnot’ or ‘nécessités de la preuve’)¹²⁶⁰ when they suffer damage caused by technologically more complex products,¹²⁶¹ the new Directive includes important new rules relating to evidence. It must be noted here that the Commission has published simultaneously with its proposal for updating the PLD-1985 also a proposal for a new AI Liability Directive, which would impose similar refutable presumptions and rules on disclosure of evidence for claims based on national extracontractual fault-based liability in relation to damage caused by AI-systems.¹²⁶²

- a. Art. 9(1) PLD-2024 requires Member States to ensure that, if a plaintiff has “*presented facts and evidence sufficient to support the plausibility*” of a product liability claim, the defendant will upon request of the plaintiff be “*required to disclose relevant evidence that is at the defendant’s disposal*”. Nevertheless, this must occur “*in accordance with national law*” and remain “*limited to what is necessary and proportionate*”.¹²⁶³ In considering this necessity and proportionality, courts must “*consider the legitimate interests of all parties concerned, including third parties, in particular in relation to the protection of confidential information and trade secrets*”.¹²⁶⁴ This aims to prevent so-called ‘fishing expeditions’¹²⁶⁵ and, if (alleged) trade secrets are required to be disclosed, there is a possibility to ask courts to take specific measures necessary to preserve their confidentiality when these risk being disclosed or used both during or after the court proceedings.¹²⁶⁶ Additionally,

¹²⁵⁹ E.g., Commission, ‘Green Paper Liability for defective products’, COM(1999) 396 final, 21; P. Machnikowski, ‘Conclusions’ in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 702 (collecting references to national reports); Viney, Jourdain and Carval, *Les régimes spéciaux et l’assurance*, 4th edn., 51-52; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3602, 41. See also *supra* footnote 36.

¹²⁶⁰ See generally regarding this concept W. Vandenbussche, *Bewijs en onrechtmatige daad* (Intersentia 2017) 205-238. See also H.-J. Ahrens, *Der Beweis im Zivilprozess* (Otto Schmidt Verlag 2015) 208; N. Hoffschir, *La charge de la preuve en droit civil* (Dalloz 2016) 412-413.

¹²⁶¹ See Commission, ‘Report on the Application of the Council Directive on the approximation of the laws, regulations, and administrative provisions of the Member States concerning liability for defective products (85/374/EEC)’ COM(2018) 246 final, 8-10; Expert Group on Liability and New Technologies (New Technologies Formation), *Liability for Artificial Intelligence and Other Emerging Digital Technologies* (2019), 28; Commission, ‘Report on the safety and liability implications of Artificial Intelligence, the Internet of Things and Robotics’, COM(2020) 64 final, 13. See also sources cited *supra* nr. 32.c.

¹²⁶² Commission, ‘Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence (AI Liability Directive)’ COM(2022) 496 final.

¹²⁶³ Art. 9(3) PLD-2024. Note that in the original proposal by the Commission, the disclosure of evidence was phrased less as a right and more as a possibility at the discretion of national courts (art. 8 in Commission, ‘Proposal for a Directive of the European Parliament and of the Council on liability for defective products’ COM(2022) 495 final).

¹²⁶⁴ Art. 9(4) PLD-2024.

¹²⁶⁵ Recital 42 *ibid.*: “[...], *inter alia* to avoid non-specific searches for information that is not relevant to the proceedings, [...]”

¹²⁶⁶ Art. 9(5) *ibid.* Recital 45 *ibid.* adds, among others: “*Such measures should include at least measures to*

courts can upon request order that the disclosed evidence is “*presented in an easily accessible and easily understandable manner*” if this would be deemed proportionate in terms of costs and effort.¹²⁶⁷

Importantly, subject to the same conditions, also “*the claimant is required, in accordance with national law, to disclose the relevant evidence that is at the claimant’s disposal*”, when this is requested by a defendant who has “*presented facts and evidence sufficient to demonstrate the defendant’s need for evidence for the purposes of countering a claim*”.¹²⁶⁸ This mirror-right of the defendant, which might for example be relevant to assess whether certain product (mis)use had been reasonably foreseeable or to prove a contributory fault defence, was not part of the initial Commission proposal.¹²⁶⁹ It seems that a defendant faces less obstacles to request such a disclosure of evidence than a plaintiff. After all, the former must only prove a need for evidence while the latter must already establish the plausibility of his claim for compensation, as discussed above, which is a significant threshold.

It is furthermore worth noting that the plaintiff’s potential right to a disclosure of evidence can be quite meaningless in practice when the defendant is subject to secondary liability or is at least not the product’s manufacturer, which can mean that no pertinent evidence is “*at [his] disposal*”.¹²⁷⁰ This limitation becomes more significant in a more circular consumer goods sector, where there will be on average more anonymous products or defendants being either reusing or repurposing consumer or independent repairers or refurbishers.

Given the maximum harmonisation nature of the Directive,¹²⁷¹ it must be assumed that existing rules of national law on the disclosure of evidence are swept aside in future harmonised product liability cases, even if these would be more lenient to a particular party.¹²⁷² This is of course a significant incursion in the traditional ‘procedural autonomy’ of the Member States. As a concrete illustration, the existing Belgian rule on disclosure of evidence in arts. 877 et seq. *Gerechtelijk Wetboek* / *Code Judiciaire* is somewhat more lenient because it does not require that a party has already established his claim’s plausibility. Conversely, it is also more restrictive because ordering the

restrict access to documents containing trade secrets or alleged trade secrets and to restrict access to hearings to a limited number of people, or allowing access only to redacted documents or transcripts of hearings.”

¹²⁶⁷ Art. 9(6) *ibid.* See also recital 42 *ibid.*: “Such evidence includes documents that have to be created *ex novo* by the defendant by compiling or classifying the available evidence. [...] Taking into consideration the complexity of certain types of evidence, for example evidence relating to digital products, it should be possible for national courts to require such evidence to be presented in an easily accessible and easily understandable manner, subject to certain conditions.”

¹²⁶⁸ Art. 9(2) *ibid.* See also recital 44 *ibid.*

¹²⁶⁹ Cf. art. 8 in Commission, ‘Proposal for a Directive of the European Parliament and of the Council on liability for defective products’ COM(2022) 495 final.

¹²⁷⁰ M.J.J. de Ridder, ‘Het bewijs van gebrekkigheid en causaal verband bij complexe producten in het voorstel voor een nieuwe productaansprakelijkheidsrichtlijn’ (2023) 2023/44 *Nederlands Tijdschrift voor Burgerlijk Recht* 356, 359.

¹²⁷¹ Art. 3 PLD-2024. See also *supra* nr. 170.

¹²⁷² This is also implied in art. 9(7) PLD-2024, which confirms that *a contrario* national rules relating to pre-trial disclosure are not affected.

disclosure remains entirely subject to the judge's discretion and because it is limited to particular pieces of evidence which are relevant to prove a pertinent fact and for which there are serious and specific indications that they are held by the targeted person.¹²⁷³ Art. 9 PLD-2024 does of course not regulate all possible aspects for operationalising this new system of disclosure of evidence. Unregulated aspects remain governed by national law, subject to the principles of equivalence and effectiveness (see *supra* nr. 205).¹²⁷⁴

- b. Art. 10(1) PLD-2024 reaffirms the fundamental principle that the plaintiff bears the burden of proof relating to damage, defect and causation (see *supra* nr. 205). Nevertheless, the other paragraphs of this article introduce a series of refutable factual presumptions which can prove product defectiveness, causation or both.¹²⁷⁵ If the conditions for their application are fulfilled and if there is not sufficient counter-evidence to refute them, these presumption can thus suffice for a plaintiff to prove either or both of these crucial liability requirements.

Art. 10(2) PLD-2024 establishes three grounds where the plaintiff benefits from a refutable presumption of the product's defectiveness. First of all, such presumption applies if a defendant "*fails to disclose relevant evidence*" when ordered pursuant to the aforementioned art. 9 PLD-2024.¹²⁷⁶ Second, a defect is presumed, if the plaintiff has demonstrated that "*the product does not comply with mandatory product safety requirements laid down in Union law or national law that are intended to protect against the risk of the damage suffered by the injured person*".¹²⁷⁷ This presumption seems to have only limited practical value if the final adopted version of art. 7(1) PLD-2024, which equates product defectiveness with violations of product safety requirements, is interpreted at face value (see *supra* nr. 180). Third, a defect is furthermore presumed if the plaintiff demonstrates that "*the damage was caused by an obvious malfunction of the product during reasonably foreseeable use or under ordinary circumstances*".¹²⁷⁸

Art. 10(3) PLD-2024 creates a refutable presumption of the causal link between the damage and the defective product, if it has been established that the caused damage is of a kind which is typically consistent with the defect in question. This can be very helpful to plaintiffs in cases where both defect and 'general causation' are already established but proving 'specific causation' in light of the case's circumstances is very

¹²⁷³ See D. Mougenot, *Mesures d'instruction en matière civile: Production de documents, enquête et témoignage écrit, comparution personnelle, vue des lieux* (Bruylant 2016) 21-30; W. Vandenbussche, *Bewijs en onrechtmatige daad* (Intersentia 2017) 394-421.

¹²⁷⁴ See recital 43 PLD-2024: "[...] Matters not regulated by this Directive include rules on disclosure of evidence with regard to: pre-trial procedures; how specific a request for evidence must be; third parties; cases of declaratory actions, and sanctions for non-compliance with the obligation to disclose evidence." However, relating to the last aspect, note that art. 10(2)a *ibid.* establishes a defect presumption as a sanction for failure to disclose required evidence.

¹²⁷⁵ See recital 46 *ibid.*

¹²⁷⁶ Art. 10(2)a *ibid.*

¹²⁷⁷ Art. 10(2)b *ibid.* See recital 46 *ibid.* But see *infra* nr. 251 on the interpretation of this provision in light of other types of product regulation, such as Ecodesign requirements.

¹²⁷⁸ See *infra* nrs. 233, 260, 290 and 376 for applications to different circular strategies.

challenging.¹²⁷⁹ For example, this can be applied when the potential adverse health effects of defective pharmaceuticals, foodstuffs or toxic substances are specifically known but those same symptoms can still have myriad other causes.

And as a final instrument to support plaintiffs, art. 10(4) PLD-2024 requires national courts to presume either the product's defectiveness, the causal link or both, if despite the aforementioned disclosure of evidence pursuant to art. 9 PLD-2024 and considering all relevant circumstances, two conditions are fulfilled. First of all, "*the claimant faces excessive difficulties, in particular due to technical or scientific complexity,*^[1280] *in proving the defectiveness of the product or the causal link [...], or both*".¹²⁸¹ Second, "*the claimant demonstrates that it is likely that the product is defective or that there is a causal link [...], or both*." It must be emphasized that this final presumption, which has the broadest potential scope of application and can shift the burden of proof for both defect and causation, still imposes relatively stringent requirements. Excessive 'evidentiary deficiency' in itself does not suffice, since the plaintiff furthermore has to already prove according to a standard of likelihood the product defect, the causal link or both.

These proposed new, refutable presumptions will undoubtedly give rise to a lot of debate, both at a legal doctrinal level and in concrete proceedings. Admittedly, they entrench practices and evidentiary principles which many national courts today already apply when they appreciate evidence in product liability proceedings based on the PLD-1985.¹²⁸² However, given the PLD's maximum harmonising character,¹²⁸³ these harmonised rules of evidence now have much more far-reaching consequences. On the one hand, when defendants enjoy under current national law of civil evidence a comparatively strong position, art. 10 PLD-2024 will confront them with presumptions of defectiveness and/or causation which they must now actively refute rather than rely on the plaintiff struggling to substantiate his claim. On the other hand, it can now be questioned to what extent other types of evidentiary relief for plaintiffs provided by national

¹²⁷⁹ See on the distinction between 'general' and 'specific causation' S. Lierman, *Voorzorg, preventie en aansprakelijkheid* (Intersentia 2004) 428-431; S. Steel, *Proof of Causation in Tort Law* (Cambridge University Press 2015) 6.

¹²⁸⁰ See recital 48 PLD-2024: "[...] *Technical or scientific complexity should be determined by national courts on a case-by-case basis, taking into account various factors. Those factors should include the complex nature of the product, such as an innovative medical device; the complex nature of the technology used, such as machine learning; the complex nature of the information and data to be analysed by the claimant; and the complex nature of the causal link, such as a link between a pharmaceutical or food product and the onset of a health condition or a link that, in order to be proven, would require the claimant to explain the inner workings of an AI system. [...]*"

¹²⁸¹ See also recital 48 PLD-2024: "[...] *While a claimant should provide arguments to demonstrate excessive difficulties, proof of such difficulties should not be required. [...] The defendant should have the possibility of contesting all elements of the claim, including the existence of excessive difficulties.*"

¹²⁸² Admittedly, under the PLD, national courts are not allowed to afford to these considerations a full presumption which formally reverses the burden of proof (see *supra* footnotes 1250-1251). But the extent to which they can freely evaluate evidence, factually interpret the liability conditions and use the other possibilities afforded by national rules of civil evidence, allows them to approximate similar outcomes in practice.

¹²⁸³ Art. 3 PLD-2024. See also *supra* nr. 170.

law of evidence, like more limited presumptions and *prima facie* evidence, can still be applied in the context of harmonised product liability. The latter do not rise to the level of a full reversal of the burden of proof and were therefore still allowed under the PLD-1985, albeit with some restrictions (see *supra* nr. 205). If such more limited factual presumptions and other forms of evidence would now continue to apply unabated under the PLD-2024, especially in support of the plaintiffs burden of proving defect and causation, would this not risk to undermine the relatively elaborate balance between the interests of both parties established by art. 10 PLD-2024? At first sight, it seems that the rules on the distribution of the burden of proof in combination with the multiple refutable defect presumption have now extensively harmonised almost all substantive rules of evidence applicable to the defect and causation requirements of a harmonised product liability claim.¹²⁸⁴

Section B. Clarifying the interplay between EU harmonisation and Belgian product liability *sensu lato*

207. INTRODUCTION – The preceding Section’s extensive overview of EU ‘strict’ product liability law has, amongst other aspects, outlined the key principles of the harmonisation pursued by both Directives and the extent thereof (see *supra* nrs. 170-171). Nevertheless, this remains a complex and confusing topic, because an explicit rule on the preservation of different, national liability theories is combined with maximum harmonisation and case law of the CJEU which attempts to maximize the harmonising effect of this legislation. This is also undeniably an important topic, since the extent of the harmonisation achieved by both Directives determines product liability law in general across the EU and, indirectly, also determines the relevance of this dissertation’s research scope.¹²⁸⁵

It is therefore helpful to examine in some extra detail what this concretely means for remaining, non-harmonised product liability law *sensu lato*. Belgian law is specifically chosen to serve as an illustration. On the one hand, focusing on one Member State is still feasible and does not jeopardize the overall research goals of this dissertation, which do not directly

¹²⁸⁴ See CJEU 21 June 2017, C-621/15, *Sanofi Pasteur*, ECLI:EU:C:2017:484, nrs. 19-25 (departing from the combination of the PLD-1985’s maximum harmonising nature with the very limited rules relating to evidence harmonised by this Directive, to establish the extent of the procedural autonomy of the member states). See also M.J.J. de Ridder, ‘Het bewijs van gebrekkigheid en causaal verband bij complexe producten in het voorstel voor een nieuwe productaansprakelijkheidsrichtlijn’ (2023) 2023/44 *Nederlands Tijdschrift voor Burgerlijk Recht* 356, 359-360 (concluding that it would have been preferable if the PLD-2024 had explicitly confirmed that national evidentiary presumptions could still be applied).

¹²⁸⁵ See *supra* nr. 37. This obviously presents a risk of bias, which is relevant to consider when appreciating the persuasiveness of the not merely descriptive but ultimately also normative legal analysis below.

involve national product liability law. On the other hand, recent developments in Belgian case law and literature have sharpened the debate surrounding the extent of the PLD's harmonisation. This makes an analysis focused on the Belgian context also more insightful from an intra-EU perspective.

§ 1. Extracontractual fault-based liability

a. Belgian extracontractual fault-based product liability and European harmonisation

208. BASIC FEATURES AND THE (GROWING) AMBIT OF EXTRACONTRACTUAL LIABILITY FOR FAULT IN BELGIAN PRODUCT LIABILITY LAW – Without delving too deep in the specificities of Belgian liability law (see *supra* nr. 37), art. 1382 Old CC BE, now replaced by art. 6.6 CC BE, imposes a single rule of extracontractual liability for fault, as is common in legal systems based on the Napoleonic Civil Code.

- a. Traditionally, it is accepted by Belgian courts¹²⁸⁶ and scholars¹²⁸⁷ that any product liability claim *sensu lato* on this basis remained unaffected by EU product liability harmonisation, given the rule of art. 13 PLD-1985 on preservation of national product liability theories (see *supra* nr. 171).¹²⁸⁸ The next section will return to this pivotal, but no longer commonly accepted point.
- b. Belgian courts have in the second half of the 20th century started to consider the fact that a 'defective'¹²⁸⁹ product has been supplied by a commercial producer or – less frequently – by a commercial distributor¹²⁹⁰ as sufficient proof of a violation of the general standard

¹²⁸⁶ See, e.g., the following published decisions where claims based on art. 1382 Old CC BE and based on the PLDI by the same plaintiffs regarding the same damage are combined, without any concern about the harmonising effect of the latter on the former Liège 7 November 2005, *TBBR* 2006, 620, 622-623, note E. Montero; Antwerpen 28 October 2009, *TBBR* 2011, 381, 387, note D. Verhoeven; Trib. Bruxelles 23 January 2001, *RGAR* 2002, nr. 13513; Kh. Hasselt 8 November 1999, *RW* 2001-02, 100.

¹²⁸⁷ See, e.g., H. Bocken, 'Buitencontractuele aansprakelijkheid voor gebrekkige producten' in X. (ed.), *Bijzondere overeenkomsten. PUC W. Delva nr. 34* (Kluwer 2008) 356, 359; D. Wuyts, 'Productaansprakelijkheid: een Richtlijn voor (n)iets?' (2008) *Tijdschrift voor Belgisch Burgerlijk Recht* 3, 8-9; Vansweevel and Weyts, *Handboek aansprakelijkheidsrecht*, 498; Delforge, 'Le défaut de sécurité au sens de la loi du 25 février 1991', 304; F. George, 'La responsabilité du fait des produits défectueux' in F. George and R. Jafferali (eds.), *Manuel de droit de la responsabilité civile* (Anthemis 2022) 546; Dubuisson et al., *Chronique de jurisprudence 2008-2020 – Volume 1*, 367-377.

¹²⁸⁸ See in particular the literature cited *supra* footnotes 962-963, dating from before the CJEU's case law on art. 13 PLD-1985, which simply took this rule at face value and considered that any alternative national liability theory was fully preserved and which clearly confirmed how such full preservation was central to the political compromise reached by the EU legislator.

¹²⁸⁹ What brings a court to consider a product as being 'defective'? This is a potentially crucial step, as examined *infra* nr. 212.

¹²⁹⁰ Cases where the distribution of a defective product by a trader rather than by the producer or importer

of care.¹²⁹¹ Just like in French law, this ‘objective fault’ has developed for (diagonal) product liability claims by injured third parties as the mirror-image to the increasingly strict (vertical) product liability claims by injured consumers directly against their distributors and indirectly (*action directe*) against defendants higher in the contractual chain, which case law and literature developed on the basis of the hidden defects guarantee of sales law, as summarised *infra* nr. 208.d.¹²⁹²

In their respective studies of this case law separated by decades, both COUSY and BOCKEN find that the objective component of fault (‘wrongfulness’) is interpreted in a stricter

is considered as an objective fault, are much rarer. See, e.g., Brussel 12 November 1973, RGAR 1974, nr. 9177; Brussel 13 November 1987, RGAR 1989, nr. 11485; Kh. Ieper 24 June 2002, RW 2005-06, 1229 (no fault liability found due to misuse of product by plaintiff). Perhaps this is simply because injured third parties more easily claim against producers and importers, if only because these parties are often identified on the product (see also *infra* nrs. 281 and 303). Alternatively, this might be because the (corrective justice or efficiency) rationale for stricter liability of those distributors is weaker and courts therefore more easily adopt a traditional appreciation of the general standard of care.

¹²⁹¹ See, e.g., Brussel 16 June 1951, RGAR 1951, nr. 4833; Brussel 9 February 1955, JT 1955, 683; Gent 13 May 1988, TBBR 1990, 219, note K. Byttebier and P. Debruyne; Liège 7 November 2005, TBBR 2006, 620, note E. Montero; Brussel 28 November 2005, RGAR 2008, nr. 13341; Com. Bruxelles 22 March 1934, RGAR, nr. 1595; Trib. Liège 11 March 1982, JT 1982, 396; Kh. Ieper 24 June 2002, RW 2005-06, 1229; Kh. Hasselt 16 March 2004, RW 2006-07, 107. Note that the *Cour de Cassation* has mostly ignored this more ‘objective fault’ in product liability cases. An often-cited decision (Cass. BE 12 December 1958, *Pas.* 1958, I, 383, *RCJB* 1960, note G. Van Hecke) is likely misinterpreted based on the summary in the official publication (Cousy, *Problemen van produktenaansprakelijkheid*, 291-292; H. Bocken, ‘Buitencontractuele aansprakelijkheid voor gebrekkige producten’ in X. (ed.), *Bijzondere overeenkomsten*. PUC W. Delva nr. 34 (Kluwer 2008) 347). Only an unpublished decision from 2012 is reported to offer clear support (Cass. BE 23 April 2012, C.10.0737.N, C.11.0639.N, unpublished, cited by M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 186)

¹²⁹² BORGHETTI has extensively studied this ‘Franco-Belgian exception’ in comparative product liability law in Borghetti, *La responsabilité du fait des produits*, 199-262. See also Cousy, *Problemen van produktenaansprakelijkheid*, 229-310 (although critical towards the lower case law adopting an ‘objective fault’ in product liability cases based on art. 1382 Old CC BE, still seeing the historic parallel with product liability based on the hidden defects guarantee); M. Kruithof, ‘Aansprakelijkheid van verkopers voor schade veroorzaakt door verborgen gebreken: tijd voor een “decontaminatie” van artikel 1645 BW’ in N. Carette and B. Weyts (eds.), *Verantwoord aansprakelijkheidsrecht: Liber amicorum Aloïs Van Oevelen* (Intersentia 2017) 402. See on the link with the hidden defects guarantee the summary of Cass. BE 12 December 1958, *Pas.* 1958, I, 383, *RCJB* 1960, note G. Van Hecke: “*Le fabricant qui vend un produit de son industrie doit veiller à ce qu’il ne soit pas atteint de vices cachés; s’il manque à cette obligation il peut encourir, indépendamment de sa responsabilité contractuelle comme vendeur, une responsabilité quasi délictuelle vis-à-vis des tiers.*” Note, however, that this case law relating to the objective nature of the professional’s fault (with roots in Roman law *spondet peritiam artis, et imperitia culpa adnumeratur*) was not, when it started to appear in Belgian court decisions, necessarily tied to the already recognised, relatively strict, (extended) (*action directe*) vertical claim based on the hidden defects guarantee of professional sellers. See, e.g. the summary of the earliest published decision I found Com. Bruxelles 22 March 1934, RGAR, nr. 1595: “*Les professionnels doivent posséder les règles de leur art: toute erreur de technique constitue dans leur chef, une faute susceptible d’engager leur responsabilité. L’industriel qui a fabriqué un objet ou un appareil défectueux commet une faute délictuelle en le mettant en circulation dans le public. Sa responsabilité est engagée sur pied de l’art. 1382 C.c. même vis-à-vis des tiers [...].*”

manner ('more objective fault') by the courts when the established defect is a manufacturing defect. In contrast, in case of design and information defects the assessment remains more traditionally fault-based, meaning that courts evaluate more in-depth how a 'normally prudent' producer or distributor would have acted in the case's concrete circumstance according to the general standard of care.¹²⁹³ This distinction based on the product defect typology matches with a broader pattern in comparative product liability law, which is also observed in the PLD.¹²⁹⁴ Yet, technically speaking, the Belgian fault-based product liability case law itself does not make a real distinction between the defect types. After all, the remaining more traditional appreciation based on the general standard of care actually occurs before establishing whether a design or information defect exists to begin with. Only after the marketed product's defective nature has been established – which is effectively easier, more 'objective' for manufacturing defects – does the aforementioned case law technically apply identically to both design, information and manufacturing defects: the fact that a 'defective' product has been commercially produced or distributed suffices in itself as an 'objective' proof of wrongfulness. Just the appreciation of a design or information defect inherently requires implicit use of the standard of care (cf. *supra* nr. 174).

- c. Belgian law traditionally accepts also 'conscious and free'¹²⁹⁵ conduct that violates a legal rule requiring specific conduct as proof of the objective component of fault ('wrongfulness'). This theoretical 'unity' between illegality and wrongfulness, thus serves as an independent alternative to the general standard of care.¹²⁹⁶ Although it is invoked less frequently in the product liability context,¹²⁹⁷ current Belgian law allows to directly deduce fault-based extracontractual liability from the fact that a producer or distributor has violated a provision of product safety law.¹²⁹⁸

¹²⁹³ Cousy, *Problemen van produktenaansprakelijkheid*, 293-296; H. Bocken, 'Buitencontractuele aansprakelijkheid voor gebrekkige producten' in X. (ed.), *Bijzondere overeenkomsten*. PUC W. Delva nr. 34 (Kluwer 2008) 346-352. See also T. Verheyen, 'Foutaansprakelijkheid voor producten met gebreken' (2018) *Nieuw Juridisch Weekblad* 592, 593.

¹²⁹⁴ See *supra* footnotes 1007-1009.

¹²⁹⁵ This subjective component must relate to the factual conduct that violates the legal rule, not the content of the rule itself. See Cass. BE 19 February 2017, *Pas.* 2017, 337, *RW* 2018-2019, 343, *RCJB* 2018, 37, note J.-L. Fagnart; M. Kruithof, 'Belgium' in B. Weyts (ed.), *International Encyclopaedia of Laws: Tort Law* (Wolters Kluwer 2018) 50-51; Dubuisson et al., *Chronique de jurisprudence 2008-2020 – Volume 1*, 66-71.

¹²⁹⁶ This 'unitary theory' is now explicitly codified in the new art. 6.6, § 1 CC BE. See Cass. BE 22 March 1957, *Pas.* 1957, *Arr.Cass.* 1957, 610; Cass. BE 22 September 1988, *Arr.Cass.* 1988-89, 94, *Pas.* 1989, I, 83, *RW* 1989-90, 433; Cass. BE 16 May 2011, *Arr.Cass.* 2011, 1230, *Pas.* 2011, 1339; Cass. BE 9 February 2017, C.13.0528.F, *JT* 2019, nr. 6756, 21, note F. Auvray. See also *supra* footnote 1073.

¹²⁹⁷ E.g., Trib. Bruxelles 23 January 2001, *RGAR* 2002, nr. 13513 (invoked violation of consumer good labeling regulation is not withheld as a fault, seemingly because court ultimately finds that regulation has been complied with); Mons 26 September 2006, *JT* 2006, 812 (fault consisting of constructing property in violation of various permit and safety requirements).

¹²⁹⁸ M. Kruithof, 'Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?' in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 176; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 310-311, 313.

In those cases, the sticking point is whether the product safety law provision requires ‘sufficiently specific’ conduct, which continues to be a contentious point of interpretation in legal practice. In accordance with AUVRAY’S criterion of ‘context-independence’,¹²⁹⁹ the general product safety requirement imposed on (quasi-)manufacturers and importers,¹³⁰⁰ requires in my opinion in each individual case an interpretation that is too dependent in terms of outcomes on the concrete factual context to satisfy this condition. The same can in my opinion also be said of the general information and temporary product safety obligations of distributors.¹³⁰¹ Only more detailed and concrete product safety requirements, which are less reminiscent of the general standard of care, would satisfy this test of ‘context-independence’ and should in case of a violation immediately prove wrongfulness. Note, however, that the traditional view requires instead that the legal rule imposes a ‘result-oriented obligation’,¹³⁰² regardless how abstract and general it might be. In this reading, the vague and general yet absolute general product safety requirement fulfils this requirement, while the requirements of distributors are interpreted as merely ‘means-oriented obligations’ which do not automatically prove wrongfulness in case of a violation.¹³⁰³ Yet, the explanatory memorandum relating to now adopted art. 6.6, § 1 CC BE seems to explicitly reject a distinction between ‘result-’ and ‘means-oriented obligations’ and instead lends support to approaches similar to AUVRAY’S criterion, by emphasizing the ‘specificity of the conduct required’ by the legal provision.¹³⁰⁴

¹²⁹⁹ F. Auvray, *(On)wettigheid binnen (overheids)aansprakelijkheid: Stellingname voor een uniforme toepassing van het gemeen recht* (KU Leuven 2023) 293 et seq.

¹³⁰⁰ Art. 5 General Product Safety Regulation 2023/988/EU: “Economic operators shall place or make available on the market only safe products.” See also arts. 9-11 *ibid*.

¹³⁰¹ Art. 12(2)-(4) *ibid*.

¹³⁰² See Cass. BE 22 February 1989, *Pas.* 1989, I, 631; Bruxelles 10 February 2017, *JT* 2017, 260, *RGAR* 2017, nr. 15.386; M. Kruithof, ‘Belgium’ in B. Weyts (ed.), *International Encyclopaedia of Laws: Tort Law* (Wolters Kluwer 2018) 52-53.

¹³⁰³ See M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit. PUC W. Delva nr. 40* (Kluwer 2015) 178, 182-183; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 311, 313. *Contra* V. Pire and C. Nicaise, ‘Développements réents en matière de sécurité des produits et des services (lois du 4 avril 2001 et du 18 décembre 2002) et en matière de responsabilité du fait des produits défectueux’ (2004) *Revue Générale des Assurances et des Responsabilités* 13.794 nr. 9 (qualifying the general safety requirement as a means-oriented obligation).

¹³⁰⁴ Boek 6 Wetsvoorstel 2023 / Livre 6 Proposition 2023, 46: “Niet elke overtreding van de wet maakt dus automatisch een fout uit. Om dezelfde reden wordt hier afstand genomen van de stelling dat de verplichting om de wet na te leven een resultaatsverbintenis zou inhouden. Er bestaat altijd een plicht tot naleving van een bindende norm. Het dwingende karakter van een door een juridisch bindende norm opgelegde verplichting mag niet worden verward met de nauwkeurigheid van het daarin vervatte gebod [...]” Note that the explanatory memorandum explicitly refers to a study by DUBUISSON, who argues that a legal rule’s binding character always imposes ‘result-oriented obligation’ of compliance, which indeed reveals how this criterion derived from contract law is less useful to determine whether a legal rule prescribes sufficiently specific conduct B. Dubuisson, ‘Faute, illégalité et erreur d’appréciation en droit de la responsabilité civile’ (2001) 55 *Revue Critique de Jurisprudence Belge* 28, 37-39. See also G. Jocqué,

- d. Finally, it is important to understand the broad scope of application of extracontractual fault-based liability in Belgian product liability law, which will further expand as a consequence of the abandonment of the *non-cumul* principle.

All diagonal product liability claims by injured third parties against producers and distributors are traditionally based on this theory. Also all horizontal claims by third parties against product users can be based on this theory (see Figure 2 *supra* nr. 5 on ‘diagonal’, ‘horizontal’ and ‘vertical claims’), although these often employ the liability for custody of defective goods (see *infra* nr. 217). However, it is important to note that only the diagonal claims against commercial producers and distributors enjoy the two aforementioned possibilities of a relatively strict (‘objective’) proof of fault.

The majority view of applying the hidden defects guarantee of sales contracts to extended vertical claims by consumers across a chain of translatative contracts (*action directe*),¹³⁰⁵ meant in combination with the *non-cumul* principle that extracontractual fault-based liability could not be invoked by injured consumers for the purposes of vertical claims, neither against their direct contractual counterparty nor against producers, importers and intermediate distributors higher up in the distribution chain.¹³⁰⁶

Nevertheless, according to an in my opinion theoretically persuasive minority view first propagated by KRUIHOF, such *actions directes* claiming the reparation of extrinsic damage in a vertically indirect manner against actors higher up in the distribution chain, have always been more correctly based on extracontractual liability for fault, because these claims only arise after an accident occur and therefore do not transfer as accessory rights in translatative contracts. This alternative extracontractual fault-based liability also remains relatively strict, as long as consumers claim against specialised (commercial) product producers and distributors according to the adage *spondet peritiam artis, et imperitia culpa adnumeratur*.¹³⁰⁷

Most significantly, the new Belgian rule on concurrence of liability of art. 6.3 CC BE, which abolishes the general principle of *non-cumul*, means that consumers can now always claim on an extracontractual basis against even their own contractual counterparty.¹³⁰⁸ Such claims admittedly remain subject to limitations of liability based

‘Foutaansprakelijkheid: Algemene beginselen - Aansprakelijkheid minderjarigen en geesteszieken’ (2021) *Tijdschrift voor Privaatrecht* 31, 35: “Dit kan blijken uit de zekerheid van het te bereiken resultaat bij het naleven van het bepaalde bedrag en de appreciatiemarge die de omschrijving van de gedragsregel toelaat.”

¹³⁰⁵ See *supra* footnotes 978-980 for a summary and references to case law regarding this theory.

¹³⁰⁶ Cass. BE 2 October 2020, C.20.0005.N, *Jur.Prat.* 2023, 177, note J. Romain, *TBBR* 2021, 188, note M. Higny, *TBH* 2020, 939. See also *supra* nr. 172 where this convolution of Belgian liability rules has already been outlined.

¹³⁰⁷ See *supra* footnote 982 on this theory and references to its promoters KRUIHOF and BORUCKI. Note that, according to this view, the *actio redhibitoria* and *actio quanti minoris* claims for intrinsic damage still remain possible on the basis of the hidden defects guarantee in indirect vertical claims (*action directe*), because these already exist at the occasion of the (successive) translatative contracts and transfer as accessory rights together with the transferred property right.

¹³⁰⁸ See also H. Bocken, ‘Buitencontractuele aansprakelijkheid voor gebrekkige producten’ in X. (ed.),

on for example the consumer sales regime or the hidden defects guarantee, like the 2-year or 'brief' extinction periods, the requirement of anteriority of the non-conformity or defect or the lack of liability for visible defects.¹³⁰⁹ Yet, such contractual limitations no longer apply to the extracontractual liability claim when the defendant had the intention to cause damage or, much more significantly in the product accident context, when the claim relates to a violation of the plaintiff's physical or psychological integrity.¹³¹⁰ This possibility for vertical product liability claims by consumers based on extracontractual liability for fault, extend of course also to claims against producers, importers and intermediate distributors higher in the distribution chain (*action directe*), even when the aforementioned majority view based on the hidden defects guarantee would still apply to those indirect vertical relationships.

In conclusion, the extracontractual fault-based liability of art. 6.6 CC BE can in the future be invoked for all possible vertical product liability claims, while it was already fully applicable in diagonal and horizontal relationships (see Figure 2 *supra* nr. 5). And remaining limitations to those vertical claims, such as those coming from specific contract law, no longer apply in the relatively frequent event that a product accident has infringed the consumer's physical or psychological integrity.

209. THE PLD'S HARMONISING EFFECT AND THE CASSATION DECISION OF 14 MARCH 2024 – The basic features discussed in the preceding section indicate how the stage is now ostensibly set for extracontractual fault-based liability to dominate Belgian product liability law in a manner comparable to *Produzentenhaftung* based on § 823(1) BGB in Germany.¹³¹¹ However, while the theoretical scope of application of fault-based liability indeed expands due to the abandonment of the *non-cumul* principle, the two reasons why it is potentially so attractive for injured parties as a product liability theory, risk to disappear as a result of the PLD's maximum harmonisation.

It was KRUIHOF who first challenged the dominant view in Belgian law that existing fault-based extracontractual liability has been integrally preserved by the PLD (see *supra* nr. 208.a).

Bijzondere overeenkomsten. PUC W. Delva nr. 34 (Kluwer 2008) 340-341 (discussing how the significance of extracontractual fault-based liability is inversely related to the *non-cumul* principle; noting how judges in the past often tried to circumvent said principle in the product liability context).

¹³⁰⁹ See on these concrete examples of art. 6.3, § 1, 2nd section CC BE's principle that defendants can still invoke, among others, the defences they enjoy under specific contract law, the Explanatory Memorandum of Boek 6 Wetsvoorstel 2023 / Livre 6 Proposition 2023, 28-29.

¹³¹⁰ Art. 6.3, § 1, 2nd section, *in fine* CC BE.

¹³¹¹ See on how this is by far the most significant ground of product liability law *sensu lato* in Germany S. Lenze, 'German product liability law: between European Directives, American Restatements and common sense' in D. Fairgrieve (ed.), *Product Liability in Comparative Perspective* (Cambridge UP 2005) 101-102, 107; G. Wagner, 'The development of product liability in Germany' in S. Whittaker (ed.), *The Development of Product Liability: Volume 1* (Cambridge UP 2010) 126; Kullmann, 'Haftung aus § 823 Abs. 1 BGB', § 1512, 1. This is despite the wealth of alternative product liability theories existing in German law (see for an overview E. Van Gool, 'Overview of German product liability law' (2024) <<https://ssrn.com/abstract=4824956>> 1-29). But see *supra* footnote 197 on German authors noting a more recent increase in relative attractiveness of the PLDI.

In a for Belgian law sobering¹³¹² study in 2015, he scrutinized several components of Belgian product liability law *sensu lato* (see also *infra* nrs. 216 and 217) in light of the CJEU's case law on the maximum harmonising nature of the PLD and on how the principle of preservation of national product liability law must be interpreted restrictively. This dissertation has *supra* nr. 171 already discussed both principles, how these were arguably not conceived in this manner by the drafters of the PLD-1985, who seemingly wanted to fully preserve existing general national product liability theories, and how the CJEU's case law is now nevertheless codified by arts. 2(4)b and 3 PLD-2024. With regards to extracontractual liability for fault, KRUIHOF, now supported unequivocally by VERHOEVEN,¹³¹³ arrives at two significant findings.

First of all, the Belgian case law that automatically derives a violation of the general standard of care from the fact that a producer has commercially produced or distributed a defective product, violates the PLD's maximum harmonisation.¹³¹⁴ Where this case law is applied in such an automatic manner without concretely applying the general standard of care, it effectively has the same theoretical basis as the PLD, namely imposing a 'quasi-strict' liability on actors who have placed defective products on the market. The fact that applicable defences or limitation periods are different,¹³¹⁵ makes no difference, since the CJEU requires for national law to be still preserved only that it is "based on other grounds" than "the system of rules put in place by the Directive, which in Article 4 enables the victim to seek compensation where he proves damage, the defect in the product and the causal link between that defect and the damage".¹³¹⁶

¹³¹² E.g., Belgian law had failed not only to directly acknowledge the implications of the CJEU's case law but also to observe how French law had in the meantime started to put aside its strict product liability rules based on "*l'obligation de sécurité*" to the extent those overlapped with the PLD's scope of harmonisation (see French case law *infra* footnote 1328). E.g., in addition to 'objective' extracontractual fault-based product liability, KRUIHOF also demonstrated how product liability claims for extrinsic damages against specialized sellers and producers on the basis of the hidden defects guarantee must be considered as also harmonised (see *infra* nr. 216.c). See M. Kruithof, 'Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?' in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 192-193, 209-219.

¹³¹³ See the references *infra* footnotes 1314 and 1318.

¹³¹⁴ M. Kruithof, 'Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?' in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 182-194. See also unequivocally supporting D. Verhoeven, 'De Wet Productaansprakelijkheid: onbekend en/of onbemind?' in M. Kruithof (ed.), *Inzichten in actueel aansprakelijkheidsrecht en verzekeringsrecht (ICAV II)* (Intersentia 2018) 190-191; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 305.

¹³¹⁵ KRUIHOF argues that the ground of justification of 'insurmountable error' is also present in the development risk defence of art. 7(e) PLD-1985 and art. 11(1)e PLD-2024 (M. Kruithof, 'Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?' in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 191). While both are far from identical, this does not really matter for the possibility of infringing on EU product liability harmonisation according to the CJEU's case law.

¹³¹⁶ CJEU 25 April 2002, C-52/00, *Commission v. France*, ECLI:EU:C:2002:252, nr. 22; CJEU 25 April 2002, C-154/00, *Commission v. Greece*, ECLI:EU:C:2002:254, nr. 18; CJEU 25 April 2002, C-183/00, *González Sánchez v. Medicina Asturiana*, ECLI:EU:C:2002:255, nr. 31. See also CJEU 10 January 2006, C-402/03, *Skov and Bilka*, ECLI:EU:C:2006:6, nr. 47; CJEU 4 June 2009, C-285/08, *Moteurs Leroy Somer v. Dalkia France*, ECLI:EU:C:2009:351, nr. 23.

Second, where Belgian case law on art. 1382 Old CC BE, as now confirmed in art. 6.6, § 1 CC BE, automatically imposes extracontractual fault-based liability when it is found that an economic actor has violated the general product safety requirement to “*place or make available on the market only safe products*”,¹³¹⁷ it violates the PLD’s maximum harmonisation in cases falling within the Directive’s material and personal scope of application.¹³¹⁸ KRUIHOF argues furthermore that the same could be said of the product safety obligations of distributors, if those would not constitute ‘means-oriented obligations’ which pursuant to the traditional reading not allow to automatically lead to a finding of wrongfulness when violated (cf. *supra* nr. 208.c).¹³¹⁹

On 14 March 2024, the *Cour de cassation* confirmed the first of these two findings, by rejecting a court decision (analysed more in-depth *infra* nr. 212.d) which established proof of violations of the general standard of care by a producer, based on nothing more than the fact that he had placed an unsafe product on the market, and by a seller, based on nothing more than the fact that he had sold an unsafe product.¹³²⁰ This decision’s motivation referred extensively to the relevant CJEU case law.¹³²¹

b. Clarifying the harmonisation of liability for fault based on the general duty of care

210. PRELIMINARY OBSERVATIONS FROM A FRANCO-GERMAN AND CJEU PERSPECTIVE – This dissertation argues that the aforementioned twofold analysis by KRUIHOF and VERHOEVEN, partially validated by the *Cour de Cassation* decision of 14 March 2024, is in essence correct. However, their reading must be nuanced in several ways, which leads to a more limited impact and a substantial continued relevance of Belgian product liability based on extracontractual liability for fault. Two preliminary observations are raised first, before discussing in the next sections to what extent such liability based on art. 1382 Old CC BE and art. 6.6 CC BE must in product accident cases be set aside in favour of the PLD.

¹³¹⁷ Art. 5 General Product Safety Regulation 2023/988/EU.

¹³¹⁸ M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit. PUC W. Delva nr. 40* (Kluwer 2015) 180-183. See unequivocally supporting D. Verhoeven, ‘De Wet Productaansprakelijkheid: onbekend en/of onbemind?’ in M. Kruithof (ed.), *Inzichten in actueel aansprakelijkheidsrecht en verzekeringsrecht (ICAV II)* (Intersentia 2018) 191; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 314. See more critically E. Van Gool, J. De Bruyne and M. Fierens, ‘De regulering van artificiële intelligentie (deel 2): Een analyse van buitencontractuele aansprakelijkheid’ (2021) *Rechtskundig Weekblad* 1003, 1008, footnote 289; J. De Bruyne, E. Van Gool and T. Gils, ‘Tort Law and Damage Caused by AI Systems’ in J. De Bruyne and C. Vanleenhove (eds.), *Artificial Intelligence and the Law* (2nd edn., Intersentia 2023) 409.

¹³¹⁹ M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit. PUC W. Delva nr. 40* (Kluwer 2015) 183.

¹³²⁰ Cass. BE 14 March 2024, C.23.0100.N, ECLI:BE:CASS:2024:ARR.20240314.1N.2, *Juportal*, nrs. 5-6. Note that, in doing so, the Belgian Court follows several years later the example of its French counterpart. See *infra* footnote 1328.

¹³²¹ *Ibid.*, nrs. 3-4.

- a. First of all, it is relevant in this context to briefly adopt an intra-EU comparative perspective. Member States have on the basis of art. 13 PLD-1985 maintained various national product liability theories *sensu lato*, which are in several cases rules of extracontractual fault-based liability with a particularly ‘objective’ conception of fault. It is worthwhile to briefly focus on German and French law, since they offer diverging perspectives.

The by far most widely used product liability theory in Germany, *Produzentenhaftung* based on § 823(1) BGB, imposes fault-based liability on manufacturers and other defendants in the distribution chain when a plaintiff can prove a *Rechtsgutsverletzung* that has been caused by a product ‘defect’ originating from the defendant’s *Verantwortungsbereich*,¹³²² unless the defendant can disprove his negligent or intentional culpability (*Verschulden*).¹³²³ Especially but not only for potential manufacturing defects, the assessment of defectiveness is relatively strict and it is very difficult for a company to disprove *Verschulden*.¹³²⁴

German product liability claims can also be based on § 823(2) BGB, another extracontractual fault-based provision, which requires proof of an intentional or negligent violation of a *Schutzgesetz* protecting the injured party against the damage he suffered from a product accident.¹³²⁵ Very similar to Belgian fault-based liability for violations of legal rules requiring specific conduct, product liability claims can via § 823(2) BGB also be based on violations of product safety law.¹³²⁶

Importantly, even after the more expansive CJEU case law, German scholarship does not see any (remote risk of a) conflict between its existing national product liability law and the PLD’s scope of maximum harmonisation.¹³²⁷

¹³²² Note how this fits well with the ‘risk-internalisation’ principle. *See supra* nrs. 128.c and 129.

¹³²³ BGH 26 November 1968, VI ZR 212/66, BGHZ 51, 91 (this is the seminal *Hühnerpestfall*). *See also* Hager, Staudinger, ‘BGB § 823 E-I’, nr. F39; E. Van Gool, ‘Overview of German product liability law’ (2024) <<https://ssrn.com/abstract=4824956>> nr. 2; G. Wagner, ‘§ 823 Schadensersatzpflicht’ in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024), nrs. 1033 et seq.

¹³²⁴ *See supra* footnote 1008. The reason why disproving *Verschulden* is so difficult after a plaintiff has met the initial burden of proof, is because the latter includes the wrongfulness (*Rechtswidrigkeit*) of the defendant’s conduct and both *Rechtswidrigkeit* and *Verschulden* are in practice most often assessed simultaneously according to one or more concrete *Verkehrspflichten*. The latter are relatively strict for professional manufacturers with regards to product accident risks in their *Verantwortungsbereich* (in particular for risks of manufacturing defects). *See also* Borghetti, *La responsabilité du fait des produits*, 127-129; J. Hermes, *Wechselwirkungen zwischen Produktsicherheitsrecht und Produkthaftungsrecht* (Verlag Dr. Kovac 2009); G. Wagner, ‘The development of product liability in Germany’ in S. Whittaker (ed.), *The Development of Product Liability: Volume 1* (Cambridge UP 2010) 145.

¹³²⁵ *See for an introduction* E. Van Gool, ‘Overview of German product liability law’ (2024) <<https://ssrn.com/abstract=4824956>> nr. 5.

¹³²⁶ *See* Foerste, ‘2. Deliktische Haftung’, § 34; K. Stöhr, ‘Haftung aus § 823 abs. 2 BGB’ in H.-J. Kullmann and others (eds.), *Produzentenhaftung, Band 2* (ESV, looseleaf 2020 update) § 1600; T. Lenz, ‘Die Schutzgesetze des Produktsicherheitsgesetzes’ in H.-J. Kullmann and others (eds.), *Produzentenhaftung, Band 2* (ESV, looseleaf 2020 update) § 2440.

¹³²⁷ *E.g.*, Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 56, nrs. 8-11; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3612, 5-7; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 15, nrs. 2-6; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 15, nrs. 12-16.

This can of course be contrasted with the PLD's impact on French law. After a belated transposition and CJEU condemnations, the French *Cour de Cassation* eventually abandoned¹³²⁸ its case law based on general extracontractual (and contractual, see *infra* nr. 216) result-oriented obligations of professional producers and distributors to deliver products free from any *défait de sécurité* (*obligation de sécurité de résultat*), which had precisely been developed to protect injured parties in the anticipation of France's long-overdue transposition of the PLD-1985.¹³²⁹ It furthermore has refused to revive its older case law, virtually identical to the Belgian counterpart discussed *supra* nr. 208.b, which considered the professional production or distribution of a defective product as automatically constituting a fault.¹³³⁰

- b. Second, it can be questioned whether the CJEU would in practice actually rule that the two strands of Belgian case law on extracontractual fault-based product liability discussed *supra* nr. 208.b-c, violates the PLD's maximum harmonisation.¹³³¹ In its successive decisions, the CJEU has consistently referred to "fault" as an example of a

¹³²⁸ Cass. FR civ. (com.) 26 May 2010, nr. 08-18.545, *Bull.civ.* 2010, IV, nr. 99, *RTD Civ.* 2010, 790, note P. Jourdain, *JCP E* 2010, nr. 34, 1721, note L. Leveneur ("que celles-ci n'établissaient aucune faute distincte du défaut de sécurité du produit, la cour d'appel en a exactement déduit, sans dénaturer les conclusions qui lui étaient soumises, que l'action en responsabilité délictuelle fondée sur l'article 1382 du code civil était irrecevable à l'encontre de la société Ettax par application des articles 1386-1 et suivants du code civil"); Cass. FR civ. (1^e Ch.) 10 December 2014, nr. 13-14.314, *Bull.civ.* 2014, I, nr. 209, *RTD Civ.* 2015, 348, note N. Rias, *CCC* 2015, com. 58 ("qu'il ne pouvait se prévaloir d'un régime de responsabilité distinct du régime de responsabilité du fait des produits défectueux que s'il établissait que le dommage subi résultait d'une faute distincte du défaut de sécurité du produit en cause"). See also Cass. FR civ. (mixte) 7 July 2017, nr. 15-25.651, *JCP G* 2017, 926, note Ch. Quézel-Ambrunaz, *D.* 2017, 1800, note M. Bacache; G. Viney and P. Jourdain, *Les conditions de la responsabilité* (3rd edn., LGDJ 2006) 860 (prior to the aforementioned decisions). See also the decisions relating to the contractual variant *infra* footnote 1416.

¹³²⁹ See on this transitional, judge-made protection regime based on extracontractual obligations de sécurité Borghetti, *La responsabilité du fait des produits*, 217-228, 560-577; G. Viney and P. Jourdain, *Les conditions de la responsabilité* (3rd edn., LGDJ 2006) 866-867; P. Le Tourneau, *Responsabilité des vendeurs et fabricants* (5th edn., Dalloz 2015) nrs. 22.31-22.54; J.-S. Borghetti, 'Product Liability in France' in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 210-211.

¹³³⁰ J.-S. Borghetti, 'Product Liability in France' in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) 213-214; P. Jourdain, 'La responsabilité du fabricant du fait des produits défectueux: Rapport français' in B. Dubuisson and P. Jourdain (eds.), *Les responsabilités et les garanties du vendeur en droit belge et en droit français* (Larcier 2024) 913-914. See also J. Huet, 'Fasc. 335: Responsabilité du fait des produits défectueux' in X. (ed.), *JurisClasseur Contrats - Distribution* (Lexis360 2023 update) nr. 79. It nevertheless had the opportunity to do so when it rejected the even stricter transitional case law based on obligations de sécurité, in the decisions cited *supra* footnote 1328. See on the French 20th century case law that equated the production or distribution of a defective product with a fault Borghetti, *La responsabilité du fait des produits*, 208-214.

¹³³¹ E. Van Gool, J. De Bruyne and M. Fierens, 'De regulering van artificiële intelligentie (deel 2): Een analyse van buitencontractuele aansprakelijkheid' (2021) *Rechtskundig Weekblad* 1003, 1008, footnote 289; J. De Bruyne, E. Van Gool and T. Gils, 'Tort Law and Damage Caused by AI Systems' in J. De Bruyne and C. Vanleenhove (eds.), *Artificial Intelligence and the Law* (2nd edn., Intersentia 2023) 409.

system of “contractual or non-contractual liability based on other grounds”.¹³³² And recital 9 PLD-2024 now explicitly lists “liability based [...] on fault” as an illustration of national product liability law still preserved by art. 2(4)b PLD-2024.

To be clear, I agree with the Belgian *Cour de Cassation*, KRUTHOF and VERHOEVEN that such a finding would still be the correct one, at least for the most ‘objective’ applications of fault-based liability in the product accident context.

Nevertheless, it would require from the CJEU to look beyond the formal label of fault-based extracontractual liability and evaluate in-depth how this part of non-harmonised national liability law actually operates in practice.¹³³³

Moreover, before issuing such a verdict, it would have to (implicitly) consider whether and precisely how other, similar national product liability theories would still be preserved, if only because national government might be keen to intervene in defence of their national liability law, invoking art. 2(4)b *juncto* recital 9 PLD-2024 and the principle of subsidiarity. We can refer to the example German product liability based on §§ 823(1) and 823(2) BGB, which can in practice arrive at relatively ‘objective’ outcomes comparable to its Belgian counterpart (see *supra* nr. 210.a).

Finally, although the CJEU’s restrictive interpretation of the principle of the preservation of national law has now been codified in art. 2(4)b PLD-2024, it might still in an ‘originalist’ fashion be somewhat sensitive to evidence that the drafters of art. 13 PLD-1985 wanted to preserve existing national law as much as possible.¹³³⁴ Alternatively, political considerations relating to EU subsidiarity and judicial overreach or legal-economic considerations¹³³⁵ might also still steer the Court away from going further in strengthening the maximum harmonisation of EU product liability.

211. NUANCE 1: TRADITIONAL, GENERAL EXTRACONTRACTUAL LIABILITY FOR FAULT HAS NOT BEEN HARMONISED – The *Cour de Cassation* decision of 14 March 2024 and the corresponding analysis by KRUTHOF and VERHOEVEN (see *supra* nr. 209) are essentially correct. A truly ‘objective’ interpretation of fault applied to product producers and distributors, which “consists of nothing more than the putting into circulation or delivery of a defective product” falls within the PLD’s scope of maximum harmonisation.¹³³⁶ Yet, as a first nuance, it is important to emphasize that

¹³³² CJEU 25 April 2002, C-52/00, *Commission v. France*, ECLI:EU:C:2002:252, nr. 22; CJEU 25 April 2002, C-154/00, *Commission v. Greece*, ECLI:EU:C:2002:254, nr. 18; CJEU 25 April 2002, C-183/00, *González Sánchez v. Medicina Asturiana*, ECLI:EU:C:2002:255, nr. 31; CJEU 10 January 2006, C-402/03, *Skov and Bilka*, ECLI:EU:C:2006:6, nr. 47; CJEU 4 June 2009, C-285/08, *Moteurs Leroy Somer v. Dalkia France*, ECLI:EU:C:2009:351, nr. 23.

¹³³³ See also on the gap between ‘form’ and ‘substance’ or ‘law in the books’ and ‘law in action’ in this matter M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit. PUC W. Delva nr. 40* (Kluwer 2015) 182, 190-191.

¹³³⁴ See the older sources, among which the PLD-1985’s main author, cited *supra* footnotes 962-963.

¹³³⁵ See the sources providing a critical economic analysis of EU harmonisation of product liability and private law in general, cited *supra* footnote 949.

¹³³⁶ Cass. BE 14 March 2024, C.23.0100.N, ECLI:BE:CASS:2024:ARR.20240314.1N.2, *Juportal*, nr. 6 (own translation).

traditional fault-based extracontractual liability, which for example applies the general duty of care to product producers and distributors¹³³⁷ in a case-specific manner, without this somewhat artificial, purely ‘objective’ assessment of fault, of course continues to fully operate independently of harmonised product liability. This, at least, is clear from the aforementioned references to the preservation of national liability theories based on other grounds, “such as fault”, in the Directives and the CJEU’s case law.¹³³⁸

Traditional extracontractual liability for fault, based on an actual application of the general standard of care, can in the future be invoked in any possible product liability relationship, including in vertical claims between contractual counterparties. Moreover, if product accidents violate a person’s physical or psychological integrity, such vertical extracontractual claims are even no longer subject to limitations originating from (sales) contract law or contractual provisions (see *supra* nr. 208.d).¹³³⁹

It is important to realize why, even without the aforementioned case law on a purely ‘objective’ fault, it can be interesting to also still claim against commercial producers and distributors on the basis of such traditional, extracontractual fault-based liability, in lieu of ‘strict’ harmonised product liability. For example, a claim based on the PLDI might no longer be admissible due to the expiration of the still relatively brief limitation or extinction period.¹³⁴⁰ In such cases, it can be particularly attractive to still claim against a producer or distributor based on the non-harmonised,¹³⁴¹ traditional fault-based liability of arts. 1382 Old CC BE and 6.6 CC BE, which benefit from a longer limitation period of five years and from an in most cases longer extinction period of twenty years.¹³⁴² Alternatively, especially in design and information defect cases, it can be psychologically strategic for a plaintiff to frame liability explicitly in terms of the ‘hot’ language of culpably negligent conduct by an individual rather than the more strict, ‘cold’ language of harmonised product liability.¹³⁴³

¹³³⁷ See for an explicit confirmation CJEU 10 January 2006, C-402/03, *Skov and Bilka*, ECLI:EU:C:2006:6, nrs. 46–48.

¹³³⁸ Art. 13 *juncto* recital 13 PLD-1985; art. 2(4)b *juncto* recital 9 PLD-2024; CJEU 25 April 2002, C-52/00, *Commission v. France*, ECLI:EU:C:2002:252, nr. 22; CJEU 25 April 2002, C-154/00, *Commission v. Greece*, ECLI:EU:C:2002:254, nr. 18; CJEU 25 April 2002, C-183/00, *González Sánchez v. Medicina Asturiana*, ECLI:EU:C:2002:255, nr. 31; CJEU 10 January 2006, C-402/03, *Skov and Bilka*, ECLI:EU:C:2006:6, nr. 47; CJEU 4 June 2009, C-285/08, *Moteurs Leroy Somer v. Dalkia France*, ECLI:EU:C:2009:351, nr. 23. See also confirming this specifically relating to Belgian and French traditional fault-based extracontractual liability, respectively M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit. PUC W. Delva nr. 40* (Kluwer 2015) 194; R. Steennot, ‘De vergoedbare schade bij schade ingevolge onveilige en gebrekkige producten’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit. PUC W. Delva nr. 40* (Kluwer 2015) 232–233; J. Huet, ‘Fasc. 335: Responsabilité du fait des produits défectueux’ in X. (ed.), *JurisClasseur Contrats - Distribution* (Lexis360 2023 update) nr. 79.

¹³³⁹ Arts. 6.3, § 1 and 6.6 CC BE.

¹³⁴⁰ Arts. 10–11 PLD-1985; arts. 16–17 PLD-2024. See *supra* nrs. 202–203.

¹³⁴¹ Note that, based on the PLD’s maximum harmonisation, it would not be possible to allow a national product liability theory with the same theoretical basis as the PLD to operate after expiration of the PLD’s limitation or extinction period. See *supra* nr. 171 and *infra* nr. 213.b.

¹³⁴² Art. 2262bis, § 1 Old CC BE.

¹³⁴³ See the following empirical study R. Cupp and D. Polage, ‘The Rhetoric of Strict Products Liability

212. NUANCE 2: THE CASE LAW ON ‘OBJECTIVE’ FAULT CAN CONTINUE TO APPLY WHEN A FINDING OF A PRODUCT ‘DEFECT’ IS ACTUALLY BASED ON A PRECEDING, CONCRETE APPLICATION OF THE GENERAL STANDARD OF CARE – Second and most crucially, attention must be paid to what it means in each individual case that a product is found to be ‘defective’. Two main categories must be distinguished.

- a. On the one hand, when the simple fact that a product turns out to be harmful or has in some manner malfunctioned is considered as already sufficient *prima facie* proof of a product ‘defect’ (see also *supra* nrs. 185 and 189), then the PLD’s maximum harmonisation is indeed infringed upon by automatically imposing fault-based liability on a producer or distributor who made such product available or put it into service. This can concern both manufacturing, design and information defects. Similarly, the PLD’s harmonisation is also infringed upon when fault-based liability is imposed solely based on the fact that the product made available or put into service by a producer or distributor does not match its intended design ostensibly as a consequence of a flaw in its manufacturing process. This concerns of course only manufacturing defects.
In all the preceding cases, “*fault consists of nothing more than the putting into circulation or delivery of a defective product*”, which effectively falls squarely within the PLD’s scope of maximum harmonisation.¹³⁴⁴
- b. On the other hand, there is in my opinion no issue in terms of the PLD’s harmonisation when a fault is still derived automatically from the fact that a producer or distributor has made a ‘defective’ product available or put it into service, if an actual, case-specific assessment in light of the general standard of care has preceded the qualification of said product as being ‘defective’ (see also *supra* nr. 208.b). Many European scholars¹³⁴⁵ have in past years observed how harmonised product liability itself also includes connotations of ‘fault’ and this dissertation has examined *supra* nrs. 173-174 how these are to a large extent based on the fact that especially design and information defects inherently require a fault-based assessment. This does not mean that every judge always makes an

Versus Negligence: An Empirical Analysis’ (2010) 77 N.Y.U. Law Review 874, 874: “[...] The authors found support for the perhaps counterintuitive argument that negligence language may favor plaintiffs by drawing on emotionally ‘hot’ notions of fairness and fault, as opposed to the ‘cold’ technical concepts of strict liability. The study found that jurors hearing the case under negligence language were more likely to find the defendant liable, and that they awarded, on average, almost twice the amount of damages compared to their strict liability counterparts. Indeed, although several findings showed advantages to using negligence language or disadvantages to using strict liability language, the study found no obvious rhetorical advantages to using strict liability language. The study thus presents a powerful challenge to the notion that strict liability is generally a pro-plaintiff doctrine under courts’ increasingly dominant approaches to design and warning cases.” Admittedly the study is based on an experiment in the US with mock jurors, which is perhaps less representative of (albeit not completely unlike) professional judges in European jurisdictions without civil jury trials.

¹³⁴⁴ Cass. BE 14 March 2024, C.23.0100.N, ECLI:BE:CASS:2024:ARR.20240314.1N.2, *Juportal*, nr. 6 (own translation).

¹³⁴⁵ See in particular sources cited *supra* footnotes 987 and 1007.

in-depth application based on the general standard of care in light of a case's concrete circumstances before finding a design or information defect. The aforementioned first main category has demonstrated that he can do so instead in a very strict manner such as by simply observing the damage caused by the harmful product or its apparent malfunctioning. But a more explicitly motivated, case-specific and detailed argument why a concrete product was made available or put into service with what is ultimately qualified as a design or information 'defect', will automatically gravitate to an assessment in light of the general standard of care (see *supra* nr. 174).

Many case-specific, factually motivated findings of design and information defects will therefore have already applied the general standard of care, including one or more of the concrete, supporting criteria now listed in art. 6.6, § 2 CC BE, like the 'reasonably foreseeable consequences', the 'proportionality between the risk of damage, its nature and its scope compared to the efforts and measures necessary to prevent it', the 'state of the technique and scientific knowledge' or 'the requirements of good craftsmanship and good professional practices'.¹³⁴⁶ It will be up to Belgian courts to make such considerations based on the general standard of care sufficiently explicit in product liability cases.

Furthermore, also manufacturing 'defects' can in practice of course still be established based on an actual, concrete application of the general standard of care and thus non-harmonised, traditional extracontractual liability for fault. To do so, courts must refrain from automatically deriving a fault from the fact that a product does not correspond with its intended design due to a flaw in the manufacturing process. Instead, they can evaluate whether a 'normally prudent' manufacturer would have prevented this non-conformity in the product through more careful manufacturing and/or additional investments in quality controls.

In all these cases where the finding of a design, information or manufacturing 'defect' is effectively motivated on the basis of a case-specific application of the general standard of care, the PLD's maximum harmonisation is in my opinion not violated when a fault is derived from the fact that the defendant has made such a 'defective' product available on the market or put it into service. To interpret this differently would completely void the principle of preservation of existing, general national liability theories, enshrined in art. 13 *juncto* recital 13 PLD-1985 and art. 2(4)b *juncto* recital 9 PLD-2024.

- c. From a theoretical perspective, it is important to note how the concept of product 'defect' runs as a common theme through product liability *sensu lato*, not only in Belgian law but also in a comparative perspective (see also *supra* nrs. 174 and 210.a).¹³⁴⁷ This is inherently connected to the basic structure of 'product liability', which can only impute (stricter or more fault-based) liability to individuals like producers and distributors (see also *supra* nrs. 5, *in fine* and 74) through the prism of the product itself (see *supra* nrs. 18 and 101.c).

¹³⁴⁶ See for additional guidance on these now explicitly codified criteria in support of the appreciation of the general standard of care Boek 6 Wetsvoorstel 2023 / Livre 6 Proposition 2023, 50-52.

¹³⁴⁷ See in particular *supra* footnote 1008.

It would therefore be a fundamental mistake to try to banish any thinking in terms of product ‘defect’ from extracontractual fault-based product liability, merely out of a misplaced devotion to the PLD’s harmonising effect. It is relevant to note here that, in another last-minute negotiated amendment, the final adopted version of the principle of preservation of national law in art. 2(4)b PLD-2024 adds to the statement “*on grounds other than the defectiveness of a product [...]*” the additional requirement “[...] *as provided for in this Directive*”. The word ‘defect’ itself is not made exclusive to harmonised product liability law.

Instead, one must appreciate in each individual case whether liability is not effectively imposed on the basis of a liability theory with a different theoretical basis than the PLD, like traditional extracontractual fault-based liability. The latter actually requires in case of vertical and diagonal claims to consider when concretely evaluating whether a producer or distributor has violated the general standard of care applicable to him, the state of the product he has produced or distributed, which can effectively lead to a non-harmonised, fault-based finding of a design, information or manufacturing ‘defect’.¹³⁴⁸

- d. Finally, based on the published petition underlying the *Cassation* decision of 14 March 2024, the appeals court had indeed qualified the product, a soupmaking device, as defective purely motivated by the fact that the device’s lid came loose while mixing hot soup, thereby burning a mother and her daughter, plaintiffs in the proceedings at first instance.¹³⁴⁹ Therefore, the challenged appeals court judgement was indeed part of the aforementioned first, main category, meaning that the *Cour de Cassation* was correct to quash said judgement to the extent it motivated a violation of extracontractual fault-based liability (art. 1382 Old CC BE) purely based on the fact that such defective product had been placed on the market and sold by the two defendants in the proceedings at first instance, as discussed *supra* nrs. 209 and 212.a.

Nevertheless, it is relevant to point out some particularities of the case, which help to clarify why the appeals court made this decision and why courts feel the urge to turn to stricter product liability, akin to the PLD, instead of a concrete application of the general standard of care (see also *supra* nrs. 6 and 14). Immediately after the accident, the product was brought to the first defendant in the proceedings at first instance, a trader, who repaired the product for free since it was still covered by a guarantee and then returned it. In the first instance proceedings, said defendant was convicted to disclose evidence relating to the repair process and the product’s technical state. In the appeals

¹³⁴⁸ See also T. Verheyen, ‘Foutaansprakelijkheid voor producten met gebreken’ (2018) *Nieuw Juridisch Weekblad* 592, 593 (discussing case decided on the basis of extracontractual liability for fault by concretely applying standard of care): “*Het is echter frappant dat de rechter de aandacht vestigt op het product zelf, en niet op de handelswijze van de producent – net zoals dat vandaag het geval is in de productaansprakelijkheid. [...] Het is gewoon een bevestiging van het feit [...], dat er veel gelijkenissen zijn tussen de foutaansprakelijkheid en de productaansprakelijkheid, en een herbevestiging van de vaststelling dat de foutaansprakelijkheid voor producenten sterk geobjectiveerd is.*”

¹³⁴⁹ Verzoekschrift voorziening in cassatie (mtr. Beatrix Vanlerberghe), 9 February 2023, namens NV CNUDE en VORWERK ELEKTROWERKE GmbH & CO KG, C.23.0100.N, ECLI:BE:CASS:2024:ARR.20240314.1N.2, *Juportal*, 5-8.

proceedings, the court decided that the latter had completely failed to provide such evidence and that the plaintiffs in the proceedings at first instance lacked any means of proving a potential fault, which led the court to reverse the burden of proof based on art. 8.4, 5th section CC BE.¹³⁵⁰ The appeals court additionally motivated its judgement holding the defendants liable, by referring to media reporting on similar accidents caused worldwide by the same product and the lack of evidence relating to a potential contributory fault.¹³⁵¹

Therefore, it seems that the appeals court could have respected the PLD's maximum harmonisation and avoided its decision being squashed, by simply concluding that the defendants had failed to successfully discharge their burden of proving that they had acted like a 'normally prudent' seller or producer would have acted in this specific case, which would have resulted in a finding that they had effectively violated the general standard of care. This illustrates the fine line between non-harmonised extracontractual liability for fault and stricter product liability harmonised by the PLD.

213. NUANCE 3: THE CASE LAW ON 'OBJECTIVE' FAULT OR OTHER NATIONAL FORMS OF LIABILITY WITH THE SAME BASIS AS THE PLD CAN CONTINUE TO OPERATE OUTSIDE THE SCOPE OF EU PRODUCT LIABILITY HARMONISATION – Third, as also already noted amongst others by KRUIHOF¹³⁵² and as already explored in earlier parts of this Chapter, there are various ways in which the PLD's scope of maximum harmonisation is limited. In these instances, there is no issue under EU law to continue to apply national liability theories with the same theoretical basis as the PLD, consisting of making a defective product available or putting it into service combined with damage and causation (see *supra* nr. 171). An example thereof is thus the Belgian case law on an 'objective' fault by producers and distributors who make defective products available on the market or put them into service, at least if the determination of the product's defectiveness does not entail an actual, concrete application of the general duty of care. The challenge, however, is to precisely determine the scope of current EU product liability harmonisation. Based on the texts of the PLD-1985 and PLD-2024 in combination with existing CJEU case law, the following guidance can be offered.

¹³⁵⁰ Ibid., 6. Note how these Belgian rules on disclosure of evidence and reversing the burden of proof are now completely harmonised by arts. 9 and 10(2)a PLD-2024 (see *supra* nr. 206), which further highlights the relevance of the PLD's scope. Under the rules of the PLD-1985, applicable to the case, at least art. 8.4, 5th section CC BE's reversal of the burden of proof would not have been allowed (see *supra* nr. 205).

¹³⁵¹ Ibid., 7.

¹³⁵² See further references in this section.

- a. First of all, claims based on national theories with the same theoretical basis as the PLD remain possible against other defendants than the various product ‘producers’ and ‘distributors’¹³⁵³ targeted by the PLD.¹³⁵⁴

Importantly for this dissertation’s specific subject matter, under the PLD-2024, these can be prosumers or non-profit entities who are involved in producing or distributing a product outside “*the course of a commercial activity*”.¹³⁵⁵ Under the PLD-1985, however, this does technically not seem to be the case, because this Directive lacks the same limitation of its scope of application and, instead, requires defendants to bear the burden of proving the more stringent ‘neither for-profit nor professional defence’.¹³⁵⁶ This delineation of the personal scope of harmonisation of both Directives has been discussed *supra* nrs 197-198.

As the CJEU has confirmed,¹³⁵⁷ the PLD’s scope of harmonisation does not extend to actors who provide services, even when they would do so “*in the course of a commercial activity*”. This must be distinguished from the fact that said service provider may happen to be still liable under the PLD as an actor who has produced or distributed a product in the context of the service provision.¹³⁵⁸ Therefore, Member States are entirely free to impose a ‘(quasi-)strict’ liability reminiscent of the PLD’s system on various professional service providers, which might for example focus on the service provision itself and/or the general qualifications and conduct of the service provider. This would only violate the PLD’s maximum harmonisation to the extent that liability is imposed based on the fact that damage has been caused by a product made available or put into service during the service provision.¹³⁵⁹ In addition to service-providers who use various products in providing a service, this might also involve the liability of product certifiers

¹³⁵³ The fact that ‘distributors’ are in principle only subject to a secondary harmonised product liability, does not allow member states to impose a liability akin to primary harmonised product liability on those defendants. See CJEU 10 January 2006, C-402/03, *Skov and Bilka*, ECLI:EU:C:2006:6, nrs. 31-45. See also CJEU 25 April 2002, C-52/00, *Commission v. France*, ECLI:EU:C:2002:252, nrs. 36-41; CJEU 5 July 2007, C-327/05, *Commission v. Denmark*, ECLI:EU:C:2007:409, nr. 1.

¹³⁵⁴ M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 194.

¹³⁵⁵ Arts. 2(1) and 4(7)-(9) PLD-2024.

¹³⁵⁶ Art. 7(c) PLD-1985. See also *supra* nr. 197.

¹³⁵⁷ CJEU 10 June 2021, C-65/20, *VI v. KRONE*, ECLI:EU:C:2021:471, nrs. 37-38; CJEU 21 December 2011, C-495/10, *Thomas Dutrueux*, ECLI:EU:C:2011:869, nrs. 29-39. See also *supra* footnote 193 regarding the withdrawn Commission proposal for harmonising liability for (some) services.

¹³⁵⁸ See CJEU 10 May 2001, C-203/99, *Henning Veddfald*, ECLI:EU:C:2001:258, nrs. 11-18; CJEU 21 December 2011, C-495/10, *Thomas Dutrueux*, ECLI:EU:C:2011:869, nrs. 18-39; CJEU 10 June 2021, C-65/20, *VI v. KRONE*, ECLI:EU:C:2021:471, nr. 36.

¹³⁵⁹ See J. Huet, ‘Fasc. 335: Responsabilité du fait des produits défectueux’ in X. (ed.), *JurisClasseur Contrats - Distribution* (Lexis360 2023 update) nr. 80. This author contrasts how a strict liability akin to the PLD may thus be imposed on the service-provider for flaws in his service provision, while the PLD precludes to impose such a (primary) liability on distributors for defects in distributed products, which might be products distributed by such a service provider such as in case of a lessor.

and recommenders¹³⁶⁰ or actors who provide information services, which have been qualified by the CJEU as not constituting products.¹³⁶¹

Note, however, that this product-service distinction has been made more complex by the PLD-2024, which has slightly expanded the scope of harmonisation. Namely, services like product transportation, storage, maintenance, repurposing, repairs and others that happen to ‘substantially modify’ a product ‘outside the manufacturer’s control’ (see for example *infra* nrs. 262, 307 and 442) now result in a primary liability for subsequent product accidents based on art. 8(2) PLD-2024. Moreover, when ‘within the manufacturer’s control’ such ‘substantial modifications’ of the product occur after the product has been placed on the market or put into service, an existing defendant can no longer invoke the posteriority defence based on art. 11(2)d PLD-2024 (see *supra* nr. 196 and *infra* nr. 413). Likewise, existing defendants can based on art. 11(2)a-c PLD-2024 no longer invoke the posteriority defence when a product defect results either from digital services or software supplied ‘within the manufacturer’s control’ or from the absence of software updates or upgrades which would have been necessary to maintain the product’s safety (see *supra* nr. 196 and *infra* nr. 242). All these instances, which fundamentally relate to acts of service provisions, have now been maximally harmonised by the new Directive, which precludes applying a national liability theory with the same basis as the PLD to those actors for product accidents ensuing from flaws in the how they provided these services.

Finally, neither Directive has harmonised in any manner the horizontal liability of product users,¹³⁶² the liability of market surveillance authorities or the liability of other actors who neither make a product available on the market nor put it into service nor fall under the aforementioned new arts. 8(2) and 11(2) PLD-2024.¹³⁶³

- b. Second, it would substantially undercut the PLD’s maximum harmonisation (see *supra* nr. 170) if Member States would be allowed to impose a liability with the same theoretical basis that would apply after expiration of either the limitation period of arts. 10 PLD-1985 and 16 PLD-2024 or the extinction period of arts 11 PLD-1985 and 17 PLD-2024.
- c. Third, it seems logical to extend this view of maximum harmonisation to all of the substantive defences provided by both Directives, which have been discussed *supra* nrs. 194-201 and *infra* nrs. 319-322. If the EU legislator has determined that a defendant in these instances cannot be subject to primary or secondary harmonised product liability, then national law should in principle no longer be able to alternatively impose a form of product liability with the same theoretical basis as the PLD.

¹³⁶⁰ See Verhoeven, *Productaansprakelijkheid en productveiligheid*, 308-309.

¹³⁶¹ CJEU 10 June 2021, C-65/20, *VI v. KRONE*, ECLI:EU:C:2021:471, nrs. 32-42. See also *infra* nr. 345 regarding information in future digital product passports.

¹³⁶² Of course, in case of vertical product liability claims by injured consumers, a defence of contributory fault is available to defendants based on art. 8(2) PLD-1985 and art. 13(2) PLD-2024. See *supra* nr. 191.

¹³⁶³ M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 194.

In my opinion, this maximum harmonisation rationale indeed applies to the ‘compliance’, ‘development risk’, ‘component’ and ‘modification’ defences.¹³⁶⁴ Although this is more debatable, the same arguably also holds true for the ‘neither for-profit nor professional’ defence,¹³⁶⁵ which is no longer part of the new Directive (see *supra* nrs. 197 and 213.a). National law can for example not impose a ‘quasi-strict’ liability on a producer or distributor purely based on the fact that he has made a defective product which caused damage available or put it into service, when the defectiveness could not have been discovered pre-marketing according to the objective state of scientific and technical knowledge or when the defectiveness was the direct result of compliance with legal requirements.¹³⁶⁶

- d. Importantly, however, maximum harmonisation does in my opinion neither extend to the ‘not put into circulation’ defence of art. 7(a) PLD-1985 and 11(1)a-b PLD-2024 nor to the ‘posteriority’ defence of arts. 7(b) PLD-1985 and 11(1)c PLD-2024. This is because these defences actually demarcate the temporal boundaries of EU product liability harmonisation,¹³⁶⁷ which encompasses neither accidents occurring during the ‘pre-marketing’ phase nor liability relating to ‘post-marketing’ obligations.

On the one hand, for harmonised product liability to commence, a product must have been ‘put into circulation’ according to the PLD-1985 or either ‘placed on the market’ or ‘put into service’ according to the PLD-2024. When an accident occurs during a product’s ‘pre-marketing’ manufacturing or import process, which might harm employees or third parties, then a national liability theory can subject said manufacturer or importer to a liability akin to the PLD for a defect in such still to be manufactured or imported ‘product’, without infringing on the PLD’s maximum harmonisation. Furthermore, when a product accident occurs before a product is made available on the market, it is theoretically possible to hold the aspiring, future distributor of said product liable on the basis of a liability theory comparable to the PLD. This second possibility is perhaps still debatable under the original Directive, but no longer under its successor, which confirms in art. 11(1)b PLD-2024 a ‘personal’ application of the not put into circulation defence (see *infra* nrs. 317-322). These notions of ‘making available on the market’, ‘placing on the market’ and ‘putting into service’, which originate from EU product regulation and which determine this starting point of harmonised product liability law, are examined in more detail *infra* nrs. 323 and 412.¹³⁶⁸

¹³⁶⁴ Art. 7(d)-(f) PLD-1985; art. 11(1)d-g PLD-2024.

¹³⁶⁵ Art. 7(c) PLD-1985.

¹³⁶⁶ Arts. 3 and 11(1)d-e PLD-2024.

¹³⁶⁷ In terms of scope of application *ratione temporae* at the level of the legislation rather than the level of an individual product case, art. 17 PLD-1985 excludes products already put into circulation prior to its entry into force (see *infra* nr. 225). The PLD-1985, with the inclusion of this rule, will continue to apply in the future to products that have been placed on the market or put into service prior to the new Directive’s entry into force, based on art. 21 PLD-2024 (see *supra* nr. 167).

¹³⁶⁸ The after 40 years still not completely clear starting point of the PLD-1985, ‘putting into circulation’, is discussed *supra* nr. 194 and *infra* nr. 318.

On the other hand, harmonised product liability does not extend to ‘post-marketing liability’.¹³⁶⁹ This is not only confirmed by the posteriority defence¹³⁷⁰ but also by the defect assessment criteria that emphasize the importance of returning to the moment when a product was placed on the market, put into service or left the manufacturer’s control.¹³⁷¹ The CJEU has furthermore found provisions in the original French PLDI in breach of the Directive’s maximum harmonisation, when those made the compliance and development risk defences conditional on whether a defendant meets his post-marketing product monitoring obligations from product safety regulation.¹³⁷² It is therefore clear that Member States can still impose on any defendant a ‘(quasi-)strict’ product liability theory akin to the PLD for ‘post-marketing defects’ in products that cause damage.¹³⁷³ Such post-marketing liability may for example relate to a product that becomes defective as a result of new practices by users or dangerous combinations with new complementary products, failures to inform market surveillance authorities as well as failures to timely and adequately warn users and/or implement a product recall, which are all aspects regulated by product safety regulation (see *supra* nr. 10.d). In a recent decision, the French *Cour de Cassation* confirmed this unequivocally, by quashing an appeal court decision that had considered an extracontractual fault relating to insufficient product monitoring and surveillance as being purely based on the lack of safety entitled by the public and thus being harmonised.¹³⁷⁴

There is little reason to doubt that the Directives do not harmonise liability for accidents occurring prior to the moment when the product is made available or put into service, just like they do not harmonise liability for accidents caused by products only becoming

¹³⁶⁹ See M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 180; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3604, 11; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 3, nr. 112; J. Huet, ‘Fasc. 335: Responsabilité du fait des produits défectueux’ in X. (ed.), *JurisClasseur Contrats - Distribution* (Lexis360 2023 update) nr. 70.

¹³⁷⁰ Art. 7(b) PLD-1985; art. 11(1)c PLD-2024. See *supra* nr. 195 and *infra* nr. 239.

¹³⁷¹ Art. 6(1)c(2) PLD-1985; art. 7(2)e(3) PLD-2024. See *supra* nr. 184.

¹³⁷² CJEU 25 April 2002, C-52/00, *Commission v. France*, ECLI:EU:C:2002:252, nrs. 42-47.

¹³⁷³ See also M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 180 (discussing how the PLD’s scope of harmonisation does not extend to post-marketing liability, specifically violations of post-marketing general product safety requirements); Verhoeven, *Productaansprakelijkheid en productveiligheid*, 307-308 (discussing possibility to apply traditional, non-harmonised extracontractual liability for fault in Belgian law); J. Huet, ‘Fasc. 335: Responsabilité du fait des produits défectueux’ in X. (ed.), *JurisClasseur Contrats - Distribution* (Lexis360 2023 update) nr. 79 (discussing possibility to apply traditional, non-harmonised extracontractual liability for fault in French law).

¹³⁷⁴ Cass. FR civ. (1re Ch.) 15 November 2023, nr. 22-21.174, D. 2024, 150, JCP G 2024, 39, note P. Oudot, *Resp.civ.ass.* 2024, comm. 4, note C. Radé: “7. [...] que la faute reprochée au laboratoire, prise d'un manquement au devoir de vigilance et de surveillance du fait de la commercialisation d'un produit dont il connaissait les risques ou de l'absence de retrait du produit du marché français contrairement à d'autres pays européens, n'est pas distincte du défaut de sécurité du produit, de sorte que la responsabilité délictuelle pour faute ne saurait se substituer au régime de la responsabilité du fait des produits défectueux. 8. En statuant ainsi, la cour d'appel a violé les textes susvisés.”

defective after that moment. Yet, as an ultimate argument why the absence of liability corresponding with the ‘not put into circulation’ and ‘posteriority’ defences are definitely not harmonised, it is worthwhile to glance at what the opposite would mean according to this dissertation’s normative framework. All the efficiency benefits in terms of risk-allocation, accident-prevention and price-signalling of stricter liability akin to the PLD would be lost for potential product accidents occurring before and after these points in time, which non-harmonised, generally more fault-based national liability theories could not fully replace (see *supra* nrs. 135 et seq.) Furthermore, there would actually be little return in terms of harmonisation, because no European harmonised liability rules attractive to plaintiffs are offered in return, while preserved, non-harmonised liability theories would continue to apply in parallel to these ‘pre-marketing’ accidents and ‘post-marketing’ obligations (see *supra* nrs. 171 and 211).

Finally, note that the aforementioned principle of the absence of post-marketing liability for a product when a defendant can successfully invoke the posteriority defence, has not been overturned by the PLD-2024, even though the latter has admittedly complicated matters. Art. 7(2)e PLD-2024 simply postpones the defect assessment when a product has at a later moment ‘left the manufacturer’s control’, but the resulting harmonised product liability remains subject to the posteriority defence.¹³⁷⁵ Art. 8(2) PLD-2024 creates a new ground of product liability, but this remains in turn subject to the posteriority defence.¹³⁷⁶ And art. 11(2) PLD-2024 creates a set of exceptions to the posteriority defence, which extend the scope of harmonised product liability into the domain of post-marketing liability (see also *supra* nrs. 196 and 218.b). These exceptions of course do not change the fact that in the other instances where the posteriority defence applies, an absolute absence of the defendant’s liability has not been harmonised and national post-marketing liability continues to apply in those cases in parallel.

- e. Finally, the CJEU has confirmed in the *Leroy Somers* decision that damage to professional goods can still be claimed on the basis of a national liability theory with the same basis as the PLD.¹³⁷⁷ The logical extension thereof is that all heads of damage not recognised in art. 9 PLD-1985 or art. 6 PLD-2024 fall outside the scope of maximum harmonisation. In addition to damage to (purely)¹³⁷⁸ professional goods, this can for

¹³⁷⁵ More problematically in terms of the new Directive’s drafting, the posteriority defence of art. 11(1)c PLD-2024 has seemingly forgotten about this extension of the defect assessment, which results in bizarre outcomes. This can be remediated by *de lege ferenda* either inserting a reference to the moment a product ‘leaves the manufacturer’s control’ in art. 11(1)c *ibid.* or, as this dissertation prefers, to simply limit the concept of the ‘manufacturer’s control in art. 4(5) *ibid.* to the same factual circumstances targeted now by art. 11(2) *ibid.*’s exceptions to the posteriority defence (applicable when these circumstances occur instead ‘outside the manufacturer’s control’). See *infra* nr. 405.

¹³⁷⁶ However, a mistake has been made in drafting arts. 8(2) and 11(1)c *ibid.*, which can be remediated by *de lege ferenda* changing the reference to ‘making available’ in art. 8(2) *ibid.* to ‘placing on the market’. See *infra* nrs. 266.b and 463.b.

¹³⁷⁷ CJEU 4 June 2009, C-285/08, *Moteurs Leroy Somer v. Dalkia France*, ECLI:EU:C:2009:351, nrs. 24-32.

¹³⁷⁸ Note that art. 6(1)b(iii) PLD-2024 now also includes all ‘mixed use’ goods in the scope of harmonisation, while art. 9(b)ii PLD-1985 only covers damage to goods used ‘mainly’ for private purposes (see *supra* nr. 190.b.d).

example concern intrinsic damage to the defective product itself or pure economic losses.¹³⁷⁹ This is ultimately confirmed *infra* nr. 219, where a counterhypothesis based on a possible interpretation of the new art. 6(3) *juncto* art. 3 PLD-2024 is also considered and then refuted.

c. Clarifying the harmonisation of liability for fault based on a violation of a legal rule requiring specific conduct

214. THE EXTENT TO WHICH THE PLD HAS HARMONISED EXTRACONTRACTUAL FAULT-BASED PRODUCT LIABILITY BASED ON A VIOLATION OF A LEGAL RULE REQUIRING SPECIFIC CONDUCT – As outlined *supra* nr. 208.c, the alternative to a violation of the general standard of care in Belgian extracontractual fault-based liability, the violation of a legal rule requiring specific conduct (the so-called ‘unitary theory’), has significant potential to facilitate product liability claims, in particular due to burgeoning product safety rules. Yet, as mentioned *supra* nr. 209, KRUITHOF and VERHOEVEN argue that liability for a fault that is just based on a violation of the general product safety requirement to “*place or make available on the market only safe products*”,¹³⁸⁰ has the same theoretical basis as the PLD and therefore violates its maximum harmonisation.¹³⁸¹ The outcome would be that this relatively ‘strict’ route for establishing fault-based liability is closed and that it is required instead to make a concrete, non-harmonised application of the general standard of care (see *supra* nr. 211).¹³⁸² While this interpretation is not (yet) validated by the Belgian *Cour de Cassation*, it is in my opinion persuasive.

Moreover, the same risk of violating the PLD’s maximum harmonisation applies in my view also to such combination of the ‘unitary theory’ with many other product safety requirements borne by (quasi-)manufacturers, importers, authorised representatives and substantial product modifiers,¹³⁸³ like the obligation to provide users with clear instructions and safety information,¹³⁸⁴ or sectoral product safety rules specific to particular sectors. I believe that this furthermore extends to several general and sectoral product safety requirements incumbent on distributors, like ensuring product safety during the distribution process, refraining

¹³⁷⁹ See sources cited *infra* footnotes 1440-1444. See also in general terms M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 194.

¹³⁸⁰ Art. 5 General Product Safety Regulation 2023/988/EU.

¹³⁸¹ M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 180-183; D. Verhoeven, ‘De Wet Productaansprakelijkheid: onbekend en/of onbemind?’ in M. Kruithof (ed.), *Inzichten in actueel aansprakelijkheidsrecht en verzekeringsrecht (ICAV II)* (Intersentia 2018) 191; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 314.

¹³⁸² In practice, this might only require a slightly different motivation while still leading to the same outcomes in many cases. See E. Van Gool, J. De Bruyne and M. Fierens, ‘De regulering van artificiële intelligentie (deel 2): Een analyse van buitencontractuele aansprakelijkheid’ (2021) *Rechtskundig Weekblad* 1003, 1008, footnote 289; J. De Bruyne, E. Van Gool and T. Gils, ‘Tort Law and Damage Caused by AI Systems’ in J. De Bruyne and C. Vanleenhove (eds.), *Artificial Intelligence and the Law* (2nd edn., Intersentia 2023) 409.

¹³⁸³ See in particular arts. 10-11 and 13(2)(3) General Product Safety Regulation 2023/988/EU.

¹³⁸⁴ Arts. 9(7) and 11(4) *ibid.* See also arts. 13(2)(3) *ibid.*

from making a product suspect of non-conformity available on the market, fulfilling information obligations and cooperating with corrective measures.¹³⁸⁵ In all these cases, automatically deriving the objective component of fault from a violation of these product safety requirements, would indeed make extracontractual fault-based liability as having for all intents and purposes the same theoretical basis as harmonised product liability.

This interpretation is now further strengthened by art. 7(1) PLD-2024, which recognizes explicitly that a “*product shall be considered defective if it does not provide the safety [...] that is required under Union or national law*”. Regardless of how this new provision will be interpreted in practice, it is indeed eerily similar to the ‘unitary theory’ of Belgian fault-based liability (see *supra* nr. 180). Additionally, the French *Cour de Cassation* has recently abandoned its case law deriving a separate, strict extracontractual liability from the general product safety requirement (*obligation générale de sécurité de résultat*).¹³⁸⁶

However, the issue I see in the preceding analysis finding an infringement on the PLD’s maximum harmonisation, is its starting premise.¹³⁸⁷ The possibility to apply the ‘unitary theory’ to any of the aforementioned product safety requirements relies on it being qualified as a legal rule prescribing or prohibiting ‘specific conduct’. As the explanatory memorandum regarding art. 6.6, § 1 CC BE now seemingly confirms, a criterion based on ‘result-’ and ‘means-oriented’ obligations is ill-suited for this purpose and it is necessary to focus instead more on the specificity of the behaviour required by the violated legal rule, such as through AUVRAY’S ‘context-independence’ criterion (see *supra* nr. 208.c). In my opinion, many if not most general product safety requirements fail this test, since they require too much, highly context-specific interpretation to operate in a given case. Therefore, the aforementioned issue of a potential infringement of the PLD’s maximum harmonisation would in many instances not arise, since many if not most of those product safety rules can be considered illegible for an application of the ‘unitary theory’. Belgian liability law would thus still require a non-harmonised, concrete application of the general standard of care (see *supra* nr. 211).

Finally, to the extent that the preceding nuance does not hold and there are still instances where applications of the unitary theory based on violations by producers and distributors of one or more product safety provisions would violate the PLD’s maximum harmonisation, it must be emphasized that this risk remains limited to the actual scope of EU product liability harmonisation.¹³⁸⁸ As already examined *supra* nr. 213, this means that such product liability

¹³⁸⁵ Art. 12 *ibid.* See also M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 183 (believing that required conduct is insufficiently specific, but confirming violation of PLD’s maximum harmonisation when objective component of fault would be automatically derived from violation by distributor of main general product safety obligations).

¹³⁸⁶ Cass. FR civ. (1^e Ch.) 9 September 2020, nr. 19-11.882, *RTD Civ.* 2020, 890, note P. Jourdain, *CCC* 2020, nr. 11, com. 154, note L. Leveneur, *RDC* 2021, nr. 1, 114, note J. Julien; Cass. FR civ. (1^e Ch.) 24 November 2021, nr. 20-11.098, *CCC* 2022, nr. 1, com. 17, note S. Bernheim-Desvaux. Nevertheless, these decisions seem to have been motivated more by theoretical concerns internal to French national liability law and its independence from administrative provisions than by considerations regarding the PLD’s scope of harmonisation.

¹³⁸⁷ See also the reference to KRUIHOF *supra* footnote 1385.

¹³⁸⁸ See *supra* nrs. 170-171.

theory with the same theoretical basis as the PLD can still perfectly apply in many instances where the defendant falls outside the PLD's personal scope of application, where other heads of damage are claimed or when the not put into circulation defence applies. In this context, the most significant area outside the PLD's scope of harmonisation is undeniably post-marketing liability (see *supra* nrs. 213.d). Claims of extracontractual liability for fault, often according to the 'unitary theory' based on violations of post-marketing product safety requirements of manufacturers, distributors and others to take the necessary preventive and corrective measures, are the main liability theory invoked by parties injured in product accidents that might have been prevented if such post-marketing requirements had been complied with (see also *supra* nrs. 10.d and 184).

§ 2. Hidden defects guarantee

215. BASIC FEATURES OF THE HIDDEN DEFECTS GUARANTEE AS A KEY THEORY OF BELGIAN PRODUCT LIABILITY LAW *SENSU LATO* – This dissertation refrains from diving too deep into national law in general and contract law in particular. Yet, as already outlined earlier (see for example *supra* nrs. 6 and 172), the claim for extrinsic damages based on sales law's hidden defects guarantee is the main vertical product liability claim employed by injured consumers in Belgium. Just like in French law,¹³⁸⁹ this theory is actually the core around which Belgian product liability prior to the PLD-1985 has developed, with the aforementioned 'objective' extracontractual fault-based liability subsequently developing as a mirror-image for diagonal claims by injured third parties.¹³⁹⁰ A crucial underlying reason, generally taken for granted in the existing doctrinal literature, is the economic dominance of sales-based product distribution, which servitisation now challenges (see *supra* nr. 67). Of course, in case of for example use- and result-oriented PSS, different special contractual liability theories, such as those relating to leases and services contracts, may apply instead of sales law, in addition to general contractual liability. The other two, legal doctrinal reasons for the dominance of the hidden defects guarantee in Belgian product liability law *sensu lato*, have been extensively studied and reflected upon in the literature.

First of all, Belgian courts assume that producers and specialized sellers have in case of a product accident caused by established hidden defects, violated their obligation to discover and refrain from selling products impaired with such defects, which is very challenging for them to refute and which allows injured purchasers to claim extrinsic damage based on art.

¹³⁸⁹ See Borghetti, *La responsabilité du fait des produits*, 202-207; B. Dubuisson and P. Jourdain (eds.), *Les responsabilités et les garanties du vendeur en droit belge et en droit français* (Larcier 2024) (multiple contributions discussing this theory of contractual product liability *sensu lato* under Belgian and French law, respectively).

¹³⁹⁰ See Cousy, *Problemen van produktenaansprakelijkheid*, 229-264, 271 363-367; H. Bocken, 'Buitencontractuele aansprakelijkheid voor gebrekkige producten' in X. (ed.), *Bijzondere overeenkomsten*. PUC W. Delva nr. 34 (Kluwer 2008) 337.

1645 Old CC BE.¹³⁹¹ At the same time, contractual exonerations from this product liability risk are not possible in B2C-relationships and is.¹³⁹²

Second, it is traditionally assumed that this vertical claim for extrinsic damages based on the hidden defects guarantee transfers downwards along a chain of ownership-transferring ('translative') contracts, which corresponds with most product distribution pathways. This allows injured consumers to directly (*action directe*) claim on this contractual basis against the product's producer, importer, intermediary distributors or even contractors for works, even when these defendants are not their direct counterparties.¹³⁹³ The consequence that extracontractual claims are thus no longer allowed in this indirect vertical relationship due to the *non-cumul* principle,¹³⁹⁴ is now overruled by art. 6.3 CC BE's new rule on concurrence of contractual with extracontractual liability.

As already indicated *supra* nrs. 287 and 208.d, an in my opinion theoretically persuasive, alternative interpretation, first propagated by KRUIITHOF, argues that the *action directe* relating to a claim for extrinsic damages cannot be based on the hidden defects guarantee, because said claim only arises after a product accident occurs and therefore could not yet have transferred as an accessory right tied to the transferred product's ownership in each preceding stage of the contractual chain. Instead, producers and distributors have also towards third parties, which includes future consumers of their products, a general obligation of diligence and quality controls, which provides the basis for a fault-based extracontractual liability and which is more strict for producers and specialized sellers (*spondet peritiam artis, et imperitia culpa adnumeratur*).¹³⁹⁵ To the extent that this fault-based extracontractual *action directe* against producers and specialized intermediary distributors is strict, it violates the PLD's maximum harmonisation.¹³⁹⁶ This last point has actually been examined already, since it corresponds with fault-based extracontractual product liability, traditionally invoked by only injured third parties, which is based on the mere fact that a 'defective' product has been made available or put into service by a commercial producer or distributor (see *supra* nrs. 209-213).¹³⁹⁷

¹³⁹¹ See the explanation and sources *supra* footnote 979.

¹³⁹² See the explanation and sources *supra* footnote 980.

¹³⁹³ See the explanation and sources *supra* footnote 978.

¹³⁹⁴ Cass. BE 2 October 2020, C.20.0005.N, *Jur.Prat.* 2023, 177, note J. Romain, *TBBR* 2021, 188, note M. Higny, *TBH* 2020, 939.

¹³⁹⁵ See M. Kruithof, 'Aansprakelijkheid van verkopers voor schade veroorzaakt door verborgen gebreken: tijd voor een "decontaminatie" van artikel 1645 BW' in N. Carette and B. Weyts (eds.), *Verantwoord aansprakelijkheidsrecht: Liber amicorum Aloïs Van Oevelen* (Intersentia 2017) 385-404; C. Borucki, 'Samenloop tussen buitencontractuele en contractuele aansprakelijkheid bij schade veroorzaakt door een goed met verborgen gebreken' (2022) *Tijdschrift voor Belgisch Burgerlijk Recht* 519, 522-527.

¹³⁹⁶ M. Kruithof, 'Aansprakelijkheid van verkopers voor schade veroorzaakt door verborgen gebreken: tijd voor een "decontaminatie" van artikel 1645 BW' in N. Carette and B. Weyts (eds.), *Verantwoord aansprakelijkheidsrecht: Liber amicorum Aloïs Van Oevelen* (Intersentia 2017) 402-404; C. Borucki, 'Samenloop tussen buitencontractuele en contractuele aansprakelijkheid bij schade veroorzaakt door een goed met verborgen gebreken' (2022) *Tijdschrift voor Belgisch Burgerlijk Recht* 519, 526.

¹³⁹⁷ This already discussed, 'objective' fault-based product liability is until now only invoked by injured third parties, as a result of the *non cumul* principle. Yet, as a result of art. 6.3 CC BE's new rule on

The following section examines to what extent direct and indirect (*action directe*) vertical claims by injured consumers, based on the hidden defects guarantee, violate the PLD's maximum harmonisation. For the alternative interpretation, first proposed by KRUIHOF, of indirect vertical product liability claims (*action directe*), this is thus no longer necessary.

216. THE PLD HAS, WITHIN ITS SCOPE, HARMONISED DIRECT AND INDIRECT VERTICAL CLAIMS FOR EXTRINSIC DAMAGE BASED ON THE HIDDEN DEFECTS GUARANTEE AGAINST PRODUCERS AND SPECIALIZED SELLERS (OR CONTRACTORS) – This dissertation supports the argument first propagated by KRUIHOF¹³⁹⁸ that – contrary to the current majority opinion in Belgian law – the PLD has maximally harmonised vertical claims for the reparation of extrinsic damage, which fall within the PLD's material and personal scope of application, against producers and specialized sellers (or contractors) that are based on a 'strict' version of the hidden defects guarantee. Unlike in the case of the 'objective' extracontractual fault-based product liability (see *supra* nr. 209), this position has today not (yet) been confirmed by the *Cour de Cassation* or, to my knowledge, by another Belgian court. The argument is outlined below.

- a. The current majority view among Belgian courts¹³⁹⁹ and legal scholars¹⁴⁰⁰ is that product liability claims based on the hidden defects guarantee, including those against producers and specialized sellers or contractors for works, have not been harmonised by the PLD, because this legal theory has a different basis than harmonised product liability. This is ostensibly validated by explicit references in CJEU decisions to “*a warranty in respect of latent defects*” as an example of a national liability theory preserved by art. 13 PLD-1985,¹⁴⁰¹ which recital 9 PLD-2024 now reiterates.

concurrency, such claims now also become possible for injured consumers willing to claim vertically against any actors in the product distribution chain, which completely encompasses the indirect vertical claims for extrinsic damages analysed by KRUIHOF.

¹³⁹⁸ M. Kruithof, 'Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?' in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 209-219. See also *infra* footnote 1414 for additional support.

¹³⁹⁹ See, e.g., the following published decisions where claims based on the hidden defects guarantee and based on the PLDI by the same plaintiffs regarding the same damage are combined, without any concern about the harmonising effect of the latter on the former Liège 7 November 2005, *TBBR* 2006, 620, note E. Montero; Bruxelles 8 February 2010, *RGAR* 2010, nr. 14.645; Bruxelles 16 January 2012, *RGAR* 2012, nr. 14.843, *TBBR* 2013, 428, note D. Verhoeven; Antwerpen 19 March 2012, *T.Gez.* 2014-15, 29, note S. Illegems; Liège 23 April 2013, *DCCR* 2014, 50, note L. Jacqmin; Antwerpen 25 April 2018, *TBBR* 2020, 185, *NJW* 2018, 386, note T. Verheyen; Trib. Bruxelles 10 November 2009, *RGAR* 2010, nr. 14.632.

¹⁴⁰⁰ See, e.g., D. Wuyts, 'Productaansprakelijkheid: een Richtlijn voor (n)iets?' (2008) *Tijdschrift voor Belgisch Burgerlijk Recht* 3, 8-9; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 498; L. Jacqmin, 'La responsabilité pour les dommages causés par un 'bien défectueux' : multiplicité de parties et de fondements potentiels de l'action' (2014) *Droit de la Consommation / Consumentenrecht* 61, 69; Delforge, 'Le défaut de sécurité au sens de la loi du 25 février 1991', 331; Tilleman and Van Den Abeele (collab.), *Gevolgen van de koop*, 952; F. George, 'La responsabilité du fait des produits défectueux' in F. George and R. Jafferali (eds.), *Manuel de droit de la responsabilité civile* (Anthemis 2022) 547; Dubuisson et al., *Chronique de jurisprudence 2008-2020 – Volume 1*, 367-377.

¹⁴⁰¹ CJEU 25 April 2002, C-52/00, *Commission v. France*, ECLI:EU:C:2002:252, nr. 22; CJEU 25 April 2002, C-

- b. However, when a claim is made that ‘hidden defects’ have caused a product accident (which entails extrinsic damage, see *supra* nrs. 4-5), the proof of a ‘sufficiently grave’, ‘anterior’ and either ‘intrinsic’ or ‘functional’ hidden ‘defect’¹⁴⁰² will by nature virtually always correspond with an objective lack of “*safety which a person is entitled to expect*” according to the PLD’s notion of ‘defect’ (see *supra* nrs. 179 et seq.),¹⁴⁰³ for which the posteriority defence cannot be successfully invoked (see *supra* nr. 195 and *infra* nr. 239). The additional requirement that a ‘defect’ under the guarantee of arts. 1641 et seq. Old CC BE must have been ‘hidden’ from the perspective of a normally prudent buyer in the same circumstances,¹⁴⁰⁴ remains an actual difference with product ‘defects’ under the PLD. The latter can theoretically be completely apparent, which demonstrates again the PLD’s extracontractual nature (see *supra* nr. 172). Nevertheless, this only makes cases where it is possible to base on the hidden defects guarantee a claim for extrinsic damages resulting from a product accident, a smaller subset that still falls entirely within the PLD’s scope of application. Moreover, while the PLD is thus not directly concerned with the hidden or apparent nature of defects, the fact that in a specific instance a potential defect had been hidden for a normally prudent consumer, only further strengthens the case to effectively qualify it as a ‘defect’ according to the PLD’s defect

154/00, *Commission v. Greece*, ECLI:EU:C:2002:254, nr. 18; CJEU 25 April 2002, C-183/00, *González Sánchez v. Medicina Asturiana*, ECLI:EU:C:2002:255, nr. 31; CJEU 10 January 2006, C-402/03, *Skov and Bilka*, ECLI:EU:C:2006:6, nr. 47; CJEU 4 June 2009, C-285/08, *Moteurs Leroy Somer v. Dalkia France*, ECLI:EU:C:2009:351, nr. 23.

¹⁴⁰² See the following recent overviews of case law and literature regarding the requirements that defects under the guarantee must be anterior to the transfer of control over the good, be ‘sufficiently serious’ and be either intrinsic to the structure of the good or render it unsuitable for an intended function Tilleman and Van Den Abeele (collab.), *Gevolgen van de koop*, 363-386, 403-412; C. Hélas, ‘La garantie des vices cachés dans la vente: Rapport belge’ in B. Dubuisson and P. Jourdain (eds.), *Les responsabilités et les garanties du vendeur en droit belge et en droit français* (Larcier 2024) 320-325, 328.

¹⁴⁰³ As a difference with the PLD’s objective defect concept (art. 6(1) PLD-1985; art. 7(1) PLD-2024), a ‘defect’ under the hidden defect guarantee (art. 1641 Old CC BE) can be based purely on subjective expectations of the buyer known by the seller (see e.g. Liège 25 April 2002, *RGAR* 2003, nr. 13.742; Com. Bruxelles 29 October 1987, *JT* 1988, 443). However, when a good causes damage to other goods or physical injuries, this will by nature also be pivotal for the PLD’s objective concept of product defectiveness (see *supra* nrs. 179 et seq.). The only difference I can imagine are hypothetical cases where a product due to its inherently dangerous nature is not defective according to the PLD (see *supra* nr. 185) while it nevertheless constitutes a defect according to subjective expectations expressed by the buyer and known by the seller, although in those cases the defect itself must still in turn have been ‘hidden’ to give rise to a claim under the guarantee (see following footnote), which seems a very unlikely combination of circumstances. See also G. Wester, ‘Responsabilité du fait des produits défectueux et garantie des vices cachés: un cumul d’actions?’ (2023) *Recueil Dalloz* 1211, I: “*Cette différence de fondement manque donc de convaincre pleinement. Le défaut de sécurité et le vice caché semblent recouvrir une seule et même réalité : la chose/le produit est anormal, il présente une anomalie, un défaut.*”

¹⁴⁰⁴ See again the following recent overviews of case law and literature Tilleman and Van Den Abeele (collab.), *Gevolgen van de koop*, 387-403; C. Hélas, ‘La garantie des vices cachés dans la vente: Rapport belge’ in B. Dubuisson and P. Jourdain (eds.), *Les responsabilités et les garanties du vendeur en droit belge et en droit français* (Larcier 2024) 325-328.

assessment criteria.¹⁴⁰⁵ The argument offered by a French author,¹⁴⁰⁶ according to which the hidden defects guarantee cannot have been (partially) harmonised by the PLD because these defects are necessarily ‘hidden’, is therefore unconvincing.

Likewise, some authors suggest that the hidden defects guarantee cannot have been (partially) harmonised by the PLD because it strives to repair intrinsic damage to the product itself, while the PLD concerns extrinsic damage.¹⁴⁰⁷ This is indeed a fundamental difference between ‘contractual liability’ and ‘product liability’ in general (see also *supra* nrs. 4-6)¹⁴⁰⁸ and a claim for intrinsic damage is as a matter of fact always excluded from the PLD’s scope of harmonisation (see *infra* nrs. 216.e and 219). Nevertheless, the sticking point is that the hidden defects guarantee based on art. 1645 Old CC BE still allows to also claim extrinsic damage.¹⁴⁰⁹ And it is precisely in this regard that there is a potential risk of national law infringing upon the Directive’s scope of harmonisation.

¹⁴⁰⁵ A for the average consumer hidden nature of a product feature makes it more likely that it is qualified as a ‘defect’ under harmonised product liability, because the criteria of the product’s presentation (see *supra* nr. 182) and its inherently dangerous nature (see *supra* nr. 185) may consequently not come into play as arguments that the product still offered the safety the general public was entitled to expect (art. 6(1)a PLD-1985; art. 7(1)(2)a PLD-2024).

¹⁴⁰⁶ C. Caillé, ‘Responsabilité du fait des produits défectueux’ in X. (ed.), *Répertoire de droit civil* (Dalloz.fr 2018 update) nr. 103.

¹⁴⁰⁷ See D. Bakouche, ‘Dits et non-dits sur la mise en œuvre de la responsabilité du fait des produits défectueux et de la garantie des vices cachés’ (2023) *La Semaine Juridique: Entreprise et Affaires* nr. 1186, 48-49; A. Vignon-Barrault, ‘Complémentarité de la responsabilité du fait des produits défectueux et de la garantie des vices cachés dans les groupes de contrats : la Cour de cassation persiste et précise !’ (2023) *La Semaine Juridique: Edition Générale* 1359, 1361; I. Samoy and C. Borucki, ‘La responsabilité du fabricant du fait des produits défectueux: Rapport belge’ in B. Dubuisson and P. Jourdain (eds.), *Les responsabilités et les garanties du vendeur en droit belge et en droit français* (Larcier 2024) 860, footnote 21.

¹⁴⁰⁸ BORGHETTI leverages this fundamental difference to argue that the hidden defects guarantee and the PLD cannot have the same theoretical basis, with which I disagree to the extent that the hidden defects guarantee turns out to be as strict as the PLD (as discussed *infra* nr. 216.c) while it similarly imposes this liability on producers and distributors for having made a defective product available or put it into service. J.-S. Borghetti, ‘Fait des produits : 1 - Fait des choses : 0’ (2018) *Recueil Dalloz* 1840, nr. 16: “L’analogie entre la responsabilité pour faute de l’article 1240 du code et cette garantie ne doit cependant pas être poussée trop loin. La première, comme la responsabilité du fait des produits défectueux, est une protection que le droit positif accorde aux justiciables, pour ainsi dire de plano, et il est compréhensible qu’elle soit écartée lorsqu’un régime plus spécifique, mais ayant la même finalité, est également applicable. La garantie des vices cachés, en revanche, est une protection que le droit positif accorde aux seuls acheteurs, du fait du contrat de vente. Il n’y a dès lors pas lieu de l’écarter pour la simple raison qu’un autre régime, dont la raison d’être est différente, est également applicable. En décider autrement reviendrait à restreindre indûment les garanties que les acheteurs tirent de leur contrat, et qui trouvent leur justification dans le prix payé en contrepartie de la chose.”

¹⁴⁰⁹ As admitted by one of these authors, who sets it aside as a subsidiary feature D. Bakouche, ‘Dits et non-dits sur la mise en œuvre de la responsabilité du fait des produits défectueux et de la garantie des vices cachés’ (2023) *La Semaine Juridique: Entreprise et Affaires* nr. 1186, 49: “En effet, si la garantie des vices cachés peut permettre, sous certaines conditions, notamment celles de l’article 1645 du Code civil tel qu’il est interprété par la jurisprudence, la réparation des conséquences préjudiciables du vice ([...]), elle a bien au premier chef en vue, à travers la conception fonctionnelle de celui-ci entendu comme l’impropriété de la chose

It is not because a national liability theory merely partially overlaps with the PLD's scope, that it cannot violate the latter to that extent if it happens to have the same theoretical basis as the PLD.

Moreover, the CJEU has confirmed in the *Skov* decision that the PLD also maximally harmonises the merely secondary nature of product liability for distributors.¹⁴¹⁰ In other words, it can also not be argued that the PLD only harmonises the liability of producers and other primary liable defendants, which would leave open vertical claims based on the hidden defects guarantee against one's own direct and intermediary sellers (and contractors) who are not subject to primary liability under the PLD.

- c. The actual reason why the PLD, as a general principle, does not harmonise all vertical claims against distributors and producers for the reparation of extrinsic damage resulting from product accidents that are based on the hidden defects guarantee, is the fact that this national liability theory is with regards to extrinsic damage in principle not as 'strict' as the PLD.¹⁴¹¹ While claims based on the PLD require in addition to damage and causation only proof that the product is defective, which is decisive for the preservation of remaining national law (see *supra* nr. 171), claims for extrinsic damage based on the hidden defects guarantee require pursuant to art. 1645 Old CC BE 'the seller's knowledge about the defects'. However, it is precisely this pivotal, subjective and somewhat fault-oriented requirement that Belgian courts, in parallel with their French counterparts, have started to interpret in an increasingly strict manner for producers and specialised sellers (and contractors) of products, by assuming that this requirement is automatically fulfilled because these actors bear a professional obligation of diligence to discover and not sell products with hidden defects (*spondet peritiam artis, et imperitia culpa adnumeratur*), for which a defence that they have not breached this violation is extremely difficult.¹⁴¹² This defence of last resort for specialized sellers and producers under Belgian law requires that the defect had been 'absolutely undetectable'.¹⁴¹³ This does little to make this liability any less strict compared to the 'quasi-strict' PLD (see *supra* nrs. 173-174) which also includes a comparable development risk defence (see *supra* nr. 200).

à sa destination normale, un dommage à la chose ou au produit. Différemment, dans le régime de la responsabilité du fait des produits défectueux, ne sont des préjudices réparables que ceux qui résultent, suivant l'article 1245-1, 'd'une atteinte à la personne' ou 'd'une atteinte à un bien autre que le produit lui-même'."

¹⁴¹⁰ CJEU 10 January 2006, C-402/03, *Skov and Bilka*, ECLI:EU:C:2006:6, nrs. 31-45.

¹⁴¹¹ See *ibid.*, nrs. 46-48; G. Wester, 'Responsabilité du fait des produits défectueux et garantie des vices cachés: un cumul d'actions?' (2023) *Recueil Dalloz* 1211, I: "La différence de fondements s'expliquerait plutôt par le fait que la garantie des vices cachés soit subordonnée à la réunion des conditions de la responsabilité contractuelle - et, partant, à l'existence d'une faute - tandis que la responsabilité du fait des produits défectueux est une responsabilité objective(16). La faute serait donc le « fondement différent » le plus convaincant pour autoriser le cumul d'actions."

¹⁴¹² See the explanation and sources *supra* footnote 979.

¹⁴¹³ See the explanation and sources *supra* footnote 979. Some French-speaking authors go even further and, following the example of French law, negate even this limited defence. See, e.g., C. Hélas, 'La garantie des vices cachés dans la vente: Rapport belge' in B. Dubuisson and P. Jourdain (eds.), *Les responsabilités et les garanties du vendeur en droit belge et en droit français* (Larcier 2024) 348.

Consequently, KRUIHOF and more recently VERHOEVEN argue in my opinion correctly that such claims for extrinsic damages against producers and specialized sellers have the same theoretical basis as the PLD and therefore violate its maximum harmonisation,¹⁴¹⁴ at least to the extent that these overlap with the PLD's scope of application as discussed *supra* nr. 213 and *infra* nr. 219.

- d. As already mentioned, highly comparable case law exists in France based on the same Napoleonic, Civil Code provisions relating to the hidden defects guarantee, arts. 1641 and 1645 CC FR, although in France professional rather than specialized sellers (and contractors) bear an entirely irrefutable presumption of knowledge about the hidden defect,¹⁴¹⁵ which makes the liability of those professional sellers for extrinsic damage even stricter than under the equivalent Belgian case law. The French debate about the same question of the PLD's harmonisation can therefore be instructive from a Belgian perspective. Overall, the current state of French case law and literature seems to increasingly hint that the above argument, first raised by KRUIHOF and supported by this dissertation, is correct in the Belgian context. Nevertheless, some nuance seems to be warranted.

The French *Cour de Cassation* has in 2007 unequivocally abandoned its past case law on a contractual result-oriented *obligation de sécurité* of professional distributors and producers to ensure that their products have no *défauts de sécurité*, just like it has subsequently done with the extracontractual counterpart (see *supra* nr. 210.a) because both were deemed to violate the PLD's maximum harmonisation.¹⁴¹⁶

¹⁴¹⁴ M. Kruithof, 'Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?' in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit. PUC W. Delva nr. 40* (Kluwer 2015) 209-219; D. Verhoeven, 'De Wet Productaansprakelijkheid: onbekend en/of onbemind?' in M. Kruithof (ed.), *Inzichten in actueel aansprakelijkheidsrecht en verzekeringsrecht (ICAV II)* (Intersentia 2018) 191-192. See also M. Kruithof, 'Aansprakelijkheid van verkopers voor schade veroorzaakt door verborgen gebreken: tijd voor een "decontaminatie" van artikel 1645 BW' in N. Carette and B. Weyts (eds.), *Verantwoord aansprakelijkheidsrecht: Liber amicorum Aloïs Van Oevelen* (Intersentia 2017) 401-404; C. Borucki, 'Samenloop tussen buitencontractuele en contractuele aansprakelijkheid bij schade veroorzaakt door een goed met verborgen gebreken' (2022) *Tijdschrift voor Belgisch Burgerlijk Recht* 519, 526. The authors in these last two publications actually only refer to indirect vertical claim for extrinsic damages against producers and intermediate distributors (*action directe*), which according to these authors cannot be based on the hidden defects guarantee (art. 1645 Old CC BE) but rather on extracontractual fault-based liability. Hence, what they argue here is actually that the PLD's maximum harmonisation is violated by the parallel extracontractual 'objective' fault, which merely consists of the making available on the market or putting into service of a defective product by a professional producer or distributor, as already discussed *supra* nrs. 209-213.

¹⁴¹⁵ See the explanation and sources *supra* footnote 979.

¹⁴¹⁶ Cass. FR civ. (1^e Ch.) 15 May 2007, nr. 05-17.947, *Bull.civ.* 2007, I, nr. 186, *JCP G* 2007, I, 185, nr. 8, note Ph. Stoffel-Munck, *RTD Civ* 2007, 580, note P. Jourdain, *RDC* 2007, 1147, note J.-S. Borghetti; Cass. FR civ. (1^e Ch.) 12 July 2012, nr. 11-17.510, *Bull.civ.* 2012, I, nr. 165, *JCP G* 2013, 484, note Ph. Stoffel-Munck, C. Bloch, *Resp.civ.ass.* 2012, 314; Cass. FR civ. (1^e Ch.) 17 March 2016, nr. 13-18.876, *Bull.inf.* 2016, I, nr. 846, nr. 1064, *Resp.civ.ass.* 2016, comm. 158, note D. Bakouche. See also the decisions relating to the extracontractual variant *supra* footnote 1328.

Seemingly to the contrary, French courts seem to have never ruled explicitly that the PLD's scope of harmonisation is also violated by the strict liability for extrinsic damage of professional sellers based on art. 1645 CC FR. This would match with many statements in the French literature unequivocally accepting that all claims based on the hidden defects guarantee have a different theoretical basis than the PLD and therefore can be combined with the latter.¹⁴¹⁷ Of course, such a view runs contrary to the arguments raised above with regards to the Belgian equivalent.

However, French case law has in recent years shown at least a preference to reserve the use of the hidden defects guarantee for only intrinsic damage to be remedied by the *actio redhibitoria* or *aestimatoria*, while extrinsic damage to other goods and persons can seemingly only be claimed through the PLDI. In a decision of 19 April 2023, the *Cour de Cassation* now seems to elevate this distribution to the level of a rule: "10. Il s'en déduit que la responsabilité du producteur peut être recherchée, d'une part, sur le fondement de la responsabilité du fait des produits défectueux au titre du dommage qui résulte d'une atteinte à la personne ou à un bien autre que le produit défectueux lui-même, d'autre part, sur le fondement de la garantie de vices cachés au titre notamment du dommage qui résulte d'une atteinte au produit qu'il a vendu."¹⁴¹⁸ Does this mean that extrinsic damage that can be claimed based on the PLDI, can no longer be claimed against professional sellers on the basis of the hidden defects guarantee (art. 1645 CC FR)? This is what the first commentators of this new decision seem to imply, although they do not state this explicitly, like the Court itself.¹⁴¹⁹ This barring of claims for extrinsic damages based on art. 1645 CC FR within the PLD's scope of application, would confirm what HUET had already

¹⁴¹⁷ E.g., P. Le Tourneau, *Responsabilité des vendeurs et fabricants* (5th edn., Dalloz 2015) nr. 22.53; C. Caillé, 'Responsabilité du fait des produits défectueux' in X. (ed.), *Répertoire de droit civil* (Dalloz.fr 2018 update) nr. 103; D. Bakouche, 'Dits et non-dits sur la mise en œuvre de la responsabilité du fait des produits défectueux et de la garantie des vices cachés' (2023) *La Semaine Juridique: Entreprise et Affaires* nr. 1186, 48; A. Vignon-Barrault, 'Complémentarité de la responsabilité du fait des produits défectueux et de la garantie des vices cachés dans les groupes de contrats : la Cour de cassation persiste et précise !' (2023) *La Semaine Juridique: Edition Générale* 1359, 1361; O. Barret and P. Brun, 'Vente: effets' in X (ed.), *Répertoire de droit civil* (Dalloz.fr 2024 update) nrs. 748, 750.

¹⁴¹⁸ Cass. FR civ. (1^e Ch.) 19 April 2023, nr. 21-23.726, *D.* 2023, 1211, note G. Wester, *RTD Civ.* 2023, 654, note P. Jourdain, *JCP G* 2023, nr. 28, act. 865, note A. Vignon-Barrault, *JCP E* 2023, nr. 24, 1186, note D. Bakouche.

¹⁴¹⁹ P. Jourdain, 'Quelle articulation entre la responsabilité du fait des produits défectueux et les responsabilités et garanties de droit commun : cumul ou exclusion?' (2023) *Revue Trimestrielle de Droit Civil* 654; A. Vignon-Barrault, 'Complémentarité de la responsabilité du fait des produits défectueux et de la garantie des vices cachés dans les groupes de contrats : la Cour de cassation persiste et précise !' (2023) *La Semaine Juridique: Edition Générale* 1359, nrs. 1.B, 2.B.; G. Wester, 'Responsabilité du fait des produits défectueux et garantie des vices cachés: un cumul d'actions?' (2023) *Recueil Dalloz* 1211, nr. III. The only commentator who explicitly addresses the possibility of claiming extrinsic damages based on art. 1645 CC FR, is BAKOUCHE, who does so in passing and states that this is a secondary function of the hidden defects guarantee (see citation *supra* footnote 1409). It is unclear whether this is an argument to permanently set aside such claims within the scope of application of the PLDI on a mandatory or whether this is only an argument to highlight the potential complementarity between both theories when the hidden defects guarantee is voluntarily chosen to be used only for remediating intrinsic damage in such cases.

suggested earlier,¹⁴²⁰ but would run contrary to the views of others who believe that the contractual hidden defects guarantee always has a fundamentally different nature than the extracontractual PLD.¹⁴²¹

All in all, while this matter is arguably not yet entirely settled under French law, recent developments seem to lend support to the preceding argument that ‘strict’ claims for extrinsic damages against specialized sellers and producers based on the Belgian hidden defects guarantee (art. 1645 Old CC BE), indeed violate the PLD.

- e. Finally, it is important here to emphasize again that any conflict between current claims for extrinsic damages based on art. 1645 Old CC BE against specialized sellers and producers and the PLD’s maximum harmonisation, remains restricted to the actual scope of the PLD’s harmonisation. This has been discussed in-depth *supra* nr. 213 and is discussed further with regards to the recognised heads of damage *infra* nr. 219. Especially the latter is important to highlight. Intrinsic damage cannot be claimed based on the PLDI, which means that these are always possible based on the hidden defects guarantee’s *actio redhibitoria* or *actio aestimatoria*, as highlighted in the aforementioned French decision of 19 April 2023. Damage to purely professional goods can also not be claimed based on the PLDI, which means that if those goods are damaged as a result of a product accident subject to the PLDI, this extrinsic damage can still be claimed against a professional seller or producer on the basis of a ‘strict’ claim based on art. 1645 Old CC BE (see *infra* nr. 219).

§ 3. Extracontractual liability for custody of defective goods

217. BASIC FEATURES OF THE EXTRACONTRACTUAL LIABILITY FOR CUSTODY OF DEFECTIVE GOODS AND ITS EXPANDING POTENTIAL OVERLAP WITH HARMONISED PRODUCT LIABILITY – Belgian case law has, similar to its French counterpart although with a somewhat different approach, developed a relatively strict extracontractual liability of the custodian of defective goods based on art. 1484, 1st section Old CC BE, now art. 6.16 CC BE. The ‘custodian’ is the person who has in a ‘not-subordinate’ position the power of factual direction and control over a good. This is often the owner, who bears a refutable presumption of being the ‘custodian’,¹⁴²² but it might also be

¹⁴²⁰ J. Huet, ‘Fasc. 335: Responsabilité du fait des produits défectueux’ in X. (ed.), *JurisClasseur Contrats - Distribution* (Lexis360 2023 update) nr. 69 (after discussing French case law relating to the PLD’s scope of harmonisation and other liability theories than the hidden defects guarantee): “*En présence de ces arrêts, on doit se demander si le cumul ouvert par l'article 13 de la directive autorise encore l'acheteur à se prévaloir de la garantie contre les vices cachés contre le distributeur, pour obtenir la réparation de son dommage, sur un fondement objectif, ou si cette garantie n'est pas désormais cantonnée à la seule garantie de conformité.*” See also *ibid.*, nrs. 77-78.

¹⁴²¹ J.-S. Borghetti, ‘Fait des produits : 1 - Fait des choses : 0’ (2018) *Recueil Dalloz* 1840, nr. 16 (relevant passage cited *supra* footnote 1408).

¹⁴²² Art. 6.16, 2nd section CC BE.

another person, as discussed below. Moreover, a good can have in a given situation multiple, jointly and severally liable ‘custodians’ at the same time.¹⁴²³

Importantly, codifying the end-result of a diverse case law, the Belgian legislator now considers a good as being ‘defective’ when it ‘as a result of one of its characteristics does not offer the safety which can legitimately expect in the given circumstances’.¹⁴²⁴ This is of course extremely similar to the PLD’s defect criterion (see *supra* nrs. 179 et seq.), which is in the explanatory memorandum explicitly highlighted pursuant to a goal of harmonising both ‘defect’ concepts.¹⁴²⁵ Yet, it is often stated that there is little to no risk of infringing upon the PLD’s scope of harmonisation, because the liability for custody of defective goods targets other defendants, namely product users, which concerns horizontal product liability claims unlike the vertical and diagonal claims against producers and distributors with which the PLD is concerned (see Figure 2 *supra* nr. 5).¹⁴²⁶ The PLD remains furthermore limited to the moment when a product is made available or put into service, which excludes the post-marketing phase (see *supra* nrs. 184 and 213.d). Nevertheless, there is a significant factual overlap between both regimes, which is now undeniably expanding.

First of all, the aforementioned abandonment of the *non-cumul* rule by the new art. 6.3 CC BE (see *supra* nr. 208.d), theoretically allows also injured consumers to claim vertically on the basis of the extracontractual liability for custody of defective goods against a contractual counterparty, like a distributor or service-provider.¹⁴²⁷ The theory is therefore no longer restricted to diagonal and horizontal product liability claims.

Second, product distributors targeted by the PLD will generally still be the ‘custodian’ of a good when it is being ‘made available’, which includes retail logistics and presenting a good to prospective consumers in a store, just like economic actors who ‘put into service’ a self-manufactured product. In those cases, the not put into circulation defence of art. 7(a) PLD-1985 and art. 11(1)a-b PLD-2024 can no longer be invoked (see *supra* nr. 194 and *infra* nrs. 323

¹⁴²³ Cass. BE 25 March 1943, *Arr.Cass.* 1943, 68; Cass. BE 24 October 1994, *Arr.Cass.* 1994, 873, *RW* 1996-97, 389; Cass. BE 15 November 2004, *Arr.Cass.* 2004, 1825; Gent 5 February 2004, *RW* 2006-07, 1048.

¹⁴²⁴ Art. 6.16, 3rd section CC BE.

¹⁴²⁵ Boek 6 Wetsvoorstel 2023 / Livre 6 Proposition 2023, 77: “*La définition du vice correspond alors à la définition du défaut dans la loi relative à la responsabilité du fait des produits défectueux (article 6.54 de la proposition). Cela favorise une interprétation uniforme des deux définitions. En outre, il ressort de la jurisprudence concernant la loi relative à la responsabilité du fait des produits défectueux que cette définition du défaut donne lieu à peu de contestations*” See also Liège 20 May 2010, *RGAR* 2011, nr. 14.704; J.-L. Fagnart, *La responsabilité du fait des choses* (Kluwer 2017) 25.

¹⁴²⁶ E.g., Cousy, *Problemen van produktenaansprakelijkheid*, 264; H. Bocken, ‘Buitencontractuele aansprakelijkheid voor gebrekkige producten’ in X. (ed.), *Bijzondere overeenkomsten. PUC W. Delva nr. 34* (Kluwer 2008) 356-357; I. Samoy and C. Borucki, ‘La responsabilité du fabricant du fait des produits défectueux: Rapport belge’ in B. Dubuisson and P. Jourdain (eds.), *Les responsabilités et les garanties du vendeur en droit belge et en droit français* (Larcier 2024) 858. See also J.-S. Borghetti, ‘Fait des produits : 1 - Fait des choses : 0’ (2018) *Recueil Dalloz* 1840 nr. 4.

¹⁴²⁷ Note that limitations to liability from specific contract law or contractual provisions no longer apply to these new extracontractual liability claims between contractual parties, when the defendant had the intention to cause damage or, much more significantly in the product accident context, when the claim relates to a violation of the plaintiff’s physical or psychological integrity (art. 6.3, § 1, 2nd section, in fine CC BE).

and 412). And the PLD extends to products which cause harm while being used in a service provision (see *supra* nr. 175), in which case the service provider will generally be qualified as the ‘custodian’.¹⁴²⁸

Third, both circular economic strategies and the combination of digitalisation and servitisation in the consumer goods sector further increase the likelihood that commercial distributor and producers of those goods still qualify as a ‘custodian’ of those goods, even during the use phase. In addition to a use- or result-oriented PSS-provider who remains the owner of products he leases or otherwise makes available to consumers, also a product-oriented service provider who offers various services of periodic maintenance, repairs and/or digital services and software updates and upgrades, can be potentially qualified as the sole or one of the ‘custodians’ of a good. Especially so-called ‘smart products’ increase the possibilities for remote product monitoring and service provisions.¹⁴²⁹ In principle, once the main product has been made available, defendants can invoke the posteriority defence of art. 7(b) PLD-1985 and art. 11(1)c PLD-2024 for intervening, truly posterior defect causes, which for example result from any of the aforementioned ancillary products and services (but see *infra* nr. 239 on how this defence must be correctly interpreted). This would mean that the liability risk based on the PLD would remain limited to defects in ancillary ‘products’ according to the PLD which are subsequently made available or used during a service provision.

Finally, this last risk of potential overlap is by the new Directive nevertheless expanded in a twofold manner. On the one hand, art. 8(2) PLD-2024 now imposes on independent ‘substantial product modifiers’ a primary liability (see *infra* nrs. 442 et seq. in the repair context). On the other hand, the posteriority defence can based on art. 11(2) PLD-2024 no longer be invoked for substantial product modifications still occurring within the broadly defined ‘manufacturer’s control’ and it can no longer be invoked for defects in provided digital services, provided software or in the absence of software updates or upgrades that had been necessary to maintain the product’s safety, provided again this occurs ‘within the manufacturer’s control’ (see *supra* nr. 196). All these new instances of potential harmonised product liability might overlap with potential liability of the same defendants based on the liability for custody of defective goods.

218. ALTHOUGH UNCERTAIN, ARTS. 8(2) AND 11(2) PLD-2024 SEEM TO HAVE MAXIMALLY HARMONISED A SMALL NUMBER OF POTENTIAL CLAIMS BASED ON THE EXTRACONTRACTUAL LIABILITY FOR

¹⁴²⁸ H. Bocken, ‘Buitencontractuele aansprakelijkheid voor gebrekkige producten’ in X. (ed.), *Bijzondere overeenkomsten*. PUC W. Delva nr. 34 (Kluwer 2008) 357.

¹⁴²⁹ See J. Tanghe and J. De Bruyne, ‘Software aan het stuur: Aansprakelijkheid voor schade veroorzaakt door autonome motorrijtuigen’ in T. Vansweevelt and B. Weyts (eds.), *Nieuwe risico's in het aansprakelijkheids- en verzekeringsrecht - ALLIC III* (Intersentia 2018) 51-53; E. Van Gool, J. De Bruyne and M. Fierens, ‘De regulering van artificiële intelligentie (deel 2): Een analyse van buitencontractuele aansprakelijkheid’ (2021) *Rechtskundig Weekblad* 1003, 1017-1018.

CUSTODY OF DEFECTIVE GOODS – Traditionally, Belgian courts¹⁴³⁰ and scholars¹⁴³¹ accept mostly implicitly that, in situations where harmonised product liability and the extracontractual liability for custody of defective goods overlap, there is no issue because the latter has a different theoretical basis and has been preserved by art. 13 PLD-1985. KRUIHOF, however, argues in the aforementioned, seminal study that also this Belgian national liability theory has the same theoretical basis as the PLD, namely imposing liability for damage caused by a ‘defective’ product.¹⁴³² The fact that the new art. 6.16, 3rd section CC BE now explicitly adopts the same criterion of ‘defectiveness’ as the PLD (see *supra* nr. 217), further strengthens this argument.¹⁴³³ Moreover, the French *Cour de Cassation* has in the meantime arrived at the same conclusion, by explicitly precluding the use of the similar albeit far from identical *responsabilité du fait des choses* of current art. 1242, 1st section CC FR to claim extrinsic damage against producers and distributors who have made a defective product available.¹⁴³⁴

¹⁴³⁰ E.g., Rb. Brugge 30 October 2000, *RW* 2001-02, 1182. This is a rare example where both theories are considered as potentially applicable to the same defendant in a single case, while there are countless cases where for similar facts courts alternatively apply the PLDI or the liability for custody of defective goods. See M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 195-197.

¹⁴³¹ E.g., Delforge, ‘Le défaut de sécurité au sens de la loi du 25 février 1991’, 331; E. Van Gool, J. De Bruyne and M. Fierens, ‘De regulering van artificiële intelligentie (deel 2): Een analyse van buitencontractuele aansprakelijkheid’ (2021) *Rechtskundig Weekblad* 1003, 1016, footnote 379; F. George, ‘La responsabilité du fait des produits défectueux’ in F. George and R. Jafferali (eds.), *Manuel de droit de la responsabilité civile* (Anthemis 2022) 546.

¹⁴³² M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 197.

¹⁴³³ Cf. with the different applicable rules in France, where both BORGHETTI and JOURDAIN critically reflects about the *Cassation* decision cited in the next footnote J.-S. Borghetti, ‘Fait des produits : 1 - Fait des choses : 0’ (2018) *Recueil Dalloz* 1840, nrs. 8, 15: “Cette assimilation automatique du fait de la chose à un défaut de sécurité nous paraît discutable. [...] un dommage peut être causé par le fait d’une chose ne coïncidant pas avec un défaut de sécurité, par exemple si ce fait découle simplement de ce que la chose était en mouvement et a heurté le siège du dommage.”; P. Jourdain, ‘Quel régime applicable aux dommages causés à des biens à usage professionnel?’ (2019) *Revue Trimestrielle de Droit Civil* 121: “L’arrêt semblerait pourtant pécher par excès de généralité en admettant une coïncidence conceptuelle qui n’aurait rien de nécessaire entre le fait de la chose et le défaut de sécurité du produit. Dans bien des cas en effet, le fait de la chose sera dû à sa manipulation par le gardien ou à sa position anormale ou encore au contact d’une chose en mouvement avec le siège du dommage. Ces hypothèses correspondent à des situations dans lesquelles le dommage est imputable au « comportement » de la chose et où la responsabilité du fait des choses ne pourrait affecter un producteur. Lorsque, au contraire, elle est invoquée à l’encontre du producteur après la mise en circulation du produit, comme l’envisage l’arrêt, cette responsabilité coïncide généralement (ou nécessairement ?) avec un défaut de sécurité (D. Bakouche, *ibid.*). Elle repose alors sur le même fondement que la responsabilité du fait des produits défectueux dont le caractère exclusif aurait pour effet d’évincer l’application de l’article 1242, alinéa 1er, du code civil.”

¹⁴³⁴ Cass. FR civ. (1^e Ch.) 11 July 2018, nr. 17-20.154, *Bull.civ.* 2018, I, nr. 139, D. 2018, 1840, note J.-S. Borghetti, *JCP E* 2018, nr. 47, 1590, note L. Grynbaum, *RTD Civ.* 2019, 121, note P. Jourdain; Cass. FR civ. (1^e Ch.) 26 October 2022, nr. 20-23.425, *dalloz.fr*. See also A. Vignon-Barrault, ‘Complémentarité de la responsabilité du fait des produits défectueux et de la garantie des vices cachés dans les groupes de

Unlike the points raised by KRUTHOF relating to extracontractual fault-based liability and the hidden defects guarantee (cf. *supra* nrs. 209-216), I do not as emphatically agree with his view that the Belgian extracontractual liability for custody of defective goods has the same theoretical basis as liability based on the PLD.

- a. Without a doubt, art. 6.16, 3rd section CC BE now clearly adopts the same ‘defect’ concept and this is ostensibly, together with liability requirements of damage and causation, what the CJEU singles out as the defining feature of the PLD’s scope of harmonisation in the 2002 decisions where it has restrictively interpreted the principle of preservation of national law.¹⁴³⁵

Nevertheless, a fundamental feature of harmonised product liability has always been that it imposes liability vertically and diagonally on producers and distributors (see also *supra* nr. 74), which the new Directive now fundamentally determines by imposing liability for ‘making a product available on the market’ or ‘putting it into service’. This is a crucial reason why the previously discussed ‘strict’ versions of extracontractual fault-based liability and the hidden defects guarantee infringe upon the PLD’s maximum harmonisation, because these national theories impose liability for distributing or selling a defective product. In contrast, the theoretical structure of the Belgian liability for custody of defective goods does not include any requirement that the good is by the potentially liable defendant been ‘made available’ or ‘put into service’ in the course of a commercial activity, as demonstrated by the fact that mostly consumers are held liable on this basis when they simply use their own good.

TANGHE AND DE BRUYNE have previously pointed at this fundamental difference,¹⁴³⁶ which DE BRUYNE, FIERENS AND I have also raised to argue that this national liability theory does not violate the PLD’s scope of maximum harmonisation.¹⁴³⁷ Likewise, in critical commentaries to the aforementioned French *Cour de Cassation* decision, both BORGHETTI and JOURDAIN have argued that both liability theories only overlap in cases where the defendants happens to have just made a defective product available on the market but have, at a fundamental level, a different theoretical basis.¹⁴³⁸ And now also the EU legislator itself has hinted at the same, by including in recital 9 PLD-2024 a reference to a regime of “*strict liability of operators*” as an illustration of a national theory preserved by art. 2(4)b PLD-2024.

contrats : la Cour de cassation persiste et précise !’ (2023) *La Semaine Juridique: Edition Générale* 1359 nr. 1.A.

¹⁴³⁵ CJEU 25 April 2002, C-52/00, *Commission v. France*, ECLI:EU:C:2002:252, nr. 22; CJEU 25 April 2002, C-154/00, *Commission v. Greece*, ECLI:EU:C:2002:254, nr. 18; CJEU 25 April 2002, C-183/00, *González Sánchez v. Medicina Asturiana*, ECLI:EU:C:2002:255, nr. 31. See the more general discussion *supra* nr. 171.

¹⁴³⁶ J. Tanghe and J. De Bruyne, ‘Software aan het stuur: Aansprakelijkheid voor schade veroorzaakt door autonome motorrijtuigen’ in T. Vansweevelt and B. Weyts (eds.), *Nieuwe risico's in het aansprakelijkheids- en verzekeringsrecht - ALLIC III* (Intersentia 2018) 53.

¹⁴³⁷ E. Van Gool, J. De Bruyne and M. Fierens, ‘De regulering van artificiële intelligentie (deel 2): Een analyse van buitencontractuele aansprakelijkheid’ (2021) *Rechtskundig Weekblad* 1003, 1016, footnote 379.

¹⁴³⁸ See excerpts cited *supra* footnote 1433.

- b. This would in principle be sufficient to conclude that Belgian extracontractual liability for defective goods does not infringe on the PLD's scope of maximum harmonisation, as previously argued.¹⁴³⁹ However, the new Directive has further complicated this issue, by expanding in art. 11(2) PLD-2024 in some specific cases the PLD's temporal scope of application beyond the moment when a product is 'made available' or 'put into service' to the post-marketing, product use phase, by providing narrow exceptions to the posteriority defence (see *supra* nr. 196). This small but theoretically significant extension is particularly significant in the way it expands the category of cases where a claim against the same defendant is possible based on both the PLD and the Belgian liability for custody of defective goods (see *supra* nr. 217).

This novelty means that in those cases where art. 11(2) PLD-2024 establishes an exception to the posteriority defence, the theoretical basis of harmonised product liability is no longer limited to the making available or putting into service of the defective product. These cases first of all consist of product defects resulting from 'substantial modifications' of the product which occur 'within the manufacturer's control' (see *infra* nrs. 442 et seq.). Secondly, these relate to product defects due to supplied digital services, software or the absence of software updates or upgrades if those had been necessary to maintain a product's safety, again only when these have (not) been supplied from 'within the manufacturer's control' (see *infra* nrs. 242 and 248). All these new concepts have been defined in art. 4 PLD-2024, but note that this dissertation argues *infra* nrs. 402-404 and 435 in favour of a restrictive interpretation of 'within the manufacturer's control'.

In this narrow set of cases identified by art. 11(2) PLD-2024, harmonised product liability is imposed on the manufacturer or other economic actors operating under his control or consent based on the fact that they exert factual control over a product which has already been made available on the market or put into service and which can, as a result of this 'post-marketing' interaction, become defective. In those cases, harmonised product liability truly overlaps with liability based on the custody of defective goods (cf. *supra* nr. 217). Hence, if in such cases the same defendant could also be qualified as a 'custodian' strictly liable based on art. 6:16 CC BE, this last liability theory can in my opinion no longer apply since it violates the PLD's maximum harmonisation.

I believe that this is an application of what art. 2(4)b PLD-2024 precisely means when it states that national liability theories are preserved as long as these have grounds other than the defectiveness of a product "*as provided for in this Directive*", which is a nuanced difference with the CJEU's case law based on the prior Directive (see *supra* nr. 171).

- c. Finally, the same effect is also achieved by art. 8(2) PLD-2024's new rule on the primary liability of persons who independently 'substantially modify' a product, which remains

¹⁴³⁹ E. Van Gool, J. De Bruyne and M. Fierens, 'De regulering van artificiële intelligentie (deel 2): Een analyse van buitencontractuele aansprakelijkheid' (2021) *Rechtskundig Weekblad* 1003, 1016, footnote 379. *Contra* M. Kruithof, 'Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?' in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 197.

limited to defects in parts of the product affected by the substantial modification based on art. 11(1)g PLD-2024 (see *infra* nrs. 454-456). Again, this is a novelty where harmonised product liability is imposed on a person because of the fact that he exerts substantial control over a product that has already been made available on the market or put into service. This can be a person who changes in a significant manner a product's safety configuration by repurposing it (see *infra* nr. 262), unintentionally damaging it during use, transportation or storage (see *infra* nr. 307), tampering with the product or simply by (attempting to) repair or refurbish it (see *infra* nrs. 442 et seq.). In all these instances, when a person is liable based on art. 8(2) PLD-2024, it seems that parallel liability based on art. 6:16 CC BE as a custodian of defective goods can no longer be allowed due to the PLD's maximum harmonisation.

- d. Just like in case of the liability of producers and specialized sellers based on art. 1645 Old CC BE, it of course remains to be seen how the Belgian *Cour de Cassation*, perhaps on the basis of a preliminary reference to the CJEU, ultimately interprets this matter. I argue that it should not follow the example of its French counterpart by barring the liability of the custodian of defective goods in all cases where a harmonised product liability claim against the same defendant for the same damage is also possible, based on the fundamental reasons discussed *supra* nr. 218.a. Instead, it should consider the maximally harmonising effect of the PLD with regards to this national liability theory as being limited to the particular, 'post-marketing' situations regulated by the new arts. 8(2) and 11(2) PLD-2024.

§ 4. Non-harmonised heads of damage

219. ART. 6(3) PLD-2024 MUST BE INTERPRETED PURSUANT TO *LEROY SOMERS*: NATIONAL LAW CAN STILL ALLOW NATURAL PERSONS TO CLAIM NON-HARMONISED HEADS OF DAMAGE THROUGH LIABILITY THEORIES WITH THE SAME BASIS AS THE PLD – In the 2009 *Leroy Somers* case, the CJEU ruled that damage to professional goods has not been harmonised by the PLD-1985 and that claims for reparation of such damage can therefore still be based on a national liability theory with the same theoretical basis as the PLD-1985,¹⁴⁴⁰ namely a theory according to which a plaintiff must prove “the damage, the defect in the product and the causal link”.¹⁴⁴¹ *Supra* nr. 218, it has been argued that this basis also requires that the defendant has made the defective product available on the market or put it into service, with the exception of the new situations of arts. 8(2) and

¹⁴⁴⁰ CJEU 4 June 2009, C-285/08, *Moteurs Leroy Somer v. Dalkia France*, ECLI:EU:C:2009:351, nrs. 24-32. See also art. 1245-1, 2nd section CC FR; J.-S. Borghetti, 'La responsabilité du fait des produits et la protection des intérêts professionnels' (2009) *Recueil Dalloz* 1731, nrs. 5 et seq.; E. Terryn, 'Draagwijdte maximum harmonisatie richtlijn productaansprakelijkheid 85/374/EG' (2009) *Droit de la Consommation / Consumentenrecht* 177, 178; R. Steennot, 'De vergoedbare schade bij schade ingevolge onveilige en gebrekkige producten' in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 231. Note that art. 6(1)b(iii) PLD-2024 now also includes 'mixed use' goods in the scope of harmonisation (see *supra* nr. 190.d).

¹⁴⁴¹ CJEU 4 June 2009, C-285/08, *Moteurs Leroy Somer v. Dalkia France*, ECLI:EU:C:2009:351, nr. 32.

11(2) PLD-2024. Logically, this would mean that Member States can decide that such a product liability theory with the same basis as the PLD can also be invoked to recover other heads of damage that are excluded from the PLD's scope of harmonisation, like damage to the defective product itself,¹⁴⁴² pure economic losses like lost business opportunities¹⁴⁴³ or the fact itself of an infringement of a (fundamental) personal right.¹⁴⁴⁴ This is the view that has been commonly accepted under the PLD-1985 after the *Leroy Somers* decision.¹⁴⁴⁵

However, after listing the heads of damage recoverable based on harmonised product liability (see *supra* nr. 190), art. 6(3) PLD-2024 now states: “*This Article does not affect national law relating to compensation for damage under other liability regimes.*” This provision can be interpreted in two possible ways.

On the one hand, in combination with art. 3 PLD-2024's premise of maximum harmonisation, it can be argued *a contrario* that heads of damage not recognised in art. 6(1)-(2) PLD-2024 can therefore no longer be claimed on the basis of a national product liability theory with the same basis as the PLD, such as Belgian extracontractual fault-based liability where it equates product defectiveness automatically with fault (see *supra* nrs. 209-212), claims for extrinsic damages against professional sellers and producers based on the hidden defects guarantee (see *supra* nr. 216) or even extracontractual liability for custody of defective goods in the limited cases overlapping with arts. 8(2) and 11(2) PLD-2024 (see *supra* nr. 218.b-c). In this reading, art. 6(3) and the accompanying recital 24 PLD-2024 emphasise precisely that only “*other liability regimes*” than the one harmonised by the Directive can still award compensation for heads of damage not recognised in art. 6(1)-(2) PLD-2024. Hence, it would no longer be possible for natural persons to claim on the basis of the aforementioned theories with the same theoretical basis as the PLD, damage to for example the defective product itself, to goods used exclusively for professional purposes, pure economic losses, privacy infringement or discrimination.¹⁴⁴⁶

On the other hand, it can be argued that the *Leroy Somers* ruling still stands. In this reading, art. 6(3) PLD-2024 does not tell anything about national liability theories with the same

¹⁴⁴² See M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit. PUC W. Delva nr. 40* (Kluwer 2015) 171; C. Borucki, ‘Samenloop tussen buitencontractuele en contractuele aansprakelijkheid bij schade veroorzaakt door een goed met verborgen gebreken’ (2022) *Tijdschrift voor Belgisch Burgerlijk Recht* 519, 526; J. Huet, ‘Fasc. 335: Responsabilité du fait des produits défectueux’ in X. (ed.), *JurisClasseur Contrats - Distribution* (Lexis360 2023 update) nr. 77.

¹⁴⁴³ See Borghetti, *La responsabilité du fait des produits*, 487-488; Delforge, ‘Le défaut de sécurité au sens de la loi du 25 février 1991’, 335; M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit. PUC W. Delva nr. 40* (Kluwer 2015) 175, 194. See also *supra* nr. 190. Contra Viney, Jourdain and Carval, *Les régimes spéciaux et l'assurance*, 4th edn., 49 (claiming that pure economic loss can be claimed under the PLD-1985).

¹⁴⁴⁴ The latter may for example consist of “*privacy infringements or discrimination*” (recital 24 PLD-2024). Consequences of such infringements are possibly already covered under the PLDI as non-economic damage recognised by national law (art. 9, 2nd section PLD-1985 and art. 6(2) PLD-2024) or as other, fully harmonised heads of damage.

¹⁴⁴⁵ See sources cited in preceding footnotes.

¹⁴⁴⁶ See also recital 24 PLD-2024.

theoretical basis as the PLD and merely confirms, in a non-restrictive manner, that at least for those theories there should be no doubt that any other heads of damage can be claimed. This might be a somewhat less convincing reading, if the CJEU had not issued the *Leroy Somers* decision in 2009 after it had already established the fact that the PLD pursues maximum harmonisation. If the EU legislator had wanted to overturn *Leroy Somers*, would it not have stated this in a more unequivocal manner? Hence, according to this second interpretation, it would still be possible for Member States to allow natural persons to claim any of the aforementioned, non-harmonised heads of damage on the basis of a product liability theory with the same theoretical basis as the PLD, like the three previously discussed Belgian examples.

This second interpretation, which lets the *Leroy Somers* case law endure, seems preferable. First of all, one must note that the maximum harmonisation of the PLD-2024 is now more than ever limited to rules of product liability for protecting “consumers and other natural persons”.¹⁴⁴⁷ This means that Member States remain completely free to uphold or introduce product liability rules with the same basis as the PLD to allow companies and other legal persons to recover any type of damage whatsoever. The first interpretation would thus create a situation where natural persons would not be allowed to claim any of the aforementioned, non-harmonised heads of damage based on a national ‘(quasi-)strict’ product liability theory premised on product defectiveness, while legal persons would ironically be entitled to claim these types of damage based on such a theory. This would be incoherent¹⁴⁴⁸ and clearly undermine the Directive’s goal of protecting injured natural persons (see *supra* nr. 168). Second, as examined in the previous Part, the PLD’s ‘quasi-strict’ product liability is overall more efficient in terms of especially risk-allocation and price-signalling than more fault-based alternatives, like most preserved, national product liability theories with a different basis than the PLD (see *supra* nrs. 106, 110 and 135-136). The *Leroy Somers* decision, which expands the possibility to claim on the basis of such stricter product liability theories, is therefore also preferable on the basis of this dissertation’s normative framework.¹⁴⁴⁹

¹⁴⁴⁷ See arts. 1, 3 and 5(1) *ibid.*

¹⁴⁴⁸ Nevertheless, the more general reality that member states are entirely free to retain (or introduce) for damage to professional goods and other non-harmonised aspects more stringent, protective product liability rules than those offered by PLD within its scope of maximum harmonisation centred around more vulnerable private persons, has also been deemed ‘unfair’ and even ‘absurd’. E.g., J.-S. Borghetti, ‘La responsabilité du fait des produits et la protection des intérêts professionnels’ (2009) *Recueil Dalloz* 1731, nrs. 13-14; M. Kruithof, ‘Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?’ in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit. PUC W. Delva nr. 40* (Kluwer 2015) 171-172.

¹⁴⁴⁹ ‘Quasi-strict’ liability such as based on the PLD’s model, is perhaps slightly less preferable but can still approximate more purely fault-based product liability in terms of corrective justice, at least if all conditions of the ‘risk-internalisation’ principle are respected. Nevertheless, this criterion plays merely a subsidiary role in this dissertation’s normative framework (see in particular *supra* nrs. 132 and 149).

Chapter 2. Reusing and repurposing products

Section A. Introduction

220. (PRODUCT LIABILITY FOR) REUSING AND REPURPOSING PRODUCTS – ‘Reuse’ refers in this dissertation to a continued use of a product during a single use phase, despite the fact that most consumers would consider it, for various reasons, obsolete (see *supra* nr. 83). ‘Repurpose’ as a general concept refers to using a consumer good during a single use phase for a new purpose than the one it was originally produced and distributed for (see *supra* nr. 84). Both strategies therefore do not involve any intervening product redistribution or reproduction and are limited to the actions of a single product user. As such, they can be considered as not only circular strategies, which extend useful product lifetimes, but also as overlapping to some extent with collaborative economy, since consumers, or rather ‘prosumers’ are the actors who actually implement these strategies. As the simplest circular strategies which affect the nature of a product, they provide a good starting point to commence our in-depth examination of current harmonised product liability law, when it is specifically put to the test in a more circular economic context.

221. POTENTIAL CLAIMS AND FACTUAL CONSTELLATIONS – This Chapter’s analysis refers in terms of defendants mostly to ‘traditional’ (linear economic) producers and distributors: professionals who manufacture, import or distribute ‘new’ products which are subsequently either reused or repurposed during their initial use phase. However, there is no reason why the following analysis would not apply to more complex situations where the defendants would happen to be product reproducers, redistributors or collaborative (re)producers or (re)distributors, like product refurbishers, retransferors and prosumers, for whom the harmonised product liability risk is examined in following Chapters. Relevant for this Chapter is that their (re)produced or (re)distributed product happens to be subsequently reused or repurposed by a consumer and subsequently cause an accident.

When the decision to ‘reuse’ or ‘repurpose’ a product is not taken during a product use phase by a consumer but during a redistribution phase by for example a retransferor or during a reproduction phase by for example a refurbisher, we are no longer talking about ‘reusing’ or ‘repurposing’ as how these concepts are specifically understood in this dissertation’s typology (see *supra* nrs. 83-84 on the alternative, broader meanings of these concepts). Such factual constellations, where other circular strategies are combined with the fact that a product is either used much longer or used for a different purpose, are discussed in the following Chapter which specifically focus on these redistribution or reproduction strategies that happen to be combined with using products longer or for a different purposes. Examples are resales of

reused or repurposed products or using reused or repurposed spare parts in repair and refurbishment processes. This Chapter thus remains singularly focused on the product use phase and the narrow understandings of product ‘reuse’ and ‘repurposing’.

Finally, there is of course the question of liability of the actual user who decided to reuse (‘reuser’) or repurpose a product (‘repurposer’). This is mainly relevant for horizontal product liability claims against these reusers or repurposers by injured third parties. These are normally based on national extracontractual liability, which is beyond the focus of this dissertation. Nevertheless, there are three exceptions where rules of harmonised product liability are nevertheless relevant to this horizontal relationship. First of all, an injured party can exceptionally claim directly against certain product repurposers based on art. 8(2) PLD-2024’s new primary liability of substantial product modifiers. Second, when injured third parties claim diagonally against the producers or distributors of reused or repurposed products, then the latter can potentially claim on a recourse basis against the users who have reused or repurposed those products, likely by compelling them to join in the initial lawsuit. And third, even in vertical product liability claims by injured product reusers or repurposers against the original manufacturers and distributors of those products, the personal conduct of those reusers or repurposers can always still play a role as a result of the contributory fault defence.

222. STRUCTURE OF THE ANALYSIS – It seems logical to first focus on the liability risk of persons who have produced or distributed a durable consumer product or component which happens to be subsequently reused (Section B) or repurposed (Section C. § 1) and cause an accident. These Paragraphs refer mostly to a generic harmonised product liability ‘defendant in the original distribution chain’ or an ‘original producer or distributor’ of such products. This encompasses the manufacturer, importer, quasi-manufacturer as well as the distributor of subsequently reused or repurposed products. After all, there is in this Chapter no need to specifically re-examine when individual defendants in a product’s original distribution chain can be held liable based on primary or secondary harmonised product liability (see *supra* nrs. 176-177 on the general rules of the PLD’s personal scope of application). Importantly, harmonised product liability provides no general ground for horizontal liability of or a recourse claim against a reuser or repurposer, at least if they have not subsequently redistributed or reproduced the product, which is discussed in following Chapters. However, as a limited exception, certain acts of consumer good repurposing could lead to a direct liability as a ‘substantial product modifier’ based on the novel provision art. 8(2) PLD-2024 (Section C. § 2). Furthermore, when reusers or repurposers claim vertically for damage they have suffered themselves based on the PLDI against actors in the reused or repurposed product’s (original) distribution chain, the latter defendants can still try to invoke the reuser’s or repurposer’s contributory fault as a defence (Section D).

Section B. Liability of original producers and distributors for later reused products

§ 1. Scope of application

a. Ratione materiae

223. REUSE HAS THEORETICALLY NO IMPACT ON PRODUCT QUALIFICATION – As implicitly confirmed in the PLD Explanatory Memorandum 1976,¹⁴⁵⁰ older products that some consumers would consider obsolete but that are nevertheless ‘reused’ (see *supra* nr. 83), continue to be ‘products’ according to art. 2 PLD-1985 and art. 4(1) PLD-2024 (see *supra* nr. 175). This also holds true when these products have become second-hand after a retransfer (see *infra* nr. 279). Products remain in principle within the PLD’s material scope of application regardless of how long they might already have been in use, how intensively they have already been used or how many previous users have already owned and used them (see also *infra* nr. 279).¹⁴⁵¹ This suits the accident reparation and prevention goals of this liability theory (see *supra* nrs. 167-168). After all, there is no fundamental reason why consumers and third parties should suddenly become bereft of harmonised product liability protection simply because a product is no longer relatively new or because it has been used before by a previous consumer.¹⁴⁵²

Naturally, there are concerns from the defendant’s perspective relating to defects originating after a product has been put into circulation and the related risk of very long liability periods. But these are addressed by the posteriority defence and extinction period. And one should not forget that the plaintiff must still initially prove that a product is defective, which can also be complicated by the fact that a product has already been in use for a long time. These three considerations present the bulk of the analysis of this Section.

Finally, the fact that the PLD applies to reused and second-hand products also matches with *ex ante* EU general product safety regulation, which explicitly confirms that it continues to apply to “used” products.¹⁴⁵³

¹⁴⁵⁰ See the reference to worn out products as potentially defective in PLD Explanatory Memorandum 1976, nr. 13.

¹⁴⁵¹ See Taschner and Frietsch, *Kommentar*, 238; Howells, ‘strict liability’, nr. 4.76; Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 47, nr. 8; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3603, 4; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., 307; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 2, nr. 8; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 2, nr. 10. See also Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 518. But see regarding the PLD’s extinction period *infra* nrs. 244-246.

¹⁴⁵² See also Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3603, 5.

¹⁴⁵³ Art. 2(3) General Product Safety Regulation 2023/988/EU. Note that the exception for the supply of “antiques” in art. 2(a) General Product Safety Directive 2001/95/EC 2001/95 has been retained in current art. 2(2)i General Product Safety Regulation 2023/988/EU.

224. REUSED PACKAGING – An issue on which existing case law and literature seem to be silent, are the strict EU product liability rules applicable to reuse of packaging, such as the refilling of a plastic water bottle or reusing a crate for transporting other goods.¹⁴⁵⁴ Packaging is an inherent part of a sold product, as confirmed by some authors who consider products defective as a consequence of packaging which is unhygienic, physically unsafe for transportation or which bear incorrect or insufficient instructions and warnings.¹⁴⁵⁵ Similar rules therefore apply in principle to reuse of packaging as to reuse of the packaged product. However, key questions in the product liability assessment are to what extent the packaging was designed to be safely reusable, to what extent this complies with (new) regulatory requirements and whether relevant information on packaging reuse was provided (see *infra* nr. 237).

b. Ratione temporis

225. FROM LONGER PRODUCT USE CYCLES TO NEW MEMBER STATES: AN ARGUMENT AGAINST ‘IMMEDIATE EFFECT’ OF PLD-1985’S INTER-TEMPORAL SCOPE OF APPLICATION – Certain consumer goods have remarkably long potential lifespans, like furniture, tools or some kitchen equipment, even though most durable goods can actually be reused during very long time periods. When this happens, a consideration relating to the PLD-1985 still reemerges that has mostly faded into the background: its inter-temporal scope of application.¹⁴⁵⁶ Art. 17 PLD-1985 states: “*This Directive shall not apply to products put into circulation before the date on which the provisions referred to in Article 19 enter into force.*” Art. 19 PLD-1985 refers to the obligation of the Member States to implement the PLD-1985. Hence, products reused today that were first put into circulation before the date of entry into force of the applicable PLDI, still fall outside the scope of EU harmonised product liability law.¹⁴⁵⁷ And any product accident caused by such reused products can only lead to claims based on national liability law.¹⁴⁵⁸

¹⁴⁵⁴ See also art. 3(5) Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste [1994] OJ L365/31: “‘reuse’ shall mean any operation by which packaging, which has been conceived and designed to accomplish within its life cycle a minimum number of trips or rotations, is refilled or used for the same purpose for which it was conceived, with or without the support of auxiliary products present on the market enabling the packaging to be refilled; such reused packaging will become packaging waste when no longer subject to reuse;”.

¹⁴⁵⁵ See Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 48, nr. 42; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 1, nr. 34. See also *infra* nr. 288 on how a lack of product information, which is often included in packaging that may be lost, can render a product defective.

¹⁴⁵⁶ This concerns the general scope of application *ratione temporis* of the rules of harmonised product liability themselves. This is not to be confused with the temporal limitations to a concrete application of those rules, such as the limitation and extinction periods of arts. 10-11 PLD-1985 and arts. 16-17 PLD-2024.

¹⁴⁵⁷ Hence, there are different starting dates of the regime’s temporal scope of application, depending on which member state’s law is applicable. See Markovits, *La Directive C.E.E. du 25 juillet 1985*, 100-101; Taschner and Frietsch, *Kommentar*, 468.

¹⁴⁵⁸ In case of a late transposition, the EU obligation to interpret national law as much as possible in accordance with the Directive of course applied. The most noteworthy example with regards to the PLD-1985 was France, which was very late in adopting a French PLDI, while French courts adopted contractual and extracontractual theories of results-oriented *obligations de sécurité*, which strove to maximally protect injured parties in anticipation of the PLDI (see *supra* footnotes 926 and 1329).

By now, the effect of this rule is in most cases no longer remarkable in practice. This is because the PLD-1985 also establishes an extinction period of ten years after a product has been put into circulation (see *infra* nrs. 244 et seq.),¹⁴⁵⁹ which cannot be suspended or interrupted except if court proceedings have been timely initiated.¹⁴⁶⁰ Even for the Member State that has been the latest to implement the original PLD, France, much more than ten years have now passed since its PLDI entered into force.¹⁴⁶¹ Hence, for an in current practice even larger group of (reused- products that have been put into circulation long after these dates, defendants can also already evade harmonised product liability by invoking the extinction period's expiration.¹⁴⁶²

However, the aforementioned rules are only pertinent for Member States that were already part of the European Economic Communities at the time of the PLD-1985's adoption or that acceded more than ten years ago.¹⁴⁶³ And, of course, there can be new EU Member States in the future.¹⁴⁶⁴ At the latest on the date of accession, such new Member States must in principle have a PLDI that has entered into force. In such situations, if the accession treaty provides no specific rule, there is the question whether the new Member State's PLDI 'immediately'¹⁴⁶⁵ applies to accidents that occur after its entry into force but that are caused by products that were put into circulation prior to this date.

While the CJEU generally prefers immediate effect,¹⁴⁶⁶ the text of art. 17 PLD-1985 cited above aims ostensibly to exclude such an immediate effect. Furthermore, an immediate effect would arguably infringe the legitimate expectations of defendants who could not have foreseen such strict EU product liability risk when they had originally put the product into circulation,¹⁴⁶⁷ which is also an act that they cannot simply reverse afterwards. It may therefore be seen as impairing the corrective justice rationale of harmonised product liability,

¹⁴⁵⁹ Howells, 'strict liability', nr. 4.321.

¹⁴⁶⁰ See *supra* footnote 1240.

¹⁴⁶¹ This occurred on 20 May 1998 (see *supra* footnote 926).

¹⁴⁶² The challenge in successfully invoking the extinction period, proving the (approximative) date when the product was put into circulation, is also required to successfully invoke the aforementioned rule of art. 17 PLD-1985.

¹⁴⁶³ Croatia was in 2013 the latest member state to join. See Treaty between the Member States of the European Union and the Republic of Croatia concerning the accession of the Republic of Croatia to the European Union [2012] OJ L112, 10.

¹⁴⁶⁴ See the current list of EU membership candidates 'Enlargement Policy' <https://neighbourhood-enlargement.ec.europa.eu/enlargement-policy_en>.

¹⁴⁶⁵ The question refers to possible 'immediate effect' but not 'retroactive effect', which requires that all legal effects of a situation have already been exhausted prior to the entry into force of a new law (i.e. the product accident would also already have occurred prior). The CJEU applies a general presumption in favour of immediate effect but precludes retroactive effect in most cases. See S. Kaleda, 'Immediate Effect of Community Law in the New Member States: Is there a Place for a Consistent Doctrine?' (2004) 10 *European Law Journal* 102, 103-105, 108-109.

¹⁴⁶⁶ E.g., in a private law (contractual) context CJEU 29 January 2002, C-162/00, *Pokrzepowicz-Meyer*, ECLI:EU:C:2002:57, nrs. 52-57. See generally L. Havas, 'The Inter-Temporal Applicability of EC Law in the 'New' Member States after Accession' (2006) *Debreceni Jogi Muhely* 143, 143-145.

¹⁴⁶⁷ See on the lack of immediate effect if required for the protection of legitimate expectations S. Kaleda, 'Immediate Effect of Community Law in the New Member States: Is there a Place for a Consistent Doctrine?' (2004) 10 *European Law Journal* 102, 108-114.

although this is relatively weak and requires the risk-internalisation principle, since this seems to require knowledge of ‘wrongdoing’ or rather of the stricter liability associated with taking an abnormal risk in order to have full effect (see *supra* nrs. 97, 127 and 128.c). More significantly in light of this dissertation’s normative framework, the crucial accident-prevention function of curative product liability claims like those based on the PLD-1985 precisely requires that a liability risk is foreseeable and, as a result, can influence conduct (see *supra* nrs. 108 and 130). An immediate effect would therefore not only diminish corrective justice by diminishing the element of ‘wrongdoing’ but also make harmonised product liability less efficient by undermining its accident-prevention function. Finally, general contractual and extracontractual liability rules of the new Member State continue to apply to such product accidents (see *supra* nr. 171), in addition to possible social and private accident insurance (see *supra* nr. 11). From a risk-allocation perspective, the injured party therefore continues to enjoy protection even when the new PLDI would be inapplicable.

In conclusion, although the inter-temporal application of the PLD-1985 is not specific to cases of product reuse, this circular strategy and to a lesser extent other product life extension strategies make the absence of legal authority on this topic more problematic in the event that new Member States would join. Nevertheless, in such a scenario, the analysis above has argued in favour of rigorously applying art. 17 PLD-1985 and to refuse to immediately apply harmonised product liability to cases involving (reused) products that have been put into circulation before the new Member State’s PLDI entered into force.

c. Ratione personae

226. PRODUCT REUSERS ARE IN PRINCIPLE ONLY POTENTIAL HARMONISED PRODUCT LIABILITY PLAINTIFFS AND NOT DEFENDANTS – A person who ‘reuses’ a product is purely a user or, in case of a consumer good, more specifically a consumer. At the plaintiff-side, such reusers are of course part of the PLD’s personal scope of application,¹⁴⁶⁸ since they can claim against a manufacturer or other defendant for damage suffered as a result of the defective nature of a product in a reuse context, as discussed *infra* nrs. 230 et seq. However, at the defendant-side, there is no possibility that an actual reuser qualifies as a defendant like a manufacturer, importer, quasi-manufacturer or distributor. This is because reusers according to this dissertation’s typology are in principle not involved in any type of (re)distribution or (re)production of the product (see *supra* nr. 83), which is a prerequisite for liability based on the PLD-1985’s specific product liability theory (see also *supra* nr. 74).

Belgian authors LIERMAN and VIJVERMAN have in the medical devices context argued that a person who ‘reuses’ such device can sometimes be qualified as the manufacturer of a new

¹⁴⁶⁸ The PLD-1985 does not impose limitations on the potential plaintiffs but limits the type of damage that can be claimed, while the PLD-2024 is now explicitly limited to claims by “natural persons”. See *supra* nrs. 176 and 190.

product, subject to harmonised product liability.¹⁴⁶⁹ On the one hand, this seems to have been mostly motivated by the medical devices regulation's relatively broad concept of 'manufacturer'.¹⁴⁷⁰ However, it is in my opinion incorrect to interpret the 'manufacturer' or other concepts of *ex post* harmonised horizontal product liability purely on the basis of *ex ante* (sectoral) product regulation, since both serve different purposes, have different scopes of application and the PLD's theoretical rules are uniform across product categories, which are precisely prerequisites of its 'enforcement costs advantage' (see *supra* nrs. 10 and 152-154). On the other hand, these authors explicitly describe such 'reuse' as a 'renewal' of the medical device and the aforementioned medical devices regulation also labels the person who 'fully refurbishes' a product as the 'manufacturer' of a new device.¹⁴⁷¹ By all likelihood, they therefore discuss situations that are according to this dissertation's typology not actual cases of 'reuse' but rather 'refurbishments' or, alternatively, 'remanufacturings' or 'preparations for re-use' of already disposed devices, for which applicable product liability rules are examined in following Chapters.

In conclusion, reusing a product does in principle not suffice to incur a risk of liability based on the PLDI. If injured third parties want to claim horizontally against a product reuser or if a producer or distributor who is held liable wants to likewise claim vertically against them on a recourse basis, they can normally only do so through national (likely extracontractual) liability law. As discussed in the next section, there is only a very limited potential exception to this, which theoretically allows to hold certain reusers liable based on art. 8(2) PLD-2024.

227. PRODUCT REUSERS CAN EXCEPTIONALLY BE HELD LIABLE BASED ON ART. 8(2) PLD-2024 IF THEY ARE COMMERCIAL ACTORS WHO SUBSTANTIALLY MODIFY A PRODUCT THROUGH REUSE – Art. 8(2) PLD-2024, which is examined more extensively in the Chapter on repairs and refurbishments, holds that a person who 'substantially modifies' a product outside the manufacturer's control and subsequently makes the product available on the market or puts it into service, becomes liable on a primary basis for any damage resulting from defects in this product.¹⁴⁷² As discussed below, this can in very exceptional cases allow harmonised product liability claims against commercial actors who reuse products.

¹⁴⁶⁹ S. Lierman, 'De richtlijnen en het koninklijk besluit medische hulpmiddelen en de gevolgen van technische voorschriften op de aansprakelijkheid van de fabrikant en het ziekenhuis' (1998) *Tijdschrift voor Gezondheidsrecht* 360, 368; A. Vijverman, 'Hergebruik van voor eenmalig gebruik bestemde medische hulpmiddelen: nood aan een duidelijke regeling' (2008) *Tijdschrift voor Gezondheidsrecht* 7, 20.

¹⁴⁷⁰ See currently art. 2(30) Parliament and Council Regulation 2017/745/EU of 5 April 2017 on medical devices [2017] OJ L117/1, 17: "'manufacturer' means a natural or legal person who manufactures or fully refurbishes a device or has a device designed, manufactured or fully refurbished, and markets that device under its name or trademark;"

¹⁴⁷¹ Art. 2(30) *ibid.* See also art. 2(31) *ibid.*: "'fully refurbishing', for the purposes of the definition of manufacturer, means the complete rebuilding of a device already placed on the market or put into service, or the making of a new device from used devices, to bring it into conformity with this Regulation, combined with the assignment of a new lifetime to the refurbished device;"

¹⁴⁷² See also *infra* nrs. 437-441 on whether a similar principle already applies under the PLD-1985.

Merely continuing to use a product despite long and/or intensive past use, can in itself normally not be considered as constituting a ‘substantial modification’, as now defined in art. 4(18) PLD-2024. Nevertheless, this might still be possible in two scenarios. First of all, reuse might still qualify as a substantial modification if an EU or national product safety requirement would explicitly consider the use of a particular product beyond a certain moment in time as constituting such a substantial modification,¹⁴⁷³ which is less likely for the durable consumer goods on which this dissertation focuses and more likely for biomedical products or foodstuffs (see *supra* nr. 34). Secondly, reuse can alternatively qualify as a substantial product modification if two cumulative conditions are fulfilled. The reuse must “*change[s] the product’s original performance, purpose or type, without that change being foreseen in the manufacturer’s initial risk assessment*”,¹⁴⁷⁴ which is far from evident since reuse can in the context of durable consumer goods be considered as reasonably foreseeable in general, as discussed *infra* nr. 232. And the same reuse must additionally “*change[s] the nature of the hazard, create[s] a new hazard or increase[s] the level of risk.*”¹⁴⁷⁵ Using a product beyond the moment when most consumers would consider it obsolete can of course create a new risk or exacerbate existing ones, but it remains to be seen whether in a concrete case a reuse changes a product’s risk profile in a sufficiently substantial manner that a plaintiff can also prove this condition.

It is telling that the Commission’s Blue Guide, which discusses the application of the almost identical principle in EU product regulation, from which the PLD-2024 drew inspiration, explicitly ties ‘substantial modifications’ to repairs but does not mention the use or distribution of second-hand products, which are nevertheless discussed elsewhere in this extensive guidance document.¹⁴⁷⁶ The same differentiation can be observed in specialized literature on EU product safety law.¹⁴⁷⁷ At the same time, it must be noted that the ‘substantial modification’ definition in art. 4(18) PLD-2024 lacks the explicit condition that the modification happens “*by physical or digital means*”, which the parallel provision of art. 13(3) General Product Safety Regulation 2023/988/EU requires.¹⁴⁷⁸ Reuse does of course not require any actual change to

¹⁴⁷³ Art. 4(18)a PLD-2024: “‘substantial modification’ means a modification of a product after it has been placed on the market or put into service: (a) that is considered substantial under relevant Union or national rules on product safety; or (b) [...]”.

¹⁴⁷⁴ Art. 4(18)b(i) *ibid.*

¹⁴⁷⁵ Art. 4(18)b(ii) *ibid.*

¹⁴⁷⁶ Cf. Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 16-18, 22, 38. The 2022 version of the Blue Guide already applied the ‘substantial modification’ principle, which was first developed in previous iterations of this Commission guidance on EU product regulation and which is now codified in art. 13(3) General Product Safety Regulation 2023/988/EU.

¹⁴⁷⁷ See, e.g., C. Piovano, *Der Hersteller im europäischen Produktsicherheitsrecht* (Fachmedien Recht und Wirtschaft 2020) nr. II.3.b-e (emphasizing that all substantially modified ‘new’ products were beforehand already used products but implying that a more active change than merely continued use of product is required for such substantial modification); T. Klindt, *Produktsicherheitsgesetz: Kommentar* (3rd edn., Beck 2021) § 2, nrs. 53, 122 (assuming that an already used product must always be first changed in some active manner in order to be ‘substantially modified’).

¹⁴⁷⁸ Art. 4(18) PLD-2024 furthermore does not require that “*the modifications have not been made by the consumers themselves or on their behalf for their own use*”, as stipulated in art. 13(3)c General Product Safety Regulation 2023/988/EU. At first sight, this seems another crucial difference, because reuse in the

the product, whether physical or digital, other than its continued use through the passing of time (see *supra* nr. 83).

Consequently, while unlikely, it is theoretically possible that particular cases of product reuse can qualify as a ‘substantial modification’ pursuant to art. 4(18) PLD-2024. Nevertheless, this would only result in the reuser’s primary liability if such substantially modified, reused product is subsequently ‘made available on the market’ or ‘put into service’, as required by art. 8(2) PLD-2024. The definitions of both concepts explicitly require a commercial activity (see also *supra* nr. 198).¹⁴⁷⁹ Traditional consumers who reuse a consumer good in order to continue using it for their own private purposes, will therefore never become liable as a substantial modifier based on art. 8(2) PLD-2024.

Instead, there are only two possibilities where harmonised product liability is imposed on the product ‘reuser’. Either commercial actors reuse products, like professional goods used in services or manufacturing, to such an extent that the product has according to the aforementioned criteria been substantially modified and is in this manner put into service. Alternatively, commercial distributors of second-hand goods might resale or otherwise redistribute a product that most consumers would consider obsolete. Such reused product might likewise qualify as a substantially modified product, which is then made available on the market as a consequence of being redistributed.¹⁴⁸⁰

228. TRADITIONAL HARMONISED PRODUCT LIABILITY DEFENDANTS IN THE REUSED PRODUCT’S DISTRIBUTION CHAIN – Importantly, the fact that a product is used longer than anticipated and is actually reused, does in itself not preclude the potential liability based on the PLDI of the original manufacturer, importer, quasi-manufacturer or, on a secondary basis, the distributor of such product. The same holds true for the entirely new categories of defendants introduced by the PLD-2024, namely the authorised representative, fulfilment service provider and online platform (see *supra* nr. 178). Both injured reusers and third parties injured by reused products can try to claim against these actors, who are as ‘producers’ and ‘distributors’ traditional defendants of harmonised product liability law (see also *supra* nr. 74). The remainder of this Paragraph focuses on such claims.

At a practical level, it can become more difficult for an injured party to identify one or more of these potential defendants when a product has already been used during a long period of time. The secondary liability of distributors is part of harmonised product liability in order to address the risk of anonymous products.¹⁴⁸¹ However, due to the passing of time, a consumer

consumer goods context is obviously a circular strategy which consumers themselves pursue. However, this omission in art. 4(18) PLD-2024 makes little difference, because the application of art. 8(2) PLD-2024 additionally requires a commercial activity, which excludes pure consumers regardless.

¹⁴⁷⁹ Art. 4(7)(9) PLD-2024. See also relating to the requirement of a ‘commercial activity’ in the context of the same concepts used in EU product regulation Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 19. See also relating to ‘making a product available on the market’ and ‘putting a product into service’ *infra* nrs. 323 and 412.

¹⁴⁸⁰ This second possibility is actually not a form of ‘pure’ reuse limited to the use phase, which is examined in this Chapter, but rather a combination of reuse with a retransfer, which is examined in the following Chapter. See *supra* nr. 83 on the concept of ‘reuse’ in this dissertation’s typology.

¹⁴⁸¹ See art. 3(3) PLD-1985; art. 8(3) PLD-2024. See also *supra* nr. 177.

may also forget the supplier's identity while he lost product packaging or documentation which refers to the producer or quasi-producer as well as a receipt or payment information which refers to the supplier. A potential solution can be provided by already (partially) existing product safety 'traceability' requirements as well as potential future digital product passports. These are further discussed *infra* nrs. 281 and 343-346, since defendant identification becomes even more challenging when a (reused) product has previously been retransferred and the original consumer is no longer involved. Finally, significant challenges in defendant identification are also encountered when the reused product has not been mass manufactured in an industrial setting, such as in case of 'collaborative production' by one or more prosumers. However, precisely when such prosumers do not have to comply with the aforementioned 'traceability' or future 'digital product passport' requirements, this will be because they do not act in the course of an organized, 'commercial activity'. The latter also means that they cannot be held liable as harmonised product liability defendants to begin with, at least under the PLD-2024 (see *supra* nr. 198).

229. PACKAGING REUSERS AND PACKAGING PRODUCERS – Similar principles apply when packaging rather than the packaged product itself is being reused: the reuser of packaging can be a plaintiff but not a possible defendant on the basis of the PLDI. At the same time, packaging is often separately produced by a component manufacturer who supplies the packaging to the final product manufacturer. Both of these parties are possible defendants when a defect in packaging that is later reused causes an accident,¹⁴⁸² with the understanding that only the packaging producer can potentially benefit from the component defence of art. 7(f) PLD-1985 and art. 11(1)f PLD-2024 (see *supra* nr. 201).

§ 2. Defect assessment of wear and tear and lack of reusability

a. In general

230. DISENTANGLING DEFECT REQUIREMENT AND DEFENCES IN THE REUSE CONTEXT – The preceding sections confirmed that manufacturers and other traditional defendants of harmonised product liability can be held liable when a product that they have produced or distributed, is reused and subsequently causes an accident. Such claim can be either on a vertical basis by an injured reuser or on a diagonal basis by an injured third party. It is incumbent on these plaintiffs to prove the liability requirements of product defect, damage and causation (see *supra* nrs. 179-191 and 205), although the PLD-2024 introduces a few refutable presumptions (see *supra* nr. 206).

While damage and causation do not pose theoretical challenges that are specific to the context of reusing products, the same cannot be said of the defect requirement. Sources in the

¹⁴⁸² See also in the context of the English tort of negligence Fairgrieve and Goldberg, *Product Liability*, 3rd edn., 542-543.

literature that discuss the potentially defective nature of reused, possibly second-hand products, are often rather cursory and tend to discuss this requirement simultaneously with the defendant's defences, like the extinction period, contributory fault and especially the posteriority defence.¹⁴⁸³ In the dynamic reality of actual product liability proceedings, the defect assessment and these defences indeed tend to practically blend into each other. First of all, this is because both parties often anticipatively try to refute the other party's burden of proof (see *supra* nrs. 205-206). Second, this is because many of the possible defences, in particular the posteriority (see *infra* nrs. 239 and 255) and contributory fault defence (see *infra* nr. 274), are sometimes difficult to separate from the defect assessment. And the latter is particularly true in the context of reused products and older or second-hand¹⁴⁸⁴ products more generally. However, in this analysis, it is worthwhile to disentangle and discuss them in the theoretically correct order, since it remains in terms of the 'evidentiary risk' up to the plaintiff to first prove a defect and only then should the aforementioned defences actually become relevant. The latter are therefore discussed separately further in following Paragraphs.

231. AN ABNORMAL LACK OF DURABILITY CAN CONSTITUTE A DEFECT, IN CONTRAST TO NORMAL WEAR AND TEAR – Already in the Explanatory Memorandum accompanying the original 1976 PLD-1985 proposal, the Commission unequivocally stated that a product “[...] *does not however become defective merely because it wears out through use.*”¹⁴⁸⁵ Indeed, gradual decay of any product, even the most durably designed one, is ultimately inevitable.¹⁴⁸⁶ It would therefore be hard to justify that simple wear and tear makes a product defective and provides a basis for strict EU product liability. On the other hand, it would be undesirable to completely exclude liability for all possible cases where a product lacks durability, because the public “*is entitled to expect*” at least some degree of safety with regards to product durability.¹⁴⁸⁷ This is especially true in a transition to a more circular economy with longer useful product lifetimes (see also *supra* nr. 65). After all, wear and tear of products or particular components can present innumerable, serious accident risks, for which injured parties may seek reparation, and producers can to a considerable extent mitigate or warn about these risks, pursuant to product liability's accident-prevention function.

As a result, the literature commonly accepts that, while ‘normal wear and tear’ does not constitute a product defect, an ‘abnormal’ lack of durability can nevertheless make a product

¹⁴⁸³ See, e.g., Taschner and Frietsch, *Kommentar*, 283; Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 46, nr. 36.

¹⁴⁸⁴ Many of the considerations analysed in this Chapter are also relevant for the context of second-hand products, which are discussed separately in the next Chapter on product retransfers. Of course, this is particularly true when a retransferred product has also already been in use to such a long time that it can be considered as both ‘second-hand’ and ‘reused’ (see *supra* nrs. 79 and 83). Similar considerations of how the consecutive Chapters partially overlap and build on top of each other also apply with regards to reuse, on the one hand, and repairs and refurbishments, on the other hand.

¹⁴⁸⁵ PLD Explanatory Memorandum 1976, nr. 13. See also Verhoeven, *Productaansprakelijkheid en productveiligheid*, 147 (arguing that a consumer cannot expect that a product can be used forever).

¹⁴⁸⁶ See *supra* nrs. 55 and 64 on the second law of thermodynamics and the physical limitations to circular economy.

¹⁴⁸⁷ See art. 6(1) PLD-1985. See also *supra* nr. 179.

defective.¹⁴⁸⁸ Recital 30 PLD-2024 implies this by explicitly listing a concrete product's "*expected lifespan*" as co-determining the safety which the public is entitled to expect. This criterion can indeed be used in certain cases to support and in other cases to rebut a claim of defectiveness based on a lack of durability. Note that a criterion of an 'abnormal' lack of durability can be useful to approximate an 'optimal' standard of care for purposes of efficient accident-prevention, just like it fits well with a corrective justice rationale of harmonised product liability understood according to the risk-internalisation principle (see in particular *supra* nrs. 108.c and 128.c).

These instances of an 'abnormal' lack of product durability generally concern design defects. Yet, they can occasionally also be the manifestation of a manufacturing defect. Insufficient durability can furthermore result from defective information relating to use, storage or maintenance of a product or a lack of warnings relating to the possibly dangerous wear and tear of a specific component (see *infra* nrs. 233 and 236).¹⁴⁸⁹

It is a complex case-specific, factual assessment to determine when the progress of wear and tear or the fragility of a specific product or component is abnormal and constitutes a defect. According to the general definition of art. 6(1) PLD, a defective product does not offer the safety to the public that it can legitimately expect. To get a better grip on this assessment in the context of continuing to use products beyond the moment when most consumers would consider them obsolete, it is instructive to examine this in the following sections through the lens of the most relevant concrete defect assessment criteria (see *supra* nrs. 182-188).

b. Specific defect assessment criteria

232. DURABILITY: REASONABLY FORESEEABLE USE – A product's reasonably foreseeable use, one of the key defect assessment criteria according to art. 6(1)b PLD-1985 and art. 7(2)b PLD-2024,¹⁴⁹⁰ forms the basis of the assessment whether a lack of durability constitutes a defect. As VERHOEVEN states, it is necessary to assess the normal useful lifespan of a particular product type and a modest excess of continued use beyond this normal lifespan should still be considered as reasonably foreseeable and should be possible in a safe manner.¹⁴⁹¹ After all, recital 6

¹⁴⁸⁸ Taschner and Frietsch, *Kommentar*, 293; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 146-147, 181; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., 477; Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 1, nr. 36; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 1, nr. 84; P. Ehring, '§ 1 ProdHaftG' in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 74; E. Van Gool, 'De nieuwe richtlijn productaansprakelijkheid en circulaire economie' (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 413.

¹⁴⁸⁹ See also *supra* nr. 174 on the stricter harmonised product liability assessment for established manufacturing compared to established design and information defects. See also *infra* nr. 241 on the role of manufacturing compared to design and information defects in the assessment of the posteriority defence.

¹⁴⁹⁰ See *supra* nr. 183 on this defect assessment criterion. As discussed in this last section, note that recital 46 PLD-2024 now includes a description of 'reasonably foreseeable use' but that this seems a non-exhaustive, illustrative description focused on the use of this same concept in the specific context of the defect presumption of art. 10(1)c *ibid*.

¹⁴⁹¹ Verhoeven, *Productaansprakelijkheid en productveiligheid*, 147. See also P. Ehring, '§ 1 ProdHaftG' in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 74.

PLD-1985 and art. 7(2)b PLD-2024 confirm that a certain amount of ‘misuse’ of a consumer good generally remains reasonably foreseeable as part of the harmonised product liability defect assessment.¹⁴⁹² And this approach of a ‘safety margin’ should extend to using products during longer periods of time.¹⁴⁹³ The flipside is that there are also situations where a product is continued to be used during such a long period after expiration of its normal lifespan that this type of reuse is no longer considered to have been reasonably foreseeable product misuse. When a product or a component wears out after this point in time, it can simply be considered as ‘normal wear and tear’ which does not qualify as a defect (see *supra* nr. 231). Product safety and now increasingly also Ecodesign rules and standards can be particularly relevant for establishing the normal lifespan of products as well as the subsequent ‘margin’ period during which reusability should still remain sufficiently safe (see *infra* nrs. 237 and 251).

At the same time, for most products and components, the progress of wear and tear is also heavily determined by the intensity of use, storage and transportation as well as broader environmental conditions. For example, a bike that is used intensively and always parked outside can be expected to wear out much faster than a barely used counterpart stored in a garage. Defendants cannot foresee the eventual use and environmental conditions of each individual product yet can expect the most common conditions and anticipate them to a large extent through product design and product information (but see *infra* nr. 249 on the differences between possible defendants).

There are of course limits to the amount of intensive use and suboptimal storage that remains reasonably foreseeable, which must be determined in light of the concrete circumstances of each case, the nature of the particular product (see *infra* nr. 234), provided product information (see *infra* nr. 236) and applicable rules and standards (see *infra* nr. 237). This can lead to diverging outcomes in practice. For example, with regards to intensity of and care taken in using a product, a Belgian court considered riding a moped for 2995 kilometres during 14 days as still reasonably foreseeable,¹⁴⁹⁴ while a German court considered the strain put on a towing fork designed for normal road conditions by seemingly using it intensively for heavy loads on forest roads, as not reasonably foreseeable.¹⁴⁹⁵

It is worth emphasizing again that a limited amount of misuse, even in violation of use and storage instructions, can for most consumer goods definitely be reasonably expected, which is especially true for durable consumer goods in terms of intensity and duration of use. For example, when returning to the bike example, bikes are frequently exposed to adverse

¹⁴⁹² See also the case law and literature cited *supra* footnotes 1095 and 1096. In Belgian liability law, this can be more broadly interpreted as part of the ‘*consideratieplicht*’ (see *infra* footnote 1690).

¹⁴⁹³ See also from the perspective of general product safety regulation *infra* footnotes 1623 and 1628.

¹⁴⁹⁴ Liège 18 October 2004, *JLMB* 2005, 212, 214.

¹⁴⁹⁵ OLG Hamm 20 July 2018, I-7 U 29/17, *Juris*. Note that this case was decided based on German *Produzentenhaftung* (§ 823(1) BGB) instead of the PLDI and on a lack of proof of causation between the damage and a proven but potentially unrelated manufacturing defect, by considering the likely product misuse, contrary to use instructions as an alternative cause. But if the same misuse would have been considered reasonably foreseeable, it would have regarded as a separate design defect which effectively caused the accident. In this regard, rules on *Produzentenhaftung* and PLDI run in parallel. See, e.g., Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 3, nr. 67 (citing this case).

weather conditions and, although this will inevitably somewhat reduce their normal lifespan and often is discouraged in use instructions, it can be expected that many bikes are due to necessity or convenience effectively stored outside. In such event, a bike and in particular its key structural and safety components should still maintain a sufficient level of minimal durability.

To the extent that conditions of use, storage and transportation had not been reasonably foreseeable when the product was placed on the market or put into service, they are no longer relevant to the defect assessment but they can instead provide a basis for the posteriority defence. This theoretically important point is elaborated *infra* nr. 239 et seq. Importantly, the reasonable foreseeability relating to the defect assessment and posteriority defence must be separated from the contributory fault defence. The fact that an injured reuser has made a contributory fault does not mean that his reusing had not been reasonably foreseeable. Inversely, the reasonable foreseeability of certain kinds of reusing a product, which may lead to a defect qualification, does not exclude the possibility that the reuser has committed a contributory fault. This is discussed in detail *infra* nr. 274.

Finally, the reasonably foreseeable use of a product is of course an evolving concept, even without the possible intervention of new rules or standards (see *infra* nr. 237). When a product is consistently being used longer and/or more intensively than its manufacturer originally anticipated, this results in gradual changes in the safety expectations the public is entitled to expect in terms of product durability.¹⁴⁹⁶ Likewise, as recital 39 PLD-2024 signals, when new products are increasingly designed in a more durable manner and when there is an increased societal and regulatory focus on product durability (see also *supra* nr. 65 on EU circular economy policy), this ultimately influences the public's legitimate safety expectations.¹⁴⁹⁷ Since the PLDI does generally not extend to post-marketing obligations (see *supra* nr. 184), with only limited exceptions now provided by art. 11(2) PLD-2024, the effects of such evolutions remain for the purposes of harmonised product liability limited to new products when they are placed on the market, put into service or leave the 'manufacturer's control'.¹⁴⁹⁸

233. ART. 10(2)c PLD-2024: IF REUSE WAS REASONABLY FORESEEABLE, AN ACCIDENT CAUSED BY AN OBVIOUS MALFUNCTION CAN DELIVER A DEFECT PRESUMPTION – Art. 10(2)c PLD-2024 introduces a

¹⁴⁹⁶ See S. Lierman, 'De richtlijnen en het koninklijk besluit medische hulpmiddelen en de gevolgen van technische voorschriften op de aansprakelijkheid van de fabrikant en het ziekenhuis' (1998) *Tijdschrift voor Gezondheidsrecht* 360, 369; A. Vijverman, 'Hergebruik van voor eenmalig gebruik bestemde medische hulpmiddelen: nood aan een duidelijke regeling' (2008) *Tijdschrift voor Gezondheidsrecht* 7, 21; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 147; W. Rubens et al., *Juridische knelpunten bij circulaire economie projecten: Een verkenning en studie aan de hand van enkele concrete projecten* (OVAM 2019) 118-119.

¹⁴⁹⁷ Recital 39 PLD-2024: "In the transition from a linear to a circular economy, products are designed to be more durable, reusable, repairable and upgradable." See also V. Ulfbeck, 'From Linear to Circular Value Chains: A Role for Tort Liability in Recycling Practices?' (2022) 13 *European Journal of Risk Regulation* 603, 611.

¹⁴⁹⁸ Art. 6(1)c PLD-1985; 7(2)e PLD-2024. See also Taschner and Frietsch, *Kommentar*, 278-279; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3604, 11. Such evolutions remain also for existing products on the market relevant but only for purposes of post-marketing product safety obligations and the corresponding possibility of extracontractual fault-based product liability (see also *supra* nrs. 10).

refutable defect presumption in cases where the plaintiff can demonstrate that the damage was caused by an obvious malfunction of the product “*during reasonably foreseeable use or under ordinary circumstances*.” Note that the original Commission proposal of this presumption inspired by the adage *res ipsa loquitur* (see also *supra* nr. 185), required a “*normal use*”, which is more demanding than the “*reasonably foreseeable use*” in the final adopted version.¹⁴⁹⁹

This dissertation understands the circular strategy of ‘reuse’ as continuing to use a product which most, although not all, consumers would consider as an obsolete product for functional, psychological, technological or other reasons (see *supra* nr. 83). Such reuse can be considered as neither a part of “*normal use*” nor of “*ordinary circumstances*”, because otherwise a majority of consumers would be using these products during these extended periods of time, which would then be contradictory to the aforementioned understanding of ‘reuse’. It is therefore less likely that this defect presumption can be applied to accidents caused by reused products. Or, conversely, if a durable consumer good is still relatively new or has not yet been used a lot, it is more likely that an eventual occurring malfunctioning would be deemed to have occurred “*during reasonably foreseeable use or under ordinary circumstances*”.¹⁵⁰⁰

However, as just discussed in the preceding sections, at least some instances of product reuse can still be considered as constituting a “*reasonably foreseeable use*” (or misuse) of the product for which the public remains entitled to expect sufficient safety. The final adopted version of recital 46 PLD-2024 contains a description of the ‘reasonably foreseeable use’ referred to in art. 10(2)c, which does not explicitly encompass potential product misuse.¹⁵⁰¹ Nevertheless, this should in my opinion only be considered as a non-exhaustive illustration of reasonable foreseeability in the Directive’s non-operative part. An interpretation of this concept with how it is interpreted in the defect assessment (and this dissertation’s understanding of the posteriority defence, see Figure 9 *infra* nr. 239) seems preferable for reasons of theoretical coherence. Moreover, a sufficiently broad and flexible interpretation of ‘reasonably foreseeable use’ can contribute to the Directive’s goals of efficient accident-prevention and risk-allocation (see *supra* nrs. 105-109 and 168).

Consequently, when an accident is caused by a malfunctioning, reused product, it becomes necessary to determine whether this particular application of the circular strategy of reuse had been reasonably foreseeable when the specific product was originally placed on the market or put into service.¹⁵⁰² If this happens to be the case, it can first of all already prove the product’s defectiveness due to a lack of sufficient durability, as discussed *supra* nrs. 231-232. At the same time, a finding that the reuse as well as other aspects of the product’s use phase up to the moment of the malfunctioning had been reasonably foreseeable, can furthermore

¹⁴⁹⁹ Cf. art. 10(2)c PLD-2024 with art. 9(2)c in Commission, ‘Proposal for a Directive of the European Parliament and of the Council on liability for defective products’ COM(2022) 495 final. ‘Reasonably foreseeable use’ is a less stringent requirement for invoking the defence, if only because it also encompasses ‘reasonably foreseeable misuse’ (see *supra* nr. 183).

¹⁵⁰⁰ Art. 10(2)c PLD-2024.

¹⁵⁰¹ Recital 46 PLD-2024: “[...] Reasonably foreseeable use covers the use for which a product is intended in accordance with the information provided by the manufacturer or economic operator placing it on the market, the ordinary use as determined by the design and construction of the product, and use which can be reasonably foreseen where such use could result from lawful and readily predictable human behaviour.”

¹⁵⁰² See art. 6(1)c PLD-1985; 7(2)e PLD-2024.

deliver a refutable presumption of defectiveness pursuant to art. 10(2)c PLD-2024. This new defect presumption might for example be useful when there are other pieces of evidence indicating that the reused product had not been defective due to a lack of durability, while its malfunction in reasonably foreseeable circumstances nevertheless warrants a presumption of defectiveness.

As an illustration, the frame of an older, reused cargo bike carrying kids might suddenly crack while driving normally over a speed bump. If the defending manufacturer can dispel that the bike was defective because of a lack of durability, by means of reports of the bike's recent maintenance and/or evidence about the production series' outstanding durability, the fact that this reuse and other aspects of the product's use had still been reasonably foreseeable in combination with the obvious malfunction at the time of the accident, still allow the plaintiff to benefit from the new defect presumption of art. 10(2)c PLD-2024. Of course, this remains a refutable defect presumption,¹⁵⁰³ which means that only the burden of proof concerning product defectiveness is shifted.

234. DURABILITY: NATURE OF A PRODUCT – Another decisive criterion for assessing whether a lack of durability constitutes a defect, is the particular nature of a product or component (see also *supra* nr. 185).

This relates first of all to the inherently different lifespans of distinct products and components, of which a consumer is often aware at a very general level.¹⁵⁰⁴ For example, if we limit ourselves to this dissertation's focus on durable consumer goods, a normal table chair can be expected to last longer than a folding camping chair and brake pads wear out faster than most other components of a bike.

Second, as this last example already illustrates, different products and components also entail inherently different accident risks. For example, the rapid wear of a fragile sweater is unlikely to render it defective, because it is unlikely to cause extrinsic damage, but the same cannot be said of a playground swing that breaks during its first years of use. Particularly important at the sub-product level, are of course components that offer safety functions. For example, guards to protect fingers against moving parts in garden or DIY tools or the insulation against electrocution in electrical devices cannot be the first components in these products that fail.¹⁵⁰⁵

Third, there are also inherent differences between products and components in terms of the (un)expected nature of wear and tear processes. For example, a bicyclist can observe the gradual wearing out of his brake pads but he is likely completely surprised and in a dangerous situation when his handlebars suddenly break off, which is therefore a typical component that should be very durable. Consequently, products that inevitably wear out but provide

¹⁵⁰³ Art. 10(5) PLD-2024. See also the general overview *supra* nrs. 205-206.

¹⁵⁰⁴ See, e.g., LE Europe et al., *Behavioural study on consumers' engagement in the circular economy* (EU Commission 2018) 111-113 (differences in consumer expectations about product lifespans between product categories).

¹⁵⁰⁵ See, e.g., Antwerpen 13 April 2005, 2003/AR/2570, RW 2008-09, 803, *Juportal*: "Maar voor een levensreddend veiligheidsmechanisme, zoals in casu het geval was, impliceert de legitieme veiligheidsverwachting dat het veiligheidsmechanisme werkt zolang het product in de normale economische kringloop gebruikt is, minstens dient in het tegenovergesteld geval door de producent de aandacht op het tegendeel te worden gevestigd;".

critical safety functions should generally provide users some visible warnings that they have to be repaired or replaced before they fail.¹⁵⁰⁶ For example, climbing ropes and harnesses should still function when they start to fray for the first time, but an experienced climber should know that these are clear warnings to retire these products.¹⁵⁰⁷ A deadly accident resulting from continued use of such climbing gear despite its visibly deteriorated condition, is therefore insufficient to consider these particular types of products defective.

This third point on the expected or visible nature of wear and tear hints at a fundamental issue which becomes worse in the context of circular and functional economy product redistribution methods. The normal useful lifespan of a new product or component is often roughly perceivable and, if necessary, can be clearly communicated to consumers (see *infra* nr. 236). In contrast, the intensity of past use and the care taken in past handling and storage of older and especially second-hand products cannot be readily assessed. This is less problematic in linear distribution where a product is purchased and exclusively used by a single consumer who has a general awareness of its overall state as well as the record of its past use. But when products are retransferred or access to them is provided as a service, this knowledge risks being lost. Although technological solutions like product passports may bring a partial solution to this information deficit (see *infra* nr. 253), it makes it even more important that critical components in terms of safety do not wear out first and that dangerous wear and tear can be easily discovered.

If the nature of a product or component combines several of the aforementioned risk considerations, then multiple strategies might become necessary to avoid that a product would be considered defective due to a lack of safe durability. For example, car tires provide a critical safety function to both passengers and other road users but they also wear out faster than other car components, this unpredictable process is heavily determined by both mileage and driving style and wear of tires is also not easily noticed during driving before it is too late. Hence, car tires have threads that allow users themselves to quickly establish when they should be replaced. But they are also subject to strict sectoral safety standards, which require this indicator as well as minimal durability (see also *infra* nr. 237). Furthermore, their condition is frequently checked by service providers as well as mandatory technical inspection for older vehicles. Finally, car and vehicle producers also warn about the need for regular inspection and timely replacement of car tires (see also *infra* nr. 236). Only this combination of accident risk mitigating strategies avoid that this inherently risky component with limited durability is considered defective.

235. DURABILITY: TIME WHEN PRODUCT WAS PLACED ON THE MARKET OR PUT INTO SERVICE – There seem to be two ways in which art. 7(2)e PLD-2024’s criterion of “*the moment in time when the product was placed on the market or put into service or, where the manufacturer retains control over the product after that moment, the moment in time when the product left the control of the manufacturer*”, which replaces art. 6(1)c PLD-1985 “*the time when the product was put into*

¹⁵⁰⁶ See *infra* nr. 236 on the possibility to mitigate accident risks consisting of insufficient durability through product information.

¹⁵⁰⁷ See, e.g., ‘How to Inspect Your Climbing Gear and When to Retire It’ <<https://www.climbing.com/skills/how-to-inspect-your-climbing-gear-and-when-to-retire-it>>.

circulation”,¹⁵⁰⁸ is useful to assess when a product might be defective due to insufficient durability.

On the one hand, there is the straightforward meaning, discussed *supra* nr. 184, which requires that the defect assessment goes back in time to the moment when the defendant placed the later reused product on the market or put it into service. Since harmonised product liability does not extend to post-marketing obligations, with the limited new exception of art. 11(2) PLD-2024, it is theoretically irrelevant that afterwards the regulatory framework or market standards would evolve and would require more durability for new products.¹⁵⁰⁹ Likewise, it is irrelevant that after this moment more durable products are introduced on the market.¹⁵¹⁰

On the other hand, the more time has expired since a product had been put into circulation when it eventually causes an accident, the more difficult it gradually becomes for a plaintiff to prove that it had been defective due to a lack of durability.¹⁵¹¹ This seems at first sight to relate to the posteriority defence, where a similar rule of thumb to the benefit of the defendant applies (see *infra* nr. 239). However, already at the theoretically preceding stage when the plaintiff has to first prove that a product was defective due to insufficient durability, limited circumstantial evidence pointing to the contrary simply derives from the mere fact that a product has effectively already lasted for a long time before the accident. This elapsed time can help to establish that the product only had a ‘normal’ lack of durability, only suffered from ‘normal’ wear and tear and therefore is not defective (see *supra* nr. 231).

236. DURABILITY: PRODUCT PRESENTATION AND THE LIMITATIONS OF INFORMATION FOR ADJUSTING THE PUBLIC’S LEGITIMATE EXPECTATIONS OF SAFE DURABILITY – Existing sources rely to a considerable extent on “*the presentation of the product*” criterion,¹⁵¹² when determining whether a perceived lack of durability constitutes a product defect. In a perhaps too extreme and disputable example, a Belgian court considered that a critical safety component, the blocking mechanism of a switch which held a heavy and in this case ultimately deadly load, can be allowed to have significantly lower durability than the rest of the product as long as the use instructions warn about this risk and instruct the user to timely replace this safety component.¹⁵¹³

Discussions in the literature on the PLD relating to durability, also appear to assume that it generally suffices for defendants to clearly warn about a product’s limited lifespan or fragility and/or to provide instructions regarding appropriate use, storage and maintenance, in order

¹⁵⁰⁸ See *supra* nr. 184 and *infra* nrs. 310 et seq. and 402-404 on some of the differences and interpretative difficulties.

¹⁵⁰⁹ PLD Explanatory Memorandum 1976, nr. 13: “*The same applies where safety regulations are tightened up after a product has been put into circulation, at which time it met the existing requirements. In such a case there is in principle no obligation on the part of the producer to withdraw all products. Anyone using products which do not meet more recent safety requirements does so at his own risk.*”

¹⁵¹⁰ Art. 6(2) PLD-1985; art. 7(3) PLD-2024. See also Verhoeven, *Productaansprakelijkheid en productveiligheid*, 181; C. Förster, ‘ProdHaftG § 3 Fehler’ in W. Hau and R. Poseck (eds.), *BeckOK BGB* (Beck 2023) nr. 20.

¹⁵¹¹ See Howells, ‘strict liability’, nr. 4.76 Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 9.113.

¹⁵¹² Art. 6(1)a PLD-1985; art. 7(2)a PLD-2024.

¹⁵¹³ Antwerpen 13 April 2005, 2003/AR/2570, RW 2008-09, 803, *Juportal*.

to avoid a defect qualification due to a lack of durability.¹⁵¹⁴ However, upon closer reading, many of these authors emphasize this in the context of resales of second-hand goods,¹⁵¹⁵ where this is actually a flawed reasoning clouded by contract law, because defectiveness under the PLD must be evaluated at the moment when a product is placed on the market or put into service and not when it is subsequently just made available.¹⁵¹⁶ However, product information that is already provided at that time can effectively be pertinent in a product's defect assessment, pursuant to arts. 6(1)a PLD-1985 and 7(2)a PLD-2024.

However, accepting that safety expectations concerning durability can be completely moulded through the presentation of a product, would ignore recital 31 PLD-2024's clear rejection of overreliance on warnings to make a product safe.¹⁵¹⁷ Moreover, as discussed *supra* nr. 182, this reflects a more recent, by behavioural science informed view in the literature, which affords to warnings and other product information only a relatively modest role as part of the so-called 'safety hierarchy'.¹⁵¹⁸ This product safety guideline is cognizant of the behavioural and practical limitations of consumer information as a means to prevent product accidents and generally recommends to accept it only as a 'last resort' measure. Priority should first be given to the elimination and secondly to the mitigation of accident risks through product design, unless this would be unfeasible or undesirable for case-specific reasons of overriding interest.

As a result, product information definitely remains a pertinent piece of the jigsaw. On the one hand, warnings or use instructions can effectively help to avoid a product defect qualification based on a lack of durability. Yet, as just discussed and as case law also confirms,¹⁵¹⁹ there are limitations to what can be achieved through information; product presentation is not a silver bullet. For example, a bike saddle which risks breaking off during the first years of use or a baby toy which too easily fractures into dangerous small components when used roughly by an older sibling, appear to be hypothetical risks that should always be eliminated or mitigated through design and that cannot be simply remediated through warnings or use instructions. On the other hand, incorrect information or an absence of specific instructions

¹⁵¹⁴ E.g., Taschner and Frietsch, *Kommentar*, 283; A. Vijverman, 'Hergebruik van voor eenmalig gebruik bestemde medische hulpmiddelen: nood aan een duidelijke regeling' (2008) *Tijdschrift voor Gezondheidsrecht* 7, 21. These authors focus on warnings and use instructions provided by the original manufacturer with regards to durability of a new product, instead of such information being provided during the redistribution of a second-hand product, which is discussed in the following Chapter and for which many comparable statements can be found in the literature (see e.g. *infra* footnote 1800). See also Oechsler, Staudinger, 'Produkthaftungsgesetz', § 3, nr. 73.

¹⁵¹⁵ See sources cited *infra* footnote 1800.

¹⁵¹⁶ Art. 6(1)c PLD-1985; art. 7(2)e PLD-2024. See *infra* nrs. 285 and 310.

¹⁵¹⁷ Recital 31 PLD-2024: "The assessment of defectiveness should take into account the product's presentation. However, warnings or other information provided with a product cannot by themselves make an otherwise defective product safe, since defectiveness is determined only by reference to the safety that the public at large is entitled to expect. Therefore, liability under this Directive cannot be circumvented simply by listing all conceivable side effects of a product."

¹⁵¹⁸ See *supra* footnotes 1082 and 1087 on literature relating to the risks of 'overwarning' and the 'safety hierarchy' in harmonised EU product liability.

¹⁵¹⁹ See Belgian case law relating to the PLDI and indirectly relevant German and CJEU case law cited *supra* footnote 1084

on use, storage and maintenance requirements can sometimes also make a product insufficiently durable through an information defect. Yet, in some of these cases it can be questioned whether the product would even with this information have as a matter of fact still been defective because there is a more fundamental underlying design defect.¹⁵²⁰

This limited significance of product information is at a fundamental level connected with the extracontractual nature of harmonised product liability, which is on its turn based on the ‘privity problem’ and in particular the need to also protect injured third parties (see also *supra* nrs. 5 and 172). The product liability defect assessment should therefore not be compounded with the conformity assessment of contract law, where precontractual information can have a more significant impact.¹⁵²¹

Producers and distributors not only provide information regarding product durability which is defensive in nature, such as warnings or instructions relating to certain use or storage conditions. Since consumers are increasingly susceptible to the environmental and economic benefits of more durable products (see also *supra* nrs. 61-64), they often try to gain a competitive edge by advertising regarding the durability of their products. To the extent that such information is incorrect or misleading, it can violate EU commercial practices regulation.¹⁵²² The recently adopted Empowering Consumers for the Green Transition Directive 2024/825¹⁵²³ and the accompanying but not yet adopted Green Claims Proposal 2023¹⁵²⁴ promise to further help in this combat against ‘greenwashing’ in B2C markets when it specifically relates to product durability (see also *infra* nr. 252). However, it is important to realise that traditional civil law, like contract law rules on conformity or fraud but also the PLDI, can in parallel dissuade producers and distributors to overpromise regarding potentially sustainable aspects of their products. After all, incorrectly informing the public about increased product durability can backfire, since it may help a consumer or third party injured in an accident to prove a product defect consisting of abnormal wear and tear or another defective lack of product durability.¹⁵²⁵

Finally, product and consumer protection regulation may also make it mandatory for economic actors to communicate certain information relating to product durability, as required by the future French *indice de durabilité* and as now required to a very limited extent as a result of the recently adopted Empowering Consumers for the Green Transition Directive 2024/825

¹⁵²⁰ This illustrates how it is perhaps most correct to perceive information defects just as a subset of design defects, which would also fit with some of the main observations this dissertation makes relating to the relationship between the defect typology and harmonised product liability (see e.g. *supra* nr. 174 and *infra* nr. 241).

¹⁵²¹ See, e.g., the rules on subjective conformity and on contractual derogation from otherwise applicable objective conformity requirements in EU consumer sales law in arts. 6 and 7(5) Consumer Sales Directive 2019/771.

¹⁵²² In particular arts. 6(1)b and 7 Parliament and Council Directive 2005/29/EC of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market [2005] OJ L149/22, 28-29.

¹⁵²³ See in particular arts. 1(2)a and 2(2) and Annex I, nr. 4 Empowering Consumers for the Green Transition Directive 2024/825.

¹⁵²⁴ See in particular arts. 3-6 Green Claims Proposal 2023.

¹⁵²⁵ Art. 6(1)a PLD-1985; art. 7(2)a PLD-2024. See Howells, ‘strict liability’, nr. 4.162; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 10.71; Staudinger, ‘Produkthaftungsgesetz’, § 3, nrs. 44-45; G. Wagner, ‘Produkthaftungsgesetz’ in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024), § 3, nr. 18.

(see *infra* nr. 252). Such information on durability that is mandatorily provided can of course, subject to the aforementioned caveats, also co-determine the defect assessment.

237. DURABILITY: PRODUCT RULES AND STANDARDS – Rules of product regulation traditionally provide pertinent although not completely binding points of reference to assess product defectiveness and ‘soft law’ standards can fulfil a similar role.¹⁵²⁶ However, as examined *supra* nr. 180, the final adopted version of art. 7(1) PLD-2024 now also considers as automatically defective any product which does not provide “*the safety [...] that is required under Union or national law.*”

Some sectoral product safety regulation, in particular non-binding¹⁵²⁷ harmonised or national implementing standards, stipulate minimal requirements of product or component durability. Furthermore, the General Product Safety Regulation 2023/988/EU refers in its pivotal definition of ‘safe product’ to “*normal or reasonably foreseeable conditions of use, including the actual duration of use*”.¹⁵²⁸ This very general requirement akin to the aforementioned criterion of reasonably foreseeable use in the context of the PLDI, can again be more concretely elaborated in implementing product safety standards, which are themselves not directly binding (see also *supra* nr. 10.a). Post-marketing product safety requirements, such as on market monitoring or issuing corrective warnings and recalls, are naturally very important when products are used longer. But these are only relevant to national, in particular extracontractual fault-based, but not harmonised product liability, because this theory remains in principle limited to the moment when a product is placed on the market or put into service (see *supra* nr. 184).

Already a few existing EU Ecodesign requirements impose minimal durability requirements for particular product categories and such Ecodesign requirements are expected to become more numerous in the near future (see *infra* nr. 251). Moreover, as illustrated in the next section specifically regarding the aspect of packaging, an even broader range of sectoral regulations exist that are part of the EU’s circular economy policy agenda and that can be pertinent for a defect assessment in relation to a product’s durability. A similar role can also be fulfilled by national legal rules. A prominent example is the French ban on planned product obsolescence (*l’obsolescence programmée*).¹⁵²⁹ This provision violates perhaps current EU

¹⁵²⁶ See *supra* nrs. 10.d and 187.

¹⁵²⁷ Non-binding standards, whether harmonised or national coming from official standardisation bodies or having purely private industry origins, can only be considered in the defect assessment as merely indicative forms of ‘soft law’ and not according to the automatic defect qualification in the novel, second part of art. 7(1) PLD-2024, discussed *supra* nr. 180.

¹⁵²⁸ Art. 3(2) General Product Safety Regulation 2023/988/EU. See also for products already on the market art. 2(b) General Product Safety Directive 2001/95/EC 2001/95.

¹⁵²⁹ Art. L441-2 Code de la Consommation. See C. Martin, ‘Le délit d’obsolescence programmée’ (2015) *Recueil Dalloz* 1944; A. Michel, *Premature Obsolescence: In Search of an Improved Legal Framework* (Intersentia 2023) 254-263. See also *infra* nr. 252 on French B2C information requirements relating to product durability and *infra* nr. 397 on related French prohibition on practices that restrict self- and independent repairs and refurbishments of products.

maximum harmonisation of rules on B2C unfair commercial practices,¹⁵³⁰ but this issue perhaps partially disappears with the future entry into force of the Empowering Consumers for the Green Transition Directive 2024/825.¹⁵³¹

When they are binding and when they effectively required a product to provide a given level of safety, then violations of the aforementioned EU or national rules can lead to an automatic defect qualification under art. 7(1) PLD-2024. Alternatively, if a plaintiff can demonstrate that such binding product safety requirements¹⁵³² precisely “*intend[ed] to protect against the risk of the damage suffered by the injured person*”, then a refutable defect presumption applies based on art. 10(2)b PLD-2024 (see *supra* nr. 206.b). Otherwise, the more indicative, open-ended effect of regulation, which already existed under the PLD-1985 (see *supra* nr. 187), can still apply.

Finally, although neither the novel, second part of art. 7(1) nor art. 10(2)b PLD-2024 can be invoked in this context, privately promulgated ‘soft law’ like industry standards are also still particularly useful for determining when a perceived lack of durability constitutes a defect. Dutch courts use for example indicative lists drafted by industry to figure out the expected lifespan of consumer goods, which determine the length of the consumer sales law guarantee in the Netherlands.¹⁵³³ Hence, if a product without a clearly posterior defect origin breaks down before this time period elapses, a plaintiff may not only refer to this indicative list to claim based on consumer sales law against a B2C seller but also or alternatively refer to it to

¹⁵³⁰ Art. 4 Unfair Commercial Practices Directive. *De lege lata*, art. L441-2 Code de la Consommation violates in my opinion the Directive, because it concerns at least partially the regulation of “*unfair commercial practices harming consumers' economic interests*” (art. 1 Unfair Commercial Practices Directive), because the prohibited practice of ‘planned obsolescence’ is not part of the current ‘blacklist’ in Annex I *ibid.* and because at least a straightforward application of the provision would not consider in the concrete circumstances of each case whether the practice materially distorts or is likely to materially distort the consumer’s economic behaviour pursuant to arts. 5-9 *ibid.*, as the CJEU requires in its case law relating to this Directive’s maximum harmonisation (CJEU 23 April 2009, C-261/07 and C-299/07, *VTB-VAB & Galatea*, ECLI:EU:C:2009:244, nrs. 62-65; CJEU 14 January 2010, C-304/08, *Zentrale zur Bekämpfung unlauteren Wettbewerbs*, ECLI:EU:C:2010:12; CJEU 7 March 2013, C-343/12, *Euronics Belgium*, ECLI:EU:C:2013:154; CJEU 8 September 2015, C-13/15, *CDiscout*, ECLI:EU:C:2015:560).

¹⁵³¹ Annex I, nr. 4 Empowering Consumers for the Green Transition Directive 2024/825 inserts into the Unfair Commercial Practice’s Directive ‘blacklist’ of automatically prohibited practices “[w]ithholding information from the consumer about the fact that a software update will negatively impact the functioning of goods with digital elements or the use of digital content or digital services” and “[i]nducing the consumer to replace or replenish the consumables of a good earlier than necessary for technical reasons.” This would allow many but arguably not all potential applications of art. L441-2 Code de la Consommation to fit within the Unfair Commercial Practices Directive’s maximum harmonisation.

¹⁵³² Since art. 10(2)b PLD-2024 refers to “*safety requirements*”, it likely refers to product safety rules in the functional meaning, which would for example also include Ecodesign requirements if those contribute at least partially to accident-prevention. However, it remains to be seen whether in a particular case, a specific Ecodesign requirement is considered to precisely “*protect against the risk of the damage suffered by the injured person*”, as required by art. 10(2)b *ibid.* See *infra* nr. 251.

¹⁵³³ E.g., UNETO-VNI, ‘Tabel met gemiddelde gebruiksduurverwachtingen’ (2014) <<https://www.technieknederland.nl/stream/richtlijnenafschrijvingsmethoden>>. See also *infra* nr. 246 on the argument *de lege ferenda* to transform the PLD-1985’s current 10-year extinction period to this flexible approach.

claim based on the PLDI against a manufacturer or other defendant to argue that the product was defective due to an abnormal lack of durability.

238. REUSING PACKAGING – Finally, it is worthwhile to briefly return to reusing packaging, to illustrate the preceding sections on product presentation, rules and standards as well as to complete the prior discussion on this more niche subtopic (see *supra* nrs. 224 and 229). Current EU packaging regulation generally encourages reuse and requires markings on packaging to facilitate reuse, although this is mostly part of an ‘extended producer responsibility’ scheme to reduce packaging waste through take-back obligations of producers.¹⁵³⁴ Hence, these provisions are less relevant to reuse by consumers and more to industrial re-use or waste recovery (cf. *supra* nrs. 83 and 93-95), which is discussed in a later Chapter. Nevertheless, one of the requirements for placing packaging on the market stipulates in general terms that packaging “*shall be designed, produced and commercialized in such a way as to permit its re-use*”.¹⁵³⁵ Undoubtedly, violations of or compliance with either this requirement or the more concrete standards adopted to implement them,¹⁵³⁶ can act as a point of reference to conclude that certain packaging was defective due to a lack of safe reusability.

Recently, the Commission has proposed a new Packaging Regulation, which includes additional provisions that could influence the future assessment of packaging reusability. First of all, it imposes restrictions on various types of single-use packaging and targets to gradually increase the amount of reusable and refillable packaging on the market.¹⁵³⁷ Although this once more mostly aims to extend the extended producer responsibility scheme of taking back products for industrial re-use or recycling,¹⁵³⁸ it would simultaneously increase possibilities for consumers to reuse packaging themselves (see also *supra* nr. 232 on the evolving nature of the defect assessment). Moreover, the proposed Regulation’s implementation would have to consider the impact of chemical substances on re-use (as well as reuse) and require that all reusable packaging is “*capable of being emptied, unloaded, refilled or reloaded while ensuring compliance with the applicable safety and hygiene requirements*”.¹⁵³⁹ Finally, consumers would need to be informed, among others, about the reusability of packaging and on how to safely refill packaging,¹⁵⁴⁰ which again ties into the role of information in the assessment whether a product is safely reusable (see *supra* nr. 236).

¹⁵³⁴ Arts. 5, 7(1)b and 8(2) Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste [1994] OJ L365/31.

¹⁵³⁵ Art. 9(1) *juncto* Annex II.1 *ibid.* See also *supra* footnote 1454 on the broad definition of packaging ‘reuse’ in art. 3(5) *ibid.*

¹⁵³⁶ Pursuant to the EU’s ‘New Legislative Framework’ (see *supra* nr. 10.a), harmonised and national standards are adopted to provide a presumption of compliance with the essential requirements of art 9(1) and Annex II *ibid.* (art. 9(2) *ibid.*).

¹⁵³⁷ Arts. 22, 26 and Annex V Commission, ‘Proposal for a Regulation of the European Parliament and of the Council on packaging and packaging waste, amending Regulation (EU) 2019/1020 and Directive (EU) 2019/904, and repealing Directive 94/62/EC’ COM(2022) 677 final.

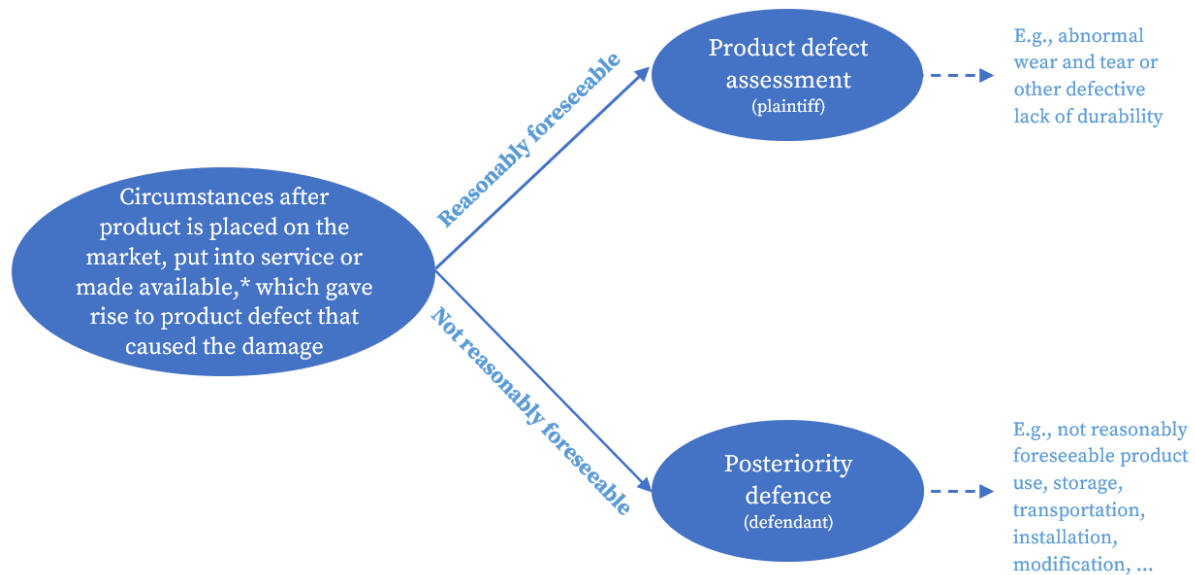
¹⁵³⁸ See, e.g., arts. 6-7, 23-24 and Annex VI *ibid.*

¹⁵³⁹ Arts. 5(4) and 10(1)d *ibid.*

¹⁵⁴⁰ Arts. 11(2) and 25 *ibid.* The information about packaging reusability should be provided by means of “a QR code or other type of digital data carrier that provides further information” (art. 11(2) *ibid.*).

§ 3. Posteriority defence

a. Distinguishing between posteriority defence and defect assessment



* See *infra* nr. 322 on interpretation of art. 7(b) PLD-1985 vis à vis suppliers.

Figure 9: Distinction between defect assessment and posteriority defence in light of reasonable foreseeability of circumstances after product is placed on the market, put into service or made available.

239. POSITIVE EVIDENCE OF DEFECT POSTERITY: A POST-MARKETING CIRCUMSTANCE THAT GAVE RISE TO THE PRODUCT DEFECT THAT CAUSED THE DAMAGE AND THAT HAD NOT BEEN REASONABLY FORESEEABLE WHEN THE PRODUCT WAS PLACED ON THE MARKET,¹⁵⁴¹ PUT INTO SERVICE OR MADE AVAILABLE – Liability claims for accidents involving reused products are closely bound up with the posteriority defence of art. 7(b) PLD-1985 and art. 11(1)c PLD-2024. Even when a plaintiff has proven the product’s defective nature, damage and causation, a defendant can still escape liability by proving, according to a standard of probability, that the defect originated after the moment when the product was made available or put into service (see *supra* nr. 195).¹⁵⁴² This

¹⁵⁴¹ ‘Placing on the market’ is a subset of ‘making a product available on the market’ (art. 4(7)-(8) PLD 2024), which is why this and the following sections refer to ‘the moment when the product was made available or put into service’ as the cut-off date for the posteriority defence according to art. 11(1)c *ibid.*

¹⁵⁴² The terminology of art. 11(1)c *ibid.* is used here, which confirms that the distributor despite his mere secondary liability can invoke the posteriority defence in a ‘personal’ manner (i.e. the time when he makes the product available is the date of reference rather than the preceding moment when the product was placed on the market by for example a manufacturer, see *infra* nrs. 317 et seq.). It is debated whether such a personal interpretation can also be accepted for art. 7(b) PLD-1985 vis à vis the

relates to a post-marketing defect origin, which, in case of the PLD-2024 applies, does not qualify under any of the narrow ‘digital’ or ‘substantial modification’ exceptions of the new art. 11(2) PLD-2024 (see *supra* nr. 196).

Given the confusion that sometimes surrounds the defect assessment relating to wear and tear and the posteriority defence in case of reused goods (see also *supra* nr. 230), this dissertation aims to clarify here how both interact by distinguishing two categories based on the reasonable foreseeability of a post-marketing circumstance. The existing literature does not make such a clear distinction, at least not explicitly. Instead, it discusses the defect assessment and posteriority defence separately without clarifying how both can be precisely demarcated.¹⁵⁴³

As a starting point, the posteriority defence can be proven by a defendant through either negative or positive evidence.¹⁵⁴⁴ Since negative evidence, like a documented quality control, tends to be in itself insufficient for a successful defence (see *supra* nr. 195), this section focuses on the much more important positive evidence of post-marketing circumstances that cause a product accident. Possible examples are product misuse, bad transportation and storage, product modifications, damage to the product itself resulting from a previous accident, etc.

The defendant must first of all prove, according to the posteriority defence’s standard of probability, that a sufficient causal relationship¹⁵⁴⁵ exists between the post-marketing circumstance presented as positive evidence of defect posteriority and the product defect that caused the damage claimed by the plaintiff. After all, the positive proof requires demonstrating “*that the defect which caused the damage did not exist at the time when the product was put into circulation*”, pursuant to art. 7(b) PLD-1985, which is now reconfirmed by art. 11(1)c PLD-2024.¹⁵⁴⁶

A crucial second requirement for the posteriority defence – which seems to have not yet been explicitly identified as a general requirement in the existing literature –¹⁵⁴⁷ is proof that the allegedly posterior circumstance that made the product defective and caused the damage, had not been reasonably foreseeable when the product was made available or put into service. If this requirement is not fulfilled, this ‘vulnerability’ to a reasonably foreseeable risk in the product’s lifecycle, already constituted an anterior product defect that caused the eventual damage. After all, the reasonably foreseeable use of a product is an explicitly listed,

supplier and even other defendants like the quasi-producer or whether a ‘producer-specific’ interpretation should be accepted instead. See *infra* nrs. 320-322.

¹⁵⁴³ See generally the sources cited *supra* nrs. 179, 183, 195, 231 et seq. and in this section. But see also already the sources cited *infra* footnote 1547.

¹⁵⁴⁴ Art. 7(b) PLD-1985; art. 11(1)c PLD-2024.

¹⁵⁴⁵ Causation is only to a very limited extent harmonised by both Directives and is mostly left to national law, subject to the EU law principles of non-discrimination and effectiveness. See *supra* nr. 191.

¹⁵⁴⁶ See also art. 11(1)c PLD-2024: “[...] *that the defectiveness that caused the damage did not exist at the time the product was placed on the market, put into service or, in the case of a distributor, made available on the market, [...]*”.

¹⁵⁴⁷ But see already hinting at this Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 46, nr. 36; P. Ehring, ‘§ 1 ProdHaftG’ in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 74.

crucial criterion in the product defect assessment.¹⁵⁴⁸ A twofold distinction must therefore be made.

- a. On the one hand, there are the circumstances occurring after a product is made available or put into service that were at that time already reasonably foreseeable. Examples are an intensive use by some consumers which can still be expected when a particular product is marketed, not abnormal conditions of installation, storage and transportation or a certain amount of misuse by an inexperienced (new) consumer. As discussed *supra* nr. 232, a product is defective due to a lack of durability if it does not provide the safety legitimately expected by the public to deal with such reasonably foreseeable circumstances. If this is nevertheless the case and a product is defective as a result of such circumstances, then this is a product defect that had already been present when the product was made available or put into service. In other words, a defect resulting from reasonably foreseeable circumstances is simply an anterior defect to which the posteriority defence can of course not apply.

To make this concrete to the specific focus of this Chapter, abnormal wear and tear corresponds with the incapability of a product to handle post-marketing circumstances that had been reasonably foreseeable, namely ‘normal wear and tear’. This explains why it qualifies as a product defect.¹⁵⁴⁹ Hence, the posteriority defence does not apply to abnormal wear and tear.

- b. On the other hand, there are the actually posterior defect origins. These are circumstances occurring after a product is made available or put into service that had not yet been reasonably foreseeable at that time. Examples are significant product misuse for which safety could no longer be legitimately expected, storage or transportation decisions which are so ostensibly detrimental to a product’s safety that they could not be considered as having been reasonably foreseeable, extreme weather events, not reasonably foreseeable product modifications as well as damage inflicted to a product in another accident when this had not been reasonably foreseeable. As discussed *supra* nrs. 183 and 232, a product is not defective if it fails to provide sufficient durability to ensure safety in this no longer reasonably foreseeable context. Instead, such circumstances constitute positive evidence required for a successful posteriority defence, if a defendant can prove that they caused the damage claimed by the plaintiff and that they effectively had not been reasonably foreseeable when the product was made available or put into service, as discussed above. This is the actual test for defect posteriority,¹⁵⁵⁰

¹⁵⁴⁸ Art. 6(1)b PLD-1985; art. 7(2)b PLD-2024. See *supra* nrs. 183 and 232.

¹⁵⁴⁹ Taschner and Frietsch, *Kommentar*, 293; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 146-147, 181; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., 477; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 1, nr. 36; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 1, nr. 84; P. Ehring, ‘§ 1 ProdHaftG’ in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 74; E. Van Gool, ‘De nieuwe richtlijn productaansprakelijkheid en circulaire economie’ (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 413. See *supra* nr. 231.

¹⁵⁵⁰ See also Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 46, nr. 36; P. Ehring, ‘§ 1 ProdHaftG’ in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 74.

which following sections further discuss specifically regarding reused products and in following Chapters with regards to other circular strategies.

Additionally, it is necessary to point out that ‘normal wear and tear’ is irrelevant to the posteriority defence, despite what is held by certain authors.¹⁵⁵¹ This is because normal wear and tear, although perfectly reasonably foreseeable, does not constitute a product defect at all.¹⁵⁵² As discussed *supra* nr 231, a plaintiff should not be allowed to base a claim on wear and tear that is not considered abnormal. Consequently, also the posteriority defence does not apply to such case.

This distinction based on the reasonable foreseeability of circumstances during a product’s lifecycle, is admittedly sometimes difficult to draw. It is after all a factual assessment dependent on the particular circumstances of each case as well as the evolving, legitimate safety expectations of the public. However, it is part of the theoretical core of harmonised product liability and is especially indispensable for applying this theory accurately in a more circular economic consumer goods sector (cf. *supra* nr. 232 relating to reuse and *infra* nrs. 256-258 and 373 et seq. relating to repurposing, repair and refurbishment).

Finally, to avoid any confusion, it is important to specify how the aforementioned distinction between defect assessment and posteriority defence precisely operates in an actual dispute, considering the applicable procedural rules of evidence (see *supra* nr. 205). As a starting point, it remains of course up to the plaintiff to first of all prove a product defect, in addition to damage and causation.¹⁵⁵³ If he wants to prove a defect based on the fact that the product would have provided insufficient safety vis à vis a particular post-marketing circumstance, such as the fact that the product would be reused, he must already initially establish according to the applicable standard of proof that such circumstance had been reasonably foreseeable when the product was placed on the market or put into service.¹⁵⁵⁴ Alternatively, the plaintiff can base his claim on various other potential manufacturing, design or information defects. Under the PLD-2024, the plaintiff can of course in some cases benefit from refutable presumption of product defectiveness or causation (see *supra* nr. 206). Subsequently, if the defendant fails to directly disprove the alleged product defect, he can still raise a posteriority defence relating to one or more post-marketing circumstances for which the reasonable foreseeability was not yet established as part of the plaintiff’s proof of a product defect (cf. *infra* nrs. 291 and 417). As discussed above, this requires the defendant to demonstrate according to a standard of mere probability¹⁵⁵⁵ that such circumstance has caused the damage and had not been reasonably foreseeable when the product was made available or put into service.

¹⁵⁵¹ P. Ehring, ‘§ 1 ProdHaftG’ in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 74. *Contra* authors who state that a manufacturer can invoke the posteriority defence in case of ‘normal wear and tear’ Verhoeven, *Productaansprakelijkheid en productveiligheid*, 261; Wagner, *MüKo BGB, ‘Produkthaftungsgesetz’, § 1*, nr. 36.

¹⁵⁵² See sources cited *supra* nr. 1549.

¹⁵⁵³ Art. 4 PLD-1985; art. 10(1) PLD-2024.

¹⁵⁵⁴ Art. 6(1)b PLD-1985; art. 7(2)b PLD-2024. See *supra* nr. 183. Note that the applicable standard of proof for the plaintiff has not been harmonised (see *supra* nr. 205).

¹⁵⁵⁵ Art. 7(b) PLD-1985; art. 11(1)c PLD-2024. See *supra* nr. 195.

Hence, this theoretical clarification of the precise distinction between the defect assessment and posteriority defence determines the burden of proof with regards to the reasonable foreseeability of post-marketing circumstances that causally contribute to the product accident or, more precisely, the underlying ‘evidentiary risk’ for these elements.¹⁵⁵⁶

b. Applying the posteriority defence to accidents involving reused products

240. THE AMOUNT OF TIME PASSED SINCE THE PRODUCT WAS MADE AVAILABLE OR PUT INTO SERVICE, CAN PROVIDE A LIMITED, INDIRECT PROOF OF DEFECT POSTERIORITY – As the Commission already signalled in the explanatory memorandum of the original PLD-1985 proposal¹⁵⁵⁷ and as observed by many courts and scholars,¹⁵⁵⁸ the longer a product has been used without leading to accidents after it has been ‘put into circulation’ (according to the PLD-1985), the more probable it becomes that an eventually surfacing defect indeed originated after this moment in time as a result of an actually posterior, not reasonably foreseeable post-marketing circumstance.¹⁵⁵⁹ In addition to a purely statistical increase in likelihood that a posterior factor intervened, it must also be considered that evidence to prove to the contrary the anterior nature of a defect becomes scarcer or less dependable over time.¹⁵⁶⁰ What constitutes a sufficiently long period of use to apply this rule of thumb, depends of course on the nature

¹⁵⁵⁶ The ‘evidentiary risk’ determines the outcome of a factual or legal dispute when the evidence brought forward by either party is indecisive. See in the liability context W. Vandenbussche, *Bewijs en onrechtmatige daad* (Intersentia 2017) 22-24.

¹⁵⁵⁷ PLD Explanatory Memorandum 1976, nr. 13: “It is clear from Article 5 that the article must be defective at the time the producer puts it into circulation. This is presumed, but the presumption is rebuttable. Where articles have been used over a long period of time, the court will pay particular attention to this circumstance.”

¹⁵⁵⁸ See OLG München 21 June 2002, 21 U 4952/01, *OLGR München* 2003, 4, *Juris*, nrs. 24-26 (tumble dryer in use during 7 years before accident, which makes it unlikely that a defect already present at the time of putting it into circulation would not have manifested itself earlier); Antwerpen 13 April 2005, *RW* 2008-09, 803, 805 (referring to timeperiod elapsed between putting into circulation and accident as potential proof of posteriority); Taschner and Frietsch, *Kommentar*, 190, 238-239; Howells, ‘strict liability’, nr. 4.277; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 542; Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 55, nr. 15; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3602, 46; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 9.113; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 1, nr. 77; P. Ehring, ‘§ 1 ProdHaftG’ in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 73; E. Van Gool, ‘De nieuwe richtlijn productaansprakelijkheid en circulaire economie’ (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 413.

¹⁵⁵⁹ The flipside is of course that when a product accident occurs immediately after a new product has been started to be used, it becomes difficult to prove that the defect was not yet present when it was made available or put into service. See, e.g., OLG Koblenz 24 June 1999, 5 U 1668/98, *MDR* 2000, 30, *Juris*, nr. 10 (fire caused by new washing machine that has been used for only 6 months).

¹⁵⁶⁰ See in general I. Gilead, ‘Economic Analysis of Prescription in Tort Law’ in H. Koziol and B. Steininger (eds.), *European Tort Law 2007* (Springer 2007) 116; H. Lando, ‘Why Cut off Buyers’ Claims by a Limitation Period?’ in T. Eger and others (eds.), *Internationalisierung des Rechts und seine ökonomische Analyse: Festschrift für Hans-Bernd Schäfer zum 65. Geburtstag* (Gabler 2008) 7-22.

and expected lifespan of the particular product (see analogously also *supra* nrs. 232-233).¹⁵⁶¹ Since the circular strategy of reuse consists of using a product longer than the moment when most consumers, for various reasons, would consider it to be obsolete (see *supra* nr. 83), it is by definition a prime example where this rule of thumb for the posteriority defence can apply. The same relationship between longer product use and posteriority is by the way also reflected in EU harmonised consumer sales¹⁵⁶² and general German sales law,¹⁵⁶³ which restrict the period during which the anteriority of a non-conformity with the sales contract is presumed to currently one year.¹⁵⁶⁴

This rule of thumb, which can be qualified as a limited factual presumption,¹⁵⁶⁵ must not be misinterpreted. When products are reused or otherwise have been used during a long period of time, there is never an automatic presumption that the posteriority defence applies. The harmonised product liability theory rather presumes the opposite, namely defect anteriority, since the plaintiff only has to prove the existence of a defect and the defendant always bears the posteriority defence's burden of proof (see *supra* nrs. 179 and 195).¹⁵⁶⁶ Nevertheless, the defendant benefits from the defence's low standard of proof: he only has to make a case "*that, having regard to the circumstances, it is probable*" that the defect is of a posterior nature.¹⁵⁶⁷ And this is where the fact that a product had already been in use for a long time prior to an

¹⁵⁶¹ E.g., Antwerpen 18 december 2012, *Limb. Rechtsl.* 2013, 151, note E. Smeets. This case concerned a hip prosthesis from which metal debris fractured within 8 years of the operation. A hip prosthesis is normally not expected to be already obsolete after 8 years. Hence, the elapsed time does not necessarily indicate potential defect posteriority. See also *infra* footnote 1564.

¹⁵⁶² Art. 11(1) Consumer Sales Directive 2019/771. Member states can extend this period of presumed anteriority to a maximum of 2 years, as an exception to the new Directive's maximum harmonisation (art. 11(2) Consumer Sales Directive 2019/771).

¹⁵⁶³ § 477 BGB. See E. Van Gool, 'Overview of German product liability law' (2024) <<https://ssrn.com/abstract=4824956>>, nr. 14.b.

¹⁵⁶⁴ In general, it is interesting to observe how EU product liability law, on the one hand, and EU harmonised consumer sales law (and German general sales law), on the other hand, can achieve similar outcomes through different rules. The former presumes anteriority in general, but reduces the standard of proof for the defendant's posteriority defence and the more time expires the more likely a successful posteriority defence becomes. The latter presumes posteriority in general, but grants the buyer as a plaintiff a presumption period of 1 year (theoretical maximum of 2 years) during which the inverse applies and the seller has to prove posteriority. See on the difference between both approaches P. Ehring, '§ 1 ProdHaftG' in P. Ehring and J. Taege (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 73.

¹⁵⁶⁵ Rather than a potentially more decisive *prima facie* evidence (cf. W. Vandenbussche, *Bewijs en onrechtmatige daad* (Intersentia 2017) 462-466). According to German law of civil evidence, it would therefore be characterized as an *Indizienbeweis* rather than an *Anscheinsbeweis* (see in the context of national German product liability law Foerste, '2. Deliktische Haftung', § 30, nrs. 36-38, 40-41, 61, 118-124; E. Van Gool, 'Overview of German product liability law' (2024) <<https://ssrn.com/abstract=4824956>>, nr. 22).

¹⁵⁶⁶ Graf von Westphalen, '3. Produkthaftungsgesetz', § 46, nr. 34. See also Oechsler, Staudinger, 'Produkthaftungsgesetz', § 2, nr. 10.

¹⁵⁶⁷ See *supra* nrs. 205-206 on how exceptional this specified and lowered standard of proof is in the entirety of EU product liability harmonisation, even under the new PLD-2024 rules relating to evidence. See also *supra* footnote 1185 on how this was introduced as an amendment to the original PLD-1985 proposal.

accident, provides limited, positive evidence of defect posteriority. The more time has elapsed, the more probable it has on average become that either the gradual progress of wear and tear can be considered to have been ‘normal’, which can be useful to still refute an alleged defect based on a lack of durability, or that a defect’s origin was a truly not reasonably foreseeable, intervening circumstance, which provides a basis for the posteriority defence (see *supra* nrs. 231-232 and 239).

However, the time during which a product has already been in use, is only one of potentially several elements that can be considered to assess whether a defect is according to a standard of probability posterior to the moment when the product was made available or put into service. There can be elements brought forward by the plaintiff that point to the opposite, namely defect anteriority, such as the nature of the product (see analogously *supra* nr. 233),¹⁵⁶⁸ of the defect (see also *infra* nr. 241) or of the accident. Conversely, the defendant can support his posteriority defence by offering additional, more concrete proof of a posterior defect origin. Besides negative evidence of production (and distribution) quality controls, this may also consist of other positive evidence than the product’s long period of use.¹⁵⁶⁹ For example, the nature of the product (see analogously *supra* nr. 233), of the defect¹⁵⁷⁰ or of the accident can sometimes also indicate the posterior origin of a defect.¹⁵⁷¹ Additionally, the defendant might be able to demonstrate that the product, rather than being used during a long time, has been used very intensively and possibly by several different persons, as a result of for example retransfers (see also *infra* nr. 292), product leasing or sharing. Alternatively, the defendant may provide positive evidence that the product has been repaired, modified or simply tampered with (see also *infra* nr. 415). To the extent that such other post-marketing circumstances had not been reasonably foreseeable when the product was made available or put into service, they can be pertinent to proving the posteriority defence (see *supra* nr. 239).

Moreover, the time that has passed after a product is produced but before it is actually used by a consumer, such as the time taken by a (re)distribution process, equally increase the statistical likelihood that a subsequently surfacing product defect has a posterior origin or even constitutes no defect at all. Namely, there can be during these periods of time normal wear and tear, but also improper storage or uncaredful transportation by product (re)distributors (see also *infra* nrs. 291-293).¹⁵⁷² Hence, not only the mere passing of time during the use phase

¹⁵⁶⁸ E.g., Antwerpen 18 december 2012, *Limb. Rechtsl.* 2013, 151, note E. Smeets (the nature of the product, a hip prosthesis, makes it unlikely to consider an external, posterior cause, unless there is evidence that the patient suffered from a serious accident with local impact or underwent another operation).

¹⁵⁶⁹ See *supra* nr. 195 regarding the more significant value of ‘positive’ compared to ‘negative’ evidence of defect posteriority.

¹⁵⁷⁰ E.g., OLG München 21 June 2002, 21 U 4952/01, *OLGR München* 2003, 4, *Juris*, nr. 26 (the type of alleged defect, inadequate insulation or a loose contact, make together with the long period of successful product use unlikely that the defect had an anterior nature).

¹⁵⁷¹ Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3602, 46-47.

¹⁵⁷² This is also closely tied to the important question how to interpret the posteriority defence with regards to defendants who have (re)distributed or (re)produced a product long after it was originally placed on the market by a manufacturer or importer, which is also discussed in the Chapter on re-transferred products (see *infra* nrs. 320 et seq.).

but also during preceding or subsequent (re)distribution phases provides a limited and easily refutable, but still pertinent factual presumption of defect posteriority.

Finally, the posteriority defence's assessment whether product reuse had not been reasonably foreseeable should be separated from the contributory fault defence. Although there can be an accidental correlation, the reuser's contributory fault does not have to exclude a finding that the reuse itself had been reasonably foreseeable when the product was put into circulation, and *vice versa* (see *infra* nrs. 274 and 418).

241. IDENTIFYING POSTERIORITY THROUGH THE PRODUCT DEFECT TYPOLOGY, REVISITED IN A MORE CIRCULAR AND COLLABORATIVE ECONOMY – The preceding discussion made clear that the mere fact that a product has been reused before it caused an accident, is a pertinent but not necessarily decisive element for determining whether a defect truly originated from a circumstance that had not been reasonably foreseeable when a product was made available or put into service. To further aid in this determination, especially German authors¹⁵⁷³ have pointed out that defects originating from truly posterior, intervening factors, generally appear as manufacturing defects (see also *supra* nr. 7 on the product defect typology).¹⁵⁷⁴ On the one hand, this is because the random, accidental nature of what seems to be a manufacturing defect may in fact have been the result of damage inflicted to the product at a later date, as a result of not reasonably foreseeable product misuse, storage or transportation, product modifications or other not reasonably foreseeable, posterior factors. On the other hand, this is because the other types of defects, design and information defects,¹⁵⁷⁵ remain more easily identifiable as having been already present when the product was made available or put into service, because they are by nature similarly present in every individual item of a mass production series.¹⁵⁷⁶

This distinction is useful and counterbalances in an interesting way the fact that the defendant is generally subject to a stricter liability standard in case of manufacturing defects compared to design or information defects, as argued *supra* nr. 174. However, the distinction must also be nuanced.¹⁵⁷⁷ First of all, what appears as a manufacturing defect, might of course

¹⁵⁷³ Who are intrinsically familiar with the product defect typology given the role it plays in *Produzentenhaftung* based on § 823(1) BGB (see Foerste, '2. Deliktische Haftung', § 24; Kullmann, 'Haftung aus § 823 Abs. 1 BGB', §1520; E. Van Gool, 'Overview of German product liability law' (2024) <<https://ssrn.com/abstract=4824956>> nr. 3).

¹⁵⁷⁴ Taschner and Frietsch, *Kommentar*, 135, 189; Graf von Westphalen, '3. Produkthaftungsgesetz', § 55, nrs. 12, 17-18; Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 1, nr. 35; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 1, nr. 80; P. Ehring, '§ 1 ProdHaftG' in P. Ehring and J. Taeger (eds.), *Produkthaftung und Produktsicherheitsrecht* (Nomos 2022) nr. 70; C. Förster, 'ProdHaftG § 1 Haftung' in W. Hau and R. Poseck (eds.), *BeckOK BGB* (Beck 2023) nr. 43. See also Fairgrieve et al., 'Product Liability Directive', 92; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 13.27. The limitation in German scholarship of the posteriority defence to manufacturing defects, appears to originate from a statement in the explanatory memorandum for the German PLDI legislative proposal (Deutscher Bundestag, 'Entwurf eines Gesetzes über die Haftung für fehlerhafte Produkte', BT 11. Wahlperiode, Druksache 11/2447, 14).

¹⁵⁷⁵ Furthermore, post-marketing defects are of course, by their nature, of a posterior nature. However, they fall outside the scope of EU harmonised product liability (see *supra* nrs. 7 and 184).

¹⁵⁷⁶ C. Förster, 'ProdHaftG § 1 Haftung' in W. Hau and R. Poseck (eds.), *BeckOK BGB* (Beck 2023) nr. 43.

¹⁵⁷⁷ See also Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 13.27.

actually be a manufacturing defect rather than the result of a posterior event or act.¹⁵⁷⁸ It would therefore be incorrect to be overly eager in granting the posteriority defence in case of apparent manufacturing defects. Second, as the German literature admits as well,¹⁵⁷⁹ information defects can also be created after a product was made available or put into service through incorrect changes to the product information relayed downstream (see also *infra* nr. 288). Third, even what appears as a design defect, might actually also have a posterior nature. This is because in a more circular and collaborative economy, both third-party professionals and prosumers may try to repair or refurbish a product (see also *infra* nrs. 373 et seq.) or may try to use a product or component in creating another product. Third, in case of collaborative production, products are no longer mass manufactured, which makes it more difficult to still easily identify the anterior nature of design and information defects and which therefore makes all defect types similar to manufacturing defects.

Consequently, the aforementioned distinction that links a successful posteriority defence with apparent manufacturing defects and tends to exclude it in case of design and information defects, is actually to a large extent premised on the linear and non-collaborative economic model of the consumer goods sector (see also *supra* nrs. 152-154 on the increased 'heterogeneity of products' in circular economy). In a more circular and collaborative economy, design and information defects can perfectly have a posterior nature. However, it remains true that it is easier for design and information defects to determine whether they have an anterior or posterior nature by simply comparing them with other products of the same manufacturing series. As a result, it is the manufacturing of unique products in collaborative production, which poses the greatest theoretical difficulties in evaluating the posteriority defence with regards to not only manufacturing but also design and information defects.

A final consequence of this more limited relevance of the type of product defect typology to assess the posteriority defence, is that it becomes even more important to focus on any available, more direct evidence of a posterior defect origin, like proof that a product has been manipulated or badly damaged in circumstances that had not been reasonably foreseeable when the product was made available or put into service. In addition to recognition of certain facts by the plaintiff, direct evidence of posterior defect origins may also be provided through data collected and transmitted by a so-called 'smart' product or become available to some extent in the future through digital product passports (see *infra* nrs. 343-346).

242. ART. 11(2)A-C PLD-2024'S EXCEPTION FOR DIGITAL SERVICES, SOFTWARE UPDATES AND UPGRADES WITHIN THE MANUFACTURER'S CONTROL: BENEFITS FOR PRODUCT LIFETIMES, BUT ALSO AN UNCERTAIN DURATION – As one of the most significant proposals to update current harmonised product liability's more static nature to the more dynamic, digital context, art. 11(2)a-c PLD-

¹⁵⁷⁸ E.g., this is most clear when the manufacturing defect is inside sealed packaging or metal encasing (*ibid.*).

¹⁵⁷⁹ Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 1, nr. 35; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 1, nr. 80; P. Ehring, '§ 1 ProdHaftG' in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 70. See also Graf von Westphalen, '3. Produkthaftungsgesetz', § 46, nr. 36.

2024 provides an exception to the posteriority defence. This new rule applies to defects that either result from digital services or software supplied ‘within the manufacturer’s control’¹⁵⁸⁰ or that result from a lack of such supply of software ‘updates or upgrades’¹⁵⁸¹ that had been necessary to maintain the product’s safety (see *supra* nrs. 25.c and 196).¹⁵⁸² This last part of the exception actually creates a *de facto* obligation for manufacturers to update or upgrade software aspects which are necessary to maintain (cyber)security of their software-dependent products.¹⁵⁸³ From the perspective of circular economy, this exception to the posteriority defence and *de facto* obligation to update or upgrade safety software, helps to combat technological obsolescence of products.¹⁵⁸⁴ Hence, it contributes to extending the useful lifetime of software-dependent products, which is a very rare, niche example of a product liability rule contributing to more sustainable development. In turn, the extended lifetime of these products slightly increases the possibility for (reasonably foreseeable) reuse of products, which has its own ramifications for assessing a potential defect due to insufficient product durability, as already discussed *supra* nr. 232.

Given this important benefit provided by this proposed ‘digital exception to the posteriority defence’, it is important to figure out its duration. Art. 11(2) PLD-2024 mentions no limit, which would mean in practice that it applies as long as the extinction period of currently in principle 10 years (see *infra* nrs. 244 et seq.) has not yet expired.¹⁵⁸⁵ For many software-dependent products, such a duration for the exception to the posteriority defence for digital services and software supplied within the manufacturer’s control and for a lack of such software updates or upgrades necessary to maintain safety, this would seem quite long and arbitrary.¹⁵⁸⁶ Recital 51 PLD-2024 hints at the “*lifecycle*” of a product as a more flexible

¹⁵⁸⁰ Art. 4(5) PLD-2024. See also on the interpretation of this concept *infra* nrs. 402-404.

¹⁵⁸¹ The distinction between both is explained by KOOLEN with regards to the use of only the ‘update’ concept in the Consumer Sales Directive 2019/771, as discussed further in this section. C. Koolen, *Innovation and consumer protection in Internet of Things ecosystems* (KU Leuven 2023) 213: “(i) Updates are understood as a set of changes to software aimed at maintaining the features and performance of the smart device, thereby meeting the consumer’s reasonable expectations regarding the smart device. (ii) Upgrades are understood as a set of changes to software aimed at improving the features and performance of the smart device, thereby exceeding the consumer’s reasonable expectations regarding the smart device.”

¹⁵⁸² See also 51 PLD-2024.

¹⁵⁸³ J. De Bruyne, O. Dheu and C. Ducuing, ‘The European Commission’s Approach To Extra-Contractual Liability and AI - An evaluation of the AI liability directive and the revised product liability directive’ (2023) 51 *Computer Law & Security Review* 105894, 14; P. Hacker, ‘The European AI liability directives – Critique of a half-hearted approach and lessons for the future’ (2023) 51 *Computer Law & Security Review* 105871, 28.

¹⁵⁸⁴ See analogously relating to the comparable ‘update-obligation’ in the Consumer Sales Directive 2019/771, as discussed further in this section E. Van Gool and A. Michel, ‘The New Consumer Sales Directive 2019/771 and Sustainable Consumption: a Critical Analysis’ (2021) 10 *Journal of European Consumer and Market Law* 136, 139; A. Michel, *Premature Obsolescence: In Search of an Improved Legal Framework* (Intersentia 2023) 497. See *supra* footnote 279 on premature obsolescence in general.

¹⁵⁸⁵ Art. 17 PLD-2024. See *supra* nr. 203 on the extinction period in general. See *infra* nr. 248 on the starting point of the extinction period in the context of art. 11(2)a-c PLD-2024’s digital exception to the posteriority defence.

¹⁵⁸⁶ This could become even more problematic if the extinction period would be extended in the future. See *infra* nr. 247 on a proposal to improve the extinction period *de lege ferenda*.

duration, when it refers in this context to a product safety obligation in medical devices regulation.¹⁵⁸⁷ The European Parliament seized on this suggestion, by proposing to add “*for the reasonably expected lifespan of the product*” to art. 10(2)b-c of the PLD Proposal 2022.¹⁵⁸⁸ However, rather curiously, such an amendment has not been included in the final version of the PLD-2024 nor has a clear alternative solution been adopted.

The final adopted version of recital 51 PLD-2024 states that “[t]his Directive does not itself impose any obligation to provide updates or upgrades.” This probably confirms merely that art. 11(2)a-c PLD-2024’s exception to the posteriority defence establishes a *de facto* update or upgrade obligation, which Germans would call an *Obliegenheit*.¹⁵⁸⁹ Alternatively, however, this could mean that the update or upgrade obligations pursuant to art. 11(2)a-c PLD-2024 would only exist when required by specific regulation. Yet, this would void this provision of most its significance and it is unconvincing that this would not be stated explicitly in the Directive’s operative part. It would also run contrary to the accident-prevention and risk-allocation functions of the PLD, which generally benefit from this exception to the posteriority defence for potentially accident risk-generating aspects that temporarily still remain within the manufacturer’s control. After all, said manufacturer is well-placed to minimize these particular accident risks under his control as well as to bear the associated liability risk which it can charge through product prices through the relatively efficient solution of ‘quasi-strict’ product liability (see *supra* nrs. 106, 108 and 137). As a result, it appears that the *de facto* software update or upgrade obligation now extends for the full duration of the applicable extinction period of currently in principle 10 years.

Nevertheless, it continues to seem more desirable that an amendment would confirm that the duration of this ‘digital exception to the posteriority defence’ is instead determined by the reasonably expected lifespan of a product. This finds current support in the still remaining reference in recital 51 PLD-2024 to the lifecycle of products. From a broader legal perspective, there are in addition to the aforementioned risk-allocation and accident-prevention function additional policy reasons to accept that the exception to the posteriority defence for defects resulting from supplied software updates or upgrades or the absence thereof if those had been necessary to maintain safety, should last only for the duration of the concerned product’s reasonably expected lifespan. This would align art. 11(2)a-c PLD-2024 with the already existing ‘update obligation’¹⁵⁹⁰ for maintaining objective contractual conformity in ‘goods with

¹⁵⁸⁷ See Annex I(3) Parliament and Council Regulation 2017/745/EU of 5 April 2017 on medical devices [2017] OJ L117/1, 94.

¹⁵⁸⁸ Art. 10(2) amended draft PLD Proposal 2022 in EU Parliament, ‘Report of 12 October 2023 on the proposal for a directive of the European Parliament and of the Council on liability for defective products’ A9-0291/2023, 59.

¹⁵⁸⁹ A. Schmidt, ‘Obliegenheit’ in K. Weber (ed.), *Rechtswörterbuch* (Beck 2023), BeckOnline: “In einem Schuldverhältnis kann neben der Schuld der einen oder beider Seiten auch eine Pflicht des Gläubigers zur Mitwirkung bei der Erfüllung des Schuldverhältnisses bestehen (zB die Pflicht bei Bestellung eines Porträts, dem Maler Modell zu stehen). Diese Mitwirkungspflicht ohne eigentlichen Schuldcharakter wird Obliegenheit genannt. Ebenso besteht für einen Geschädigten die Obliegenheit, den Schaden so gering wie möglich zu halten. [...]”

¹⁵⁹⁰ Note that the objective conformity requirement of art. 7(3)-(4) Consumer Sales Directive 2019/771 only

digital elements', which has been introduced by art. 7(3)-(4) Consumer Sales Directive 2019/771.¹⁵⁹¹ The relevant duration for this update obligation for a single supply of digital content or services, is the period of time during which "*the consumer may reasonably expect*" such updates.¹⁵⁹² Moreover, the safety assessment of EU general product safety regulation is also evaluated in light of the "*reasonably foreseeable conditions of use, including the actual duration of use*" of a product.¹⁵⁹³ As a result, fixing the duration of art. 11(2)a-c PLD-2024's 'digital exception to the posteriority defence' to the reasonably expected lifetime of the product, would also offer considerable benefits of legal coherence, in addition to the aforementioned benefits aligned with the two most important criteria of this dissertation's normative framework. Interestingly, this would also align with how this dissertation suggests to amend the current extinction period, as argued *infra* nr. 247.

Note that his alternative new extinction period proposed *de lege ferenda*, would even be slightly longer than the product's reasonably expected lifespan due to an extension with an additional 'safety margin' (see *infra* nr. 247.d). Yet, it would be preferable if the duration of art. 11(2)a-c PLD-2024's digital exception to the posteriority defence would remain simply limited to the aforementioned reasonably expected lifespan of the product, simply because the 'safety margin' is intended to still facilitate claims when a product accident occurs towards the end of product's expected lifetime.

243. INTERPRETATION VIS A VIS QUASI-PRODUCER/ SUPPLIER? – Finally, it is important to signal here the legal uncertainty surrounding the application of the posteriority and several other defences under the PLD-1985, when invoked by another defendant than the original product's manufacturer. Although this often-ignored legal question theoretically already rises present

refers to an 'update' obligation and not an 'upgrade' obligation, in contrast to art. 11(2)b-c PLD-2024. Cf. C. Koolen, *Innovation and consumer protection in Internet of Things ecosystems* (KU Leuven 2023) 213.

¹⁵⁹¹ See regarding this update obligation of EU consumer sales law P. Kalamees, 'Goods with Digital Elements And The Seller's Updating Obligation' (2021) 12 *Journal of Intellectual Property, Information Technology and Electronic Commerce Law (JIPITEC)* 131, 131-142; A. Janssen, 'The Update Obligation for Smart Products: Time Period for the Update Obligation and Failure to Install the Update' in S. Lohsse, R. Schulze and D. Staudenmayer (eds.), *Smart Products* (Hart & Nomos 2022) 91-108; C. Koolen, *Innovation and consumer protection in Internet of Things ecosystems* (KU Leuven 2023) 213-225. Note that there may also be a subjective conformity requirement relating to software updates (art. 6(d) Consumer Sales Directive 2019/771).

¹⁵⁹² Art. 7(3)a Consumer Sales Directive 2019/771: "*for the period of time [...] that the consumer may reasonably expect given the type and purpose of the goods and the digital elements, and taking into account the circumstances and nature of the contract*". This must be at least the duration of the legal guarantee period of two years but it can also extend beyond that period. See recital 31 Consumer Sales Directive 2019/771; A. Janssen, 'The Update Obligation for Smart Products: Time Period for the Update Obligation and Failure to Install the Update' in S. Lohsse, R. Schulze and D. Staudenmayer (eds.), *Smart Products* (Hart & Nomos 2022) 100; C. Koolen, *Innovation and consumer protection in Internet of Things ecosystems* (KU Leuven 2023) 214-217.

¹⁵⁹³ Art. 2(b) General Product Safety Directive 2001/95/EC 2001/95; art. 3(2) General Product Safety Regulation 2023/988/EU. See T. Klindt, *Produktsicherheitsgesetz: Kommentar* (3rd edn., Beck 2021) § 2, nr. 229. An obligation to take a corrective measure to remediate product safety may consist of "*software updates*" as implied by art. 37(3) General Product Safety Regulation 2023/988/EU. See also T. Klindt, *Produktsicherheitsgesetz: Kommentar* (3rd edn., Beck 2021) § 26, nr. 24a.

when an importer, quasi-producer or especially a supplier are held liable for an accident caused by a reused product, it is most acute in case of product redistribution like retransfers, due to the longer time delay and intervening first use phase between the time when the product was originally put into circulation and the involvement of the redistributor. Hence, this issue is discussed in detail in the Chapter on retransferring *infra* nrs. 317-322.

§ 4. The ten-year extinction period, its limitations and how it can be improved

244. THE GOALS UNDERLYING THE EXTINCTION PERIOD AND ITS IMPORTANCE IN THE CONTEXT OF PRODUCT REUSE – In addition to the defect assessment and posteriority defence, the ten year extinction period of art. 11 PLD-1985 and art. 17 PLD-2024 is a third key component of applying harmonised product liability to accidents caused by products that are no longer new.

When it originally proposed this extinction period in 1976, the Commission argued that “[p]roducts wear out in the course of time. It therefore becomes more and more difficult to establish whether the defect causing the damage already existed at the time the article left the producer’s production sphere or arose later through wear.”¹⁵⁹⁴ This is more convincing than several other, theoretically inaccurate arguments raised in favour of the extinction period in the same proposal, in recitals 11 PLD-1985 and 57 PLD-2024 and repeated in a lot of the literature.¹⁵⁹⁵ Indeed, with the passing of time, evidence relating to the defectiveness of the product prior to being made available or put into service becomes scarcer and less dependable.¹⁵⁹⁶ This

¹⁵⁹⁴ PLD Explanatory Memorandum 1976, nr. 28.

¹⁵⁹⁵ These are the arguments holding that new, more advanced products can appear after a product has been put into circulation, that new safety standards can be adopted and that the defendant can be held liable for development risks (PLD Explanatory Memorandum 1976, nr. 28), which are often echoed in the literature and still summarized in recital 11 PLD-1985 and recital 57 PLD-2024. These arguments are incorrect because all of them have a post-marketing nature, beyond the scope of art. 11(2) PLD-2024. This makes them irrelevant to harmonised product liability, because product defectiveness, including for development risks, must be evaluated on the moment when a product has been put into circulation (art. 6(1)c(2) PLD-1985; art. 7(2)e(3) PLD-2024). It can only have some limited relevance when considering the practical and psychological difficulties of adopting the perspective of the time when a product was placed on the market or put into service and to overcome ‘hindsight bias’ when administering *ex post* liability in general. Moreover, it should be noted regarding development risks that arts. 7(e) and 15(1)b of the final adopted PLD-1985 introduced the optional development risk defence (arts. 11(1)e and 18 PLD-2024), which was not yet present when the extinction period was introduced in the 1976 proposal. See also more critically Borghetti, *La responsabilité du fait des produits*, 491; Fairgrieve et al., ‘Product Liability Directive’, 92-93; Fairgrieve et al., ‘Product Liability Directive’, 92-93; P. Ehrling, ‘§ 13 ProdHaftG’ in P. Ehrling and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 2.

¹⁵⁹⁶ However, an alternative that can make limitation and extinction periods to some extent redundant, can simply consist of applying the aforementioned rule of thumb according to which a longer period of past use can provide a limited factual presumption of defect posteriority. See *supra* nr. 240 and *infra* nr. 246.e.

argument, which is also raised by doctrinal legal scholars,¹⁵⁹⁷ is one of the main reasons why at least some temporal limitation to liability is ultimately considered to be economically efficient, because it significantly reduces administrative costs and reduces the very undesirable outcome of factually incorrect judgements. While this has already been discussed *supra* nr. 141.a from the perspective of economic efficiency, it must be noted that evidentiary difficulties also provide an argument in terms of corrective justice in favour of extinction periods. After all, even when counting on the risk-internalisation principle, no corrective justice and rather the opposite is achieved in case of an incorrect decision (cf. *supra* nrs. 97 et seq. and 128.c).

Yet, the most important reason for the extinction period is simply, as the Commission in 1976 and recitals argue as well, that “[i]t would be unreasonable to burden the producer beyond a certain period with an ever-increasing risk of damage.”¹⁵⁹⁸ Indeed, the longer the period during which liability can be imposed after a product has been placed on the market or put into service, the higher the statistical likelihood that eventually an accident occurs during the product’s lifetime and that a claim is made. The issue with a perpetual liability risk is that it is impossible to perfectly assess, manage or insure. This would make defendants more risk-averse compared to this liability risk and make it very challenging to spread this risk through product prices and possibly through liability insurance, which would undermine the efficient risk-allocation rationale of harmonised product liability (see *supra* nrs. 106 and 113). Furthermore, this potentially unlimited and difficult to insure liability risk could result in inefficient over-deterrence, in addition to the aforementioned increase in administrative costs and potential increase in more incorrect judgement (see *supra* nr. 141.a). This quite strong economic case for having at least some temporal limitations to (product) liability, is also reflected in the arguments of European courts and scholars. They confirm that the extinction period simply serves above all the basic goal, common to all limitation and extinction periods, of providing legal certainty,¹⁵⁹⁹ striking a balance between the interests of both parties and facilitating insurability and amortisation through a temporal demarcation of liability (see also *infra* nr. 246).¹⁶⁰⁰

¹⁵⁹⁷ See sources cited *infra* footnote 1601.

¹⁵⁹⁸ PLD Explanatory Memorandum 1976, nr. 28. See also recital 11 PLD-1985; recital 57 PLD-2024.

¹⁵⁹⁹ CJEU 9 February 2006, C-127/04, *Declan O’Byrne*, ECLI:EU:C:2006:93, nr. 26: “As is clear from the 10th recital in the preamble to the Directive, the aim of that provision is to satisfy the requirements of legal certainty in the interests of the parties involved.”

¹⁶⁰⁰ See CJEU 10 May 2001, C-203/99, *Henning Veddfald*, ECLI:EU:C:2001:258, nr. 26; A-G. Geelhoed, opinion C-127/04, 2 June 2005, ECLI:EU:C:2005:349, nr. 29; A-G. Trstenjak, opinion C-358/08, 8 September 2009, ECLI:EU:C:2009:254, nrs. 49, 77; Markovits, *La Directive C.E.E. du 25 juillet 1985*, 247-248; Borghetti, *La responsabilité du fait des produits*, 491-492; A. Guégan-Lécuyer, ‘La mise en circulation. Rapport français’ in GRERCA (ed.), *La responsabilité du fait des produits défectueux* (IRJS 2013) 291; Brun, *Responsabilité civile extracontractuelle*, 5th edn., 546-547; Wagner, *MüKo BGB*, ‘Produkthaftungsgesetz’, § 13, nr. 1. These arguments were also raised in the explanatory memorandum of the Strasbourg Convention, which included an extinction period that served as the blueprint for art. 11 PLD-1985 (Council of Europe, ‘Explanatory Report to the European Convention on Products Liability in regard to Personal Injury and Death’, 27 January 1977, European Treaty Series nr. 19, 12-13). See also *infra* nr. 246.

Other, closely related general reasons for temporal limitations to product liability, are providing socio-judicial peace and the aforementioned reason of limiting the evidentiary challenges in adjudicating old claims.¹⁶⁰¹ Additionally, it is worth noting that the fact that the safety expectations applicable to harmonised product liability are generally those that exist at the time when the product was first made available or put into service (see *infra* nrs. 310-316), means that these gradually become normatively outdated standards, which further warrants some temporal limitation.¹⁶⁰²

In practice, the extinction period is often decisive, not least due to its inflexible nature and relatively brief duration. If ten years have passed after the product was placed on the market or put into service (see *supra* nr. 203 on art. 17(2) PLD-2024's extension to 25 years in case of latent personal injuries *infra* nrs. 331-333 on the application vis à vis different defendants) and if no court proceedings have been initiated, then the defendant is irrevocably off the hook. Two aspects are important to emphasize in this regard.

First of all, the extinction period does not require that a product has been in use during ten years, let alone that it should have been a product that most consumers considered to have been obsolete. Because the CJEU interprets 'putting into circulation' in art. 11 PLD-1985 as the moment when a product exits manufacturing and enters the marketing phase,¹⁶⁰³ which art. 17 PLD-2024 confirms by referring to the new, defined concept of 'placing on the market',¹⁶⁰⁴ it is theoretically possible that the extinction period even expires for products that have been in distribution and storage during ten years and have never been actually used.¹⁶⁰⁵ Nevertheless, in practice, the extinction period is of course most important in cases where products are effectively used during longer periods of time, because this increases the likelihood that the period of in principle ten years has already passed when a product accident occurs or that this happens shortly thereafter. The reuse of products by consumers is therefore a prime situation where the extinction period can apply.

Second, the extinction period operates completely independently of the conduct of the defendant or the nature of the defect. The same ten-year extinction period equally applies to situations where it is abundantly clear that the defect has an anterior nature,¹⁶⁰⁶ as well as to situations where the defendant has acted negligently, recklessly or even intentionally.¹⁶⁰⁷ As a consequence, when harmonised product liability is time-barred due to the extinction period, there is a reasonable possibility that injured parties can still obtain reparation through

¹⁶⁰¹ See Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 13, nr. 1. See also in general A. Collin, *Pour une conception renouvelée de la prescription* (Lextenso éditions 2010) 3-65; D. Deferme, *Bevrijdende verjaring in het privaatrecht* (die Keure 2023) 9-74.

¹⁶⁰² See Graf von Westphalen, '3. Produkthaftungsgesetz', § 53, nr. 14.

¹⁶⁰³ See *supra* nr. 203 and *infra* nrs. 331-333.

¹⁶⁰⁴ See also *infra* nr. 412.a on the exact interpretation of this new concept in EU product liability law.

¹⁶⁰⁵ See M. Bacache-Gibeili, *La responsabilité civile extracontractuelle* (3rd edn., Economica 2016) 904-905; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., 761.

¹⁶⁰⁶ This of course further undermines the aforementioned argument that the extinction period is intended to complement the posteriority defence.

¹⁶⁰⁷ *Contra* art. 1245-15 CC FR. This exclusion of the extinction period 'in case of the producer's fault' in the French PLDI, violates in my opinion the PLD-1985's maximum harmonisation. See *supra* footnote 1238.

national liability law.¹⁶⁰⁸ This depends of course not only on the material requirements of national, non-harmonised product liability theories *sensu lato* but also on the length of the applicable national limitation and extinction periods.

245. PRACTICAL APPLICATION OF THE EXTINCTION PERIOD IN THE CONTEXT OF REUSED PRODUCTS – Like the posteriority defence (see *supra* nr. 242), there is also a potential difference in the application of the extinction period depending on whether it is invoked by a supplier, quasi-producer or another party who is not the product's original producer. This relates to the interpretation of the pivotal concept 'putting into circulation' and its replacement terms in the PLD-2024. A discussion in detail follows *infra* nrs. 331-333 in the Chapter on retransferred products.

In order to precisely calculate the starting point of the extinction period, it is useful that a product has 'traceability' information referring to a particular production series, batch number, an individual product identification number or simply a manufacturing date. Especially for products that are already placed on the market, this information is not always available. Possible solutions provided by general product safety 'traceability requirements' and future digital product passports, are discussed *infra* nrs. 297 and 335, where it is also considered that information on packaging and in product documentation is relatively easily lost during a longer product lifecycle and that even markings on products themselves can be lost due to wear and tear or product accidents.¹⁶⁰⁹ Even when certain traceability information like a batch or serial number still accompanies a reused product which has caused an accident, it remains necessary for a defendant to adequately keep records relating to the marketing date of individual products, in order to successfully prove the extinction period's starting date.¹⁶¹⁰ Such records therefore have to be kept in principle during at least ten years.¹⁶¹¹

246. QUESTIONING THE EXTINCTION PERIOD, ESPECIALLY BUT NOT ONLY IN A MORE CIRCULAR ECONOMY WITH LONGER PRODUCT LIFETIMES – The extinction period of art. 11 PLD-1985 is relatively brief, irrevocably starts once a product is put into circulation, cannot be suspended except through initiated court proceedings and applies uniformly regardless of particular circumstances (see *supra* nrs. 203 and 244). It is therefore worthwhile to critically examine it further and to search for ways how it can be improved, in particular but not only for the specific context of longer product lifetimes in a more circular economy.

¹⁶⁰⁸ Conversely, the extinction period's short and inflexible nature risks undermining the harmonising effect of the PLD-1985. See Borghetti, *La responsabilité du fait des produits*, 492; Fairgrieve et al., 'Product Liability Directive', 94.

¹⁶⁰⁹ Besides making it more difficult to prove the extinction period's starting date, these elements can make it also more difficult to simply identify manufacturers, distributors and other harmonised product liability defendants for accidents caused by reused products. See *supra* nr. 228.

¹⁶¹⁰ See Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 17.156. This is of course more difficult for prosumers who happen to be subject to primary or secondary harmonised product liability (cf. *supra* nrs. 197-198).

¹⁶¹¹ Howells, 'strict liability', nr. 4.316.

- a. Several authors have criticised the current extinction period as unfair to injured parties, especially when damage caused by a defective product only becomes apparent after a long period of time, such as in case of various biomedical or chemical products.¹⁶¹² In light of the *Howald Moor* decision, the ECtHR might even find that the current extinction period violates art. 6(1) ECHR, because it can even expire before injured parties have become aware of eventual damage.¹⁶¹³ It is important to emphasize that this issue is intrinsically linked to art. 11 PLD-1985's nature as an extinction which already starts running when a product is marketed, prior to an accident, which is radically different from a limitation period like art. 10 PLD-1985, which only starts when the injured party has the necessary minimum information to theoretically start a court proceeding. As an attempted improvement, art. 17(2) PLD-2024 now extends the extinction period to a period of 25 years when a person has been unable to initiate proceedings within the regular ten year period due to the latency of personal injuries which he suffered.¹⁶¹⁴ Of course, this only alleviates to a significant extent situations of latent personal injuries and not the overall, relatively brief nature of the extinction period in other situations.
- b. Another fundamental issue of the in principle ten-year extinction period, is its uniform nature. For certain perishable items, it seems unnecessarily long. As several authors have already noted, it is conversely too short for many durable consumer goods, like household appliances, cars, furniture, etc.¹⁶¹⁵ In a more circular economy where products are increasingly reused and other product lifespan extension strategies are applied, this arbitrary but absolute extinction period becomes even more

¹⁶¹² Borghetti, *La responsabilité du fait des produits*, 492; G. Pignarre and S. Pimont, 'L'action en responsabilité et la prescription. Rapport français' in GRERCA (ed.), *La responsabilité du fait des produits défectueux* (IRJS 2013) 355, 360; D. Fairgrieve, G. Howells and M. Pilgerstorfer, 'The Product Liability Directive: Time to get Soft?' (2013) 4 *Journal of European Tort Law* 1, 14-15; Delforge, 'Le défaut de sécurité au sens de la loi du 25 février 1991', 353; J.-S. Borghetti, 'La charge de la preuve du point de départ de la prescription dans la responsabilité du fait des produits défectueux (note Cass. 10 July 2013)' (2014) *Revue des Contrats* 40, 40; M. Bacache-Gibeili, *La responsabilité civile extracontractuelle* (3rd edn., Economica 2016) 904-906; Brun, *Responsabilité civile extracontractuelle*, 5th edn., 546. See also the literature cited in the next footnote.

¹⁶¹³ ECtHR 11 March 2014, *Howald Moor et autres c. Suisse*, nrs. 52067/10 and 41072/11, HUDOC (10-year extinction period in Swiss law barring claim for reparation of latent damage caused by asbestos exposure, violating art. 6(1) ECHR). See also with regards to art. 11 PLD-1985 Howells, 'strict liability', nr. 4.320; M. Bacache-Gibeili, *La responsabilité civile extracontractuelle* (3rd edn., Economica 2016) 905-906; Viney, Jourdain and Carval, *Les conditions de la responsabilité*, 4th edn., 64; Dubuisson et al., *Chronique de jurisprudence 2008-2020 – Volume 1*, 407-408.

¹⁶¹⁴ Note that the European Parliament proposed to extend it in these circumstances to 30 years, at least if the injured party exercised all due care to timely initiate proceedings, while the Council omitted this last, subjective requirement but limited the extension to 20 years. The original art. 14(3) PLD Proposal 2022 had limited the extension to a measly 15 years. See the text versions cited *supra* footnote 1241.

¹⁶¹⁵ Markovits, *La Directive C.E.E. du 25 juillet 1985*, 251; Taschner and Frietsch, *Kommentar*, 422-423; Fairgrieve et al., 'Product Liability Directive', 95; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 285; I. Lutte and J.-L. Fagnart, 'Livre 33bis' in X. (ed.), *Responsabilités. Traité théorique et pratique* (Kluwer 2020 update) 59.

problematic.¹⁶¹⁶ It completely precludes any application of product liability in cases where the public may still have legitimate safety expectations regarding certain products after more than ten years have passed since they were ‘put into circulation’.

- c. These issues with the current extinction period can be somewhat different for products that have been redistributed or reproduced in the course of their lifecycle. In those cases, it makes a significant difference if a new extinction period would start at the time of redistribution or reproduction for claims against these redistributors or reproducers. As already mentioned, this is discussed in more detail *infra* nrs. 331-333.
- d. Prior to the PLD-2024, there have already been multiple proposals to amend the current extinction period of art. 11 PLD-1985. The European Parliament proposed in 1998 to generally extend the period to 20 years when latent defects do not appear within the initial ten-year period.¹⁶¹⁷ Other suggestions have been, amongst others, to extend the extinction period to 20 years in all cases, to exclude extinction when damage only manifests itself after expiration of the statutory period or to simply abrogate the extinction period altogether.¹⁶¹⁸
- e. The last suggestion of completely abrogating the extinction period is interesting, because it would allow to fully leverage the exonerating potential of the previously discussed rule of thumb associated with the posteriority defence, which holds that the chance of a successful defence increases the more intensively a product has been used or the more time has passed between the moment when a product has been put into circulation and the moment when it causes an accident (see *supra* nr. 240). However, such a solution would still result in a theoretically everlasting liability risk in cases where the available evidence is insufficient to conclude that the defect probably had a posterior origin.

Such a complete absence of any extinction period seems undesirable. After all, as already discussed *supra* nrs. 141.a and 244, there are in terms of risk-allocation, accident-prevention and limiting administrative costs significant efficiency benefits in having some definitive temporal limitation to liability based on the PLDI. And there are even corrective justice arguments in favour of having an extinction period that limits the risk of factually incorrect judgements (244). The extinction period is also for defendants a ‘counterbalance’ for the ‘quasi-strict’ nature of harmonised product liability and the

¹⁶¹⁶ See E. Van Gool, ‘De nieuwe richtlijn productaansprakelijkheid en circulaire economie’ (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 413-414.

¹⁶¹⁷ European Parliament, ‘Approval of the Proposal for a European Parliament and Council Directive amending Council Directive 85/374/EEC (COM(97)0478, A4-0326/98)’ [1998] OJ C359/25, 26 proposed to insert an art. 11(2) PLD-1985 stating: “If because of a hidden defect the damage does not occur until after the expiry of a period of 10 years, the rights conferred upon the injured person pursuant to this Directive shall not be extinguished until after the expiry of a period of 20 years from the date on which the producer put the product into circulation.”

¹⁶¹⁸ Suggestions listed by E. Savaux, ‘Questions - Réponses’ in GRERCA (ed.), *La responsabilité du fait des produits défectueux* (IRJS 2013) 443.

presumption of defect anteriority,¹⁶¹⁹ which are all undeniably part of the political compromise underlying the Directives.

247. AN IMPROVED EXTINCTION PERIOD *DE LEGE FERENDA* BASED ON REASONABLY EXPECTED PRODUCT LIFESPANS – The preceding section established that the current extinction period, even with art. 17(2) PLD-2024's extension for latent personal injuries, is imperfect and not fit for purpose, especially in a more circular economy. However, various compelling reasons based on this dissertation's normative framework have also been discussed *supra* nrs. 141 and 244 which make clear that having an extinction period remains nevertheless desirable for reasons of efficiency and even corrective justice.

This dissertation argues that the key for finding a more suitable extinction period *de lege ferenda* consists of abandoning the premise of having a single, fixed extinction period with an arbitrary duration. VERHOEVEN has proposed to adopt instead the expected lifespan of an individual product, as assessed at the time when the product is placed on the market or put into service, as a new, more flexible extinction period for harmonised product liability.¹⁶²⁰ As advocated earlier,¹⁶²¹ I am strongly in favour of this solution, for which I outline below the main arguments. However, it is important to note that the expected lifespan of a concrete product should only become the basis of a slightly longer extinction period, as outlined below.

- a. The main argument in favour of this approach is because it overcomes the issues of current arts. 11 PLD-1985 and 17 PLD-2024 discussed *supra* nr. 246.a-b. A fixed, uniform extinction period, even when differentiated into two or three separate periods for different product categories, will always either be significantly too long or significantly too short in countless individual cases. And this issue will only become worse when the possibilities increase for a specific product to have an even longer useful lifespan as a result of accidental circular strategies. This can be avoided by a more tailored and flexible solution.
- b. Second, the perceived disadvantages of this approach are in my opinion limited or at least manageable and less significant than proponents of a single, fixed extinction period might believe. The counterargument that it would provide insufficient legal certainty, which can increase administrative costs and indirectly diminish the efficiency of other product liability functions,¹⁶²² seems less convincing when considering how other sets of closely related EU rules adopt a similar, flexible temporal limitation, without apparently noteworthy concerns about legal certainty and increased costs of product liability proceedings.

¹⁶¹⁹ See Graf von Westphalen, '3. Produkthaftungsgesetz', § 53, nr. 14; Fairgrieve et al., 'Product Liability Directive', 93; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 13, nr. 1.

¹⁶²⁰ Verhoeven, *Productaansprakelijkheid en productveiligheid*, 285-286.

¹⁶²¹ E. Van Gool, 'De nieuwe richtlijn productaansprakelijkheid en circulaire economie' (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 414.

¹⁶²² An increase in administrative costs also increases the distortion in product liability's price-signalling function (see *supra* nr. 110.e). Furthermore, more legal uncertainty might also lead to inefficient 'overdeterrence' above the optimal standard of care, especially under a stricter liability rule (see *supra* nrs. 108.c and 141.a).

For example, EU general product safety regulation determines that what constitutes a ‘safe product’ must be determined in light of a product’s “*normal or reasonably foreseeable conditions of use, including the actual duration of use*”.¹⁶²³ This operates as a case-specific determination of an ultimate temporal limitation to the post-marketing requirements imposed by this regulatory framework on producers and distributors (see *supra* nr. 10), which was not identified as problematic in the recent legislative review leading up to the General Product Safety Regulation 2023/988/EU.

Likewise, the Netherlands and Finland have based the duration of their consumer sales law legal guarantee period on the expected lifespan of each concrete consumer good.¹⁶²⁴ Elsewhere, I have argued together with MICHEL that such a fully differentiated legal guarantee period should be adopted in other Member States or at the EU-level, because it fits better with the evolving nature of longer product lifetimes and with the aforementioned rules of EU product regulation.¹⁶²⁵ It is important to note that, in both cases, the operation in practice of these flexible, open-ended periods is facilitated by various forms of ‘soft law’, most notably regularly updated industry lists of expected lifetimes for different product types.¹⁶²⁶ These only provide indicative durations, which are helpful to limit administrative costs. Yet, these can still be challenged in an individual case when it can be argued that a specific period is not or no longer representative of a particular product’s expected lifetime when it was placed on the market or put into service, which ensures that the applicable extinction periods remain sufficiently accurate in an evolving economic context.

- c. This last point brings us to a third argument. This flexible, product-specific approach is complementary with expanding EU Ecodesign regulation, which now starts imposing minimum durability requirements for new products of different categories, as discussed *infra* nr. 251. It would become increasingly odd that harmonised product liability would continue imposing a uniform, fixed extinction period, while for more and more products when they are placed on the market or put into service EU law would simultaneously require a concrete, better informed minimal durability through Ecodesign.
- d. Finally, this dissertation proposes to not simply consider the average expected lifespan of a particular product, at the time when it is placed on the market or put into service, as the relevant duration of the new extinction period. Rather, it advocates to add an additional ‘safety margin’ on top of this period. The duration of this extra ‘safety margin’ can tentatively be fixed at 25% of the particular product’s reasonably expected lifespan

¹⁶²³ Art. 2(b) General Product Safety Directive 2001/95/EC 2001/95; art. 3(2) General Product Safety Regulation 2023/988/EU. See also *infra* footnote 1628.

¹⁶²⁴ Arts. 7:17(2) and 7:23 Burgerlijk Wetboek (Netherlands); § 16 Kuluttajansuojalaki 20.1.1978/38 (Finland).

¹⁶²⁵ E. Van Gool and A. Michel, ‘The New Consumer Sales Directive 2019/771 and Sustainable Consumption: a Critical Analysis’ (2021) 10 *Journal of European Consumer and Market Law* 136, 142.

¹⁶²⁶ See, e.g., in the Netherlands UNETO-VNI, ‘Tabel met gemiddelde gebruiksduurverwachtingen’ (2014) <<https://www.technieknederland.nl/stream/richtlijnenafschrijvingsmethoden>>.

with a minimum period of one year, although the precise duration of this duration is less important than the underlying idea.

On the one hand, this extra ‘safety margin’ corresponds with the possibility of still reasonably foreseeable ‘misuse’ of said product, which is not only fundamental for harmonised product liability’s defect assessment but also for the posteriority defence, as examined *supra* nrs. 183 and 239. Among others, this is indispensable to reconcile this new extinction period with the circular strategy of product reuse. After all, the reasonably foreseeable (mis)use of a product implies that a product can to some extent be used beyond its reasonably foreseeable lifespan (see *supra* nr. 232).¹⁶²⁷ Moreover, also the aforementioned, flexible temporal limitation to general product safety requirements incorporates a similar ‘safety margin’.¹⁶²⁸ This approach thus allows to even better integrate this extinction period, based on expected product lifetimes, in the overall theoretical structure of harmonised product liability, by considering how product liability extends to a still reasonably foreseeable and with circular product reuse aligned longer use of a product, marginally beyond the expected average lifetime when it was initially placed on the market or put into service.

On the other hand, this necessary ‘safety margin’ reflects the fact that the extinction period requires that court proceedings must be initiated prior to its expiration.¹⁶²⁹ In other words, when harmonised product liability law wants to meaningfully protect persons injured by products when these are used during their still reasonably foreseeable period of (mis)use, this requires that said injured persons subsequently also have a minimally required time to assess their situation, identify possible defendants and timely initiate court proceedings. This requires this ‘safety margin’ to be sufficiently long, especially when the applicable rules do not foresee any other suspension mechanism than initiating court proceedings.

- e. Given the particularly problematic nature of latent damage, in particular latent personal injuries (see *supra* nr. 246.a), it is desirable to combine this new, flexible extinction period with an extra alleviation for injured parties in those circumstances, pursuant to at least the spirit of art. 17(2) PLD-2024. Different solutions are possible, but the simplest is probably to extend the basic extinction period of a product’s expected lifetime with the aforementioned ‘safety margin’ by another 15 years, in cases where due to the latent nature of personal injuries the plaintiff was unable to initiate court proceedings within the basic extinction period. 15 years is the difference between the respective extinction periods of art. 17(1) and art. 17(2) PLD-2024, which thus can be considered as the current political consensus to better accommodate parties in those

¹⁶²⁷ See also Verhoeven, *Productaansprakelijkheid en productveiligheid*, 147; P. Ehring, ‘§ 1 ProdHaftG’ in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 74.

¹⁶²⁸ The appreciation of which use of an older product is still reasonably foreseeable incorporates an extra ‘safety margin’ of still reasonably foreseeable misuse beyond the expiration of the normal, expected lifespan of the individual product. See T. Klindt, *Produktsicherheitsgesetz: Kommentar* (3rd edn., Beck 2021) § 2, nr. 229.

¹⁶²⁹ Art. 11 PLD-1985; art. 17 PLD-2024.

unfortunate situations, while still providing a maximum temporal limitation to liability for the reasons of efficiency and corrective justice discussed *supra* nrs. 141 and 244.

248. ART. 11(2)A-C PLD-2024'S EXCEPTION TO THE POSTERIORITY DEFENCE FOR DIGITAL SERVICES, SOFTWARE UPDATES AND UPGRADES WITHIN THE MANUFACTURER'S CONTROL: HOW TO RECONCILE IT WITH THE EXTINCTION PERIOD? – Finally, as discussed *supra* nr. 242, art. 11(2)a-c PLD-2024 introduces an exception to the posteriority defence for defects that either result from digital services or software supplied within the manufacturer's control or from the absence of such software updates or upgrades when those would have been necessary to maintain the product's safety. This new rule raises issues in combination with the extinction period of art. 17 PLD-2024, which this section studies. The analysis would be largely similar for the extinction period based on product lifetimes proposed in the preceding section.

Does the extinction period for liability claims based on product defects exempted by this 'digital exception to the posteriority defence', still start at the earlier moment when the original product is placed on the market or put into service? This is what the text of art. 17 PLD-2024 implies. The consequence would be that digital services or software supplied (more than) ten¹⁶³⁰ years after the related smart product was placed on the market or put into service, might create all kinds of dangerous cybersecurity flaws or other defects in the main product but would no longer lead to any risk of harmonised product liability.¹⁶³¹ Additionally, this would mean that the *de facto* obligation to provide software updates or upgrades necessary to maintain the product's safety (see *supra* nr. 242), starts to lose its teeth even before the ten-year period has passed. After all, if a software update had not been provided after, for example, eight years although it was necessary to alleviate a safety issue and the vulnerability resulting from this omission later causes an accident, then the extinction period for any resulting claim on the basis of the PLDI has likely already expired at that time or will very soon expire.

Hence, a differentiated starting point of the extinction period seems desirable, in particular to prevent a shortfall in efficient risk-allocation and accident-prevention that would otherwise result from not having harmonised product liability apply to accident risks covered by the 'digital exception to the posteriority defence' for the full duration of the extinction period.

Right before the publication of the PLD Proposal 2022, the EUROPEAN LAW INSTITUTE had proposed that the extinction period should only start after the last software update within the manufacturer's control is made available or after the day when they should have made an update available to ensure product safety.¹⁶³² Although this was not taken up by the Commission in the PLD Proposal 2022, nor by the Council in its mandate for negotiation, the

¹⁶³⁰ This section makes abstraction of the possibility of a 25 years extinction period in case of latent personal injuries (art. 17(2) PLD-2024).

¹⁶³¹ Only in case of supplied software, a separate liability claim for having placed a new product on the market, might become possible. See art. 4(1)(3) PLD-2024. See also *supra* nr. 175 and *infra* nr. 347. Yet, this would arguably remain limited to defects inherent to the software and not how it interacts with the main product, for which it was supplied but for which the applicable extinction period has expired.

¹⁶³² Art. 17(2) in European Law Institute, *ELI Draft of a Revised Product Liability Directive* (2022) 29-30. The terminology used by the EUROPEAN LAW INSTITUTE in this proposal is its own, but for the sake of clarity the terminology of the later PLD-2024 is used here (e.g., 'manufacturer', etc.).

Parliament proposed that the extinction period should effectively expire only ten years after “the last update or supply under the control of the manufacturer” occurs or after a software update or upgrade “should have been made available on the market in order to bring it into conformity with applicable product safety requirements under Union or national law”.¹⁶³³

This amendment would provide *de lege ferenda* a more logical relationship between art. 11(2)a-c PLD-2024’s digital exception to the posteriority defence and the extinction period’s starting date. However, it can still be improved in my opinion. After all, there is no need to delay the extinction period’s starting point for all liability claims relating to an entire product, only because there has been a posterior software or digital service supply or there should have been a software update or upgrade to maintain safety. There are significant reasons of economic efficiency and even corrective justice to avoid unnecessarily extending an applicable temporal limitation to product liability (see *supra* nrs. 141 and 244), especially on a purely accidental basis for parts of a smart product unrelated to the ‘digital exception to the posteriority defence’. It makes more sense to only delay the extinction period’s starting point specifically for claims relating to defects in the later supplied software or digital services or in omissions of software updates or upgrades that had been necessary to maintain product safety.¹⁶³⁴ For claims relating to all other defects that may possibly exist in those products, the appropriate extinction period should still continue to start when the product was first placed on the market or put into circulation, as currently stated in art. 17 PLD-2024. This would be comparable to how the separate extinction period for liability based on art. 8(2) PLD-2024,¹⁶³⁵ is through the new defence of art. 11(1)g PLD-2024 also limited to liability for the substantially modified parts of the product (see *infra* nr. 454).

Unfortunately, neither the Parliament’s amendment nor a clear alternative solution has been included in the final adopted version of the PLD-2024. When taking the current text of art. 17 PLD-2024 at face value, this seems to mean that we revert back to the aforementioned default outcome, where any consequences of the ‘digital exception to the posteriority defence’ simply stop 10 years after the original product has been placed on the market or put into service, regardless whether certain, potentially defective digital services or software are supplied shortly before the expiration of this fixed period.

However, *de lege ferenda*, it would thus be desirable that the aforementioned amendment proposed by the European Parliament would be adopted, although with the added limitation that the extinction period is only delayed for defects covered by art. 11(2)a-c PLD-2024’s to the moment when “the last update or supply under the control of the manufacturer” occurs or when

¹⁶³³ Art. 14(2) amended draft PLD Proposal 2022 in EU Parliament, ‘Report of 12 October 2023 on the proposal for a directive of the European Parliament and of the Council on liability for defective products’ A9-0291/2023, 61. The length of the *de facto* update or upgrade obligation which consequently determines when the extinction period can start, should be based on the reasonably expected lifespan of the (embedded) software product, as discussed *supra* nr. 242.

¹⁶³⁴ This is notwithstanding the more general concerns with the short and inflexible nature of the current ten-year extinction period, as discussed *supra* nrs. 246-247.

¹⁶³⁵ Art. 17(1)b PLD-2024.

a software update or upgrade “*should have been made available on the market in order to bring it into conformity [...]*.”¹⁶³⁶

§ 5. Distinguishing between defendants and plaintiffs

249. THE STRONGER POSITION OF MANUFACTURERS (AND TO A LESSER EXTENT IMPORTERS AND THEN QUASI-MANUFACTURERS) COMPARED TO DISTRIBUTORS, WHICH CONFIRMS THE CURRENT DEFENDANT HIERARCHY – The preceding discussion on harmonised product liability for accidents caused by reused products has mostly focused on a generic defendant. In the context of simple product reuse, where a product has not been redistributed or reproduced in any way, the arguments of efficient risk-allocation and accident-prevention (see in particular *supra* nrs. 105-109) advocate mostly but not solely in favour of imposing liability whenever possible on the manufacturer who directly controls most product accident risks, especially those remaining when considering the posteriority and contributory fault defences. The PLDI therefore concentrates liability on the manufacturers, although certain other actors can in particular circumstances also be held liable on a primary basis and distributors are only liable if no other liable defendant can be identified (see *supra* nrs. 176-178).

Ironically, however, the manufacturer is also in a much better position to successfully defend against a harmonised product liability claim than the distributor would be (in cases where the latter is liable because he fails to timely identify his own distributor or a primarily liable defendant).¹⁶³⁷ This asymmetry is common to harmonised product liability in general, but it is further accentuated in the context of product reuse, as discussed below. This offers an additional justification for the current hierarchy between defendants, since concentrating liability primarily at more effective defendants, can be helpful to avoid factually incorrect findings of liability. The latter are very problematic in terms of both economic efficiency and corrective justice.

First of all, for arguing as a defendant that wear and tear has been normal or that the product is otherwise not defective, the producer has better technical knowledge about the particular characteristics of the product he manufactured (cf. *supra* nr. 233) and he is likely more familiar with potentially relevant regulatory or industry standards (cf. *supra* nr. 237). Furthermore, through serial numbers, record-keeping and ‘traceability requirements’, he is more likely to precisely determine when he placed a particular product on the market, which is pertinent for, among others, the defect assessment and extinction period, but which is also generally more difficult in case of worn, reused products (cf. *supra* nrs. 228 and 245). This is in stark contrast to the difficulties a distributor faces to determine the same date or to prove the moment when he made the product available, which is at least under the PLD-2024 pertinent for his not put into circulation and posteriority defences (see also *supra* nr. 235 and *infra* nr. 310).

¹⁶³⁶ Art. 14(2) amended draft PLD Proposal 2022 in EU Parliament, ‘Report of 12 October 2023 on the proposal for a directive of the European Parliament and of the Council on liability for defective products’ A9-0291/2023, 61.

¹⁶³⁷ See also *infra* nr. 301 on some more technical questions relating to the secondary liability of distributors.

Admittedly, distributors can directly communicate with consumers, which offers them an opportunity to assess the conditions in which the consumer plans to use, store and transport the product (cf. *supra* nr. 232) and which may allow them to steer the consumer towards a particular product choice or to emphasize specifically relevant product information as part of retail advice (see *supra* nr. 236). While this provides some limited risk-prevention arguments to also impose liability on suppliers, it is challenging to prove such communications and also to use them as part of an argument that a product was not defective. This aspect is more relevant to possible contractual liability, but less for harmonised product liability. The PLD employs a purely objective defect concept (see *supra* nr. 179) and is mostly focused on the moment when a product is placed on the market or put into service, which suits channeling liability more towards the manufacturer or, in the absence thereof, other primary liable defendants.

Furthermore, manufacturers are clearly in a better position to successfully invoke the posteriority defence or the expiration of the 10-year extinction period, which are both crucial in the context of accidents caused by reused products. For both, they have better information about the precise time when they placed the product on the market or put it into service. Negative evidence on quality control measures and tests, especially those to prevent manufacturing defects, is of course mostly available to manufacturers. But they can also more easily obtain positive evidence of defect posteriority, because they are better placed to perceive and demonstrate how a particular defect is probably the result of not reasonably foreseeable conditions of product use or modification, because they have closer access to technical details about the nature of possible posterior defects or about the original product's design, information or manufacturing process. Moreover, they can also relatively easily compare with other products of the same type or manufacturing batch (see generally *supra* nrs. 240-241).

Additionally, while this is unclear based on the PLD-1985, all defences except the development risk defence will be applied according to art. 11 PLD-2024 vis à vis distributors in a personal manner (see *infra* nrs. 321-322). The outcome thereof is that distributors, unlike manufacturers, for example cannot invoke the posteriority defence for defects that arise after moment when the product was placed on the market but before it was ultimately made available by him. Moreover, although this is not the position taken by the PLD-2024, this dissertation argues *infra* nrs. 332-333 that, if the current, ten-year extinction period is to be maintained, it should at least be interpreted in also a personal manner vis à vis all defendants, including distributors. This would mean that the extinction period for the secondary liability of distributors would only start at the time when they make the product available, while the extinction period for the liability of primary liable defendants may have already expired or is at least running for some time.

The relative strength of the position of importers as defendants can be considered as close to the position of manufacturers. All the aforementioned differences with distributors apply to importers in an almost identical manner, including the interpretation of the defences and the extinction period. Possibly, they lack some of the most detailed technical knowledge. Yet, they have to comply with extensive administrative, most notably product safety requirements before being able to import a product into the EU and they normally have very good

relationships with the third-country manufacturer, who may technically support them in the event of a liability claim in the EU. Finally, quasi-manufacturers enjoy overall a position as defendants that is on average a little bit weaker than the importers' position, but they remain far better off than distributors. This is mainly because they regularly also have significant technical knowledge about the products they self-brand and because they are subject to similar obligations as manufacturers on the basis of at least general product safety regulation.¹⁶³⁸ Moreover, even if they are independent companies, most traditional quasi-manufacturers tend to have strong commercial ties with the manufacturer or importer who has originally put their product into circulation, often while they have considerable market power which can suffice to receive technical support to successfully defend against a possible liability claim.¹⁶³⁹

In conclusion, the relative strength of the position of defendants is inversely correlated with the theoretical arguments in favour of their liability. Manufacturers are in the strongest and importers are only in a slightly weaker position. The position of quasi-manufacturers, especially when they are independent and smaller companies, is considerably weaker. And, ironically, distributors find themselves overall in the weakest position, even though they are only subject to secondary liability. Normally, this weaker position as a defendant is largely counterbalanced by the fact that suppliers, similar to quasi-manufacturers, are only liable in exceptional circumstances, which are to a large extent of their own making. However, reused products have a slightly increased risk that they have become anonymous but also that distributors fail to timely identify another defendant (see *supra* nr. 228). Moreover, as we will see in the next Chapter, when older products have been retransferred prior to the accident, which frequently occurs in practice, this risk further increases, in addition to the possibility that he suddenly becomes subject to primary liability as a quasi-manufacturer or substantial product modifier (see *infra* nrs. 280 and 298-307).

250. THE STRONGER POSITION OF REUSERS AS PLAINTIFFS (OF VERTICAL CLAIMS) COMPARED TO THIRD PARTIES AS PLAINTIFFS (OF DIAGONAL CLAIMS) – Finally, the preceding discussion has mostly focused on a generic plaintiff. However, a differentiation can also be made at this side between the strong plaintiff position of injured reusers and the much weaker plaintiff position of injured third parties. Again, this is a general difference between vertical and diagonal product liability relationships (see also *supra* nr. 5). Moreover, from an *ex ante* economic perspective, it can be considered as offset by the fact that third parties actually profit the most from the product liability system (see *supra* nrs. 112 et seq.). Yet, it is important to highlight here how

¹⁶³⁸ See art. 13(1) General Product Safety Regulation 2023/988/EU.

¹⁶³⁹ This is true for the traditional quasi-manufacturers, large companies with valuable brands, on which the economic rationale for the primary liability of quasi-producers is based. However, this may no longer be true for some of the new actors who may potentially qualify as quasi-producers if the CJEU *Fennia v. Philips* decision is taken at face value. See *infra* nrs. 304-306. See also J.-S. Borghetti, 'L'apposition de sa marque sur un produit suffit à rendre le distributeur responsable du défaut de sécurité' (2022) *Recueil Dalloz* 2076; E. Van Gool, 'Case Fennia v. Koninklijke Philips NV (C-264/21): Towards a broader interpretation of the 'apparent producer', 'quasi-producer' or 'self-branders' subject to EU product liability' (2022) *Revue Européenne de Droit de la Consommation / Journal of European Consumer Law* 279.

this difference also becomes more pronounced in the context of accidents caused by reused products.

When the plaintiff is the reuser himself, the consumer who has continued using a product that most consumers would consider obsolete, his vertical product liability claim benefits from reasonable access to information about his own product's nature, its past use and storage conditions, the original marketing presentation and the time when it was placed on the market and/or made available to him personally. He might furthermore be able to disprove or nuance allegations about past use or past modifications to a product. All these elements are relevant to demonstrate that a product was defective due to insufficient durability or to refute a defendant's attempt at proving the posteriority defence (see *supra* nrs. 231-241).

In contrast, if the injured party is a truly ¹⁶⁴⁰ independent third party, such as the bystander injured as a result of the malfunctioning of an older vehicle or the fire in an apartment block caused by a reused electrical device, he is as a plaintiff in a weaker position to make his diagonal product liability claim a success. Third parties have less access to information on aspects such as past product use, storage conditions or modifications, the original product presentation or the time when the product was put into circulation. Already here, it is worth noting that the same can to a large extent also be said of new consumers ('recipients') of a redistributed product (see *infra* nr. 342), which might be a significant subset of consumers engaging in product reuse.

This asymmetry might in the future potentially be somewhat mitigated when digital product passports would be implemented in an extensive and dynamic manner (see *infra* nrs. 344-346). Furthermore, injured third parties may be even more likely than injured consumers to receive support as plaintiffs from the new rules of arts. 9-10 PLD-2024 on mandatory disclosure of evidence and various refutable presumptions of product defectiveness and causation (see *supra* nr. 206).

§ 6. Ecodesign rules, consumer information and product passports as solutions?

251. ECODESIGN STANDARDS ON PRODUCT DURABILITY AND THE DEFECT ASSESSMENT – Product design is of course a crucial factor in determining the durability of products as well as other environmental and economic performance aspects.¹⁶⁴¹ The EU has in recent years seized on this idea by promulgating design requirements that do not focus – at least not primarily – on accident-prevention such as traditional product safety regulation (see *supra* nr. 10), but rather

¹⁶⁴⁰ Third parties are often acquaintances or even household members of the harmful product's consumer, who may still obtain relevant information from the latter to support a diagonal product liability claim. On the flipside, such third parties are much less likely to claim on a horizontal basis against the consumer. See also *supra* nr. 159.

¹⁶⁴¹ See European Environment Agency, *Circular by design: Products in the circular economy* (EEA Report 2017) 16-17; A. Michel, *Premature Obsolescence: In Search of an Improved Legal Framework* (Intersentia 2023) 116-117.

on the environmental and economic performance of products. Among other aspects, this can encompass product durability.

The most prominent example is the current Ecodesign Directive,¹⁶⁴² which covers all ‘energy-related products’ and has led to implementing regulations and some sectoral self-regulation which have focused predominantly on energy-efficiency.¹⁶⁴³ Nevertheless, within this existing framework, the Commission has already adopted rules on minimal required use before failure for vacuum cleaners¹⁶⁴⁴ and light sources.¹⁶⁴⁵ And, more recently, Ecodesign rules have been adopted for mobile phones and tablets relating to other durability aspects, like resistance to accidental drops, dust and water.¹⁶⁴⁶ As a key component of the current EU circular economy policy agenda (see *supra* nr. 65), a new Regulation has been adopted that revamps the existing Ecodesign framework into a new ‘Ecodesign for Sustainable Products Regulation 2024’, which focuses more comprehensively and consistently on also other environmental and to a lesser extent economic performance aspects of products than energy-efficiency.¹⁶⁴⁷ Among others, the Ecodesign for Sustainable Products Regulation 2024 focuses on product ‘durability’, ‘reliability’ and ‘reusability’.¹⁶⁴⁸ It is expected that in the near future many new EU rules on product or component durability will be adopted, as implementing

¹⁶⁴² Parliament and Council Directive 2009/125/EC of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products [2009] OJ L285/10.

¹⁶⁴³ See art. 1(1)-(2) *ibid.*; ‘Energy-efficient products’ <https://commission.europa.eu/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/energy-label-and-ecodesign/energy-efficient-products_en>.

¹⁶⁴⁴ Annex II, nrs. 7-8 Commission Regulation 2013/666/EU of 8 July 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for vacuum cleaners [2013] OJ L192/24.

¹⁶⁴⁵ Annex II, nr. 2 and Annex V Commission Regulation 2019/2020/EU of 1 October 2019 laying down ecodesign requirements for light sources and separate control gears pursuant to Directive 2009/125/EC of the European Parliament and of the Council and repealing Commission Regulations (EC) No 244/2009, (EC) No 245/2009 and (EU) No 1194/2012 [2019] OJ L315/209. See also in general relating to the 2019 Ecodesign package ‘The new ecodesign measures explained’ <https://ec.europa.eu/commission/presscorner/detail/lv/QANDA_19_5889>.

¹⁶⁴⁶ Annex II, nrs. A.1.2, B.1.2 and D.1.2 Commission Regulation 2023/1670/EU of 16 June 2023 laying down ecodesign requirements for smartphones, mobile phones other than smartphones, cordless phones and slate tablets pursuant to Directive 2009/125/EC [2023] OJ L214/47. See also A. Michel, *Premature Obsolescence: In Search of an Improved Legal Framework* (Intersentia 2023) 166-178 (providing a broad overview of Ecodesign requirements relating to product durability, as existing shortly before the adoption of the Ecodesign for Sustainable Products Regulation 2024).

¹⁶⁴⁷ In general, Ecodesign requirements consider aspects like repairability (see *infra* nr. 393), upgradability, compatibility or design for attachment and trust. See N. van Nes and J. Cramer, ‘Influencing product lifetime through product design’ (2005) 14 *Business Strategy and the Environment* 286; C. Bakker et al., *Products that Last: Product Design for Circular Business Models* (BIS Publishers 2014) 97-121. See also on the different factors contributing to (different types of) premature obsolescence, the sources cited *supra* footnote 279.

¹⁶⁴⁸ Arts. 5(1)a-c Ecodesign for Sustainable Products Regulation 2024. See also Annex I, (a) *ibid.*: “The following parameters may, as appropriate, and where necessary supplemented by others, be used as a basis for improving the product aspects: (a) durability and reliability of the product or its components as expressed through the product’s guaranteed lifetime, technical lifetime, mean time between failures, indication of real use information on the product, resistance to stresses or ageing mechanisms; [...]”

rules under this new framework. At the same time, other, sectoral EU regulation can also impose minimum durability requirements, as illustrated by the recent Batteries Regulation.¹⁶⁴⁹

Product regulation on minimum durability of products and components can of course be particularly useful in determining whether certain wear and tear is abnormal or whether there is another defect relating to insufficient durability (see *supra* nr. 237). Traditionally, such rules are neither automatically decisive as proof of a defect in case of a violation nor as a defence in case of compliance (see *supra* nrs. 10.d and 187). Only if for example a defect consisting of a lack of durability is the direct and inevitable consequence of compliance with an Ecodesign requirement on a modular, easily repairable design,¹⁶⁵⁰ can a defendant invoke the complete compliance defence.¹⁶⁵¹ However, the final adopted version of art. 7(1) PLD-2024 seems to have partially upended this principle, by automatically qualifying as defective any product which “does not provide the safety [...] required under Union or national law” (see also *supra* nr. 180).

The way how art. 7(1) PLD-2024 is phrased, suggests in my view that it is not limited to traditional product safety regulation in the formal sense but potentially also encompasses other types of product regulation, at least if they factually require a product to provide a certain level of safety. When for example Ecodesign rules require a minimum product or component durability, this is admittedly primarily an environmental and economic performance requirement. But given that durability can also be relevant to the safety of durable consumer goods (cf. *supra* nrs. 231 et seq.), I believe that this same durability requirement also indirectly constitutes a safety requirement, which then should in case of a violation also lead to an automatic defect qualification pursuant to the new art. 7(1) PLD-2024. In this regard, it is worth noting that both the previous and new legislative frameworks explicitly require Ecodesign rules to meet, among others, a policy criterion relating to “health” and “safety”.¹⁶⁵²

Likewise, this dissertation argues that the reference in the new, still refutable defect presumption of art. 10(2)b PLD-2024 to “mandatory product safety requirements laid down in Union law or national law” (see also *supra* nr. 206.b), must also be interpreted in a functional rather than a formal manner. It can therefore potentially also encompass for example Ecodesign requirements if those include goals of accident-prevention in addition to environmental or economic performance. And this seems in my opinion to be perfectly the case for certain requirements relating to minimum product durability (see also *infra* nr. 393 on repairability requirements). For a defect presumption, art. 10(2)b PLD-2024 requires that the relevant rule of Union or national law precisely “intended to protect against the risk of the damage suffered by the injured party”. This is again a similar factual assessment, which might for example be

¹⁶⁴⁹ Arts. 9-10 Parliament and Council Regulation 2023/1542/EU of 12 July 2023 concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020 and repealing Directive 2006/66/EC [2023] OJ L191, 1.

¹⁶⁵⁰ See *infra* nr. 393 on existing and upcoming Ecodesign requirements relating to product repairability and refurbishability.

¹⁶⁵¹ Art. 7(d) PLD-1985; art. 11(1)d PLD-2024. See also on the compliance defence *supra* nr. 198.

¹⁶⁵² Art. 15(5)b Parliament and Council Directive 2009/125/EC of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products [2009] OJ L285/10, 20; arts. 5(10)b(vi) and 5(11)b Ecodesign for Sustainable Products Regulation 2024.

considered as fulfilled when a product prematurely breaks down in violation of an Ecodesign minimum durability requirement. Nevertheless, given the difference in phrasing and underlying goals of both provisions, it seems likely that a plaintiff can in practice by proving a violated, relevant Ecodesign requirement, more easily invoke art. 7(1) PLD-2024's central provision of product defectiveness than the still refutable presumption of art. 10(2)b PLD-2024.

Finally, Ecodesign implementing requirements never have a retroactive effect and only apply to new products that are placed on the market or put into service in the EU after their entry into force.¹⁶⁵³ This is particularly important in the context of durability requirements, because only a few of those requirements have already been adopted and because future ones must first pass through an extensive technical drafting process based on scientific and stakeholder input,¹⁶⁵⁴ and because there are of course now already huge amounts of products on the market or in service which may still be (re)used during a very long time.

252. MANDATORY CONSUMER INFORMATION ON PRODUCT DURABILITY – EU and national policymakers can also pursue more durable consumer goods by requiring that consumers are reliably informed on the durability of the goods offered to them. In addition to a product's expected lifetime, this can for example consist of use, storage and maintenance instructions or information on predetermined breaking points and wearing parts in need of timely replacement.¹⁶⁵⁵ Such B2C information requirements align with the traditional 'information paradigm' of EU consumer law, which is generally attractive to policymakers, including in the sustainable consumption context, because it preserves consumer autonomy.¹⁶⁵⁶ Behavioural science reveals the major limitations of this strategy,¹⁶⁵⁷ yet also offers insights for more effective consumer information, like presenting the most durable products as default

¹⁶⁵³ Art. 3 Parliament and Council Directive 2009/125/EC of 21 October 2009 establishing a framework for the setting of eco-design requirements for energy-related products [2009] OJ L285/10; arts. 1(1) and 3(1) Ecodesign for Sustainable Products Regulation 2024. Note how this matches the 'time when product was put into circulation' consideration of art. 6(1)c PLD-1985; art. 7(2)e PLD-2024.

¹⁶⁵⁴ See arts. 15-19, Annexes I-II Parliament and Council Directive 2009/125/EC of 21 October 2009 establishing a framework for the setting of eco-design requirements for energy-related products [2009] OJ L285/10, 20-21; arts. 5-8, 18-202, Annex II Ecodesign for Sustainable Products Regulation 2024.

¹⁶⁵⁵ See S. Prakash et al., *Einfluss der Nutzungsdauer von Produkten auf ihre Umweltwirkung: Schaffung einer Informationsgrundlage und Entwicklung von Strategien gegen 'Obsoleszenz'* (Umwelt Bundesamt 2016) 280-281; A. Michel, *Premature Obsolescence: In Search of an Improved Legal Framework* (Intersentia 2023) 174.

¹⁶⁵⁶ See G. Straetmans, 'Misleading practices, the consumer information model and consumer protection' (2016) *Journal of European Consumer and Market Law* 199, 200 (in general); V. Mak and E. Terryn, 'Circular Economy and Consumer Protection: The Consumer as a Citizen and the Limits of Empowerment Through Consumer Law' (2020) 43 *Journal of Consumer Policy* 227, 230-233 (specifically relating to sustainable consumption).

¹⁶⁵⁷ See, e.g., legal scholars criticizing disclosures and information mechanisms from this interdisciplinary perspective G. Howells, 'The Potential and Limits of Consumer Empowerment by Information' (2005) 32 *Journal of Law and Society* 349, 356, 358-362; Y. Bakos, F. Marotta-Wurgler and D. Trossen, 'Does Anyone Read the Fine Print? Consumer Attention to Standard-Form Contracts' (2014) 43 *Journal of Legal Studies* 1; O. Ben-Shahar and C. Schneider, *More Than You Wanted to Know: The Failure of Mandated Disclosure* (Princeton University Press 2014). See also sources cited *supra* footnote 865.

options, focusing on what matters to or what might surprise consumers and using scores or other ‘smart disclosures’.¹⁶⁵⁸

This section summarises the currently now information requirements relating to consumer good durability and subsequently discusses how these might be relevant from a product liability and accident-prevention perspective.

In terms of general EU consumer information requirements relating to product durability, there is today only a very abstract obligation to inform consumers on the “*main characteristics*” of a product.¹⁶⁵⁹ The Empowering Consumers for the Green Transition Directive 2024/825 merely adds a requirement to explicitly inform consumers of energy-using goods whether or not a ‘commercial guarantee of durability’ of more than two years is offered together with such product.¹⁶⁶⁰ The same Directive now explicitly confirms that product “*durability*” is one of the product characteristics on which consumers may not be misled through a misleading action,¹⁶⁶¹ and add to the ‘blacklist’ various B2C commercial practices that actively contribute to premature obsolescence of products.¹⁶⁶² Additionally, the Green Claims Proposal 2023 would require B2C traders to also *ex ante* substantiate according to certain standards an explicit environmental claim relating to a product’s durability, which must in some cases also be verified by an independent third party.¹⁶⁶³ However, at least for non-energy-using products, these new rules remain limited in terms of information that must be provided to consumers. The EU seems to want to regulate more detailed information on product durability only on a vertical, product-specific basis. Currently, this already happens in certain Ecodesign rules and sectoral product safety regulation (see also *supra* nr. 251).

Meanwhile, France takes a bolder approach and has adopted in 2020 legislation that requires large professional producers and importers to inform consumers on the environmental

¹⁶⁵⁸ See, e.g., I. Ayres and A. Schwartz, ‘The No-Reading Problem in Consumer Contract Law’ (2014) 66 *Stanford Law Review* 545; C. Sunstein and R. Lucia, ‘Automatically Green: Behavioral Economics and Environmental Protection’ (2014) 38 *Harvard Environmental Law Review* 127; O. Bar-Gill, ‘Defending (Smart) Disclosure: A Comment on More Than You Wanted to Know’ (2015) 11 *Jerusalem Review of Legal Studies* 75; A.-L. Sibony and G. Helleringer, ‘EU Consumer Protection and Behavioural Sciences: Revolution or Reform?’ in A. Alemanno and A.-L. Sibony (eds.), *Nudge and the Law: A European Perspective* (Hart 2015) 219-226.

¹⁶⁵⁹ Arts. 5(1)a and 6(1)a Parliament and Council Directive 2011/83/EU of 25 October 2011 on consumer rights [2011] OJ L304/64.

¹⁶⁶⁰ Art. 2(2)-(3) Empowering Consumers for the Green Transition Directive 2024/825. See also on the optional ‘commercial guarantee of durability’ art. 17(1) Consumer Sales Directive 2019/771.

¹⁶⁶¹ Art. 1(2)a Empowering Consumers for the Green Transition Directive 2024/825. This is mostly a confirmation, since this is already the case on the basis of current arts. 6(1)b and 7(4) Unfair Commercial Practices Directive. See Commission Notice ‘Guidance on the interpretation and application of Directive 2005/29/EC of the European Parliament and of the Council concerning unfair business-to-consumer commercial practices in the internal market’ [2021] OJ C526/1, 76-80; E. Van Gool, ‘Climate-washing’: B2C communicatie in de klimaatcrisis beoordeeld in het licht van oneerlijke handelspraktijken, soft law en nieuwe wetgeving’ (2023) *Droit de la Consommation / Consumentenrecht* 3, 28.

¹⁶⁶² Annex I, nr. 4 Empowering Consumers for the Green Transition Directive 2024/825.

¹⁶⁶³ Arts. 3 and 8-10 Green Claims Proposal 2023. See also art. 1(2)b and Annex I, nr. 2 Empowering Consumers for the Green Transition Directive 2024/825.

qualities of ‘waste-generating products’, among others on their durability.¹⁶⁶⁴ Moreover, from 2024 onwards, certain, to be specified products will need to be offered with a comprehensive ‘*indice de durabilité*’, which will communicate to consumers basic and intelligible information on a product’s overall durability (repairability, trustworthiness and upgradability), possibly in the form of aggregate scores in a colour label akin to the current ‘*indice de réparabilité*’ for electric and electronic products (see *infra* nr. 397.c), which it might replace.¹⁶⁶⁵ In Belgium, a federal law has very recently been adopted which aims to lead to the adoption of very similar ‘product lifetime indexes’ for products to be specified by the government in future implementing regulations.¹⁶⁶⁶

On the one hand, consumer information on product durability, whether provided on a mandatory or voluntary basis, strengthens the ‘market mechanism’ as an *ex ante* alternative to product liability for accident-prevention purposes (see *supra* nrs. 9, 108.b and 158). Over time, the result of this consumer information, which can lead consumers to make somewhat better-informed choices on product durability, may ultimately also shift the public’s legitimate expectations relating to safe durability and the duration of reasonably foreseeable product use in general, which is the touchstone for a parallel application of product liability (see in particular *supra* nrs. 232 and 239).

On the other hand, information on product durability provided to consumers can also more directly, in the short term steer the public’s safety expectations with regards to the safe durability of a particular product in an individual case (see *supra* nr. 236).¹⁶⁶⁷ For example, it is likely that a defect would be found when an important product component wears out already within two years and causes an accident while the producer advertised an expected useful lifetime of five years under normal conditions of use. Conversely, voluntary or mandatory information, possibly even very visible warnings about the particular fragility of a product or the need to promptly replace it after limited use, can be invoked by a defendant to dispute an allegation of defectiveness due to insufficient durability. However, as discussed *supra* nrs. 182 and 236, product information provided by producers and distributors should not be able to

¹⁶⁶⁴ Arts. L541-9-1 and R541-220–R541-222 Code de l’Environnement. An annual turnover of more than 10.000.000 EUR or a placing on the market of at least 10.000 units of the particular product is required (art. R541-220 *ibid.*). For fulfilling this requirement with regards to repairability and durability, the *indice de réparabilité* applicable to electric and electronic products as well as the *indice de durabilité* are pertinent (art. R541-221(I) *ibid.*) See also *infra* nr. 397 on the potential issues with the free movement of goods, notably art. 34 TFEU.

¹⁶⁶⁵ Arts. L541-9-2(II), R541-210–R541-214 and R541-221 Code de l’Environnement. See also on the prospective format and content of the ‘*indice de durabilité*’, including the debate on whether it has to fully replace the now successful ‘*indice de réparabilité*’ and whether it should afterwards evolve to an even more comprehensive ‘green score’ N. Dupont, ‘Quelles perspectives en matière de durabilité et de réparabilité des produits de consommation?’ (2019) 50/1553 *La Semaine Juridique: Entreprises et Affaires* 33, 39-40; B. Tinetti et al., *Étude de préfiguration en vue de la mise en oeuvre d’un indice de durabilité* (ADEME 2021) 55-101; ‘L’indice de durabilité, une révolution prévue pour 2024’ <www.halteobsolescence.org/lindice-de-durabilite-une-revolution-prevue-pour-2024>.

¹⁶⁶⁶ Art. 5 Wet van 17 maart 2024 ter bevordering van de herstelbaarheid en de levensduur van goederen, BS 2 mei 2024, 48922. Note that, like the French example, this Belgian legislation also creates a more limited product ‘repairability index’ (see *infra* nr. 397).

¹⁶⁶⁷ Art. 6(1)a PLD-1985; art. 7(2)a PLD-2024.

unilaterally derogate from otherwise clearly established safety expectations. In this regard, the rules on minimal product design requirements (see *supra* nr. 251) are much more significant than consumer information in determining when a product is defective due to insufficient durability.

This more restrictive view on the potential role of product information is based on the ‘safety hierarchy’, which is cognizant of the cognitive and practical limitations of consumers to effectively gather, process and act on information, before either acquiring or using a product (see *supra* nr. 182). These behavioural insights first of all make clear that there are clear limitations to the effectiveness of the aforementioned rise in national and EU information obligations on product durability or other environmental performance aspects.¹⁶⁶⁸ Secondly, instead of being ineffective but harmless, too much information on environmental performance aspects moreover risks ‘overloading’ consumers and drowning out information that is relevant from a product safety perspective. Admittedly, some information on environmental performance is relevant to product safety (see *supra* nr. 236 regarding product durability). And information on environmental performance is generally more prominent in the product distribution phase and information on product safety in the use phase. However, this distinction is far from absolute.

Hence, when there is nevertheless a conflict in light of the consumer’s limited cognitive capacity, it seems logical to give priority in terms of visibility to the most important safety information over environmental performance aspects of products. Such a priority is motivated by the core interests of consumers and third parties which are at stake in the context of preventing product accidents. More detailed technical information on environmental performance aspects can always be disclosed to interested consumers in a secondary instance, through easily retrievable and accessible, digital or physical information sources (see also analogously *infra* nrs. 382-383 on repair-related information).

253. DIGITAL PRODUCT PASSPORTS – The novel idea of introducing ‘digital product passports’, offers such a secondary source which has the potential to not displace important product safety information on packaging and use instructions. Instead, it can offer to consumers data and information that can easily be consulted and relate to, among others, a product’s durability and its entire lifecycle.¹⁶⁶⁹ A product passport could not only include information initially provided by the manufacturer or importer, such as the aforementioned information on a product’s expected lifetime, use and maintenance instructions and parts that wear out more quickly and require replacement. It could theoretically also integrate information on the duration, conditions and intensity of a product’s past use, even regarding potentially

¹⁶⁶⁸ See on the limitations to pursuing sustainable consumption through a soft policy of consumer information V. Mak and E. Terryn, ‘Circular Economy and Consumer Protection: The Consumer as a Citizen and the Limits of Empowerment Through Consumer Law’ (2020) 43 *Journal of Consumer Policy* 227, 230-232.

¹⁶⁶⁹ Art. 2(28) Ecodesign for Sustainable Products Regulation 2024: “‘digital product passport’ means a set of data specific to a product that includes the information specified in the applicable delegated act adopted pursuant to Article 4 and that is accessible via electronic means through a data carrier in accordance with Chapter III;”. See *infra* nrs. 343 et seq.

damaging events that occurred.¹⁶⁷⁰ Such extensive information on the product's use and service-history, 'dynamically' updated by different economic actors throughout its lifecycle, would of course not only be relevant to discussions whether a product is defective due to insufficient durability but also whether the posteriority defence can be successfully invoked (see *supra* nrs. 231-240).

Since the potential significance of digital product passports only further grows once a product has been redistributed or reproduced in some manner, this techno-regulatory instrument and its emerging basis in EU product regulation are further examined in the following Chapter on retransferred products (see *infra* nrs. 343-347).

Section C. Liability for repurposed products

§ 1. Liability of original producers and distributors for later repurposed products

a. Scope of application

254. MATERIAL AND PERSONAL SCOPE OF APPLICATION IN CASE OF PRODUCT REPURPOSING – 'Repurposing' a product consists of a consumer using it for a different purpose than the one it was originally produced and distributed for (see *supra* nr. 84 regarding the concept and some examples). Notwithstanding this functional change, such product remains fully subject to the PLD's material scope of application. The same holds true when a particular component rather than a complete product is being repurposed, like using a car tire as a playground toy or stacking them as an umbrella stand.

The original producer, importer, quasi-producer or supplier continue to bear the risk of being held liable based on the PLDI for damage caused by an allegedly defective product or component which they have put into circulation but which has later been repurposed. Harmonised product liability therefore applies in general to putting a product or component into circulation and is not necessarily limited to a particular, pre-planned use for or function of said product or component.

However, as discussed in more detail in the following sections, the fact that a product or component had been repurposed at the time of an accident, is effectively a pertinent consideration when determining whether it had already been defective when it was originally placed on the market or put into service. Furthermore, if the plaintiff is the consumer responsible for repurposing the product or component ('repurposer'), there is a possibility for

¹⁶⁷⁰ See M. Heinrich and W. Lang, *Materials Passports - Best Practice. Innovative Solutions for a Transition to a Circular Economy in the Built Environment* (TU München 2019) 21; C. Ducuing and R. Reich, 'Data governance: Digital product passports as a case study' (2023) 24 *Competition and Regulation in Network Industries* 3, 9-11.

manufacturers and other defendants in the product's original distribution chain to invoke the contributory fault defence against such vertical claim, as discussed *infra* nrs. 273-276.

For injured third parties, a theoretical possibility exists to claim on the basis of the PLDI diagonally against the repurposer himself, even when this Chapter's narrow understanding of 'repurposing' is applied, which does not entail any redistribution or physical modification of the product (see *supra* nr. 84). This is discussed separately *infra* nrs. 261-268.

b. Defect assessment and posteriority defence for repurposed products

i. Alternative proofs of defect in repurposed or seriously misused product

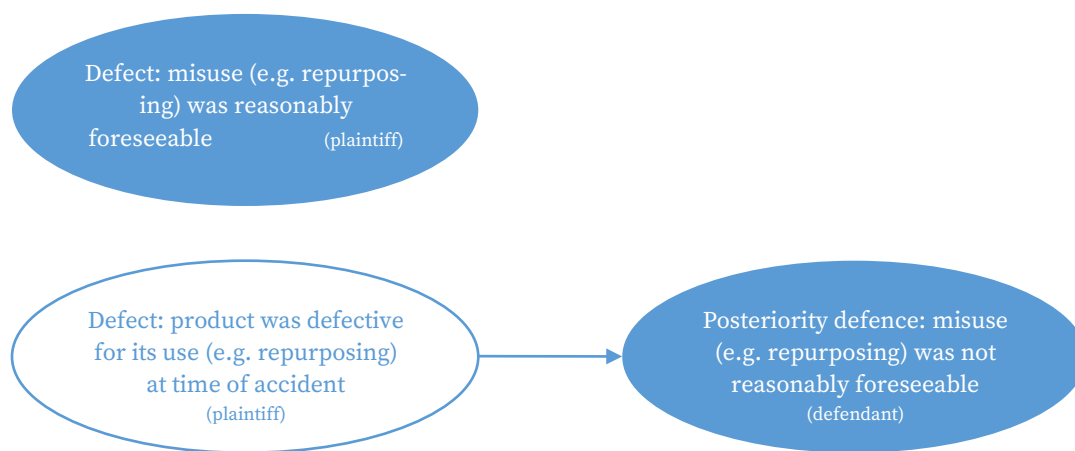


Figure 10: Two possible proofs of defect in case of product misuse, posteriority defence still applies if misuse had not been reasonably foreseeable

255. TWO WAYS FOR PLAINTIFF TO PROVE DEFECT IN REPURPOSED OR OTHERWISE SERIOUSLY MISUSED PRODUCT, DEFENDANT STILL BENEFITS FROM POSTERITY DEFENCE IF SUCH MISUSE HAD NOT BEEN REASONABLY FORESEEABLE – While the repurposing of a product by a consumer does not affect the PLD's scope of application, it is of course potentially significant to determine whether the product had been defective when it was originally put into circulation. Here, the current literature and case law, which do not discuss the circular strategy of repurposing specifically but devote attention to product misuse in general, present a picture that seems to me confusing in light of the allocation of the burden of proof (see *supra* nr. 205). On the one hand, product misuse is regarded as a part of the defect assessment, where it is generally recognized that a product can also be defective when it provides insufficient safety in the event of reasonably foreseeable product misuse.¹⁶⁷¹ On the other hand, misuse by the consumer is

¹⁶⁷¹ See literature and case law cited *supra* footnotes 1095-1096. See also recital 6 PLD-1985; art. 7(2)b PLD-2024.

simultaneously also considered as a potential posterior defect origin that can provide a basis for the posteriority defence.¹⁶⁷²

This dissertation has already clarified *supra* nr. 239 that a post-marketing circumstance that caused an accident like product misuse is relevant to only the defect assessment if it had been reasonably foreseeable when the product was placed on the market or put into service and that it is an actually posterior defect origin relevant to the defence of arts. 7(b) PLD-1985 and 11(1)c PLD-2024 if it had not been reasonably foreseeable at that time. However, this raises the question how it is possible that situations of product misuse are considered in the framework of the posteriority defence at all. At least in cases where there is only one potential defect causing the accident, such as the fact that the product was unsafe for a particular misuse (e.g. repurposing), the debate on its reasonable foreseeability should theoretically have already been settled as part of the product defect assessment.¹⁶⁷³ After all, the plaintiff bears the initial burden of proving a defect according to a traditional standard of proof and the posteriority defence according to a standard of probability can only become relevant after a product defect has already been established (see also *supra* nrs. 230 and 239).¹⁶⁷⁴

A first possible explanation is that, occasionally in legal practice, the burden of proof is shifted and the defendant has to refute a presumed product defect by demonstrating that the repurposing or other product misuse had not been reasonably foreseeable.¹⁶⁷⁵ Although it cannot be excluded that some courts implicitly or even explicitly shift the burden of proof,¹⁶⁷⁶ this would constitute a violation of art. 4 PLD-1985 and the PLD-1985's maximum harmonisation (see *supra* nrs. 170 and 205). Art. 10 PLD-2024 will in the future allow such reversals only in very specific cases, through a limited list of refutable defect presumptions (see *supra* nr. 206). The fact that numerous reputable authors commonly discuss situations of product

¹⁶⁷² See, e.g., H.C. Taschner, 'La future responsabilité du fait des produits défectueux dans la Communauté européenne' (1986) *Revue du Marché Commun* 257, 261; Taschner and Frietsch, *Kommentar*, 133-134; Howells, 'strict liability', nr. 4.277; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3602, 19-20; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 1, nr. 76; P. Ehrling, '§ 1 ProdHaftG' in P. Ehrling and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 71.

¹⁶⁷³ Of course, the defendant may always try to refute the plaintiff's attempt at proving a defect. However, in such an event, the plaintiff continues to bear the 'evidentiary risk' (see *supra* footnote 1556). Only when the defect has been proven and the debate centres around the posteriority or other formal defences, does the 'evidentiary risk' shift to the defendant.

¹⁶⁷⁴ Arts. 4 and 7(b) PLD-1985; arts. 10(1) and 11(1)c PLD-2024. See also *supra* nrs. 205-206 regarding the burden of proof in harmonised product liability in general.

¹⁶⁷⁵ In this hypothesis which violates the PLD's maximum harmonisation, this could either be seen as a premature application of the posteriority defence or simply as shifting the burden of proving the absence of a product defect on the defendant.

¹⁶⁷⁶ E.g., both German and Belgian law of civil evidence provide outside EU product liability harmonisation possibilities for a judicial reversal of the burden of proof. Frictions experienced in practice with the PLD's burden of proof, have led to the new exceptions to the traditional burden of proof in art. 10 PLD-2024 (see *supra* nr. 206). See BELGIUM: art. 8.4, 5th section CC BE. GERMANY: In addition to the statutory basis (§§ 427, 441(3), 453(2) and 454(1) ZPO), there is a diverse case law accepting full reversals of the burden of proof to relatively close approximations like *prima facie* evidence. See Kullmann, 'Haftung aus § 823 Abs. 1 BGB', § 1526, 6-20, 25; K. Schmidt, '36. Beweisführung und Beweiswürdigung' in R. Geigel and K. Haag (eds.), *Der Haftpflichtprozess* (28 edn., Beck 2020) nrs. 40-41; E. Van Gool, 'Overview of German product liability law' (2024) <<https://ssrn.com/abstract=4824956>> nr. 22.

misuse in the context of the posteriority defence and the current PLD, points to a second, more consistent but until now hidden explanation: there is more than one way to prove a product defect in case of at least serious product misuse, such as repurposing. A twofold distinction can be made.

- a. First of all, the plaintiff can simply prove, as discussed above, that the repurposed or otherwise seriously misused product was defective since it did not provide the required safety although said misuse had been reasonably foreseeable when the product was placed on the market or put into service.¹⁶⁷⁷ For several types of repurposing, it can indeed be argued that they always have been or in recent years have become reasonably foreseeable (see analogously *supra* nr. 232).¹⁶⁷⁸ For example, with the advent of more powerful electric car batteries and the rise in demand of residential energy storage, it has now become reasonably foreseeable that, unless this is actively prevented (see *infra* nr. 256), many individual electric car batteries will be eventually repurposed as home batteries.¹⁶⁷⁹ Yet, for many more possibilities of ‘repurposing’, it remains more likely that they are considered to have not been reasonably foreseeable, due to the creativity and difficult to predict nature inherent to this circular strategy. The following sections discuss this in more detail.

If the plaintiff succeeds in proving that the product did not provide the required safety although the repurposing (or other misuse) had been reasonably foreseeable and the product nevertheless causes an accident as a result of it, the plaintiff has proven a product defect on which he can base his claim. At the same time, when the defendant fails to rebut this proof of defect, he is also theoretically unable to invoke a posteriority defence with this particular repurposing (or other misuse) as a posterior defect origin.¹⁶⁸⁰

- b. Second, the aforementioned observation that product misuse still appears in discussions about the posteriority defence, can be explained by an alternative, preliminary proof of product defectiveness, which is to the best of my knowledge never discussed explicitly but which is nevertheless implicitly accepted.

¹⁶⁷⁷ Art. 6(1)b PLD-1985; art. 7(2)b PLD-2024. See regarding this defect assessment criterion *supra* nrs. 183 and 232. See specifically regarding the fact that it also encompasses ‘reasonably foreseeable misuse’ *supra* footnotes 1095-1096.

¹⁶⁷⁸ While safety expectations of the public regarding the reasonable foreseeability of repurposing or other misuse can evolve, it must be emphasized that this should still be always assessed at the time when the product was placed on the market or put into service. See art. 6(1)c(2) and recital 6 PLD-1985; art. 7(2)e(3) PLD-2024. See also *supra* nrs. 184 and 235.

¹⁶⁷⁹ This is perhaps best illustrated by existing literature on this particular repurposing application. See, e.g., A. Assunção, P. Moura and A. de Almeida, ‘Technical and economic assessment of the secondary use of repurposed electric vehicle batteries in the residential sector to support solar energy’ (2016) 181 *Applied Energy* 120; L. Canals Casals, M. Barbero and C. Corchero, ‘Reused second life batteries for aggregated demand response services’ (2019) 212 *Journal of Cleaner Production* 99; M. Schulz et al., ‘Circular economy considerations in choices of LCA methodology: How to handle EV battery repurposing?’ (2020) 90 *Procedia CIRP* 182.

¹⁶⁸⁰ After all, it is then established that the repurposing (or other misuse) had been reasonably foreseeable, which excludes invoking it as an intervening, posterior factor (see *supra* nr. 239). See also Howells, ‘strict liability’, nr. 4.187.

Namely, the plaintiff can also prove a defect by simply arguing that the product did not provide the safety that would have been expected by the public when the product was placed on the market or put into service, with regards to the particular (new) purpose it was being used for at the time of the accident. After all, as an early Belgian court decision emphasizes, the plaintiff “*does not have to prove that he used the harmful product in a normal manner*”.¹⁶⁸¹ He only bears the burden of proving that the product at the time of the accident was defective according to art. 6 PLD-1985 and art. 7 PLD-2024, due to the fundamental reasons that harmonised product liability presumes the defect’s anteriority (see *supra* nrs. 179 and 195). For example, the fact that a wooden crate repurposed as a kitchen step stool was unable to carry a kid’s weight, can be sufficient to establish with the caveat of a possible posteriority defence that the accident was caused by a defective product (i.e. a defective step stool), at least if this crate would have been considered unsafe as a step stool at the time when it was placed on the market or put into service.

When the plaintiff delivers this alternative, mostly easier proof of defect in the context of repurposing (or another type of serious product misuse), it of course remains possible and is extremely likely that the defendant will subsequently invoke the posteriority defence. The defendant then argues that the product was according to the posteriority defence’s standard of probability not defective when it had originally been put into circulation.¹⁶⁸² In other words, he crucially argues that the product had only become defective as a result of the repurposing or other serious product misuse. As discussed *supra* nr. 239, this means that the defendant demonstrates that the latter had not been reasonably foreseeable when the product was placed on the market or put into service and that this constituted an intervening, posterior origin of the defect.

If the defendant succeeds in this posteriority defence, it leads to the rejection of the liability claim based on the product’s apparent lack of required safety for the purpose it was being used for at the time of the accident. If the defendant fails to prove this posteriority defence and the repurposing or other serious product misuse is instead considered to have been reasonably foreseeable when the product was originally placed on the market or put into service, then it is confirmed that the product had always been defective with regards to this particular purpose. In other words, the same defectiveness is established as the plaintiff would have applied the aforementioned first method of proving defectiveness in the context of product misuse.

This twofold distinction explains the observation that serious product misuse is considered both as part of the product defect assessment and of the posteriority defence, in a manner that is theoretically consistent with the overall logic of both Directives.¹⁶⁸³ Finally, also this

¹⁶⁸¹ Trib. Namur 21 November 1996, *JLMB* 1997, 104.

¹⁶⁸² Art. 7(b) PLD-1985; art. 11(1)c PLD-2024. See *supra* nr. 195 regarding the posteriority defence in general.

¹⁶⁸³ Specifically, it is consistent with the basic principles on the allocation of the burden of proof (see *supra* nr. 205) and the with fact that a post-marketing circumstance like product misuse can either be part of the defect assessment or of the posteriority defence but not of both simultaneously. This last crucial difference thus depends on whether this post-marketing circumstance had been reasonably foreseeable when the product was placed on the market or put into service (see *supra* nr. 239).

theoretical distinction can be questioned by wondering whether it makes a real difference in practice, since both hypotheses lead to the same discussion about the reasonable foreseeability of the repurposing (or other misuse). Once again, the answer remains that it remains theoretically crucial to distinguish whether this debate is part of the defect assessment or the posteriority defence, because this determines which party bears the ‘evidentiary risk’ when a condition cannot be established according to the applicable standard of proof (see analogously *supra* nrs. 230 and 239).

ii. Reasonable foreseeability of product repurposing

256. GENERAL PRINCIPLE AND REJECTING LINK WITH CONTRIBUTORY FAULT ASSESSMENT – As detailed in the preceding section, either the plaintiff has to prove a defect by arguing that the repurposing had been reasonably foreseeable and the product should have provided the required safety or the defendant has to prove the posteriority defence by arguing that the repurposing had not been reasonably foreseeable and constituted an intervening, posterior origin of the product’s defectiveness. In terms of available evidence, it is worthwhile to refer here to art. 9(2) PLD-2024, which allows also defendants in future harmonised product liability proceedings to request an order according to which “*the claimant is required, in accordance with national law, to disclose relevant evidence that is at the claimant’s disposal*” (see *supra* nr. 206.a). This novel rule, which is the mirror-right of a similar right enjoyed by the plaintiff,¹⁶⁸⁴ can become occasionally helpful for defendants to obtain access to data from smart devices, a report by an insurance expert or other evidence potentially held by a plaintiff that might shed a light on suspected or admitted but unclear circumstances of product repurposing. This will in particular play a role in vertical claims where the plaintiff is an injured consumer, in contrast to diagonal claims by injured third parties.

Whether a particular type of repurposing had been reasonably foreseeable when a product was placed on the market or put into service, can be a challenging assessment. As a general guidance, we only have the in the literature generally recognized principle that a certain amount of product ‘misuse’ can still be reasonably foreseeable when a product is placed on the market or put into service.¹⁶⁸⁵ HOWELLS refers to the repurposing of hosiery as a serpentine belt in a machine as an example of a “*bizarre use*” that will lead to a finding that a product is not defective, but also considers that the question of what still constitutes reasonably foreseeable product misuse is generally open to debate.¹⁶⁸⁶

The literature, which mostly focuses on misuse in general rather than specifically on circular repurposing of products and components, offers a few criteria that are worth considering.

¹⁶⁸⁴ Art. 9(1) PLD-2024.

¹⁶⁸⁵ Art. 6(1)b and recital 6 PLD-1985; art. 7(2)b PLD-2024. See also the case law and literature cited *supra* footnotes 1095-1096. In Belgian liability law, this can be more broadly interpreted as part of the ‘*consideratieplicht*’ (see *infra* footnote 1690).

¹⁶⁸⁶ Howells, ‘strict liability’, nr. 4.189.

Some early commentaries emphasize that one should look at what is ‘socially accepted’.¹⁶⁸⁷ Admittedly, this is true at a very general level. Nevertheless, as a criterion, this offers little practical added value because it only paraphrases the objective criterion of product defectiveness in art. 6(1) PLD-1985 and art. 7(1) PLD-2024, which is based on the safety that the general public is entitled to expect (see *supra* nr. 179).¹⁶⁸⁸

VANSWEEVELT, WEYTS and VERHOEVEN have proposed to equate no longer reasonably foreseeable misuse with a ‘severe fault’ (*culpa lata*)¹⁶⁸⁹ on the part of the consumer.¹⁶⁹⁰ Although this has the benefit of recognizing that some consumer conduct that constitutes a fault can still be considered to have been reasonably foreseeable,¹⁶⁹¹ it is in my opinion incorrect to conflate the assessment of the defendant’s potential ‘quasi-strict’ product liability with the assessment of the repurposer’s potential (contributory) fault (see more in detail *infra* nr.

¹⁶⁸⁷ H.C. Taschner, ‘La future responsabilité du fait des produits défectueux dans la Communauté européenne’ (1986) *Revue du Marché Commun* 257, 261; M. Faure and W. Van Buggenhout, ‘Produktaansprakelijkheid: De Europese Richtlijn: Harmonisatie en Consumentenbescherming?’ (1987) *Rechtskundig Weekblad* 1, 11; Markovits, *La Directive C.E.E. du 25 juillet 1985*, 209-210.

¹⁶⁸⁸ See in this sense nuancing the added value of this criterion T. Vansweevelt, ‘De Wet van 25 februari 1991 inzake produktaansprakelijkheid (deel 1)’ (1992) *Tijdschrift voor Belgisch Burgerlijk Recht* 94, 116; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 515; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 152-153.

¹⁶⁸⁹ Belgian case law and literature employ various definitions of a ‘severe fault’, which is by nature more severe than a normal fault (the *bonus pater familias* standard) but also has to be distinguished from an ‘intentional fault’. See generally B. Goffaux, ‘La faute’ in F. George and R. Jafferali (eds.), *Manuel de droit de la responsabilité civile* (Anthemis 2022) 113). A classical definition by LAURENT is “*ne pas apporter à l’exécution de ses obligations les soins que personne ne néglige.*” (F. Laurent, *Principes de droit civil Français* - T. 16 (Bruylant 1878) 274).

¹⁶⁹⁰ T. Vansweevelt, ‘De Wet van 25 februari 1991 inzake produktaansprakelijkheid (deel 1)’ (1992) *Tijdschrift voor Belgisch Burgerlijk Recht* 94, 116-117; B. Weyts, ‘De Wet Productaansprakelijkheid: het voorzienbaar foutief gebruik van een product en de legitieme veiligheidsverwachtingen van ‘grote publiek’ (note Cass. BE 26 September 2003)’ (2003) *Rechtskundig Weekblad* 23, 25; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 515-516; D. Verhoeven, ‘Het redelijkerwijze voorzienbaar gebruik van een product en het later ontstaan van gebreken in de wet productaansprakelijkheid (note Antwerpen 28 October 2009)’ (2011) *Tijdschrift voor Belgisch Burgerlijk Recht* 388, 391, 393; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 152-153. This is inspired by influential work of WEYTS regarding the requirement of reasonably foreseeability of damage as part of the general standard of care in extracontractual fault-based liability (see also *supra* nrs. 208 et seq.). She argues that potential damage resulting from a normal fault by an injured party can be considered to have still been reasonably foreseeable (‘*consideratieplicht*’) but that the same cannot be said of potential damage resulting from a severe or an intentional fault (B. Weyts, *Fout van het slachtoffer in het buitencontractueel aansprakelijkheidsrecht* (Intersentia 2003) 357-359). See also T. Verheyen, *Eenzijdige beheersing van het aansprakelijkheidsrisico: Over waarschuwingen, instructies, disclaimers en andere technieken tot eenzijdige exoneration* (Intersentia 2021) 263-270.

¹⁶⁹¹ See also art. 6(1)b and recital 6 PLD-1985; art. 7(2)b PLD-2024; case law and literature cited *supra* footnotes 1095-1096.

273).¹⁶⁹² Here, the focus should be on the former and not on the latter. After all, even some particularly reckless or intentional conduct by a consumer can theoretically have been reasonably foreseeable at the time when a product is put into circulation, for example because of the specific nature of the type of product and particular target audience of consumers, because there were public reports in the past about the same misuse having already led to accidents or because particular safety standards at the time already addressed this specific risk.¹⁶⁹³

Additionally, it should be noted that harmonised product liability defendants already enjoy a partial reduction or exclusion of liability in the event that the plaintiff's own fault as a repurposer would have contributed to the product accident (see *infra* nrs. 273 et seq.). This makes it in my opinion a kind of double-counting to already consider the plaintiff's potential fault as part of the product defect assessment, which is constitutive for initially establishing the defendant's possible harmonised product liability against which the contributory fault can subsequently be invoked as a separate defence.

257. PREFERENCE FOR A COMPARATIVE CRITERION – Following an interpretation that seems to be pioneered in the context of the PLD-1985 by TASCHNER AND FRIETSCH,¹⁶⁹⁴ many German authors suggest as a rule of thumb that it becomes more likely that a certain misuse was not reasonably foreseeable ‘how further it is removed from’ the original, intended use of the product.¹⁶⁹⁵ In other words, the actual use by the consumer must be ‘compared’ with the use that was originally envisaged when the product was put into circulation, which is why I call this a ‘comparative’ approach. This criterion is in my opinion particularly useful in the context of product repurposing and is also re-employed in the Chapter on repairs and refurbishments (see *infra* nr. 374). However, given the objective nature of harmonised product liability's liability standard,¹⁶⁹⁶ the ‘originally envisaged use’ must be interpreted as the legitimate safety expectations of the general public¹⁶⁹⁷ rather than the use which the particular manufacturer

¹⁶⁹² However, some other European authors also draw a few more open-ended, general parallels between the reasonable foreseeability of product (mis)use from the EU harmonised product liability defendant's perspective and their national, extracontractual fault-based liability of the consumer. *E.g.*, Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 48, nr. 54; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 3, nr. 24.

¹⁶⁹³ See *supra* nrs. 10.d, 185 and 187.

¹⁶⁹⁴ Taschner and Frietsch, *Kommentar*, 278. Note that TASCHNER was as a Commission official the principal author of the proposals leading to the PLD-1985.

¹⁶⁹⁵ Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 48, nr. 55; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3604, 17; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 3, nr. 63; J. Taeger, ‘§ 3 ProdHaftG’ in P. Ehrling and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 42; G. Wagner, ‘Produkthaftungsgesetz’ in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024), § 3, nr. 26.

¹⁶⁹⁶ Art. 6(1) PLD-1985; art. 7(1) PLD-2024. See *supra* nr. 179.

¹⁶⁹⁷ See also the reference to ‘the perspective of the objective user’ in the seemingly original formulation of this criterion in Taschner and Frietsch, *Kommentar*, 278: “Ausegrenzt wird damit die Gebrauchs- oder Verbrauchssituation, die so weit vom Funktionsbereich des konkreten Produkts entfernt ist, daß sie weder aus der Sicht des objektiven Benutzers noch aus derjenigen eines vergleichbaren Produzenten vorstellbar ist, also der Hersteller dafür nicht mehr verantwortlich sein kann.”

or importer subjectively had in mind at the time or even the use which they or others in the product distribution chain would communicate in advertisement and product documentation to the public.¹⁶⁹⁸

As an illustration of this comparative criterion, repurposing a chair or stepladder as a stand for plants or a piece of art can be considered as reasonably foreseeable, since there is in comparison little difference between the product's originally envisaged use and the new one. In both instances, the goal is to physically support a considerable but comparable weight. It can even be argued that chairs and stepladders must in their original function support moving weights (i.e. persons), which is more demanding in terms of stability and pressure and thus also encompasses supporting immovable objects. Of course, it still needs to be concretely appreciated whether the particular chair or stepladder had been suitable for placing the particular object placed on it in question. Placing a massive statue or plant with a significantly greater weight than an average adult, is admittedly no longer reasonably foreseeable. If the chair or stepladder would collapse or topple over in such circumstances, the defect qualification could still be rejected or the defendant's posteriority defence allowed (see *supra* nr. 255).

In an actually reported, similar case, a Belgian court held that repurposing a step ladder as a regular ladder where it rests on 2 instead of four points on an uneven garden surface, was not reasonably foreseeable.¹⁶⁹⁹ Although the goal of using the product in providing physical support to persons to reach higher locations remained the same, using it on an uneven and unstable outdoor surface and using it on only 2 of its 4 support points, is definitely a significant, twofold difference. This can indeed lead to the conclusion that this repurposing had actually not been reasonably foreseeable and that the step ladder was therefore not defective. As another example, repurposing an electric cable as a rope to support objects or persons, for example in a workshop or playground, seems to be not reasonably foreseeable in the context of EU harmonised product liability. In comparison, there is a significant difference between the electric cable's original envisaged use, conducting electricity (and providing insulation), and its new use, supporting external weight.

258. REASONABLE FORESEEABILITY OF PRODUCT REPURPOSING: EVOLUTION AND NECESSARY LIMITATIONS – In the context of a potential transition to a more circular and collaborative economy, it is important to highlight that also the assessment whether a particular repurposing is reasonably foreseeable can evolve over time and this has an impact on the liability risk for new

¹⁶⁹⁸ The latter, the presentation of a product, can of course influence albeit not necessarily determine the legitimate safety expectations of the public when the product is placed on the market or put into service (art. 6(1)a PLD-1985; art. 7(2)a PLD-2024). As discussed *infra* nr. 259.d, it is therefore also relevant for assessing the defect requirement (and, possibly, the posteriority defence) in relation to a repurposed product.

¹⁶⁹⁹ Antwerpen 4 December 2002, *T.Verz.* 2003, 833. It should be noted that the step ladder's use instructions also required placing the 4 support points on a firm surface area (*ibid.*, 836), which is an important, concrete criterion, as discussed *infra* nr. 259.d.

products that are being put on the market (see analogously *supra* nr. 232).¹⁷⁰⁰ This can be illustrated by the aforementioned examples of repurposing a former car battery as a home battery or turning smartphones into ‘smart home’ appliances like cameras or monitoring and control devices.¹⁷⁰¹ While such repurposing was unheard of when the first car batteries or smartphones entered the market, it has now become sufficiently common that, for new batteries or smartphones which are today placed on the market, such repurposing can arguably be expected.

However, notwithstanding the possibility that consumer goods repurposing becomes increasingly more prevalent, it must be emphasized that there is and always will be a limitation to what remains reasonably foreseeable. More outrageous applications of repurposing should not lead to harmonised product liability and, instead, the repurposer should partially or completely bear his own loss and/or be liable on a horizontal basis for damage to third parties (see also *infra* nrs. 273-276). One major and one minor normative reason can be offered for this necessary limitation.

First of all, harmonised product liability is not a full-fledged accident insurance nor a purely strict liability; it still requires a product defect that caused the damage (see *supra* nrs. 173 and 179-191). And this is generally desirable, especially when we consider the added value and complementarity of product liability with its existing alternatives (see in *supra* nrs. 9 et seq. and nrs. 150 et seq.). It would certainly not be conducive to corrective justice to hold manufacturers or other harmonised product liability defendants liable for product misuse that had not been reasonably foreseeable when placing the product on the market or putting it into service. After all, defendants would be held liable for a risk that is neither a ‘wrong’ nor an ‘abnormal’ risk according to the risk-internalisation rationale (see *supra* nrs. 97 and 127-128.c). It would furthermore not be a worthwhile improvement in terms of efficient accident-prevention to impose on said actors a liability standard that is clearly more stringent than the ‘optimal’ standard of care,¹⁷⁰² even when we would disregard the necessity of a contributory fault defence, as discussed below. Likewise, the added value of such an approach in terms of efficient risk-allocation can also be questioned, not only because social and private accident insurance alternatives are generally more efficient for this purpose but also because defendants will be comparatively more risk-averse vis à vis this less restricted, more difficult to price and insure liability risk (see *supra* nrs. 106 and 162).

Second, as discussed *supra* nr. 109.a, it is in terms of accident-prevention highly inefficient if a repurposer would be insufficiently incentivised to take care (‘moral hazard’). This would of course be the outcome either if he could claim through a vertical harmonised product liability claim full reparation of his own damage without being opposed by a contributory fault defence or if an injured third party would be unable to claim on a horizontal basis against him

¹⁷⁰⁰ See also on the possibility that a producer post-marketing becomes aware of a recurring type of certain misuse of his product and subsequently changes his product design, information or manufacturing process S. Van Camp, ‘Productveiligheid en Product Recall’ (2010) *Tijdschrift voor Belgisch Handelsrecht* 451, 457; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 144.

¹⁷⁰¹ See *supra* footnotes 475-476.

¹⁷⁰² Economic analysis would argue that such defendants will simply choose to only comply with the optimal level of care below this standard. See *supra* nr. 108.c.

regardless of his conduct as a repurposer. In the former case, even if we consider that harmonised product liability provides a contributory fault defence (see *infra* nrs. 273-276), there is a risk that defendants do not want to invoke it against an injured consumer. More likely, in a settlement of the case out of court, considerations of contributory fault are insufficiently considered. In the latter case, the injured third party will likely prioritize claiming on a diagonal basis against the product manufacturer or other harmonised product liability defendant, not only because of the ‘quasi-strict’ nature of this theory but also possibly because of reasons of empathy with a fellow consumer and/or concerns about his insolvency in case of liability (see *supra* nr. 140 on this ‘judgement proof problem’ in the context of product liability and circular economy). If he would be held liable on this diagonal basis, the harmonised product liability defendant may for the aforementioned reasons also be less eager to claim in recourse against the repurposing consumer. In conclusion, although this dissertation argues to conceptually separate harmonised product liability’s defect assessment from the repurposer’s (contributory) fault (see *supra* nr. 256 and *infra* nr. 274), both overlap in the sense that a very extensive interpretation of the former can negate the corrective value of the latter in actual legal practice.

259. OTHER DEFECT ASSESSMENT CRITERIA – Reasonably foreseeable (mis)use is only one of several criteria in the traditional product defect assessment.¹⁷⁰³ Hence, it can be instructive to look at some of the other criteria for product defectiveness, which have been examined *supra* nrs. 182-188.

- a. First of all, it is necessary to fixate the defect assessment at the time when the product was placed on the market or put into service.¹⁷⁰⁴ Repurposing might become more prevalent in an increasingly more circular and collaborative economy and, in doing so, gradually shift what is reasonably expected for new products that are being put into circulation. However, it is necessary to avoid the ‘hindsight bias’ of applying expectations regarding repurposing existing at the time of an accident instead of applying the expectations that existed when the product was put into circulation.
- b. Second, because repurposing may become more prominent and also receive policy attention as a circular strategy, it is possible that over time more binding or soft law rules and standards appear that consider various kinds of consumer good repurposing.

¹⁷⁰³ Art. 6(1)b PLD-1985; art. 7(2)b PLD-2024.

¹⁷⁰⁴ Art. 6(1)c(2) PLD-1985; art. 7(2)e(3) PLD-2024. See also *supra* nr. 184.

Relevant binding regulation can both have a product safety¹⁷⁰⁵ or an Ecodesign¹⁷⁰⁶ origin. A violation of a binding rule which requires a product to provide a certain level of safety, can directly prove a product's defectiveness based on the final adopted version of art. 7(1) PLD-2024 (see *supra* nr. 180). Alternatively, the defect presumption of art. 10(2)b PLD-2024 can also potentially apply (see *supra* nr. 206.b). In other cases, both binding and 'soft law' rules and standards have always at least an indicative effect as proof of either a defect or the lack thereof.¹⁷⁰⁷

- c. Third, in the repurposing context, it is particularly important to consider the nature of a product, how it can be repurposed and the specific vulnerability of certain groups (see *supra* nr. 185).¹⁷⁰⁸ This can cut both ways. On the one hand, it is definitely true that the more severe a potential accident risk involving repurposing is, the more likely it can become that the producer has to design out or warn against this risk, as discussed below. On the other hand, if a particular type of repurposing presents very severe and particularly obvious risks, it may no longer be reasonably foreseeable that such repurposing would occur. For example, small household and DIY-items may present attractive shapes or dynamic objects for small children to play or make sound with. But considering them as toys for them is arguably not a reasonably foreseeable misuse, given the major and well-known vulnerability of small children to swallow them or otherwise hurt themselves. Additionally, the potentially unexpected nature of an accident risk in a repurposing scenario should be considered as well (see analogously *supra* nr. 233). For example, items like candles or stationery might be sold in jars, which can be repurposed as a drinking cup or food storage container. People are to some extent capable of assessing through touch, sight and experience whether these objects are not too fragile or resistant to certain temperature changes. But an average consumer is, especially in the absence of a very visible and permanent warnings, not aware of the fact that some of these objects contain toxic substances that are released through contact with liquids or foods.

¹⁷⁰⁵ Relevant product safety norms are either specific sectoral rules or standards which implement the main requirements of general product safety regulation for specific products. General product safety rules themselves provide little additional guidance specifically relating to repurposing, since these mostly confirm the same general principles and concepts as just examined from the perspective harmonised product liability. *E.g.*, art. 3(2) General Product Safety Regulation 2023/988/EU: “‘safe product’ means any product which, under normal or reasonably foreseeable conditions of use, including the actual duration of use, does not present any risk or only the minimum risks compatible with the product’s use, considered acceptable and consistent with a high level of protection of the health and safety of consumers;”. See also for products already placed on the market art. 2(b) General Product Safety Directive 2001/95/EC 2001/95. See in general *supra* nr. 10.

¹⁷⁰⁶ See *supra* nr. 251 on Ecodesign requirements in general and on the possibility to invoke the new arts. 7(1) and 10(2)b PLD-2024 in case of violations.

¹⁷⁰⁷ See *supra* nr. 187. See also *supra* 198 on the compliance defence of art. 7(d) PLD-1985; art. 11(1)d PLD-2024.

¹⁷⁰⁸ See also on reasonably foreseeable use in relation to particularly vulnerable groups Verhoeven, *Productaansprakelijkheid en productveiligheid*, 147-149.

- d. Fourth, a role is also played by the information provided to the consumer,¹⁷⁰⁹ as the prior example also demonstrated. The literature on the more general issue of product misuse, refers so consistently to this factor that the impression is created that potential defects relating to misuse can be avoided by including relevant usage instructions or, if necessary, a very clear warning on the packaging or product itself.¹⁷¹⁰ Belgian and German case law tend to confirm this.¹⁷¹¹ By and large, it seems indeed correct that sufficiently clear information can suffice to anticipate and protect against reasonably foreseeable but potentially dangerous repurposing or other forms of ‘misuse’ of a product. Hence, such information can be helpful in avoiding a defect qualification, while their absence can be interpreted as an information defect. Moreover, it is arguably harder for manufacturers to anticipate through product design various types of potentially dangerous product repurposing than to prevent other types of misuse in this manner. This is because the potential risks involving repurposing are so wide-ranging that it becomes challenging to integrate it in the complex product design assessment, which already involves myriad considerations of performance, among which the necessary safety when a product is used according to its original purpose.¹⁷¹²
- Nevertheless, the safety hierarchy’s prioritization of eliminating or mitigating accident risks through product design over product information (see *supra* nrs. 182 and 236) should also in the repurposing context remain a guiding principle, albeit especially for the most acute and the still most clearly foreseeable risks. These are likely risks relating to types of repurposing that still remain relatively close to a product’s original function (see *supra* nr. 256 on the ‘comparative criterion’) or to types of repurposing that involve significant safety hazard or particularly vulnerable groups, as discussed above. This is illustrated by Belgian PLDI case law concerning product misuse in general, which found that warnings and instructions can be insufficient to prevent a defect

¹⁷⁰⁹ Art. 6(1)a PLD-1985; art. 7(2)a PLD-2024. See also *supra* nr. 182.

¹⁷¹⁰ See Taschner and Frietsch, *Kommentar*, 277; Howells, ‘strict liability’, nr. 4.169, 4.186; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 175; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3604, 10; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 11.57; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 3, nr. 24; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 3, nrs. 61, 69; J. Taeger, ‘§ 3 ProdHaftG’ in P. Ehrling and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 42. An extreme version of this view would consider reasonably foreseeable misuse of products solely a matter of potential information defects.

¹⁷¹¹ See, e.g., BELGIUM: Antwerpen 4 december 2002, *T.Verz.* 2003, 833, 836; Antwerpen 26 September 2006, *RW* 2008-09, 618. See also Liège 25 October 2011, *RGAR* 2012, nr. 148.56, *Bull.ass.* 2013, 100 (confirming significance of information for remediating defect, but not relating to product misuse per se). But see the Belgian case law cited *infra* footnote 1713. GERMANY: OLG Düsseldorf 14 June 2002, 14 U 248/99, *RuS* 2004, 36, *Juris*; OLG Bamberg 26 October 2009, 4 U 250/08, *NJW-RR* 2010, 902, *Juris*. See also BGH 16 June 2009, VI ZR 107/08, *BGHZ* 181, 253, *Juris*, nr. 23.

¹⁷¹² Arguably, the required safety for using a product according to its original purpose should take priority over considerations of safety for types of repurposing, to the extent that there would be a conflict at all.

qualification with regards to relatively certain, reasonably foreseeable product misuse by children.¹⁷¹³

260. ART. 10(2)c PLD-2024: IF REPURPOSING WAS REASONABLY FORESEEABLE, AN ACCIDENT CAUSED BY AN OBVIOUS MALFUNCTION CAN DELIVER A DEFECT PRESUMPTION – If a plaintiff demonstrates that “*damage was caused by an obvious malfunction of the product during reasonably foreseeable use or under ordinary circumstances*”, then he enjoys based on art. 10(2)c PLD-2024 a refutable presumption of the product’s defectiveness.¹⁷¹⁴ As discussed in preceding sections, some instances of repurposing can be considered as having already been reasonably foreseeable when a product was originally placed on the market or put into service.¹⁷¹⁵

An injured repurposer or an injured third party can therefore invoke the defect presumption of art. 10(2)c PLD-2024, if a product’s repurposing and its other use circumstances were effectively reasonably foreseeable, and if the repurposed product subsequently causes damage as a result of an obvious malfunction. The fact that the repurposing had been reasonably foreseeable can of course already suffice in some cases to prove a product defect, due to a lack of safety which the public was entitled to expect in a context of still reasonably foreseeable misuse (see *supra* nrs. 255-258). Nevertheless, even in those cases, there might be evidence indicating to the contrary that the product was not defective due to a lack of safety in the context of the reasonably foreseeable repurposing, which still leaves room for an application of art. 10(2)c PLD-2024’s refutable defect presumption.

The final adopted version of recital 46 PLD-2024 contains a description of the ‘reasonably foreseeable use’ referred to in art. 10(2)c which does not seem to encompass potential product ‘misuse’.¹⁷¹⁶ Nevertheless, this should in my opinion only be interpreted as a non-exhaustive illustration of reasonable foreseeability in the Directive’s non-operative part. A uniform interpretation of this concept akin to how it is used in the defect assessment (and this

¹⁷¹³ BELGIUM: Cass. BE 26 September 2003, RW 2004-05, 22, 23, note B. Weyts, *JLMB* 2004, 260 (warning and use instructions were insufficient to avoid defect qualification; still reasonably foreseeable that child would remove dental prosthesis in an unsafe manner); Antwerpen 28 October 2009, *TBBR* 2011, 381, 384, note D. Verhoeven (warning in manual insufficient to avoid defect qualification vis à vis reasonably foreseeable risk that child would enter hand in exposed engine department; however, posteriority defence applies to faulty repair); Trib. Bruxelles 23 January 2001, *RGAR* 2002, nr. 13513 (sufficiently clear warning in national language(s) on packaging or on basketball hoop itself could have avoided defect qualification in relation to reasonably foreseeable risk of manipulation).

¹⁷¹⁴ See *supra* nrs. 205-206 on the plaintiff’s traditional burden of proof in harmonised product liability and the new rules on disclosure of evidence and refutable presumptions of defect and causation introduced by arts. 9-10 PLD-2024.

¹⁷¹⁵ Recital 46 PLD-2024 contains a description of art. 10(2)c *ibid.*’s ‘reasonably foreseeable use’, which seemingly excludes product misuse. However, this is arguably a non-exhaustive illustration rather than a restrictive definition of the concept and it is included in a non-binding recital. This dissertation has therefore argued *supra* nr. nr. 233 to interpret ‘reasonably foreseeable use’ in both art. 10(2)c *ibid.*, the defect assessment and the posteriority defence in a uniform, coherent manner.

¹⁷¹⁶ Recital 46 PLD-2024: “[...] Reasonably foreseeable use covers the use for which a product is intended in accordance with the information provided by the manufacturer or economic operator placing it on the market, the ordinary use as determined by the design and construction of the product, and use which can be reasonably foreseen where such use could result from lawful and readily predictable human behaviour.”

dissertation's understanding of the posteriority defence, see *supra* nr. 239) seems preferable for reasons of theoretical coherence. Moreover, such a broad interpretation can contribute to the Directive's goals of accident-prevention and risk-allocation, which correspond with core components of this dissertation's normative framework (see *supra* nrs. 130 and 168).

As an illustration, it might be considered reasonably foreseeable that a jar in which a sauce is sold, is repurposed for storing small objects like writing utensils. If the jar provides sufficient safety for this alternative, reasonably foreseeable use but nevertheless suddenly shatters forcefully when it is being moved during cleaning, leading to injuries, the malfunctioning of the product which seemingly might have also occurred when the product had still been used for its original function, still offers a defect presumption based on the new art. 10(2)c PLD-2024.

§ 2. Liability of product repurposers

a. Scope of application

261. OVERVIEW OF POSSIBLE 'REPURPOSING' QUALIFICATIONS – Can repurposers themselves be held liable on the basis of the PLDI¹⁷¹⁷ for damage resulting from an accident caused by their repurposed product? To answer this question, it is necessary to return to the different possible understandings of 'repurposing', which have been discussed *supra* nr. 84. As a general remark, it is also necessary to consider that, in practice, 'repurposers' of consumer goods are mostly prosumers (collaborative production, repair or redistribution). Prosumers can only be held liable on the basis of the PLDI if they either fail to prove the 'neither for-profit nor professional' defence of art. 7(c) PLD-1985 or if their activity still qualifies as a 'commercial activity' according to arts. 1, 2(1) and 4(7)-(9) PLD-2024 (see *supra* nrs. 197-198).

First of all, if the repurposer physically modifies the existing product and possibly assembles it with other products or components to make a new one with an entirely new function, he 're-uses' these products or components in a new product manufacturing process. For example, he might assemble ladders and window shutters into wardrobes or convert old tires, barrels and planks into a playground installation. Such repurposer, who is likely a collaborative producer engaged in the 'makers economy', can be held liable as a manufacturer pursuant to art. 3(1) PLD-1985 and art. 8(1) PLD-2024.

Second, if the repurposer would use in a (collaborative) repair process a product or component as a spare part for a different function it was originally designed for, he may be liable based on the PLDI as a distributor or even a primary liability qualification for defects in the (spare part) product component, as discussed *infra* nr. 433. Moreover, there is a possibility that this person can additionally be held liable on the basis of art. 8(2) PLD-2024 for substantially modifying the now repaired product (see *infra* nrs. 442 et seq.). For example, spare nuts,

¹⁷¹⁷ This must be distinguished from the possibility to invoke the contributory fault defence of art. 8(2) PLD-1985 and art. 13(2) PLD-2024 against a plaintiff who has repurposed a product which subsequently causes an accident. This defence is discussed *infra* nrs. 273-276.

bolts, springs and/or magnets from a broken washing machine can be repurposed as spare parts and used to fix a tumble dryer.

Third, if the repurposer would redistribute the repurposed product, whether or not in combination with any of the aforementioned physical product modifications, he can be subject to secondary product liability as a distributor pursuant to art. 3(3) PLD-1985 and art. 8(3) PLD-2024. If additional circumstances are fulfilled, such redistributor could even be liable on a primary basis as a quasi-manufacturer or importer. This is discussed *infra* nrs. 298-306. Yet, a repurposed product can of course also be redistributed without a property transfer, such as through use- and result-oriented PSS.¹⁷¹⁸

However, the three aforementioned possibilities are not ‘pure repurposing’, as defined in this dissertation’s typology *supra* nr. 84, which explains why the resulting liabilities based on the PLDI are discussed in other Chapters. ‘Pure repurposing’, on which this Chapter focuses, actually entails neither a physical modification nor a redistribution of the product and consists of only changing the function for which a product is used. The theoretical possibility of harmonised product liability for such repurposing, is examined separately in the following sections.

262. HARMONISED PRODUCT LIABILITY FOR ‘PURE REPURPOSING’: THE POSSIBILITY OF LIABILITY BASED ON ART. 8(2) PLD-2024 FOR A COMMERCIAL ACTOR WHO SUBSTANTIALLY MODIFIES A PRODUCT THROUGH REPURPOSING – ‘Pure repurposing’, as defined *supra* nr. 84 and examined in this Chapter, thus requires that only a product’s function is changed, no physical modification takes place and the repurposed product simply continues to be used rather than to be redistributed or used in another circular strategy. Examples are turning tires into loose playground equipment, stacking planks and bricks or crates as a makeshift shelf or the repurposing of one or more car batteries as a residential battery. At first sight, it does not seem possible to hold such a repurposer liable based on the PLDI, since ‘pure repurposing’ does not entail any product (re)production or (re)distribution which traditionally service as the anchors for allocating harmonised product liability (cf. *supra* nrs. 74 and 176-178). Conversely, there are plenty of opportunities to hold such repurposers liable on the basis of national liability law, in particular extracontractual liability for fault or the French-Belgian *responsabilité du fait des choses* (see also *supra* nrs. 208-213 and 217-218 on these theories and in particular the extent to which they are harmonised by the PLD-1985 and PLD-2024).

Nevertheless, an argument can be made that, by changing a product’s main function, a repurposer actually does ‘reproduce’ a product, which can still lead to harmonised product liability. After all, a product’s function or purpose is one of its decisive characteristics, especially from an accident-prevention perspective. The crucial defect assessment criterion of a product’s “*reasonably foreseeable use*”¹⁷¹⁹ implicitly confirms this. Art. 8(2) PLD-2024 now provides a clear ground to hold someone effectively liable on a primary basis when he has,

¹⁷¹⁸ Lending the product for free is another alternative. However, in this event, it is much more likely that the prosumer could invoke the neither for-profit nor professional defence of art. 7(c) PLD-1985 or that it is not a commercial activity pursuant to arts. 1, 2(1) and 4(7)-(9) PLD-2024. See also *supra* nrs. 197-198.

¹⁷¹⁹ Art. 6(1)b PLD-1985; art. 7(2)b PLD-2024. See also *supra* nrs. 183 and 256-258.

outside the manufacturer's control, 'substantially modified' a product and subsequently put it into service or made it available. The Chapter on repairs *infra* nrs. 437 et seq. examines this provision in more detail, including the possibility for a similar liability already existing under the still applicable rules of the PLD-1985.

- a. A substantial modification, which the final adopted version of the new Directive now defines explicitly in art. 4(18) PLD-2024,¹⁷²⁰ can first of all consist of a modification that EU or national product safety rules consider to be substantial. Some product safety regulation might indeed emphasize how a product can only be used for a particular purpose or either prohibit or strictly regulate certain other uses, although this seems less likely in the traditional, non-medical consumer goods sector. Alternatively, in the absence of relevant product regulation, a modification can be substantial, among others, if it "*changes the product's original [...], purpose*" and at the same time "*changes the nature of the hazard, creates a new hazard or increases the level of risk.*"¹⁷²¹ By definition, repurposing changes a product's original purpose (see *supra* nr. 84). Whether the second requirement is fulfilled, is a case-specific appreciation, since not every repurposing meets either of these three criteria. In the example where a chair or stepladder is repurposed as a stand for plants or a piece of art, there is hardly a change in hazard or increase in level of risk.¹⁷²² Nevertheless, many cases of repurposing effectively meet this second requirement. Most applications actually change or create new hazards, such as by placing large former tractor tires on a playground, which no longer need to function as part of a driving vehicle but can now potentially topple over or crush (too) young experimenting children. Alternatively, other cases of repurposing often increase at least the level of risk involved in using a product, like repurposing a washing line for suspending heavier objects in a makeshift workshop.

In comparison with reuse (cf. *supra* nr. 227), it seems less significant that repurposing is not mentioned in the Blue Guide or in literature discussing the pre-existing rule in EU product regulation that inspired art. 8(2) PLD-2024, since these sources do not discuss this particular circular strategy at all. Yet, it is significant that the aforementioned definition of substantial product modification in art. 4(18) PLD-2024 does not include the explicit requirement that the modification happens "*by physical or digital means*", as the parallel provision of art. 13(3) General Product Safety Regulation 2023/988/EU stipulates.¹⁷²³ This makes it possible that a 'pure repurposing', which by definition does not

¹⁷²⁰ Cf. art. 4(18) PLD-2024 with the lack of a clear definition and merely an indicative description in recital 29 Commission, 'Proposal for a Directive of the European Parliament and of the Council on liability for defective products' COM(2022) 495 final.

¹⁷²¹ Art. 4(18)b PLD-2024.

¹⁷²² See *supra* nr. 256, where this example is discussed in the context of a proposed 'comparative criterion' for determining whether a particular repurposing had been reasonably foreseeable in the context of the defect assessment and posteriority defence. This appreciation is somewhat related to but still fundamentally different from the more safety-oriented 'substantial modification' concept of art. 4(18) PLD-2024.

¹⁷²³ In addition, art. 4(18) *ibid.* does not require that "*the modifications have not been made by the consumers themselves or on their behalf for their own use*", as stipulated in art. 13(3)c General Product Safety

require any physical or digital change to a product (see *supra* nrs. 84 and 261), qualifies as a substantial product modification according to art. 4(18) PLD-2024.

- b. Liability based on art. 8(2) PLD-2024 furthermore requires that the ‘substantial modification’ resulting from a product repurposing occurs outside the ‘manufacturer’s control’. The latter implies that the repurposing must not have been either performed, authorised or consented to by the original manufacturer of the product.¹⁷²⁴ If a repurposing nevertheless occurs within such control of the manufacturer, then a plaintiff can simply claim against said manufacturer who can no longer invoke the posteriority defence for the post-marketing substantial modification that occurred within his own control.¹⁷²⁵
- c. Last but not least, liability of a repurposer based on art. 8(2) PLD-2024¹⁷²⁶ requires that the product which has been substantially modified outside the manufacturer’s control, is subsequently either ‘put into service’ or ‘made available on the market’. Both new concepts in harmonised product liability presuppose a commercial activity.¹⁷²⁷ As a result, when a traditional consumer repurposes a product for his own private needs, even if it qualifies as a substantial product modification, he cannot become liable based on art. 8(2) PLD-2024, as opposed to a commercial entity.

For example, the aforementioned playground with repurposed tires can be a professional playground of a company or of a non-profit organisation which allows it to be used by children of employees, daycare clients or visiting families. Alternatively, it can be an individual family’s playground in their garden. In the former scenarios, the tires are put into service¹⁷²⁸ in the course of a commercial activity,¹⁷²⁹ while this is normally not the case in the latter scenario (see also *supra* nr. 198 on activities by prosumers).

Regulation 2023/988/EU. However, this omission in art. 4(18) PLD-2024 makes little difference, since the application of art. 8(2) PLD-2024 additionally requires a commercial activity, which excludes pure consumers regardless, as discussed above.

¹⁷²⁴ Art. 4(5) PLD-2024. See *infra* nrs. 402-404 for a more detailed analysis of this novel concept.

¹⁷²⁵ Art. 11(2)d *ibid.* See *supra* nr. 196 and *infra* nr. 436.

¹⁷²⁶ At least on the basis of the final adopted version. Cf. art. 8(2) *ibid.* with art. 7(4) in Commission, ‘Proposal for a Directive of the European Parliament and of the Council on liability for defective products’ COM(2022) 495 final.

¹⁷²⁷ Art. 4(7)(9) PLD-2024. See also relating to ‘making a product available on the market’ and ‘putting a product into service’ *infra* nrs. 323 and 412.

¹⁷²⁸ Note that, if this is qualified as a lease contract, it becomes more likely that this is qualified as ‘making these products available’ rather than the residuary category of ‘putting into service’. Cf. Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 19, 23-24.

¹⁷²⁹ See regarding the non-profit association and more generally on the requirement of a ‘commercial activity’ in the definitions of ‘making available on the market’ (art. 4(7) PLD-2024) and ‘putting into service’ (art. 4(9) *ibid.*), Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 19: “Commercial activity is understood as providing goods in a business related context. Non-profit organisations may be considered as carrying out commercial activities if they operate in such a context. This can only be appreciated on a case by case basis taking into account the regularity of the supplies, the characteristics of the product, the intentions of the supplier, etc. In principle, occasional supplies by charities or hobbyists should not be considered as taking place in a business related context.”

If a commercial entity, like a farming company, distributes – potentially even by donating to a youth organisation¹⁷³⁰ or by leasing¹⁷³¹ them – those repurposed tires, it can similarly be held potentially liable based on art. 8(2) PLD-2024 for a subsequent accident, because this qualifies as making those tires available on the market. The same distinction can be made with the aforementioned example of repurposing a washing line to suspend heavy objects, depending on whether this happens for organisational reasons in a consumer's garage or in the workshop of a commercial craftsman.

263. REPURPOSING THAT SUBSTANTIALLY MODIFIES A PRODUCT, OCCURRING 'WITHIN THE MANUFACTURER'S CONTROL' – Purely theoretically, it is important to point out that the PLD-2024 provides a set of different when a repurposing, which 'substantially modifies' a product according to art. 4(18) PLD-2024, would not occur outside but 'within the manufacturer's control'. Namely, this means that the time of the defect assessment for liability of existing defendants in the product's original distribution chain is postponed on the basis of art. 7(2)e PLD-2024 to this moment in time. Furthermore, these defendants will on the basis of art. 11(1)d PLD-2024 not be able to invoke the posteriority defence to claim that the harmful defect in the product was the result of the substantial modification, despite the fact that it occurred after the product had been placed on the market or put into service. These rules are examined in more detail in the Chapter on repairs and refurbishments. In particular *infra* nrs. 435-436 an outline can be found.

However, it is highly unlikely that a repurposing, especially one that 'substantially modifies' a product, would be performed by the manufacturer or an actor in his distribution chain or service network acting under his consent or authorisation. This is nevertheless what is required for it to occur 'within the manufacturer's control'.¹⁷³² Therefore, the remainder of this Paragraph only discusses product repurposing occurring 'outside the manufacturer's control', which can potentially lead to a separate primary liability based on art. 8(2) PLD-2024, as discussed *supra* nr. 262.

b. Implementation of the repurposer's liability based on art. 8(2) PLD-2024

264. IDENTIFICATION OF THE REPURPOSER – A third party injured by a repurposed product or even an injured user of a product which has first been repurposed and then redistributed, can encounter difficulties in identifying the person who has changed the product's function ('repurposer'). This is actually problematic for the likelihood of success of any claim based on the PLDI against such repurposer, including claims based on art. 8(2) PLD-2024 against the so-called 'pure repurposer' central to this Paragraph. Interestingly, more recent product regulation requirements can potentially help plaintiffs to overcome this challenge of identifying a repurposer. Such requirements apply only to repurposers acting in the course of a

¹⁷³⁰ See art. 4(7) *ibid.* and *infra* footnote 1877 on how donations in the course of a commercial activity can qualify as 'making a product available on the market'.

¹⁷³¹ See also *supra* footnote 1728.

¹⁷³² Art. 4(5) PLD-2024. See also *infra* nrs. 402-404.

commercial activity, which precisely corresponds with their potential liability based on the PLD-2024, including art. 8(2) PLD-2024 (see *supra* nr. 262.c). Only repurposers who might already be held liable under the PLD-1985 (cf. *supra* nr. 261) are not always simultaneously subject to the same regulatory requirements, since the PLD-1985 has a very open scope of potential liability and only provides the very narrow neither for-profit nor professional defence of art. 7(c) PLD-1985 (see *infra* nr. 197 in the context of prosumers).

On the one hand, if a repurposer qualifies as a person who is subject to the same general product safety obligations as a manufacturer because he has substantially modified the original product according to art. 13(2)-(3) General Product Safety Regulation 2023/988/EU while acting in the course of a commercial activity,¹⁷³³ he has to comply with the ‘traceability requirement’ of art. 9(6) General Product Safety Regulation 2023/988/EU. Hence, in these cases, the repurposer’s name, registered name and address must theoretically be made available to third parties, if possible, by presenting this identifying information on the product itself (see also *infra* nr. 277).

On the other hand, also product passports can in the future help plaintiffs to identify a potentially liable repurposer. The rules on product passports that might serve as a blueprint for the implementation in the near future of the much broader Ecodesign for Sustainable Products Regulation 2024, are those relating to batteries (see *infra* nr. 344). The Batteries Regulation requires persons who place ‘repurposed’¹⁷³⁴ version of certain types of batteries on the market or who put those into service, which are again concepts from EU product regulation that presume a commercial activity,¹⁷³⁵ to issue a new ‘battery passport’.¹⁷³⁶ A concrete example might be an apartment block manager, commercial landlord or energy service provider who offers connected packs of repurposed electric car batteries for residential battery needs. The ‘battery passport’, a digital dataset accessible through a QR-code, will then not only identify the repurposer but also provide technical information on both the repurposed and the original battery (see *infra* nrs. 344-345), which can be helpful to injured parties for substantiating their liability claim against such repurposer on the basis of art. 8(2) PLD-2024.

265. ART. 7(2)E PLD-2024 APPLIES A ‘DIFFERENTIATED DEFECT ASSESSMENT’ WHEN THE INDEPENDENTLY SUBSTANTIALLY MODIFIED, REPURPOSED PRODUCT IS SUBSEQUENTLY PUT INTO SERVICE BUT A ‘SINGLE DEFECT ASSESSMENT’ WHEN IT IS SUBSEQUENTLY MADE AVAILABLE – Liability of a repurposer based on art. 8(2) PLD-2024 still requires that the through repurposing substantially modified product is defective and that this defect has caused damage.¹⁷³⁷ While the defect assessment for the potential harmonised product liability of original manufacturers and distributors of later repurposed products fixates on whether the repurposing had been

¹⁷³³ See arts. 2(1)(3) and 3(6)-(7) General Product Safety Regulation 2023/988/EU.

¹⁷³⁴ Art. 3(31) Parliament and Council Regulation 2023/1542/EU of 12 July 2023 concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020 and repealing Directive 2006/66/EC [2023] OJ L191/1, 27: “‘repurposing’ means any operation that results in a battery, that is not a waste battery, or parts thereof being used for a purpose or application other than that for which the battery was originally designed;”.

¹⁷³⁵ See art. 3(16)-(18) *ibid.*, 26.

¹⁷³⁶ Art. 77(7) *ibid.*, 73.

¹⁷³⁷ Arts. 1(1), 5(1) and 10(1) PLD-2024.

reasonably foreseeable (see *supra* nrs. 255-256), the defect assessment for the potential liability of repurposers based on art. 8(2) PLD-2024 looks more directly at whether the repurposed product meets the public's legitimate safety expectations for its specific new purpose.¹⁷³⁸

This last defect assessment is more complicated than one might anticipate, because the applicable rule of art. 7(2)e PLD-2024 establishes that the defect assessment must return to “*the moment in time when the product was placed on the market or put into service*” but not the moment when the product is ‘made available on the market’. In contrast, as a result of another amendment at the eleventh hour, the final adopted version of art. 8(2) PLD-2024 explicitly stipulates that a substantially modified product is either ‘put into service’ or is ‘made available on the market’. These rules and their consequences are also discussed *infra* nrs. 311 and 449-451, but for the harmonised product liability risk of repurposers this concretely means that the following two hypotheses must be distinguished.

On the one hand, when a through repurposing substantially modified product is ‘put into service’, art. 7(2)e PLD-2024 confirms that the defect assessment must look at the legitimate safety expectations of the public existing at that precise moment in time. This defect assessment is therefore fundamentally different from the one applicable to the potential liability of the repurposed product's original manufacturers and distributors, which continues to be governed by the safety expectations existing when they placed the original product on the market.¹⁷³⁹ This is why this dissertation calls this a ‘differentiated defect assessment’ (see *infra* nrs. 315-316). For example, when a housing cooperative repurposes former vehicle or industrial batteries as a residential battery unit to supply energy to the cooperative's tenants and when this repurposing is considered a ‘substantial modification’, then this substantially modified product is technically ‘put into service’ by the cooperative (see *supra* nr. 262.a.c). According to the legitimate safety expectations of the public existing when those batteries had many years ago been originally placed on the market, such creative (actually repurposed) residential battery unit might have been defective because this was unheard of at that time and because the appropriate standards on installation and use and the appropriate converting and switching equipment did not yet exist.¹⁷⁴⁰ However, art. 7(2)e PLD-2024 now clearly requires the defect assessment to look instead at the time when the residential battery is ‘put into service’. At this later moment in time, those more appropriate, facilitating circumstances exist, which may mean that the public would not consider the repurposed residential battery unit as defective. The outcome might be that the repurposer is ultimately not liable based on art. 8(2) PLD-2024, even when this battery unit has causally contributed to a fire or other accident.

On the other hand, when a through repurposing substantially modified product is subsequently ‘made available’, art. 7(2)e PLD-2024 implies that the defect assessment must to the contrary look at the public's legitimate safety expectations existing at the moment when the

¹⁷³⁸ Art. 7(1) *ibid.* See *supra* nr. 255.

¹⁷³⁹ Art. 7(2)e *ibid.* See *supra* nr. 259.a. See also *infra* nrs. 310 and 315.

¹⁷⁴⁰ For the potential liability based on the PLDI of the original manufacturers and distributors of those batteries, this might mean that the repurposing was not reasonably foreseeable. This would mean that not a defective product was placed on the market at that time and that they are not liable. See *supra* nrs. 255-256.

original product was placed on the market. This is the same standard of defectiveness applicable to the liability of the product's original manufacturers and distributors, which is why this dissertation calls this a 'single defect assessment' (see *infra* nrs. 310-314). For example, if in our preceding example the batteries repurposed as a residential battery unit would be supplied ('made available') as part of a construction contract, be sold separately for this purpose or be leased directly to one or more tenants,¹⁷⁴¹ then curiously the battery unit is suddenly considered defective because this is now assessed according to the safety expectations existing at the time when those batteries were originally placed on the market. Those safety expectations at that time did not yet consider the aforementioned standards and supporting equipment, although these now effectively contribute to the repurposed battery unit's safety.

Another example can further illustrate this fundamental difference. When a company places large and sturdy, holed bricks filled with plants on the balconies of its office building, it arguably 'substantially modifies' those bricks and 'puts them into service' in the course of its commercial activity (see *supra* nrs. 262.a.c). Hence, the assessment whether these through repurposing substantially modified bricks are defective must occur at this more recent moment when these are put into service by the company as creative plant pots, which is a 'differentiated defect' assessment from the moment when these bricks had been originally placed on the market as bricks (see also *infra* nrs. 315-316). When, to the contrary, those large bricks repurposed as plant pots were supplied and installed by a building renovator or placed by a professional landlord, they would be 'made available on the market' and the defect assessment would have to return to the time when those bricks were originally placed on the market.¹⁷⁴² Even if the general public's legitimate safety expectations on the safety of such creative plant pots might not have noticeably changed over this period of time, the theoretical difference might still be decisive when pertinent new EU or national rules have in the meantime entered into force which require a certain level of safety pursuant to art. 7(1) PLD-2024.¹⁷⁴³ For example, applicable regional regulation may now specifically regulate how plant pots and other accessories must be secured on balconies of apartment buildings,¹⁷⁴⁴ but this intervening development cannot be considered in the applicable 'single defect' assessment (see also *infra* nrs. 310-314).

This odd difference in defect assessment depending on whether a (repurposed) product that has independently been substantially modified is subsequently 'made available' or 'put into service', is one of several¹⁷⁴⁵ reasons why this dissertation argues to amend art. 8(2) PLD-2024

¹⁷⁴¹ See on the not always straightforward distinction between 'making available' and 'putting into service' Commission Notice 'The 'Blue Guide' on the implementation of EU product rules 2022' [2022] OJ C247/1, 19, 23-24.

¹⁷⁴² Art. 7(2)e PLD-2024.

¹⁷⁴³ See also *supra* nrs. 180 and 187 on this 'unitary theory', another last-minute but significant change to the new Directive.

¹⁷⁴⁴ See also *supra* nr. 251 on a functional interpretation of the reference to "safety [...] required under Union or national law" in art. 7(1) PLD-2024, which should not be limited to product safety regulation in the strict sense.

¹⁷⁴⁵ The problems caused by the reference to 'making available' in art. 8(2) *ibid.* in terms of applying the various defences, are discussed in the following section. Note furthermore that the new Directive will

by removing the reference to ‘making available’ and instead confirming that a substantially modified product is ‘placed on the market’ as a new product (see also *infra* nrs. 266 and 450-452). Even with such an amendment, defendants in the product’s original distribution chain can still be held liable for the original product, while they benefit from the posteriority defence relating to defects resulting from the substantial modification.

266. THE MESS OF APPLYING THE NOT PUT INTO CIRCULATION, POSTERIORITY AND DEVELOPMENT RISK DEFENCES TO THE LIABILITY OF REPURPOSERS BASED ON ART. 8(2) PLD-2024 – As discussed also *infra* nr. 463, the authors of the new Directive have seemingly forgotten art. 8(2) PLD-2024’s liability of substantial product modifiers when they drafted the important defences of art. 11 PLD-2024. In summary, the following can be observed.

- a. If read literally, the not put into circulation defence of art. 11(1)a-b PLD-2024 cannot be invoked by any repurposer liable as a substantial product modifier. This is because the defence for persons who have put products into service is explicitly limited to “*a manufacturer or importer*” and the defence for persons making products available on the market is explicitly limited to “*a distributor*”.¹⁷⁴⁶ Hence, this dissertation proposes to interpret *de lege lata* both defences sufficiently flexibly to also encompass repurposers and others who have put substantially modified products into service or made them available. Nevertheless, a broad interpretation of ‘manufacturer’ in art. 11(1)a PLD-2024 seems contrary to how art. 8(2) PLD-2024 stipulates that substantially modified products are ‘made available’ rather than ‘placed on the market’. This is another reason why this dissertation proposes *de lege ferenda* to amend art. 8(2) PLD-2024 by determining that a substantially modified product is ‘placed on the market’ (see also *supra* nr. 265).
- b. If read literally, the posteriority defence of art. 11(1)c PLD-2024 can for a similar reason not be invoked in a ‘personal manner’ by the repurposer liable based on art. 8(2) PLD-2024 who has made the substantially modified product ‘available on the market’: this possibility is also explicitly limited to “*a distributor*”. But, since art. 11(1)c PLD-2024 does allow the application of the posteriority defence to “*the time the product was placed on the market*”, the defence can still be applied to such defendants in a manufacturer-specific manner’ (a concept explained in more detail *infra* nrs. 317 et seq.). As an illustration, this would concretely mean that a contractor or second-hand goods reseller making inner car tire tubes available which are specifically repurposed as playground equipment in a manner leading to liability based on art. 8(2) PLD-2024 (see *supra* nr. 262.a.c), would enjoy the benefit of being able to invoke this defence in a ‘manufacturer-specific’ manner. This means that the posteriority defence would also apply to defects which arose after the tubes were originally placed on the market but before he personally by repurposing substantially modified them and subsequently made them available as

only apply to products placed on the market or put into service 24 months after its entry into force (art. 21 *ibid.*). This would mean that the current version of art. 8(2) *ibid.* will apply to a substantial modifier who puts a substantially modified product into service but not to those who make the same substantially modified product available on the market.

¹⁷⁴⁶ Art. 11(1)a-b *ibid.*, respectively.

playground objects. For example, the inflation valve of one tire might have been partially damaged during use as a car tire or when it was disassembled, resulting in a dangerously sharp edge injuring a child at the playground, for which the repurposing substantial modifier would curiously not be liable based on the PLDI.

In contrast, the repurposer liable based on art. 8(2) PLD-2024 who has “*put into service*” the substantially modified product, can – like virtually every other defendant – only invoke the posteriority defence of art. 11(1)c PLD-2024 in a ‘personal manner’ manner’ (the opposite concept which is also explained *infra* nrs. 317 et seq.). This means that if the inner tire tubes in the aforementioned example were repurposed by the professional playground operator, this repurposer cannot invoke this defence for defects like the damaged inflation valve, which occur after the tires were originally ‘placed on the market’ but before these were ‘put into service’ by him as substantially modified products. Only defects originating after the putting into service still remain relevant for this defendant’s posteriority defence.

This drastic difference in application of the posteriority defence seems difficult to justify (see also *infra* nr. 463.b). This is why this dissertation proposes *de lege lata* to interpret art. 11(1)c PLD-2024 in a manner where the reference to “*a distributor*” also encompasses those who make substantially modified products available on the market (see also *infra* nr. 319). However, a more certain and comprehensive solution *de lege ferenda*, which solves multiple issues, is again to amend art. 8(2) PLD-2024 by determining that a substantially modified product is ‘placed on the market’ rather than ‘made available’ (see also *supra* nr. 265).

- c. Finally, the development risk defence of art. 11(1)e PLD-2024 refers to the time when the product was ‘put into service’ but not when it was ‘made available’. Again, this means that the repurposer who has made the substantially product available on the market enjoys the benefit of a manufacturer-specific interpretation, which assesses the state of the art for the risks involving the repurposed product when the original product was placed on the market (long) before the repurposing. Here, this is at least similar to distributors subject to secondary liability, who can also invoke this defence only in a manufacturer-specific manner (see *infra* nr. 322). In contrast the repurposer who has put the substantially modified product into service must prove according to art. 11(1)e PLD-2024 that the repurposed product’s defectiveness could not have been discovered according to “*the objective state of scientific and technical knowledge*” existing at the time of the putting into service of the repurposed product.¹⁷⁴⁷

267. FLEXIBLE INTERPRETATION OF MODIFICATION DEFENCE OF ART. 11(1)G PLD-2024 ACCORDING TO IMPACT OF REPURPOSING – A crucial aspect of liability of repurposers and others based on art. 8(2) PLD-2024, is that they can exempt themselves by proving pursuant to art. 11(1)g PLD-2024 “*that the defectiveness that caused the damage is related to a part of the product not affected by the modification*” (see also *infra* nr. 319 on how to interpret this defence and how it interferes

¹⁷⁴⁷ See also *supra* nr. 200 regarding the strict requirements for the development risk defence.

with other defences this defendant can invoke). The substantial modifier is thus not liable for defects in other parts of the product.

However, art. 11(1)g PLD-2024 is much easier to apply in cases where one or more product parts have been physically altered than in cases of product repurposing. After all, does the act of repurposing not affect all parts of a product, by changing its overall function? This would mean that this ‘modification defence’ of art. 11(1)g PLD-2024 would not provide any relief at all to repurposers. Consequently, a commercial actor liable based on art. 8(2) PLD-2024 for repurposing crates and planks as furniture, would for example be subject to a much more significant liability than another commercial actor liable on the same basis for disabling the safety mechanisms of an electric saw during a repair. In terms of efficient accident-prevention and risk-allocation as well as corrective justice, this difference in outcomes does not seem warranted.

Nevertheless, it is possible to apply the defence of art. 11(1)g PLD-2024 to repurposing in a more nuanced manner. Somewhat similar to the ‘comparative criterion’ advocated for *supra* nr. 256 to determine whether a given repurposing had been reasonably foreseeable for the potential liability of defendants in the product’s original distribution chain, it is also here possible to compare in more detail which aspects of a product are truly “*affected by the modification*”.¹⁷⁴⁸ In cases of repurposing, said ‘modification’ is the change in a product’s purpose that is considered ‘substantial’ pursuant to arts. 4(18) and 8(2) PLD-2024 (see *supra* nr. 262.a). For example, the aforementioned crates are expected in their new function as a particular piece of furniture to either support the weight of a sitting or lying adult person, when serving as a makeshift chair, sofa or bed, or the weight of various, stacked household items, when serving as a makeshift shelf or cupboard. Especially in the latter application, vertical stability is another concern. When for either of these new purposes wooden fruit crates are used with insufficient vertical strength or stability, then such lack of strength or stability in these repurposed products can be considered as defects relating to product parts that have been affected by the modification. After all, the repurposing as these particular types of furniture specifically increases the public’s safety expectations for these products in terms of strength and stability. In contrast, the fact that these crates for example happen to be infected with woodworms, which cause further damage in the consumer’s house, or introduce another harmful pest, are arguably defects in these products that were not affected by the repurposing and for which the repurposer should thus still be able to invoke art. 11(1)g PLD-2024.

268. A SEPARATE EXTINCTION PERIOD – At least under the PLD-1985, there is quite some uncertainty on which starting date to pick for the ten-year extinction period when the defendant is someone else than the producer or importer who has originally put a product into circulation (see *infra* nrs. 325-327). The new Directive fortunately clarifies this matter and is – contrary to the preceding defences of art. 11 PLD-2024 – especially explicit with regards to the potential liability of repurposers and others based on art. 8(2) PLD-2024. Art. 17(2)b PLD-2024 stipulates that the ten-year extinction period starts on the date when the substantially modified product “*was made available on the market or put into service following its substantial modification*”. Hence, when someone would for example become liable as a substantial product modifier

¹⁷⁴⁸ Art. 11(1)g PLD-2024.

for repurposing a step ladder as furniture or for using car batteries as a residential battery, a new ten-year extinction period for this liability starts to run from the date when the repurposed product is put into service or made available by this person.¹⁷⁴⁹

§ 3. Distinguishing among defendants and plaintiffs

269. THE STRONGER POSITION OF MANUFACTURERS (AND TO A LESSER EXTENT IMPORTERS AND THEN QUASI-MANUFACTURERS) COMPARED TO DISTRIBUTORS IN THE ORIGINAL DISTRIBUTION CHAIN (BIS) – As discussed *supra* nr. 249, the manufacturers is overall in the strongest position to defend against claims based on the PLDI in the context of reused products. In descending order, importers and then quasi-manufacturers are in most cases in a largely comparable, although somewhat weaker position, while distributors find themselves on average in the weakest position. This distinction between defendants is common to harmonised product liability in general and also applies when products are repurposed instead of reused. It can be seen as an additional argument for the current hierarchy of harmonised product liability defendants, since having more effective, informed defendants, can in combination with a ‘quasi-strict’ liability and now also presumptions in favour of the plaintiff (see *supra* nr. 206) be helpful to avoid factually incorrect findings of liability.

A manufacturer has in comparison with a distributor much better knowledge on his product’s original purpose and overall design as well as on its original presentation, in particular its advertisement, use instructions and warnings. These aspects are crucial to either rebut a claim that a given kind of repurposing, which made the product defective, had been reasonably foreseeable or to prove instead that the repurposing had been a not reasonably foreseeable, posterior circumstance (see *supra* nrs. 256 and 259). The same can also be said of access to relevant technical information on the particular nature of a product, the nature of the expected group of consumers or pertinent product regulation and industry standards (see *supra* nr. 259). Through a more substantive relationship with the subsequently repurposed product and through, in most cases, relatively strong commercial ties with its manufacturer, importers and quasi-manufacturer tend to still have a comparatively stronger position as defendants than mere distributors chain (see *supra* nr. 249). Additionally, to the extent that the posteriority defence and extinction period are personally interpreted vis à vis distributors, these parties are also in a weaker position as defendants compared to defendants subject to primary liability, as discussed *infra* nrs. 322, 324-326 and 331-333).

270. THE UNIQUE POSITION OF REPURPOSERS LIABLE BASED ON ART. 8(2) PLD-2024 COMPARED TO OTHER DEFENDANTS – Repurposers held liable based on art. 8(2) PLD-2024 find themselves in a unique, relatively strong position as defendants. As briefly explored in the preceding sections (see also *infra* nrs. 442 et seq.), this new primary liability for an act of product reproduction is fundamentally different in nature from the well-known liability risks of manufacturers and other defendants in a product’s original distribution chain. The defect assessment should occur at the time and in the concrete circumstances of the repurposing and should focus on the

¹⁷⁴⁹ See also *infra* nrs. 333-334 and 336 on the concrete application of this separate extinction period.

repurposed rather than the original product. This is at least what the adopted versions of arts. 7(2)e and 8(2) PLD-2024 imply if the through repurposing substantially modified product is put into service, but it would be preferable that through an amendment the same outcome is also achieved when the product is subsequently ‘placed on the market’ rather than merely ‘being made available’ (see *supra* nr. 265). Additionally, a new extinction period starts when the through repurposing substantially modified product is made available or put into service and a separate defence makes clear that liability based on art. 8(2) PLD-2024 remains limited to those parts of the product that are not affected by the substantial modification, for which the repurposer as a defendant bears the burden of proof (see *supra* nrs. 267-268).¹⁷⁵⁰

It is therefore less straightforward to compare the relative strengths of the positions as defendants of actors in the product’s original distribution chain with the position of repurposers held liable based on art. 8(2) PLD-2024. The former and in particular manufacturers arguably still have an advantage in technical knowledge about the product, which is after all only ‘purely’ repurposed rather than physically overhauled. The latter might be better placed to argue that the repurposed product met the public’s reasonable safety expectations when it was put into service or, according to our proposed amendment, ‘placed on the market’ after being repurposed. And both types of defendants seem similarly placed to successfully invoke the defences and extinction periods applicable to their situation. Overall, this traditional harmonised product liability risk of defendants in the product’s original distribution chain and the novel liability risk (of certain repurposers) on the basis of art. 8(2) PLD-2024, not only co-exist in parallel but also remain fundamentally different in nature.

271. THE RELATIVELY STRONGER POSITION OF REPURPOSERS AS PLAINTIFFS (VERTICAL CLAIMS) COMPARED TO THIRD PARTIES AS PLAINTIFFS (DIAGONAL AND HORIZONTAL CLAIMS) (BIS) – When repurposed products cause accidents, the most likely injured party is the repurposer himself, who can of course try to claim vertically against the aforementioned defendants in the product’s original distribution chain. Under the PLD-2024, this requires that he is a natural person.¹⁷⁵¹ Their position as plaintiffs is on average stronger than the position of injured third parties, especially truly independent third parties like bystanders,¹⁷⁵² who can try to claim both diagonally based on the PLDI against the same defendants as well as horizontally against the repurposer himself based on art. 8(2) PLD-2024. Naturally, this summary makes abstraction of possible grounds of non-harmonised, national product liability law.

To some extent, this strategic difference between both types of plaintiffs can be nuanced, because both can provide a simple proof of the repurposed product’s defectiveness by demonstrating that it did not meet the reasonable safety expectations which the public would have had regarding its particular new purpose when it was originally placed on the market or put into service. Nevertheless, this proof still ends up in a debate about the reasonable

¹⁷⁵⁰ Arts. 10(1)g and 14(2) *ibid*.

¹⁷⁵¹ Arts. 1 and 5 PLD-2024. See also *supra* nrs. 176 and 190.

¹⁷⁵² Third parties are often acquaintances or even household members of the harmful product’s consumer, who may still obtain relevant information from the latter to support a diagonal product liability claim. On the flipside, such third parties are much less likely to claim on a horizontal basis against the consumer. See also *supra* nr. 159.

foreseeability of the repurposing, although in the context of the posteriority defence rather than the defect assessment (see Figure 10 *supra* nr. 255.b).

Undeniably, the repurposer is better placed than the third party to argue as a plaintiff that the repurposing had effectively been reasonably foreseeable when the original product was placed on the market or put into service. This is because the repurposer, as the product's consumer and in most cases its owner, has better access to the product's original presentation and use instructions, has a better idea when precisely the product was placed on the market or put into service and is more familiar with the exact nature of the product. These are all pertinent aspects for proving the defectiveness of a product that happens to have later been repurposed or for disproving in this context the posteriority defence that defendants in the original distribution chain likely try to raise (see *supra* nrs. 256-259).

Section D. Contributory fault of product reusers and repurposers

§ 1. No harmonised product liability of reusers and repurposers

272. HARMONISED PRODUCT LIABILITY REMAINS RESTRICTED TO (RE)PRODUCERS AND (RE)DISTRIBUTORS, WHICH CAN BE CONSIDERED AS INCLUDING LIABILITY OF CERTAIN REPURPOSERS AS SUBSTANTIAL PRODUCTS MODIFIERS – Art. 3 PLD-1985 identifies several categories of potential defendants (see *supra* nrs. 176-177). Art. 8 PLD-2024 proposes to further extend this range (see *supra* nr. 178). However, under both the current and the new Directive the general principle still stands that harmonised product liability is only imposed on actors who have in some way either ‘(re)produced’ or ‘(re)distributed’ the harmful product, while product ‘users’ are only possible plaintiffs but not defendants (see also *supra* nr. 74). Of course, there is a (new)¹⁷⁵³ possibility to hold commercial repurposers of products liable based on art. 8(2) PLD-2024, but as substantial product modifiers this situation is more correctly understood as a form of product reproduction rather mere product use.¹⁷⁵⁴

It is therefore, with the exception of said art. 8(2) PLD-2024, not possible to claim on the basis of harmonised product liability against most product ‘reusers’ or ‘repurposers’ as understood in this dissertation’s typology (see *supra* nrs. 83-84). The factually different scenarios

¹⁷⁵³ Whether this possibility is truly new or already exists under the PLD-1985 is examined *infra* nrs. 437-441.

¹⁷⁵⁴ This also aligns with the proposed amendment to art. 8(2) PLD-2024, which would confirm that a substantially modified product is ‘placed on the market’ rather than merely ‘made available’, without necessarily affecting the potential liability of actors in the product’s original distribution chain. Such amendment would solve issues relating to the defect assessment and applying several defences to this novel liability, as discussed *supra* nrs. 265-266.

where reusers or repurposers happen to subsequently also redistribute or reproduce said product, which this Chapter has sporadically already touched upon, are examined in the corresponding Chapters that follow.

Consequently, the fact that reused or repurposed products fall within the PLD's material scope of application (see *supra* nrs. 223 and 254), only matters for claims against the (re)distributors or (re)producers of those products. This has been the subject matter of the preceding Sections. Other than claims based on art. 8(2) PLD-2024 against certain commercial repurposers, reusers or repurposers themselves can only be held liable based on national extracontractual liability law. These can be either horizontal claims by injured third parties or recourse claims by (re)distributors or (re)producers who are already held liable for a product accident caused by the reused or repurposed product.

However, this does not mean that the reuser's or repurposer's conduct has no impact at all on harmonised product liability. If a reuser or repurposer is personally injured and claims vertically on the basis of the PLDI, the producer or other defendant can try to invoke the contributory fault defence, as further discussed below.

§ 2. Contributory fault of reusers and repurposers

273. CONTRIBUTORY FAULT AS A DEFENCE TO VERTICAL CLAIMS BY REUSERS AND REPURPOSERS – Arts. 8(2) PLD-1985 and 13(2) PLD-2024 allow Member States to provide that the defendant's liability is either reduced or excluded, when the damage is not only caused by a defect in the product but also by a fault of the injured person or any person for whom he is responsible. This rule, its interpretation and implementation in Belgium, France and Germany has been discussed in general *supra* nr. 191. Obviously, reusing a product can sometimes be considered as a fault according to national law and this is on average even more likely for repurposing a product. The contributory fault defence is therefore particularly useful to a defendant when an injured reuser or repurposer as a plaintiff has proven a defect, damage and causation and when other defences like the posteriority defence and extinction period cannot be successfully invoked. The following sections discuss under which conditions the contributory fault defence applies in the reuse and repurposing context.

There are fewer possibilities to invoke the contributory fault defence when injured third parties claim diagonally for damage resulting from a reused or repurposed product, simply because bystanders are less likely to have causally contributed to the accident through conduct that qualifies as a fault. Instead, manufacturers or other harmonised product liability defendants then have the possibility to claim in recourse against the product's reuser or repurposer, who might be liable based on art. 8(2) PLD-2024 or non-harmonised extracontractual liability (see in the Belgian context *supra* nrs. 208-213 and 217-218).

274. THE REUSER'S OR REPURPOSER'S (CONTRIBUTORY) FAULT AND THE ASSESSMENT OF HARMONISED PRODUCT LIABILITY (DEFECT AND POSTERITY): A STRICT SEPARATION – As discussed in earlier parts of this Chapter, liability on the basis of the PLDI for an accident caused by a reused or repurposed product mostly depends on whether the reusing or repurposing had been

reasonably foreseeable (for the producer or distributor) when the product was placed on the market or put into service. It therefore may seem logical to connect the ‘reasonable foreseeability’ in the defect or posteriority defence assessment (see *supra* nr. 239) with the absence of a (contributory) fault’ committed by the reuser or repurposer, and *vice versa*.¹⁷⁵⁵ Some form of such connection is to varying degrees even implied by certain scholars.¹⁷⁵⁶ However, as already signalled *supra* nrs. 232, 240 and 256, this dissertation argues that it is ill-advised to conflate the defect assessment and/or posteriority defence of harmonised product liability with the contributory fault defence or with an independent extracontractual fault-based liability of the reuser, repurposer or any other injured consumer for that matter. Both should be strictly separated. What connects them is not a close, theoretical connection but only an imperfect correlation in practice.

First of all, this is because a reuser or repurposer can have committed a (contributory) fault, while his conduct had still been reasonably foreseeable and therefore still provide a basis for co-existing harmonised product liability of defendants in the product’s distribution chain. For example, the consumer who continues (re)using a bike which is visibly worn and fragile as a result of outdoor storage and intensive use and eventually breaks in a pothole, may through his negligence have committed a (contributory) fault. Yet, if the visible wear and tear is abnormal in nature, it can at the same time have constituted a defect that provides a basis for a claim on the basis of the PLDI (see *supra* nrs. 231 et seq.). Even some particularly reckless or intentional conduct by a consumer can in some cases theoretically have been reasonably foreseeable when a product is put into circulation.¹⁷⁵⁷ Hence, in a significant part of the more general group of cases where a certain misuse by the consumer had been reasonably foreseeable,¹⁷⁵⁸ it is possible to simultaneously also consider the same misuse as a (contributory) fault when it eventually occurs. Moreover, in addition to a lack of safety for reasonably foreseeable reuse or repurposing, a reused or repurposed product can theoretically have other defects that also causally contribute to the same accident. As a result, there are various ways how the reuser or repurposer and the harmonised product liability defendant can at the same time be liable or have committed a contributory fault.¹⁷⁵⁹

¹⁷⁵⁵ The dissertation and this section focus primarily on the possible contributory fault by an injured reuser or repurposer who claims vertically on the basis of harmonised product liability. However, the same (incorrect) parallel can also be drawn between the defect assessment or posteriority defence for a diagonal harmonised product liability claim by an injured third party against defendants in the product’s distribution chain, on the one hand, and a possible horizontal (likely extracontractual fault-based) liability claim by the same injured third party against the reuser or repurposer, on the other hand.

¹⁷⁵⁶ See, e.g., sources cited *supra* footnotes 1690-1692.

¹⁷⁵⁷ E.g., this can be due to the product’s or user group’s particular nature, because there were public reports about the same misuse having already led to accidents or because already existing rules or standards addressed this risk. See also Verhoeven, *Productaansprakelijkheid en productveiligheid*, 247.

¹⁷⁵⁸ See the discussion *supra* nrs. 232 and 256-258. See also recital 6(1)b PLD-1985; art. 7(2)b PLD-2024; sources cited *supra* footnotes 1095-1096.

¹⁷⁵⁹ The texts of arts. 8(2) PLD-1985 and 13(2) PLD-2024 confirm this with regards to a vertical claim by the injured reuser or repurposer and his own contributory fault. The texts of arts. 8(1) PLD-1985 and 13(1) PLD-2024 confirm this with regards to a diagonal claim by an injured third party and the reuser’s or repurposer’s own horizontal liability on the basis of an extracontractual fault.

As a side note, consumers who have committed a contributory fault may in practice often be less likely to claim vertically and decide to bear their own loss.¹⁷⁶⁰ In contrast, injured third parties do not have the same reservations about claiming diagonally on the basis of harmonised product liability if there is an opportunity for doing so, regardless whether or not they also claim horizontally against the (reusing or repurposing) consumer. While the former tendency of consumers strengthens the negative correlation between contributory fault and harmonised product liability, the latter tendency of injured third parties negates it.

Second, it is also possible that an accident involving a reused or repurposed product neither leads to harmonised product liability nor constitutes a (contributory) fault of the reuser or repurposer. For example, this may occur if reusing some product beyond a particular point in time or a particular repurposing of a product created an accident risk that was hitherto unknown or was otherwise not reasonably unforeseeable.¹⁷⁶¹ This undermines the argument that the absence of product liability in case of product misuse, like a reuse or repurposing, corresponds with a (contributory) fault of the misusing user, and vice versa.

And last but not least, there is a delay between the moment when the product was placed on the market or put into service, which is relevant to the PLD's defect assessment, and the later moment when the consumer decides to reuse or repurpose a product, which is relevant to the assessment of the contributory fault defence or of the reuser's or repurposer's own extracontractual liability. Purely due to this difference in time, this can already lead to divergent outcomes which confirm that both liability appreciations are conceptually separate. This is especially true because both the defect assessment and the (contributory) fault assessment evolve over time, either as a result of new rules and standards or simply through changed social expectations (see also *supra* nrs. 232 and 258).

275. CONTRIBUTORY FAULT OF REUSER AND REPURPOSER: INCORRECT TO QUALIFY AS AN 'INTENTIONAL FAULT' – As discussed *supra* nr. 191, both Belgian, French and German law now recognize as a general rule that the injured party's intentional fault completely excludes the defendant's liability, although this rule is far from absolute in German law and also in French law there are occasional exceptions (see *supra* nr. 191). Such a complete exemption from harmonised product liability is allowed by arts. 8(2) PLD-1985 and 13(2) PLD-2024. For a manufacturer or other defendant against whom an injured reuser or repurposer claims on the basis of the PLD, it may therefore seem tempting to argue that the reuser or repurposer has committed an intentional contributory fault. However, in most cases, this should be rejected.

First of all, as argued *supra* nr. 274 and *infra* nr. 276 specifically relating to Belgian law, not every kind of reuse or repurposing can be qualified as an extracontractual fault, according to

¹⁷⁶⁰ The empirical evidence is limited, but it arguably corresponds with general life experience and it is based on behavioural science theory on attribution and self-blaming. See the sources cited *supra* footnote 284.

¹⁷⁶¹ Note that this group of cases does not overlap with the narrower group of cases of the development risk defence (art. 7(e) PLD-1985; art. 11(1)e PLD-2024). When some product (mis)use was not reasonably foreseeable, it cannot provide a basis for a defect and this defence can therefore not be at stake to begin with. Furthermore, the conditions of the development risk defence are significantly more stringent than the mere absence of reasonably foreseeability (see *supra* nr. 200).

either Belgian, French or German law. As a minimum, this makes it impossible to hold that a reuser or repurposer would automatically commit an intentional fault. Reusers and repurposers rather intend to merely implement a circular and collaborative strategy, for which the resulting increase in accident risks, if it exists, is not always readily apparent. Roughly depending on whether a normal, prudently acting consumer would have foreseen and avoided these risks, the reuse or repurposing may perhaps constitute negligent conduct that may give rise to a normal fault. But it will only in very rare cases constitute an intentional fault.

Second, Belgian law now clearly requires for a contributory fault to be qualified as ‘intentional’ that the injured party not merely intended the particular action but specifically intended to cause some damage or obtain some gain, although not necessarily cause the specific damage that occurred.¹⁷⁶² Likewise, German law.¹⁷⁶³ and by all likelihood also French law¹⁷⁶⁴ only consider a contributory fault as intentional if the injured party intended to realize the resulting damage. In virtually all situations of product reuse or repurposing, the reuser or repurposer does not actually intend to realize the damage that can result from a product accident. What he simply intends is benefiting longer from a product’s (alternative) functionality. Therefore, according to the applicable rules of Belgian, French or German law,¹⁷⁶⁵ such reuse or repurposing does not constitute an intentional contributory fault with regards to a later ensuing product accident. At maximum, it is a normal contributory fault.

276. CONTRIBUTORY FAULT OF REUSER OR REPURPOSER: ADDITIONAL CONSIDERATIONS – First of all, in the context of applying the contributory fault defence to accidents caused by reused or repurposed products, it seems useful to highlight the fact that, as a result of another last-minute amendment, the final adopted version of art. 9(2) PLD-2024 offers also to defendants a possibility to request the court to order plaintiffs, like an injured reuser or repurposer, to

¹⁷⁶² Arts. 1.11 and 6.20, § 3 CC BE. See also Explanatory Memorandum Boek 6 Wetsvoorstel 2023 / Livre 6 Proposition 2023, 100-101; Liège 12 March 2015, 2013/RG/1644, *Rev.Not.B.* 2015, 571, *Juportal* (injured party’s intentional contributory fault pursuant to maxim *fraus omnia corrumpit* rejected, since intention to obtain an unusual gain does not constitute fraudulent conduct); B. Goffaux, ‘La faute’ in F. George and R. Jafferali (eds.), *Manuel de droit de la responsabilité civile* (Anthemis 2022) 118-125.

¹⁷⁶³ BGH 8 February 1965, III ZR 170/63, *NJW* 1965, 962, 963; Bundesarbeitsgericht 18 June 1970, 1 AZR 520/69, *NJW* 1970, 1861, 1862. See also C. Höpfner, ‘§ 254 Mitverschulden’ in C. Herresthal (ed.), *Staudinger Kommentar BGB, Buch 2. §§ 249-254* (De Gruyter 2021) nr. 120.

¹⁷⁶⁴ Although the French case law on the notion of ‘intentional fault’ varies and has evolved significantly across different areas of civil law, in the context of extracontractual liability and in particular in the context of contributory fault, there seems to be a consensus that intention is also required in relation to the resulting damage. See M. Bacache-Gibeili, *La responsabilité civile extracontractuelle* (3rd edn., Economica 2016) 200, 682; Brun, *Responsabilité civile extracontractuelle*, 5th edn., 178, 215; Le Tourneau et al., *Droit de la responsabilité et des contrats*, 13th edn., nrs. 2144.71, 5111.92, 6213.141. See also G. Viney and P. Jourdain, *Les conditions de la responsabilité* (3rd edn., LGDJ 2006) 674: “Et l’on ajoutera qu’en toute hypothèse une conception très stricte de la faute intentionnelle doit continuer à prévaloir pour la faute de la victime lorsqu’elle a pour effet de réduire ou de supprimer son droit à indemnisation.” Explicit rules on intentional contributory fault are neither present in the Projet de réforme de la responsabilité civile (Garde des sceaux 2017) nor in the Proposition de réforme de la responsabilité civile (Sénat 2020).

¹⁷⁶⁵ Neither the PLD-1985 nor the PLD-2024 provides detailed rules on causation and contributory fault. See *supra* nrs. 170 and 191.

disclose evidence that is at this party's disposal (see *supra* nr. 206.a). This might for example consist of data from the defective product itself or from other smart devices or cameras, perhaps insurance or medical filings or, most likely, access to or technical evidence relating to the defective product itself. For reasons of scope, the remaining considerations regarding the contributory fault defence discussed in this last section, refer only to the Belgian context.

A contributory fault requires under Belgian law conduct by the plaintiff that has causally led to the claimed damage and that can be qualified as a 'fault'.¹⁷⁶⁶ The objective component of such fault can either be proven by a violation of the general standard of care or by a violation of a legal rule requiring specific conduct.¹⁷⁶⁷ This second possibility seems less relevant in this specific context, because there is little to no concrete consumer goods regulation that targets the user.¹⁷⁶⁸ Such rules may exist on a sectoral basis, but these will normally only target professional and/or commercial actors, who cannot claim under the PLD-2024 if they are not natural persons (see *supra* nr. 176) and who might also be directly liable themselves vis à vis injured third parties on the basis of art. 8(2) PLD-2024 (see *supra* nr. 262.c). To prove the fault element, the defendant will therefore have to prove whether a normally prudent product user would have acted in the concrete circumstances of the case like the plaintiff would have.

Especially with regards to reuse, it can generally be said that many consumers frequently 'reuse' durable consumer goods. Generally considering this as a violation of the general standard of care seems not accurate and would definitely run contrary to an observable trend towards more circular economy and more sustainable consumption (see also *supra* nrs. 60 et seq.). A fault seems to require much more specific, compelling evidence of particularly imprudent behaviour by the reuser, for example a product that is known to be particularly dangerous to be continuously used over the very long term, such as perhaps a smoke detector, or a product that is already old or intensively used shows visible safety risks, for example a climbing harness or rope that no longer seems to be in a quality condition.

In the context of repurposing, it is arguably somewhat easier for a defendant to establish a violation of the general standard of care, although it would be incorrect to automatically see a relationship between the two. This would again run contrary to emerging trends of circular consumption as well more creative, collaborative activities in the consumer goods sector (see also *supra* nr. 258). The comparative criterion, which looks at how far the new purpose is removed from the product's original one, seems more relevant to the PLD's defect assessment (see *supra* nr. 257), while it can be at best only one criterion for the contributory fault assessment. It is necessary to directly evaluate the repurposer's conduct, the particular nature of the product and environmental circumstances. For example, repurposing objects as furniture or as toys seems generally ill-advised when these come in a household into direct, potentially unsupervised contact with small kids or elderly persons, who may require safer products that meet regulatory requirement for the particular purpose they are used for.

Finally, in terms of apportionment, Belgian law applies a causal share criterion, with some exceptions, most notably the aforementioned situations of intentional faults leading to a full

¹⁷⁶⁶ Art. 6.20, § 1 CC BE.

¹⁷⁶⁷ Art. 6.6, § 1 *ibid.* See for a summary *supra* nr. 208.b-c.

¹⁷⁶⁸ See, e.g., how the General Product Safety Regulation 2023/988/EU fixates on defendants in the product distribution chain (see *supra* nr. 10).

exoneration (see *supra* nr. 275).¹⁷⁶⁹ The basic rule on causation remains the *conditio sine qua non* test, but now explicitly rejects causes that are so far removed from the eventual damage that still imposing liability would be considered manifestly unreasonable.¹⁷⁷⁰ Especially in some unlikely cases of accidents involving repurposed products, a harmonised product liability defendant may try to argue that, in comparison with the repurposer's conduct, the product defectiveness was an extremely remote cause. However, the same underlying factual arguments which relate to an unforeseeable nature of the repurposing, would, if they are convincing, likely have already led to a finding of no harmonised product liability to begin with. This would be the case either based on a lack of a proven product defect, a successful posteriority defence or simply, based on the same rule, a rebuttal of the required causation between the alleged defect and the claimed damage (see also *supra* nrs. 239 and 255 et seq.).

¹⁷⁶⁹ See art. 6.20 CC BE. See also *supra* footnote 1157.

¹⁷⁷⁰ Ar. 6.18 CC BE.

Chapter 3. Retransferring products: resales, barter and donations of second-hand products

Section A. Introduction

277. (PRODUCT LIABILITY FOR) RETRANSFERRING PRODUCTS – As discussed *supra* nrs. 58-59, 68.a and 79-82, ‘retransferring’ is a circular economic activity and, when it occurs on a P2P or P2B basis, it also overlaps with collaborative economy. Retransferring distinguishes itself from product sharing, by resulting in a transfer of ownership. The difference with traditional transfers of ownership over consumer goods, such as normal sales contracts, is the fact that the object of a retransfer is a ‘second-hand’ product. The latter is a product that has been used before, however briefly and lightly (see *supra* nr. 79 on this dissertation’s understanding of ‘second-hand’ and ‘retransferring’).

While retransferred, second-hand goods would not yet be considered by a majority of consumers as obsolete, this is of course possible and in such an event the retransfer coincides with product reuse. A retransfer can theoretically also coincide with product repurposing (see *supra* nrs. 83.a and 84.d). The way in which retransfers are different from traditional product reuse or repurposing, for which harmonised product liability has been examined in the preceding Chapter, is the obvious fact that retransfers involve a redistribution and are therefore not limited to a product use phase.¹⁷⁷¹ Additionally, the retransferred second-hand product can also have been first repaired or refurbished, but the peculiarities of harmonised product liability applied to these reproduction methods are studied separately in the next Chapter.

As discussed *supra* nrs. 79-82, the types of retransfers examined in this dissertation are resales, donations and barter.¹⁷⁷² Resales are sales of a second-hand product, meaning that ownership of this product is transferred by the ‘reseller’ to the ‘repurchaser’ in exchange for a payment. A donation of a second-hand product is a contract where the ‘donor’ gratuitously offers to transfer its ownership and the ‘donee’ accepts it. And barter is in this dissertation understood as either a single contract for the direct exchange of consumer goods or a chain of contracts among members of a barter club or exchange to exchange consumer goods for

¹⁷⁷¹ This makes again abstraction from the hypothesis that certain, far-reaching types of repurposing (by a commercial actor) can possibly be qualified as a type of product reproduction, namely a substantial modification leading to a separate primary liability based on art. 8(2) PLD-2024. See *supra* nrs. 262 and 272.

¹⁷⁷² See *supra* footnote 429 on the choice to only talk about ‘resale’ in case of sales of second-hand goods but to assume in case of sharing, donations and bartering that it involves a second-hand good, unless specified otherwise.

credits. All these retransfers can theoretically occur on a B2C, P2P or P2B basis,¹⁷⁷³ although P2B donations are rare and generally assume that the donee is a charity that can be qualified as an economic entity and although barter occurs in practice only on a P2P basis (see *supra* nrs. 80-82).

278. POTENTIAL CLAIMS AND FACTUAL CONSTELLATIONS – Retransfers are challenging from a product liability perspective, because they entail one (or more)¹⁷⁷⁴ past use phase(s) during which a product may have become defective. Such a past use phase is chronologically situated after the product was originally placed on the market but before it is again redistributed by the retransferor(s). Hence, if a product accident subsequently occurs, there are more potential defendants.

First of all, there are the manufacturer, importer and distributors of the product prior to the first use. The possibilities for harmonised product liability against these defendants in the product's 'original distribution chain' are well-known, although the fact of multiple use phases and an intervening redistribution raise several theoretical challenges. This is examined in Section B of this Chapter.

Second, there are the retransferors, either prosumers, professionals or both in a contractual chain of retransfers.¹⁷⁷⁵ Curiously, the PLDI offers more possibilities to injured consumers and third parties to claim against those retransferors than one might imagine,¹⁷⁷⁶ not only on a basis of secondary but also primary liability. Studying these possibilities in Section C of this Chapter will reveal that such liability of retransferors who engage with a product much later than defendants in the original distribution chain, raises considerably the stakes for theoretically important questions on how to interpret the defect assessment, various defences as well as the limitation and extinction periods. As discussed *supra* nrs. 79 et seq., a reseller, donor or barterer is often a prosumer. The different conditions on the basis of which prosumer can fall within the personal scope of application under the PLD-1985 and PLD-2024, are discussed *supra* nrs. 197-198.

Third, the 'recipients' of the retransfer, the new owners and users of a second-hand product, can theoretically also become defendants when said product subsequently causes an accident. This is mainly relevant for horizontal claims by injured third parties that need to be based on non-harmonised national extracontractual liability law. Nevertheless, when such third parties claim instead diagonally against defendants in the second-hand product's original distribution chain or against a retransferor, then the latter may claim on a recourse basis

¹⁷⁷³ They can of course also occur on a B2B basis, even with regards to consumer goods. This falls, however, outside the scope of this research project (see *supra* nr. 33).

¹⁷⁷⁴ Products that have been consecutively used and retransferred more than once, are also called generally 'second-hand' and 'retransferred' products in this dissertation (see *supra* nr. 79).

¹⁷⁷⁵ It often occurs that a prosumer sells his second-hand goods to a professional trader (P2B) who subsequently resells them to a new consumer (B2C). The same occurs with donations. See *supra* nrs. 80 and 82.

¹⁷⁷⁶ Naturally, national liability theories continue to play a significant role here as well, although the most protective, 'strictest' theories are suspect of actually being harmonised by the Directives, including in cases where the retransferor is under the PLDI only subject to a secondary liability.¹⁷⁷⁶ This has been examined *supra* nrs. 208-219 with regards to Belgian law.

against the potentially liable consumer. Naturally, when recipients of retransferred products suffer damage themselves and claim on a vertical basis, the contributory fault mechanism plays a role as well. Since it is an integral part of harmonised product liability, this last component is examined in Section D of this Chapter.

Given the practical significance of emerging ‘digital product passports’ in applying harmonised product liability to situations of product redistribution, of which retransfers are the paradigmatic example, Section E of this Chapter separately examines this regulatory innovation and how this may help persons injured by a second-hand product to successfully claim on the basis of harmonised product liability law.

Finally, this Chapter considers to a limited extent the combination of a retransfer with a reused or repurposed product, for which the analysis can build on the insights of the preceding Chapter. Likewise, it refers only in passing to the possibility that the retransferred second-hand product has been repaired or refurbished, since more specific issues concerning harmonised product liability for these reproduction methods are examined in the following Chapter. Furthermore, if a second-hand product is either remanufactured or re-used (as a component) in industrial or collaborative production processes, possibly after a preceding ‘preparation for re-use’, it becomes a new product (see *supra* nrs. 90-93). In such an event, the product is no longer on the market as a product that can still be retransferred as second-hand, so these types of re-use are entirely beyond this Chapter’s scope and are discussed separately in a sub-section in the Chapter on repairs and refurbishments.

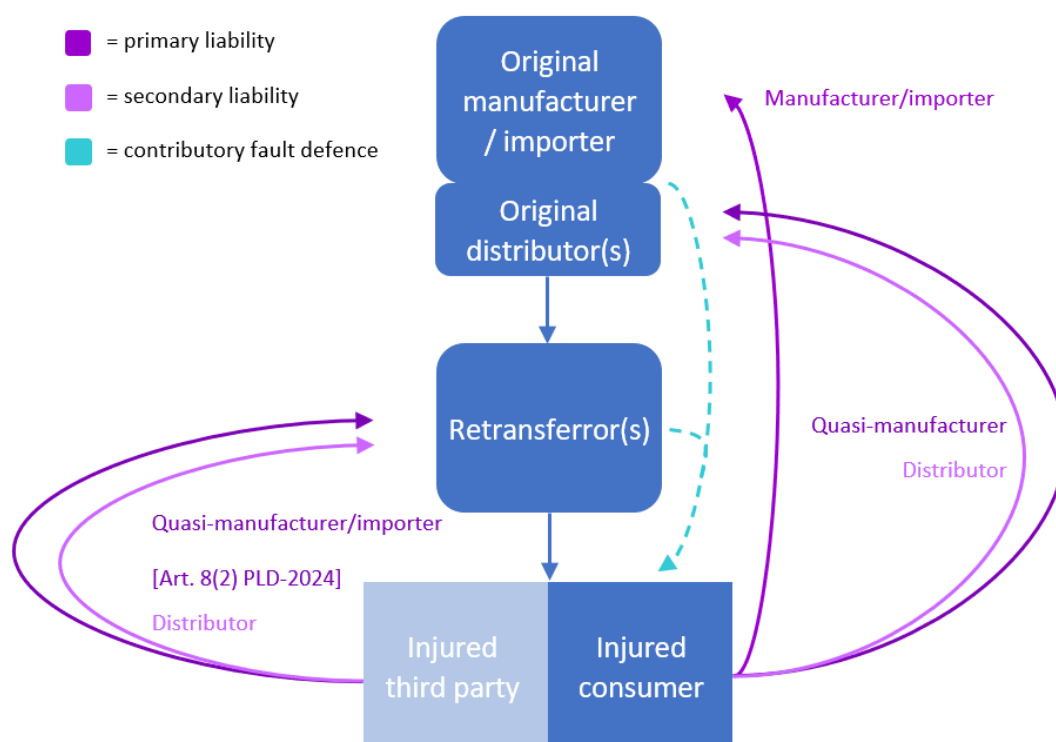


Figure 11: EU harmonised product liability claims in the context of product retransfers.

Section B. Liability of original manufacturers and distributors for second-hand products

§ 1. Scope of application

279. *RATIONE MATERIAE: RETRANSFERRED, SECOND-HAND PRODUCTS* – Just like harmonised product liability theoretically continues to apply to reused products (see *supra* nr. 223), it also continues to apply to products that have been retransferred and are now second-hand.¹⁷⁷⁷ Regardless of how many times a product has been retransferred, such products remain within the material scope of harmonised product liability law.¹⁷⁷⁸ Harmonised product liability is thus in no way limited to new products or their first use phase.¹⁷⁷⁹ Additionally, the PLD-1985 also continues to apply to products during the retransfer process itself, from transportation over storage to delivery (see *infra* nr. 283). Naturally, claims based on the PLDI against defendants in the original distribution chains of those products (see *infra* nr. 280) remain limited in different ways, such as through the posteriority defence and the extinction period, as discussed *infra* nrs. 291-297.

Likewise, it does not matter how a product is being retransferred, for it to remain theoretically within the material scope of harmonised product liability. Therefore, not only products that have been resold but also those that have been donated or bartered after an initial use phase, remain within the material scope of harmonised product liability.¹⁷⁸⁰ This does of course not necessarily mean that every retransferor himself is subject to harmonised product liability, which is further examined *infra* nrs. 298 et seq. It only means that the fact that a product is retransferred and has become second-hand, regardless in which manner and by whom, presents no obstacle to the possibility of a successful claim based on the PLDI against recognised defendants, such as those in the product's original distribution chain.

These basis rules mirror EU general product safety regulation, which also generally continues to apply to “used” products. However, in contrast to the PLD, it offers exceptions for

¹⁷⁷⁷ Taschner and Frietsch, *Kommentar*, 238; Howells, ‘strict liability’, nr. 4.76; Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 47, nr. 8; O. Berg, ‘La responsabilité du fait des produits défectueux en droit allemand: les produits’ in GRERCA (ed.), *La responsabilité du fait des produits défectueux* (IRJS 2013) 109; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3603, 4; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., 307; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 2, nr. 8; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 2, nr. 10.

¹⁷⁷⁸ Art. 2 PLD-1985; arts. 2(1) and 4(1) PLD-2024. See also *supra* nr. 175.

¹⁷⁷⁹ See also Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3602, 5; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 2, nr. 8.

¹⁷⁸⁰ See Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 49, nr. 77; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., 241-242; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 4, nr. 51. See also art. 4(7) PLD-2024: “‘making available on the market’ means any supply of a product for distribution, consumption or use on the Union market in the course of a commercial activity, whether in return for payment or free of charge;”. This is the most relevant of the new concepts that replace the ‘putting into circulation’ notion, which remained undefined in the PLD-1985 (see also *supra* nr. 194 and *infra* nr. 318).

antiques and for products that still have to be repaired or refurbished prior to being used and are clearly marked as such.¹⁷⁸¹

280. *RATIONE PERSONAE*: RETRANSFER HAS NO IMPACT ON LIABILITY RISK OF ORIGINAL MANUFACTURERS AND DISTRIBUTORS, POTENTIAL DIFFICULTIES IN IDENTIFYING (PRIMARILY LIABLE) DEFENDANTS – Just like a product does not escape the PLD’s scope of application when it is being or has been retransferred, it also remains possible to claim on the basis of harmonised product liability against the product’s original manufacturer and other potential defendants in the product’s original distribution chain, such as the importer or a quasi-manufacturer, as indicated in Figure 11 above. This also includes the novel categories of defendants introduced by the PLD-2024, the manufacturer’s authorised representative, the online platform or the fulfilment service provider (see *supra* nr. 178), which are not further discussed explicitly in this Chapter for reasons of simplicity. Theoretically, all these parties can be held liable for an accident involving a product that they have originally placed on the market, made available or helped to make available and that has subsequently been used and retransferred one or multiple times.¹⁷⁸²

At a practical level, the second-hand nature of a harmful product may pose difficulties for identifying defendants of the product’s initial distribution chain. The product’s original consumer, who may have relevant information, is no longer involved at the time of the accident. Packaging and product documentation may no longer be available (see *infra* nr. 288). And identification marks on the second-hand product itself, which can refer to brands or even original retailers, may be lost through wear and tear or as a result of the product accident itself. As a sobering outcome, the injured recipient or third party may simply be unable to claim against any of the aforementioned defendants. Traceability information or future digital product passports can provide (partial) solutions for this issue, as further discussed *infra* nrs. 281 and 345.a. Naturally, in such situations, the second-hand product’s recipient might still be able to identify the retransferor instead.¹⁷⁸³ The harmonised product liability risk of retransferors is examined *infra* nrs. 298 et seq.

Finally, harmonised product liability’s broad personal scope of application at the plaintiff side means that not only injured recipients and third parties but also retransferors themselves can potentially claim against defendants in the second-hand product’s original distribution chain, if it happens to cause an accident during the retransfer process itself. Of course, this is a context where the limitations to the recognised heads of damage play an even more significant role, as discussed *infra* nr. 283.

¹⁷⁸¹ Art. 2(2)i(3) General Product Safety Regulation 2023/988/EU. See the same rule, applicable for the time being for many products that are already on the market art. 2(a), second section General Product Safety Directive 2001/95/EC 2001/95. See also Verhoeven, *Productaansprakelijkheid en productveiligheid*, 23; T. Klindt, *Produktsicherheitsgesetz: Kommentar* (3rd edn., Beck 2021) § 2, nrs. 49-55, § 3, nr. 25.

¹⁷⁸² See, e.g., Howells, ‘strict liability’, nr. 4.76: “Producers remain liable for defects in products which existed at the time they supplied them no matter how many hands they have passed through or how many times they have been sold on.”

¹⁷⁸³ The recipient may claim directly on a vertical basis, because he is likely to have suffered damage in the accident caused by his second-hand product. Alternatively, the recipient may claim on a recourse basis after being held personally liable by an injured third party on a horizontal basis.

281. PRODUCT SAFETY ‘TRACEABILITY REQUIREMENTS’ AS A MEANS TO ENSURE IDENTIFICATION OF DEFENDANTS SUBJECT TO PRIMARY LIABILITY – The likelihood that the original manufacturer, importer or quasi-manufacturer can still be identified when a product is first retransferred and then causes an accident, is increased as a result of so-called ‘traceability requirements’ imposed by product safety law. Most products that are now on the market and that may be retransferred, should theoretically bear an identification of one of these parties as well as a product reference such as a batch number.¹⁷⁸⁴ Although some sectoral product regulation imposes more comprehensive and binding requirements, this is for most durable consumer products currently on the market based on the very general and rather optional traceability guideline of the General Product Safety Directive 2001/95/EC.¹⁷⁸⁵

Since this provision has been far from uniformly implemented and enforced across Member States,¹⁷⁸⁶ the new General Product Safety Regulation 2023/988/EU provides more detailed and stringent rules. For new products that are now placed on the market, which will become over time tomorrow’s second-hand products, manufacturers, importers and quasi-manufacturers have to indicate, among others, their name and address as well as type, batch or serial number or other product identification information. Crucially in a retransfer context where information on product packaging or product documentation might be very easily lost or not transfer together with the product (see also *infra* nr. 288), this information must be affixed to the product itself and may only be placed on the packaging or product information document if a visible placement on the product would be impossible.¹⁷⁸⁷

Additionally, for categories of hazardous products and components, the Commission can in the future through delegated acts impose ‘specific traceability requirements’, which may potentially be made available through digital means.¹⁷⁸⁸ The latter is reminiscent of the more wide-ranging but for other products and components than batteries not yet formally adopted

¹⁷⁸⁴ Belgian and German product safety law have required this during past years in a more mandatory and comprehensive manner. In contrast, in France this requirement is much more flexibly interpreted and only required when deemed necessary on a case-by-case basis. BELGIUM: arts. IX.8, §2, second section, 1° *juncto* I.10, 8° Wetboek economisch recht / Code droit économique. See on a restrictive interpretation of the exception granted by the Belgian legislator Verhoeven, *Productaansprakelijkheid en productveiligheid*, 541-542. GERMANY: §§ 6(1)2-3 *juncto* 2(15) Gesetz über die Bereitstellung von Produkten auf dem Markt (Produktsicherheitsgesetz) vom 27 Juli 2021, BGBl. I, 3146. See on a restrictive interpretation of the exceptions granted by the German legislator T. Klindt, *Produktsicherheitsgesetz: Kommentar* (3rd edn., Beck 2021) § 6, nrs. 39-44. FRANCE: art. L423-2, second section Code de la Consommation. See on how this is applied in, i.a., French practice Civic Consulting, *Study for the preparation of an Implementation Report of the General Product Safety Directive: Final report - Part 2: Country reports* (European Commission, 2020) 115.

¹⁷⁸⁵ Art. 5(1) 4th section (a) General Product Safety Directive 2001/95/EC 2001/95: “The measures referred to in the third subparagraph shall include, for example: (a) an indication, by means of the product or its packaging, of the identity and details of the producer and the product reference or, where applicable, the batch of products to which it belongs, except where not to give such indication is justified [...]”

¹⁷⁸⁶ See Civic Consulting, *Study for the preparation of an Implementation Report of the General Product Safety Directive: Final report - Part 1: Main report* (European Commission, 2020) 26-35.

¹⁷⁸⁷ Arts. 9(5)-(6), 11(1)-(3) and 13(1) General Product Safety Regulation 2023/988/EU.

¹⁷⁸⁸ Art. 18 *ibid*.

plans for ‘digital product passports’. This can provide in the future a possibly effective solution for the identification by injured parties of primarily liable defendants (see *infra* nrs. 344-345), especially for accidents involving second-hand products. Digitalised traceability information can also help to overcome classic but persistent issues in identifying harmonised product liability defendants when the product itself or at least the traceability information present on it, has been destroyed in a product accident or has disappeared through wear and tear.¹⁷⁸⁹ Both issues are again far from unthinkable when an accident is caused by a second-hand product. However, some kind of physical and thus vulnerable data carrier like a QR-code likely remains necessary to access this digitalised information, which can equally be damaged through wear and tear or the product accident (see *infra* nr. 346).

282. DIGITAL SERVICES ACT ‘TRACEABILITY REQUIREMENTS’ AS AN IMPERFECT MEANS TO HELP IDENTIFYING E-COMMERCE DISTRIBUTORS SUBJECT TO SECONDARY LIABILITY – For products distributed through an online platform, art. 30 Digital Services Act now requires these platforms to ensure that traders offering products on their platforms to EU consumers also provide to the platform identifying information, which these platforms have to verify and, importantly, make available “*in a clear, easily accessible and comprehensible manner*” to the platform’s users.¹⁷⁹⁰

However, this information currently only has to be made available on the part of the platform’s online interface where the information on the product’s offer by the trader is presented and platforms only need to store this information until six months after the end of their contractual relationship with the trader, after which they are required to delete this information.¹⁷⁹¹ For purposes of identifying e-commerce distributors, who potentially qualify as importers or quasi-producers, for a future product liability claim after the same product has become second-hand and causes an accident, this is problematic. Because the trader might no longer be active on the platform and the latter is even required after six months to delete this traceability information. This seems an unnecessary record-keeping limitation, which seems to be instilled by (in my opinion less persuasive) data protection arguments to the benefit of commercial e-commerce traders but which is detrimental to the potential utility of this record-keeping for harmonised product liability and post-marketing product safety purposes. An amendment that would extend this record-keeping period to the length of the applicable product liability extinction period (see also *supra* nr. 247), therefore seems warranted.

Admittedly, although the traceability information of art. 30 Digital Services Act can help to identify distributors of ‘ecommerce products’, it is not as important from a product liability perspective as the aforementioned, more general traceability requirements of general

¹⁷⁸⁹ A more low-tech but potentially effective solution could consist of more strictly regulating the manner how and the different places on different types of products where traceability information and/or a digital product passport’s QR-code should be affixed. This can be regulated through sectoral product safety regulation, through the aforementioned ‘specific traceability requirements’ pursuant to art. 18 *ibid.* or through Ecodesign implementing regulations. See also *infra* nr. 346 on these challenges to ensure foolproof defendant identification.

¹⁷⁹⁰ Art. 30(1)-(3)(7) Digital Services Act.

¹⁷⁹¹ Art. 30(5)(7) *ibid.*

product safety regulation and the potential future role played by digital product passports (cf. *supra* nr. 281 and *infra* nr. 345.a). This is because these requirements, if complied with and if properly implemented in case of the passports, should in principle be visible on the product itself, or at least on its packaging or documentation, and refer back to a defendant subject to primary harmonised product liability. Once an injured party knows the identity of a primary liable defendant, there is no longer a risk of secondary liability of an e-commerce distributor as a mere distributor.¹⁷⁹²

§ 2. Damage

283. PRODUCT ACCIDENTS OCCURRING DURING RETRANSFER PROCESS: MATERIAL DAMAGE IS MORE LIKELY WITHIN SCOPE IN CASE OF P2P OR P2B RETRANSFERS – Claims based on the PLDI against manufacturers and other defendants in the original distribution chain of second-hand products are not only possible for accidents occurring during the use phase(s) (before and) after each retransfer. If a defective second-hand product causes damage while it is being resold, bartered or donated, an injured retransferor or third party can theoretically also claim against defendants in the product's original distribution chain. After all, they have placed the product on the market (or made it available), which means that they can be held liable from that point in time onwards if the product is found to be defective and causes damage. Only the extinction period of art. 11 PLD-1985 and art. 17 PLD-2024 truly demarcates this liability.

Only under the PLD-2024, it is required that a plaintiff, such as an injured retransferor, is a natural person or someone succeeding to, subrogated to or representing an injured natural person.¹⁷⁹³ Of course, any claim for reparation based on the PLDI remains limited to the heads of damage recognised by arts. 9 PLD-1985 and 6 PLD-2024, as outlined *supra* nr. 190.¹⁷⁹⁴

As an illustration, when a defective electric heater resold in a second-hand goods store causes sparks which start a fire, both the shopkeeper and a third party living above the store can try to claim against the heater's manufacturer, importer or quasi-manufacturer when they would suffer personal injuries.¹⁷⁹⁵ But only the third party (or his subrogated insurer) can claim for material damage to his apartment and household goods, while the professional shopkeeper cannot do the same for extrinsic damage to his shop and inventory, although he might claim damage to certain mixed use goods based on art. 9, 1st section (b) PLD-1985 and all mixed use goods based on art. 6(1)b(iii) PLD-2024. Alternatively, if a pool table is being resold, a component breaks off during transportation and causes the heavy object to fall and damage the reseller's ornamental staircase, this damage can be claimed when the reseller is

¹⁷⁹² Art. 3(3) PLD-1985; art. 8(3) PLD-2024. *See also* regarding the underlying rules *supra* nr. 177 and *infra* nr. 301.

¹⁷⁹³ Arts. 1 and 5 PLD-2024. *See supra* nr. 176.

¹⁷⁹⁴ Note, however, that other heads of damage can still be claimed on the basis of not only non-harmonised national liability theories but also liability theories with the same theoretical basis as both Directives. This is based on the *Leroy Somers* decision (CJEU 4 June 2009, C-285/08, *Moteurs Leroy Somer v. Dalkia France*, ECLI:EU:C:2009:351, nrs. 24-32). This dissertation argues *supra* nr. 219 that this case law also extends to art. 6 PLD-2024.

¹⁷⁹⁵ Art. 9(1)a PLD-1985; art. 6(1)a PLD-2024. *See supra* nr. 190.a.d.

a prosumer but not if he is a professional and the staircase is used exclusively for professional purposes.¹⁷⁹⁶

It is therefore much more likely that material damage can be claimed in the event of accidents occurring during a retransfer process, when these are P2P or P2B rather than B2C resales, donations or barter transactions involving second-hand goods. Note that when second-hand consumer goods are retransferred professionally, such as on a B2C basis, an initial P2B retransfer has preceded this transaction in which the professional sources his second-hand consumer goods (see *supra* nrs. 80-82). Furthermore, considering that there are for example more and more prosumers who sell and barter online second-hand goods to such an extent that they can qualify as a professional enterprise (see also *supra* nr. 198), it is pertinent that art. 6(1)b(iii) PLD-2024 makes it also possible to claim for damage to ‘mixed use’ products that are for the most part used professionally.¹⁷⁹⁷ Under art. 9, 1st section (b) PLD-1985, which will continue to apply in the future to many second-hand products predating the new Directive, only much more limited extrinsic damage to ‘mixed use’ goods can be claimed (see *supra* nr. 190.b).

These rules are not theoretically different from the possibility for distributors injured by a product accident occurring during a product’s initial distribution phase to claim against (quasi-)manufacturers, importers and even preceding distributors. But the damage that can still be claimed on the basis of harmonised product liability in such on average more professionalized context, like personal injuries of employees or potential customers in a shop, are generally covered by workers’ compensation laws, a combination of contractual arrangements in supply chain contracts and insurance, as well as forms of shopkeeper’s liability based on national liability law, such as the relatively ‘strict’ *la responsabilité du fait des choses* in Belgian and French law (see *supra* nr. 217-218). Harmonised product liability claims for accidents occurring during the initial distribution phase are thus generally limited to rarer instances of recourse claims. Additionally, under the PLD-2024, potential plaintiffs must furthermore be natural persons, as discussed above. In comparison, there is in the redistribution context a higher risk of damage recognised by the Directives and also a higher risk that injured parties themselves effectively claim against defendants in the second-hand product’s original distribution chain.

Finally, these rules equally apply to potential claims based on the PLDI against retransferors themselves for damage suffered by a third party as a result of a product accident occurring during the retransfer process. Nevertheless, retransferors who are liable on either a secondary or primary basis are likely to try to invoke the not put into circulation defence of arts. 7(a) PLD-1985 and 11(1)b PLD-2024. How this defence can be interpreted in this context is discussed *infra* nr. 323.

¹⁷⁹⁶ Art. 9(1)b PLD-1985; art. 6(1)b(iii) PLD-2024. See *supra* nr. 190.b.d.

¹⁷⁹⁷ Only damage to “property used exclusively for professional purposes” is still excluded (art. 6(1)b(iii) PLD-2024).

§ 3. Defect

a. In general

284. MAIN FOCUS ON DEFECTS BROADLY RELATING TO THE INTERVENING RETRANSFER, SEPARATE PROOF POSSIBLE IN THE EVENT OF PRODUCT REPURPOSING OR OTHER SERIOUS PRODUCT MISUSE – This Paragraph focuses mostly on potential defects that are related to the fact that and the manner in which a harmful product has been retransferred. Other types of defects are of course as important in product litigation practice when accidents are caused during or after a retransfer. These can be manufacturing, design or information defects that would equally have affected the product's original user if the product would not have been retransferred. Yet, proving this broad category of traditional defects does not necessarily differ depending on whether a product is new or second-hand, which makes them less of a focal point for this Paragraph.¹⁷⁹⁸ To the extent that second-hand products are already relatively old or have been used intensively, of course various considerations concerning product durability rise, but these have already been intensively examined in the preceding Chapter.

Arguably the 'easiest' method to prove a defect that is related to the fact that a retransfer preceded or occurred at the time of the accident, is only available when said retransfer happened to coincide with a repurposing or other serious misuse of the second-hand product. For example, one or more used car batteries may be donated to a family to serve as a home battery. Or a recipient might be unsure how to precisely use his newly acquired, second-hand household device and uses it in drastically different environmental conditions or in combination with entirely different complementary products than the product was designed for.¹⁷⁹⁹ In those cases, as already argued *supra* nr. 255, the plaintiff can simply demonstrate that the second-hand product did not provide the safety to which the public was entitled when it was placed on the market, with regards to the particular (new) purpose for which the product was (mis)used at the time of the accident. The discussion then moves to the posteriority defence, since the defendant is likely to argue (potentially successfully) that the repurposing or misuse that made the product defective had not been reasonably foreseeable when the product was originally placed on the market (see *supra* nr. 255).

In all other cases where a defect is broadly related to the fact that a retransfer occurred while there has been no repurposing nor a significant other misuse of the product, this initially 'easy' proof of defectiveness is unavailable and the plaintiff has to prove the defect through other means. How such defect can be proven in these cases, is analysed below in light of the concrete defect assessment criteria presented *supra* nrs. 181-188

285. 'MIND THE GAP': THE IMPORTANCE OF RETURNING TO THE TIME WHEN THE SECOND-HAND PRODUCT WAS ORIGINALLY PLACED ON THE MARKET – Most of the relatively brief discussions in the

¹⁷⁹⁸ This is different for defences, like the posteriority defence, contributory fault or the extinction period, for which the second-hand nature of a product is at least indirectly relevant regardless of the specific nature of the defect on which the plaintiff has based his claim. See *infra* nrs. 291-297 and 338-340.

¹⁷⁹⁹ See also *supra* nr. 288 on the risk that safety information is inadequately relayed downstream when a product is retransferred.

literature on harmonised product liability for second-hand products, are content with stating that the public's legitimate safety expectations are generally lower for second-hand products compared to new products.¹⁸⁰⁰ However, notwithstanding the reputation of these authors, this statement is theoretically imprecise, even incorrect. It conflates 'strict' harmonised product liability, which is essentially extracontractual in nature (see *supra* nr. 172) and fixated on the moment when a product is placed on the market or put into service (see *supra* nr. 184), with contractual product liability, where the conformity assessment for a second-hand product is indeed determined at the time of the retransfer.¹⁸⁰¹ In contrast, harmonised product liability's defect assessment must be evaluated at the time when the product was originally placed on the market,¹⁸⁰² regardless whether or not it has later been retransferred (cf. *infra* nrs. 310 and 315 regarding the different grounds of potential harmonised product liability of retransferors). A product that has become second-hand, must thus be evaluated retroactively according to the same defect standard that applied before its retransfer and, in this regard, there is no difference with a product that is never retransferred and continuously used by an original consumer or even with the same product when it is still brand-new at the time it causes an accident.

This statement in the literature on the defect assessment of second-hand products, can instead be more correctly reformulated in two ways. First of all, it is correct to hold that, if a product is second-hand, the safety expectations applicable at the time when it was placed on the market might have been less demanding than those applicable to an equivalent product that is now for the first time placed on the market or put into service (see also *supra* nr. 235). Second, it is also correct to state that it is statistically more probable that a defect in a second-hand product originates from a posterior, intervening factor. The latter hypothesis actually concerns the posteriority defence, for which the defendant bears the burden of proof and which is discussed separately *infra* nrs. 291-292.

b. Specific defect assessment criteria

286. THE REASONABLE FORESEEABILITY OF RETRANSFERS – A key criterion for the defect assessment is the product's reasonably foreseeable use,¹⁸⁰³ which again must be evaluated retroactively from the perspective of the time when the product was placed on the market.

¹⁸⁰⁰ E.g., Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 518; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 181; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., 307; Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 2, nr. 8; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 2, nr. 10.

¹⁸⁰¹ This conflation is the clearest in WAGNER's discussion, who adds that such lower safety expectations would only apply to the extent that the public can recognize at the time of the retransfer that it is a second-hand and not a new product (Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 2, nr. 8). Such subjective appreciation fixated at the time of the retransfer may seem still persuasive to many lawyers in vertical claims by injured consumers. Yet, it clearly overlooks the possibility diagonal claims by injured third parties who were not present at the time of the retransfer. In each case, all these defect assessments that fixate on the moment when a product is merely made available at the time of a retransfer instead of the earlier moment when it was placed on the market, are theoretically incorrect, as argued in this section and *infra* nr. 310.

¹⁸⁰² Art. 6(1)c PLD-1985; art. 7(2)e PLD-2024.

¹⁸⁰³ Art. 6(1)b PLD-1985; art. 7(2)b PLD-2024. See also *supra* nr. 183.

Retransfers tend to involve some or all of the following practical steps: product disassembly, repackaging and transportation, temporary storage, potential displaying and product testing by those interested in the second-hand product, new transportation to the recipient, unpacking, potential assembly and installation and, finally, as part of the new use phase, the recipient experimenting and familiarizing himself with his newly acquired second-hand product. These are all circumstances relating to a resale, donation or barter transaction that can have an impact on a product and possibly render it defective by providing insufficient safety in these circumstances. To the extent that these circumstances individually or collectively had not been reasonably foreseeable when the product was placed on the market, they are relevant to the posteriority defence (see *supra* nr. 239 and *infra* nr. 291). But to the extent that these retransfer circumstances had been reasonably foreseeable, they may lead to a finding of a defect if the product could not deal with and became unsafe as a result of them.

Generally, it can be argued that durable consumer goods should be able to be safely retransferred and used by a new consumer once or even multiple times. This is even more true in light of the principle that a certain amount of product misuse by consumers must be considered as reasonably foreseeable.¹⁸⁰⁴ And, at a general level, it may find further support in an ongoing, both top-down and bottom-up transition to a more circular economy in which products are used longer and are also more frequently retransferred to new users (see *supra* nrs. 2 and 65-66). The latter is now also signalled by recital 39 PLD-2024.¹⁸⁰⁵ Nevertheless, whether a retransfer and continued use of a product by a new consumer is reasonably foreseeable in a concrete case, depends on various considerations, among which the product's nature, the product's presentation and possibly also future product regulation, as detailed *infra* nrs. 287-289. In a transition to a more circular economy, it can become gradually more reasonably foreseeable that certain types of products will be (more frequently) resold, donated or bartered while second-hand. If so, defendants in the product's original distribution chain should consider,¹⁸⁰⁶ when they place new products of these types on the market or make them

¹⁸⁰⁴ See recital 6 PLD-1985; art. 7(2)b PLD-2024. See sources cited *supra* footnotes 1095-1096. In Belgian liability law, this can be more broadly interpreted as part of the '*consideratieplicht*' (see *supra* footnote 1690).

¹⁸⁰⁵ Recital 39 PLD-2024: "*In the transition from a linear to a circular economy, products are designed to be more durable, reusable, repairable and upgradable.*"

¹⁸⁰⁶ As discussed in the following Section, this also relevant to the defect assessment for most possible grounds of harmonised product liability of retransferors themselves ('single defect' concept), although an exception applies if a retransferor would be liable based on art. 8(2) PLD-2024 ('differentiated defect' concept). Cf. *infra* nrs. 310-316.

available,¹⁸⁰⁷ such increased safety expectations relating to risks resulting from future retransfers.¹⁸⁰⁸

In addition to circumstances relating to the retransfer process itself, products obviously merely as a consequence of the passing of time further wear out when they, after an initial use phase, are retransferred and subsequently used by new owners. This dissertation has already studied nrs. 232 et seq. how and why a product can be considered as being defective due to insufficient durability. Without duplicating this analysis here, it is worth highlighting that only abnormal wear and tear constitutes a defect,¹⁸⁰⁹ that use of durable consumer goods after the expiration of their normal expected lifetime may during a certain period still have been reasonably foreseeable¹⁸¹⁰ and that also the legitimate expectations of the public regarding product durability can evolve.¹⁸¹¹ The next section further touches upon some concerns at the crossroads of the defect assessment for worn and already intensively used products and the fact that such products are subsequently retransferred to a new user.

Finally, the assessment of the reasonable foreseeability of one or more retransfers and the subsequent use of the second-hand product by a recipient, must remain conceptually separated from the assessment whether the retransferor and/or recipient have committed a contributory pursuant to art. 8(2) PLD-1985 or art. 13(2) PLD-2024, in case either of these parties would claim based on the PLDI against a defendant in the original distribution chain (see also *infra* nr. 339). Likewise, this assessment must remain separated from the question whether they have committed an extracontractual fault, in case an injured party would claim directly against either of these actors or if they would have to defend themselves against a recourse claim on this basis. A hypothetical (contributory) fault of either the retransferor or the recipient, does not exclude that certain of the circumstances involving the retransfer or the extended use of the product by a new user, possibly already had been reasonably foreseeable when the product was placed on the market. Conversely, the absence of a (contributory) fault by either of these parties, does not exclude a simultaneous finding that such circumstances relating to the retransfer had also not been reasonably foreseeable when the product was placed on the market by its original (quasi-) manufacturer or importer.¹⁸¹²

¹⁸⁰⁷ Such evolutions in public expectations concerning the capability to safely retransfer a product also remain relevant for products that are already placed on the market or put into service, but this only relates to post-marketing product safety obligations as well as corresponding extracontractual liability for fault-based ‘post-marketing product liability’. However, arts. 8(2) and 11(2) PLD-2024 now provide limited exceptions, where such evolutions relating to products already placed on the market or put into service would also be relevant to harmonised product liability. See *supra* nrs. 178.f, 184 and 196. See also Taschner and Frietsch, *Kommentar*, 278-279; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3604, 11.

¹⁸⁰⁸ See also W. Rubens et al., *Juridische knelpunten bij circulaire economie projecten: Een verkenning en studie aan de hand van enkele concrete projecten* (OVAM 2019) 118-119; V. Ulfbeck, ‘From Linear to Circular Value Chains: A Role for Tort Liability in Recycling Practices?’ (2022) 13 *European Journal of Risk Regulation* 603, 611.

¹⁸⁰⁹ See sources cited *supra* footnote 1488.

¹⁸¹⁰ See sources cited *supra* footnotes 1491-1494. See also sources cited *supra* footnotes 1095-1096

¹⁸¹¹ See sources cited *supra* footnotes 1496-1497.

¹⁸¹² The same principle has already been discussed more extensively in the context of product reuse. See *supra* nr. 274.

287. NATURE OF A RETRANSFERRED PRODUCT – Another key criterion to determine whether or not there is a defect in a product that causes an accident during or after a retransfer, is the particular nature of this second-hand product.¹⁸¹³

First of all, products and components can be inherently different in terms of how they can retain their safety characteristics throughout the retransfer process itself. Smaller durable consumer goods, such as kitchen, DIY, garden or sports equipment and toys, are generally easier to safely resell, donate or barter. In contrast, products that are due to their fragility or shape difficult to being safely transported, entail risks of being damaged during a retransfer process. Likewise, products that require extensive or risk-prone disassembly, reassembly or installation when they are retransferred, can lead to mistakes in their reassembly and installation, loss of certain components or damage as a result of manipulated product components, mounting pieces or connections to electricity lines or water pipes. To some extent, these risks of retransfers are inherent to those particular products, which makes them mostly relevant for the potential contractual or extracontractual liability of the retransferor or (contributory) fault of the recipient who decided to retransfer and use these products again anyway. Nevertheless, these risks can to a considerable extent also be either exacerbated or mitigated through decisions relating to product design and product information taken by the manufacturer and others before placing said product on the market.

Warnings and instructions on disassembly, transportation, reassembly and installation can provide partial solutions. Nevertheless, there are clear limitations to what can be achieved through safety information and certain product design choices are often, as a result of a particular product's nature, indispensable to ensure that it remains sufficiently safe when it is being retransferred (see *infra* nr. 288). For example, for durable consumer goods that are modular in nature, like bikes, manufacturers might have to nevertheless use solid parts for crucial safety components like the handlebar and frame. Furthermore, they might want to prevent the disassembly of these or other risk-prone components by non-professionals such as by using specific screws or keys. Precluding any disassembly is especially important for potentially dangerous components of products that are regularly retransferred, like all parts of the main block of a lawnmower. In contrast, in most instances it will be necessary to rather facilitate safe dis- and reassembly by making this as convenient and clear-cut as possible. In addition to using common, reusable screws and providing dis-, reassembly and transportation instructions, this may also consist for example of colour coding or physically differentiating components that may otherwise look too much alike. Facilitating rather than obstructing product disassembly and retransfer processes in general may also be required by unfair commercial practices regulation and other applicable rules, which tend to only allow restrictive practices if these are truly indispensable for safety reasons. This is discussed in more detail in the next Chapter from the perspective of safe repairability (see *infra* nrs. 379 et seq.).

Second, certain products can be more dangerous than others when they are used by a new consumer after a retransfer. On the one hand, this can be because certain inherently complex, obscure or ill-designed products may be (too) dependent on a sufficient downstream

¹⁸¹³ See in general *supra* nr. 185.

relay of instructions and warnings to be safely used after a retransfer, which the next section discusses further. Again, although this is mostly relevant to the retransferor's potential liability or the recipient's (contributory) fault, for certain products it becomes necessary that manufacturers take steps to improve the likelihood that product safety information is still available when a recipient acquires and start using his second-hand product. In particular, this might be required for information that is indispensable to prevent very severe accident risks tied to the nature or specific chosen design of a product, such as warnings on hand placement and use of protective equipment when using electric saws or grinding wheels. On the other hand, certain products may present accident risks during or more likely after a retransfer because they have been custom-made, for example as a result of collaborative production, or because they have particular technical limitations which the recipient might incorrectly assess. Climbing harnesses or motorbikes are for example limited in terms of the height and weight of users just like pulleys or winches in terms of their maximum loads. Although this is known at a general level and again likely relevant for the retransferor's potential liability or the recipient's (contributory) fault, there can be risks of incorrect use after a retransfer that had already been reasonably foreseeable when the product was placed on the market (see *supra* nr. 286). If so, the manufacturer has to mitigate such risks either through precautionary design or through ensuring that appropriate warnings or instructions remain accessible to a recipient even when a product has become second-hand (see also *infra* nr. 288).

Third, retransfers furthermore create risks due to the simple fact that products are used longer, as already mentioned in the last section. This dissertation has already discussed *supra* nr. 234 how products and components can be radically different in terms of safe reusability. Among the important take-aways were the findings that critical safety components should not wear out first and that it is sometimes necessary to make otherwise 'hidden' wearing process or risks of damage resulting from past use visible through redesign, visible indicators or advised regular inspections. These findings relating to product reuse become perhaps even more important in the context of second-hand good resales, donations and barter transactions. This is because, compared to the original consumer, the recipient of a second-hand product mostly lacks information on the intensity of its past use, how it has been stored and maintained, etc. Wear and tear is also generally difficult to assess at the occasion of most retransfer transactions and certain damage resulting from past use can have a hidden nature, regardless whether the retransferor is aware of the damage. In case of retransfers via online webstores and marketplaces, which is especially popular for P2P resales and bartering (see also *supra* nrs. 68.a and 80-81), this issue of insufficient relaying of information can be even more problematic.¹⁸¹⁴ While this concern is particularly relevant for potential contractual liability of retransferors, manufacturers must consider these risks as well before placing a product with a particular design and accompanying information on the market.

288. THE PRESENTATION OF A PRODUCT THAT IS LATER RETRANSFERRED: ORIGINAL PRODUCT INFORMATION – As the previous discussion of the product's nature already indicated, providing clear

¹⁸¹⁴ See also *supra* nr. 282 on relaying product safety information in the context of online platforms (i.e. marketplaces).

use instructions and warnings is for manufacturers and other defendants in the original distribution chain a potentially effective way to mitigate accident risks relating to retransfers, such as risks relating to safe dis- and reassembly or transportation or risks relating to extended use by a new owner who is unfamiliar with the product. After all, this is part of “*the presentation of the product*”, which is a key defect assessment criterion enshrined in both Directives.¹⁸¹⁵

Nevertheless, it is also for risks of product accidents during and after retransfers necessary to consider the ‘safety hierarchy’, which overall prioritizes design over information (see *supra* nr. 182) and which is now supported by recital 31 PLD-2024’s explicit rejection of an overreliance on warnings.¹⁸¹⁶ For example, if a cradle or co-sleeper is sold in one piece and should never be disassembled or is sold to be safely assembled only once, rather than warning consumers against disassembly, this product must arguably be designed in such a way that this is precluded, like by using permanent connections or one-way plugs.

Moreover, the fact that products become second-hand presents extra issues to an approach that overly relies on information to make a consumer good safe when it is placed on the market. Use instructions or warnings in physical product manuals and especially on original packaging can be and are in many cases even likely to be lost during the initial use phase. Hence such information no longer accompanies a product at the time of the retransfer dis-, reassembly and transportation process and it is even less likely to be still present when it is used for the first time by the recipient. During the retransfer process, such information may also intentionally or inadvertently be removed or become illegible, which has potentially significant repercussions for the potential liability of the retransferor but also for the chances for defendants in the original distribution chain to successfully invoke the posteriority defence.¹⁸¹⁷ Oral information provided by original distributors to consumers is of course by nature ephemeral and quite unlikely to be (correctly) relayed by a retransferor.¹⁸¹⁸ Hence, in

¹⁸¹⁵ Art. 6(1)a PLD-1985; art. 7(2)a PLD-2024.

¹⁸¹⁶ Recital 31 PLD-2024: “*The assessment of defectiveness should take into account the product’s presentation. However, warnings or other information provided with a product cannot by themselves make an otherwise defective product safe, since defectiveness is determined only by reference to the safety that the public at large is entitled to expect. Therefore, liability under this Directive cannot be circumvented simply by listing all conceivable side effects of a product.*”

¹⁸¹⁷ If indispensable, original safety information is inadvertently or intentionally removed by a commercial reseller or any other commercial product redistributor, this can potentially constitute an independent ‘substantial modification’ of the product, for which he can separately be held liable on a primary basis pursuant to the new art. 8(2) PLD-2024 (see *infra* nr. 307). For a defendant in this product’s original distribution chain, this may potentially mean that the posteriority defence can be successfully invoked vis à vis a defect resulting from this subsequent product modification, at least if it had not been reasonably foreseeable when the product was placed on the market (see *infra* nr. 291).

¹⁸¹⁸ (Quasi-)manufacturers, importers and to a lesser extent distributors must be able to prove that they have provided necessary safety information, on the basis of not only product liability law but also of *ex ante* product safety regulation (e.g. art. 5(1) General Product Safety Directive 2001/95/EC 2001/95; arts. 9(7), 11(4) and 12(1) General Product Safety Regulation 2023/988/EU). They are therefore unlikely to rely on oral communication, if only because of its flaws in terms of evidence. Nevertheless, current general product safety regulation does not explicitly require that information is provided in written

cases where producers notwithstanding the ‘safety hierarchy’ need to resort to warnings and instructions to achieve product safety (see *supra* nr. 182), it is particularly important that such information is provided as much as possible in not only a visible and clear but also in manner that is as permanent as possible.

In today’s increasingly digitalised consumer sector, it may increasingly for new products on the market be expected that clear warnings and instructions on assembly, installation and use are not only present on the product itself (or, less preferably, on its packaging or in accompanying documentation) but that such information is also easily retrievable online.¹⁸¹⁹ This dramatically improves the odds that a recipient of these products can after a retransfer still consult such product information. Nevertheless, a publicly and long-term accessible, online copy of original product safety information is still not generally required for consumer goods.¹⁸²⁰ Product passports can in the future serve as an effective solution, by providing a more standardized, streamlined format for relaying critical information on retransferred products (see *infra* nrs. 343-346). In anticipation thereof, the practical technique of digital product passports, namely affixing a QR-code preferably on the product itself that links to the necessary information online,¹⁸²¹ can already be implemented by manufacturers as another instrument to let product information effectively reach new users in more complex, circular product lifecycles. Nevertheless, as discussed *infra* nr. 345.b, there are also inherent limitations to this approach, such as consumers who are visually or motorically impaired or who lack the necessary skills or resources to consult this digital resource.

A more traditional and foolproof manner that is often very effective in ensuring that key safety warnings also reach new consumers after redistribution, is to permanently affix them to or engrave them in the physical consumer good itself, preferably on or near the concerned component. For example, a warning to seek a replacement when a climbing harness or tension strap starts to fray or when an electric blanket no longer switches off automatically and overheats, might be communicated through engraved letters on a visible, appropriate spot on these products. Or there can be a visible warning on the front or the plumbing piece of household devices to electronically disconnect them and then seek a repair when they are leaking. Naturally, the available space and opportunity of such warnings on products themselves is limited and must be used strategically, keeping in mind the cognitive limitations of consumers (see also *supra* nr. 182).

form, although this has been recommended by consumer protection organisations (e.g. ANEC and BEUC, *A New General Product Safety Regulation: Recommendations for the trilogue negotiations* (2022) 13).

¹⁸¹⁹ It would be different to require that such product safety information is only made available online. This is arguably still undesirable since not every consumer has equal access to and familiarity with finding and consulting online information. See C. Hodges, *European Regulation of Consumer Product Safety* (Oxford University Press 2005) 126-127. See also *infra* nr. 345.b.

¹⁸²⁰ See art. 9(7) General Product Safety Regulation 2023/988/EU: “Manufacturers shall ensure that their product is accompanied by clear instructions and safety information in a language which can be easily understood by consumers, as determined by the Member State in which the product is made available on the market. That requirement shall not apply where the product can be used safely and as intended by the manufacturer without such instructions and safety information.”. See also art. 5(1) General Product Safety Directive 2001/95/EC 2001/95.

¹⁸²¹ Arts. 2(30) and 9(2)b-c Ecodesign for Sustainable Products Regulation 2024.

289. RULES AND STANDARDS – Regulation and soft law can provide pertinent points of reference to assess whether a product is defective.¹⁸²² For some products which have large and established second-hand markets, sectoral product rules and standards already exist that are specifically relevant to the retransfer context. Possible examples are product design and information requirements on disassembly, reassembly and transportation or mandatory logbooks, meters or indicators on usage intensity, damage events or repairs.¹⁸²³

When these are not merely ‘soft law’ but binding rules, such as product safety requirements, the new Directive provides two rules which can help plaintiffs to prove a product defect. The most important one is art. 7(1) PLD-2024, which categorizes every product as defective that “*does not provide the safety [...] that is required under Union or national law*”. The implications of this amendment to the general defect criterion have already been discussed *supra* nr. 180. A sectoral product safety rule can for example specify how it must be easy to safely dis- and reassemble and transport a baby travel cot. In case of a violation of such a safety rule, a product defect is automatically proven based on this new provision. For example, this can be invoked when said travel cot has been resold, can no longer be securely reassembled and subsequently either collapses on a sleeping baby or no longer fully protects sleeping babies against tropical insects. Additionally, art. 10(2)b PLD-2024 establishes a now seemingly less relevant,¹⁸²⁴ refutable defect presumption for violations of “*mandatory safety requirements laid down in Union law or national law that are intended to protect against the risk of the damage that has occurred*”.

In the future, requirements more specifically relevant to retransfers are likely to come from Ecodesign rather than from product safety regulation. The previous Chapter has already referred to the few now existing Ecodesign requirements relating to product durability as well as the Ecodesign for Sustainable Products Regulation 2024’s general goal of focusing in future implementing regulations, among others, on product ‘durability’, ‘reliability’ and ‘reusability’ (see *supra* nr. 251). Some Ecodesign requirements aiming to make it easier to disassemble products already exist, although today these mostly concern components in electronic products which must only be disassembled in the context of a repair or other form of reproduction (see also *infra* nr. 393). If EU regulators intend to truly foster a more circular economy with a lot of retransfer activity, it should become another priority of new Ecodesign regulations to make durable consumer goods generally more conducive to being safely retransferred.¹⁸²⁵

¹⁸²² See arts. 7(1)(2)f PLD-2024. See also *supra* nrs. 180 and 187.

¹⁸²³ The most well-known example is of course the car sector, where there is a odometer requirement and, mostly based on industry customs, service life logbooks. In some member states, odometer fraud is combatted through additional certification that it is mandatory in case of a resale of a second-hand car. E.g., BELGIUM: Loi de 11 Juin 2004 relative à l'information à fournir lors de la vente de véhicules d'occasion, MB 5 juillet 2004, 53787 (amended by Loi de 28 novembre 2018 modifiant la loi du 11 juin 2004 réprimant la fraude relative au kilométrage des véhicules, MB 6 décembre 2018, 95970).

¹⁸²⁴ The significance in practice of this rule seems to have been diminished as a result of the adopted, last-minute amendment to art. 7(1) PLD-2024. See *supra* nrs. 180 and 206.b.

¹⁸²⁵ It can be noted that design requirements to make products more durable and retransfer-friendly, are easier to implement and raise fewer industry concerns than requirements on (self-)repairability. Cf. *infra* nrs. 379 et seq.

This can entail requirements which ensure that larger and heavier components of big products can be easily and safely dis- and reassembled by consumers themselves, transported, stored, installed and used by new, unfamiliar users, as discussed in preceding sections. Arguably, the Commission can in the future adopt such implementing requirements that specifically relate to product ‘retransferability’, under the umbrella of the ‘durability’, ‘reliability’ and ‘reusability’ goals already listed in art. 5(1) Ecodesign for Sustainable Products Regulation 2024.

Supra nr. 251, this dissertation has argued for a broader, functional interpretation of arts. 7(1) and 10(2)b PLD-2024, which would allow to also invoke these new provisions with regards to Ecodesign violations. For example, an Ecodesign requirement on reliable and safe disassembly, transportation and reassembly of camping and travel items, such as aforementioned baby travel cot, can be interpreted as requiring that a certain level of safety must still be provided when these items happen to be donated or resold second-hand to new users.¹⁸²⁶ A plaintiff can then prove a product defect according to the amended version of art. 7(1) PLD-2024 by proving that such item does not provide this required level of safety although it was placed on the market after the Ecodesign implementing regulation’s entry into force.

Post-marketing requirements, like general product safety rules on market monitoring, corrective warnings and recalls, might be pertinent for extracontractual fault-based liability of manufacturers and other defendants in a second-hand product’s original distribution chain. Yet, these are irrelevant to harmonised product liability, since this theory remains, with the narrow exception of art. 11(2) PLD-2024, limited to the moment when a product was placed on the market or put into service (see *supra* nrs. 184, 196 and 285).

Finally, future EU product regulation may introduce digital product passports. Since these are particularly useful in tackling the risks of insufficiently relaying product information during retransfers, this possible future regulatory innovation is discussed in more detail *infra* nrs. 343-346.

290. ART. 10(2)c PLD-2024: A RETRANSFER IS OFTEN PART OF REASONABLY FORESEEABLE USE OR ORDINARY CIRCUMSTANCES, WHICH ALLOWS A REFUTABLE PRESUMPTION OF DEFECTIVENESS WHEN AN ACCIDENT IS CAUSED BY AN OBVIOUS MALFUNCTION – Following the adage *res ipsa loquitur*, art. 10(2)c PLD-2024 introduces a refutable defect presumption in cases where the plaintiff can demonstrate that the damage was caused by an obvious malfunction of the product “*during reasonably foreseeable use or under ordinary circumstances*” (see also *supra* nrs. 185 and 206.b).

Many if not most instances of retransfers and subsequent use of durable consumer goods can still be considered as being part of a product’s reasonably foreseeable use¹⁸²⁷ as well as part of ordinary circumstances. After all, at least according to this dissertation’s typology, a product is already second-hand when it is transferred after it has only been used very briefly

¹⁸²⁶ See also the condition relating to the safety and health of persons for the development of Ecodesign requirements (art. 15(5)b Parliament and Council Directive 2009/125/EC of 21 October 2009 establishing a framework for the setting of eco-design requirements for energy-related products [2009] OJ L285/10, 20; art. 5(11)b Ecodesign for Sustainable Products Regulation 2024).

¹⁸²⁷ See *supra* nr. 233 regarding the limited, only illustrative value of recital 46 PLD-2024’s description of ‘reasonably foreseeable use’ for the purposes of interpreting art. 10(2)c *ibid*.

and/or not intensively (see *supra* nr. 79). Moreover, retransfers and the use of second-hand consumer goods are historically the rule rather than the exception (see *supra* nrs. 13 and 57), while there recently also many social, economic and regulatory developments which strengthen and expand the second-hand goods sector (see *supra* nrs. 2, 68.c, 65 and 0).

Therefore, if a plaintiff can demonstrate that a second-hand product obviously malfunctioned when causing damage and that all other circumstances in which the product was used, were either reasonably foreseeable or ordinary, this second-hand product must be presumed to be defective, which can still be refuted by the defendant in the product's original distribution chain.¹⁸²⁸ Nevertheless, these conditions are of course not fulfilled in all cases where a second-hand product causes an accident. As discussed *supra* nrs. 286 et seq., even when it is proven that a second-hand product obviously malfunctioned and that all other circumstances at the time of the accident were reasonably foreseeable or ordinary, certain retransfers and subsequent use of second-hand products cannot be considered as having been reasonably foreseeable when the product was placed on the market. For example, a product may be too worn out or damaged to be simply used after a retransfer without first being repaired or refurbished. A retransfer may coincide with a repurposing (cf. *supra* nr. 260). Or the nature of a product or component may be so fragile, custom-made or dependent on product information which is no longer available, that retransferring and using a product must be considered as having been not reasonably foreseeable and/or not part of ordinary circumstances. In such cases, the injured recipient or third party must as a plaintiff continue to bear the full burden of proving a product defect.¹⁸²⁹

§ 4. Posteriority defence

291. THE ROLE OF THE POSTERIORITY DEFENCE FOR ACCIDENTS CAUSED BY RETRANSFERRED PRODUCTS – As discussed *supra* nr. 285, the imprecise but recurring statement in the sparse literature on this topic, which holds that the public's legitimate safety expectations are lower for second-hand products, can be correctly reinterpreted in light of the posteriority defence of arts. 7(b) PLD-1985 and 11(1)c PLD-2024. What is likely meant is that a harmful product's second-hand nature increases the chance of a successful posteriority defence.¹⁸³⁰ As discussed in the next section, this is generally true. The literature also emphasizes more generally the significance of this defence in the context of harmonised product liability for accidents involving second-hand products.¹⁸³¹ However, it would be incorrect to therefore deduce that product liability claims based on the PLDI relating to retransferred products largely revolve around the posteriority defence. Instead, the defect assessment discussed above and the extinction period

¹⁸²⁸ Art. 10(2)c(5) PLD-2024.

¹⁸²⁹ Art. 10(1) PLD-2024. See also *supra* nrs. 205-206.

¹⁸³⁰ The alternative possible reinterpretation, which is equally correct, holds that the legitimate safety expectations of the public may have simply been (slightly) lower when the product was placed on the market compared to the later time when the accident occurred. See *supra* nr. 285.

¹⁸³¹ See, e.g., Taschner and Frietsch, *Kommentar*, 238-239; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3603, 5; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 9.113; Wagner, *MüKo BGB*, 'Produkthaftungsgesetz', § 2, nr. 8; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 2, nr. 10.

discussed in the next Paragraph, can be expected to decide at least as many if not more of these product liability cases.

The extinction period tends to be generally easier for defendants to prove than the posteriority defence. And in the context of accidents involving second-hand products, there is a substantial chance that the relatively brief and inflexible, current 10-year period has effectively expired (see *infra* nr. 296).

The comparatively much more significant role played by the defect assessment, relies on the simple fact that the plaintiff has to first prove a defect, before the defendant's posteriority defence can come into play at all.¹⁸³² And the previous Chapter has already clarified (see Figure 9 *supra* nr. 239) that all circumstances occurring after a product was placed on the market but that had been reasonably foreseeable at that time, are relevant to the product defect assessment and can actually no longer constitute a basis for the posteriority defence. In other words, whether it had been reasonably foreseeable that an electric standing-sitting desk or gas BBQ would be resold or donated after prior use, how such a retransfer would be implemented (dis- and reassembly, transportation and installation) and how the recipient would start familiarizing himself with and using these products, are all circumstances that can only be considered as part of the product defect assessment and not the posteriority defence, at least if they had been reasonably foreseeable when the desk was originally put into circulation. And in an increasingly circular economy, most retransfers and ordinary surrounding circumstances can increasingly be considered as having been reasonably foreseeable when a durable consumer good is placed on the market (see *supra* nr. 286). Consequently, only those intervening circumstances relating to a retransfer that had not been reasonably foreseeable, like truly careless transportation, grave errors in reassembly and installation or not reasonably foreseeable, reckless misuse by the new consumer, can provide direct, positive evidence for the posteriority defence.¹⁸³³

Additionally, when the harmful product has a second-hand nature but is not repurposed or otherwise seriously misused during or after its retransfer, the plaintiff cannot deliver the aforementioned 'easy', alternative proof of a defect, which consists of claiming that the product was unsafe for the particular new purpose it was used for at the time of the accident. This further reduces the potential relevance of the posteriority defence, since this alternative proof of defect shifts the discussion on reasonable foreseeability to this defence which the defendant is then likely to raise (see *supra* nrs. 255 and 284).

Finally, a whole universe naturally exists of other possible posterior defect origins that are unrelated to the fact that a product has been retransferred. For example, a soup maker or electric drill that is later retransferred may have been damaged or tampered with by either a third party, the original consumer, an intermediary retransferor or the recipient in a manner that had not been reasonably foreseeable when it was placed on the market. Of course, this

¹⁸³² In addition to damage and causation. See art. 4 PLD-1985; art. 10(1) PLD-2024. See also *supra* nrs. 190-191 and 205.

¹⁸³³ The fact that one or more reasonably foreseeable retransfers occurred, can still provide indirect, supporting evidence for a posteriority defence, by demonstrating that it is just statistically more likely that a genuinely posterior factor did intervene and has made the product defective after it was placed on the market, without directly proving that such factors actually intervened. See *infra* nr. 292.

means that it was not due to the latter's unfamiliarity with the product or due to inadequate relaying of product information in the retransfer process. However, such posterior factors that are entirely unrelated to the fact that a harmful product has a second-hand nature, are equally present in a linear economic context and are therefore not a concern for this Chapter.

292. THE MERE FACT THAT A PRODUCT IS SECOND-HAND, CAN PROVIDE ONLY LIMITED, INDIRECT PROOF OF DEFECT POSTERIORITY – When certain scholars mention the previously discussed rule of thumb according to which the chances of a successful posteriority defence increase the longer a product has been used before an accident occurs (see *supra* nr. 240), they actually refer specifically to second-hand products.¹⁸³⁴ Other authors discuss this limited factual presumption only with regards to products that have been used during a long period of time, without mentioning whether these have meanwhile been redistributed.¹⁸³⁵ In each case, both arguments are entirely correct, since the factual presumption can be applied to either situation. Yet, both arguments are substantively different, which is worthwhile to clarify here.¹⁸³⁶

On the one hand, how longer a product has been in use and in (re)distribution¹⁸³⁷ processes, how statistically more probable it becomes that an eventually surfacing defect indeed originates from the time after the product was placed on the market or put into service (see *supra* nr. 240). It is true for many, albeit far from all,¹⁸³⁸ second-hand products that they have already been used during a long time by preceding consumers and possibly also already by the new recipient, before they eventually cause an accident. Additionally, the initial distribution and subsequent retransfer processes are extra periods of time that further increase the statistical probability that a later surfacing defect has a posterior origin. The duration of a second-hand product's past use and (re)distribution phases therefore remains a factual element that can be raised as indirect, refutable evidence in support of a posteriority defence invoked by defendants in the product's original distribution chain. Moreover, long periods of preceding use and (re)distribution can actually also be indicative of the simple fact that the product just suffered from normal wear and tear and is not defective at all (see *supra* nr. 231).¹⁸³⁹

¹⁸³⁴ Taschner and Frietsch, *Kommentar*, 190, 238-239; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 2, nr. 10.

¹⁸³⁵ Howells, 'strict liability', nr. 4.277; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 542; Graf von Westphalen, '3. Produkthaftungsgesetz', § 55, nr. 15; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3602, 46; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 9.113; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 1, nr. 77; P. Ehring, '§ 1 ProdHaftG' in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 73.

¹⁸³⁶ This difference also confirms the merits of examining product liability for reused and retransferred products in separate Chapters.

¹⁸³⁷ The time passed during the product's original distribution process when it was still 'new', can also be relevant to a posteriority defence raised by a defendant in this original distribution chain, since wearing processes already start during distribution, which can potentially take very long and/or involve inadequate storage or transportation. See *supra* nr. 240.

¹⁸³⁸ There are of course also second-hand products that have barely been used prior to being retransferred and that are in no way already being 'reused'. See *supra* nrs. 79 and 83.

¹⁸³⁹ In this case, the posteriority defence is even entirely inapplicable, if no other defect in the product that caused the claimed damage has been proven. See *supra* nrs. 230 and 240.

On the other hand, the fact that a product is second-hand, regardless of how long (and how intensively) it has actually been used, is similarly relevant for a posteriority defence. As discussed in the previous Paragraph, retransfer processes entail risks of improper dis- and reassembly or installation, uncared transportation, improper storage or even mishandling by potential customers in a second-hand goods store.¹⁸⁴⁰ The recipient of a second-hand product can furthermore be initially unfamiliar with how to properly use the product and necessary use instructions or safety information may not have been properly relayed downstream.¹⁸⁴¹ Additionally, the fact that an initial user eventually decides to resell, donate or barter a product, might imply that he has on average taken less care of it, which is a potential moral hazard (see also *supra* nr. 109). To the extent that all these aforementioned risks had not been reasonably foreseeable when the product was originally put into circulation, they are relevant to the posteriority defence (see *supra* nrs. 239 and 291). As a result, regardless of the passing of time, the mere fact that a product is second-hand also inherently increases the statistical probability that a not reasonably foreseeable, posterior factor has made it defective.

In conclusion, both the fact that a product has been used successfully during a long period of time and the fact that a product has been retransferred, separately provide limited factual presumptions that an eventually surfacing defect indeed originated after the product was put into circulation. Due to the ten-year extinction period, the latter presumption might in practice for many products be more significant than the former (see *infra* nr. 296). When a product has both been used during a longer period and has been retransferred (once or multiple times), there is an accumulated, even stronger presumption in favour of a posterior origin of the found product defect. In case of some product accidents occurring during or especially after a retransfer, this can potentially suffice to convince a court that the required standard of mere probability¹⁸⁴² for the posteriority defence is met. Naturally, even in case of a truly reused and second-hand product, this presumption remains merely indicative and other factual elements may contrastingly indicate that the defect already existed when the product was placed on the market (see also *supra* nr. 240). A possible example is the fact that a design or information defect is more likely to have an anterior nature (see *infra* nr. 293). Consequently, the rule of thumb relating to a product's age and second-hand nature, still provides only a limited, indirect proof of defect posteriority.¹⁸⁴³

¹⁸⁴⁰ These 'retransfer process risks' have been discussed in detail *supra* nrs. 286-287 from the perspective whether they can be considered to have been reasonably foreseeable when the product was placed on the market, which is relevant to the defect assessment. Yet, if these risks are considered to have not been reasonably foreseeable, they are relevant to the posteriority defence and this is why these are also discussed here. See Figure 9 *supra* nr. 239.

¹⁸⁴¹ See *supra* nr. 288 on the role of transmitting product safety information in the context of retransfers. See *infra* nrs. 338-340 on the potential (contributory) fault of the recipient.

¹⁸⁴² Art. 7(b) PLD-1985; art. 11(1)c PLD-2024. See also the paraphrasing of this standard that is frequently cited in German case law and literature "*Der Hersteller muß zu seiner Entlastung einen Geschehnisablauf beweisen, der nach allgemeiner Lebenserfahrung die Schlußfolgerung auf den Zeitpunkt des Fehlereintritts plausibel erscheinen läßt.*" (OLG München 21 June 2002, 21 U 4952/01, OLGR München 2003, 4, *Juris*, nr. 23).

¹⁸⁴³ See also Oechsler, Staudinger, 'Produkthaftungsgesetz', § 2, nr. 10: "*Dies kann sicher nicht bedeuten, dass zugunsten des Herstellers einer gebrauchten Sache bereits ein einschlägiger prima facie-Beweis spricht; doch*

293. DIRECT PROOF OF DEFECT POSTERIORITY IN A SECOND-HAND PRODUCT AND THE RELEVANCE OF THE PRODUCT DEFECT TYPOLOGY – A harmful product's second-hand nature and the duration of its past use are thus only relevant to the posteriority defence of art. 7(b) PLD-1985 and art. 11(1)c PLD-2024 because these can provide limited, relatively easily refutable factual presumptions that the product defect has a posterior origin. For a successful posteriority defence, it is much more decisive that a defendant can offer more direct positive evidence of the defect's posteriority. This may consist of providing direct proof that the product has been improperly transported or stored by a retransferor, that it has been incorrectly dis- and re-assembled or that it has been misused by the original consumer or recipient,¹⁸⁴⁴ at least to the extent that these post-marketing circumstances had not been reasonably foreseeable when the product was placed on the market (see *supra* nrs. 239 and 291).

Notably, the particular nature of the defect proven by the plaintiff, can indicate its posterior origin. This may consist of a defect that has resulted from the product being dropped, crushed or shaken during transportation, while it was in storage or during handling as part of the re-transfer process.¹⁸⁴⁵ Or it might be established that the defect is the result of either storage or transportation in improper environmental conditions or of an incorrect disassembly, reassembly and installation. Alternatively, misuse of the second-hand product by either its original or new user might also explain a proven product defect. For example, a component may have been forced by a user or the product may have been operated by the recipient contrary to the product's original use instructions, which were no longer available. Again, these circumstances can only be withheld as posterior defect origins if they had not been reasonably foreseeable when the product was placed on the market. Such aspects of reasonable foreseeability specific to retransfers have already been examined *supra* nrs. 285 et seq. as part of the defect assessment. Furthermore, defendants can potentially also have access to direct, positive evidence on the defect's posteriority because the product is a connected 'smart' device which registers various data or because certain information such as intervening product repairs are perhaps recorded in future digital product passports (see also *infra* nr. 345). This is in addition to other, more traditional proof, such as recognitions by the plaintiff and evidence that directly results from the specific state of the product or the particular nature of the accident.

eröffnet hier die in § 1 Abs 2 Nr 2 ProdHaftG angelegte Reduzierung des Beweismaßes (§ 1 Rn 72 ff) Raum dafür, die Auswirkungen der Altersanfälligkeit des Produkts nach der Lebenserfahrung zur berücksichtigen."

¹⁸⁴⁴ See Howells, 'strict liability', nr. 4.277; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 542-543; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3602, 47; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 1, nr. 76.

¹⁸⁴⁵ Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 542-543. As discussed *infra* nr. 320-322, transportation, storage or handling after a (quasi-)manufacturer or importer placed the product on the market but during the initial distribution phase, can as part of a posteriority defence be invoked by these preceding defendants in the product's distribution chain. Yet, it cannot be invoked to prove a posteriority defence by the more downstream distributor who carried these redistribution steps that made the product defective, just like it cannot be invoked by subsequent (re)distributors. This is a result of a 'personal' interpretation of the posteriority defence of art. 7(b) PLD-1985, as confirmed by art. 11(1)c PLD-2024.

As discussed *supra* nr. 241, observed design and information defects are much more likely to have already been present when a product was placed on the market, while defects appearing as manufacturing defects are on average more likely to have a posterior origin.¹⁸⁴⁶ This distinction based on the product defect typology can to a considerable extent also be applied to accidents caused by second-hand products. However, it is far from absolute, contrary to how it is sometimes presented in the literature.¹⁸⁴⁷ For example, product safety information might still be lost or incorrectly relayed as a result of a retransfer (see *supra* nr. 288), which then creates an information defect with a posterior, post-marketing origin. Alternatively, accidents occurring during the retransfer process or serious misuse by either the original user or recipient can also alter a product's design, which then creates a posterior design defect. The latter can also result from repairs or refurbishments (see also *infra* nr. 415), which in practice actually occur quite frequently prior to a B2C resale of a product. The posteriority defence can thus be successfully applied to these observed information or design defects, at least to the extent that the aforementioned, defect-generating circumstances had not been reasonably foreseeable when the product was placed on the market. Conversely, apparent manufacturing defects found in a second-hand product can in practice of course still be actual manufacturing defects that were already present when the product was placed on the market. As a result, the product defect typology provides a useful indication but is in reality far from automatically decisive to determine whether the posteriority defence applies. And this is especially also the case when an accident is caused by a second-hand product (see also *supra* nr. 241).

Finally, a defendant in the second-hand product's original distribution chain can also try to prove the posteriority defence through negative evidence, like production and distribution quality control processes that try to demonstrate that an anterior defect in the product would not have been possible. As discussed *supra* nr. 195, such negative evidence can only provide a limited factual presumption of defect posteriority which should not be in itself decisive.¹⁸⁴⁸

294. INTERPRETATION VIS À VIS QUASI-PRODUCER/SUPPLIER? – There is some theoretical uncertainty on how to correctly apply the posteriority defence to other defendants than a second-hand product's original manufacturer or importer. This concerns the quasi-manufacturer and distributor who are part of the original distribution chain of a later retransferred product, due to the time difference between when the manufacturer or importer placed this product on the market and the later moment when a quasi-manufacturer or distributor redistributed the product. This issue is discussed in detail *infra* nrs. 317-322, because the potential difference and corresponding legal uncertainty are more significant in the context of the potential liability of retransferors.

¹⁸⁴⁶ See authors cited *supra* footnote 1574.

¹⁸⁴⁷ E.g., Graf von Westphalen, '3. Produkthaftungsgesetz', § 55, nrs. 12, 17-18; Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 1, nr. 35. These authors state arguably too categorically that the posteriority defence is completely meaningless in the event of an accident being caused by an observed design defect.

¹⁸⁴⁸ See also the case law and authors cited *supra* footnotes 1190-1191.

295. ART. 11(2)A-C PLD-2024'S EXCEPTION: *DE FACTO* OBLIGATION TO UPDATE OR UPGRADE SOFTWARE AND TO PROVIDE DEFECT-FREE DIGITAL SERVICES AND SOFTWARE, IN PARTICULAR FOR MANUFACTURERS – Art. 11(2)a-c PLD-2024 introduces a 'digital exception to the posteriority defence', which now seems to last for the fixed duration of the current 10-year extinction period but for which this dissertation proposes instead a duration of the concerned product's reasonably foreseeable lifespan, as the European Parliament¹⁸⁴⁹ had proposed before (see *supra* nr. 242). This *de facto* obligation to update or upgrade¹⁸⁵⁰ software necessary to maintain product safety and to ensure that any digital services or software supplied 'within the manufacturer's control'¹⁸⁵¹ are not defective, can help to combat technological product obsolescence and, in doing so, extend the useful lifetime of products and thus the potential for subsequent retransfers.¹⁸⁵²

For manufacturers and other harmonised product liability defendants in the original distribution chain of products with (embedded) software that can be later retransferred, this means that they may continue to be liable either for a lack of software updates or upgrades that had been necessary to maintain the product's expected level of safety or for defects in digital services or software provided by them or others 'within the manufacturer's control', even though the product has now become second-hand and no longer has its initial user. In practice, supplying the required, non-defective digital services and software will in most cases be fulfilled by manufacturers. Consequently, actors in the product's original distribution chain, who are for example liable as an importer or quasi-manufacturer, may want to obtain contractual rights to claim in recourse against these manufacturers for the event that they would be held liable on the basis of art. 11(2)a-c PLD-2024.

§ 5. Ten-year extinction period

296. THE CONSIDERABLE AND QUESTIONABLE IMPACT OF THE EXTINCTION PERIOD ON THE LIABILITY OF DEFENDANTS IN THE ORIGINAL DISTRIBUTION CHAIN OF PRODUCTS THAT LATER BECOME SECOND-HAND – By its nature, the current, rigid and relatively brief extinction period of in principle ten years¹⁸⁵³ has a considerable impact on harmonised product liability of manufacturers and other defendants in the original distribution chain of products that later become second-

¹⁸⁴⁹ Art. 10(2) amended draft PLD Proposal 2022 in EU Parliament, 'Report of 12 October 2023 on the proposal for a directive of the European Parliament and of the Council on liability for defective products' A9-0291/2023, 59.

¹⁸⁵⁰ See *supra* footnote 1581 on the difference between software 'updates' and 'upgrades'.

¹⁸⁵¹ Art. 4(5) PLD-2024. See also on this concept *infra* nrs. 402-404.

¹⁸⁵² A similar outcome, with regards to contractual conformity in general rather than just product safety pursued by the PLD-2024, is achieved during the legal guarantee period of EU consumer sales by art. 7(3) Consumer Sales Directive 2019/771. See E. Van Gool and A. Michel, 'The New Consumer Sales Directive 2019/771 and Sustainable Consumption: a Critical Analysis' (2021) 10 *Journal of European Consumer and Market Law* 136, 139; A. Michel, *Premature Obsolescence: In Search of an Improved Legal Framework* (Intersentia 2023) 497. See *supra* footnote 279 on premature obsolescence in general.

¹⁸⁵³ Art. 11 PLD-1985; art. 17 PLD-2024.

hand.¹⁸⁵⁴ It is not as significant as in case of reused products (see *supra* nrs. 244-246), which are by definition always products that are at least in light of their inherent properties already in use during quite some time prior to an accident. Some second-hand products are still relatively new,¹⁸⁵⁵ which minimizes concerns that the ten-year period has expired or will soon expire when such a product causes an accident during the first years after the retransfer. Nevertheless, a large number of harmful second-hand products are already in use during many years, especially when considering the use phases both before and after the retransfer. Furthermore, a substantial amount of time may have elapsed that still counts towards the extinction period (see *supra* nr. 244) during a product's initial distribution and/or its subsequent retransfer phases, since products can be in storage, logistical processes or offered for (re)distribution during potentially long periods of time. Hence, although it is far from always the case, there is a significant risk that the extinction period has already expired or will expire very soon when a second-hand product causes an accident.

The current, absolute and uniform ten-year extinction period is for many durable consumer goods relatively brief and inflexible and the extension of art. 17(2) PLD-2024 limited to cases of latent personal injuries does not really change this more fundamental issue.¹⁸⁵⁶ Based on these reasons, this dissertation has already criticised how the current extinction period runs contrary to the circular strategy of reusing products (see *supra* nr. 246). To a considerable extent, the same criticism can be repeated here. This extinction period bluntly and inefficiently¹⁸⁵⁷ decreases the overall application of harmonised product liability's risk-allocation and accident-prevention functions with regards to many retransferred products. At the same time, one can also observe how retransfers result in longer average product lifetimes,¹⁸⁵⁸ which in turn strengthen the perception that the current ten-year extinction period is too short and inflexible. Hence, also the in practice widespread circular strategy of product retransfers provides support for this dissertation's proposal to change the extinction period's duration *de lege ferenda* to the average expected lifespan of a product, extended by an additional 'safety margin', as argued *supra* nr. 247.

297. PRACTICAL APPLICATION OF THE EXTINCTION PERIOD IN THE CONTEXT OF PRODUCTS THAT LATER BECOME SECOND-HAND – The extinction period's starting point may be different depending on whether the defendant in the original distribution chain of a subsequently retransferred product, qualifies as a manufacturer, importer, quasi-manufacturer or distributor. Art. 11

¹⁸⁵⁴ See, e.g., on the general connection between the second-hand nature of products and the extinction period Taschner and Frietsch, *Kommentar*, 239; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 2, nr. 10.

¹⁸⁵⁵ Any prior use, however brief and not intensive, is sufficient to make a product second-hand at the occasion of a subsequent transfer of ownership. See *supra* nr. 79.

¹⁸⁵⁶ See also *supra* footnote 1614.

¹⁸⁵⁷ The fact that there must be an extinction period, also for reasons of efficiency (see *supra* nrs. 141.a and 244), is not disputed. Rather, the current uniform and inflexible period is too arbitrary and insufficiently tailored, which renders it inefficient in many concrete cases, which are more prominent among accidents caused by second-hand products.

¹⁸⁵⁸ The more products are retransferred to new users who are more interested in using them than their previous owners, the more product lifetimes are on average extended. See also *supra* nrs. 58-59.

PLD-1985 leaves it entirely open to interpretation whether a new extinction period starts when somebody else than the ‘producer’ ‘puts the product into circulation’. Art. 17(1) PLD-2024 now implies that such a new extinction period effectively starts when not only manufacturers but also importers and quasi-manufacturers place a product on the market (‘personal interpretation’), while a distributor who is only subject to secondary liability would benefit from the fact that the extinction period for his liability has already been running since the product was last placed on the market (‘manufacturer-specific interpretation’).¹⁸⁵⁹ Since this question is even more significant for the potential liability of retransferors, who are at a much later stage involved in a product’s lifecycle, it is discussed in detail *infra* nrs. 331-333.

For defendants in the original distribution chain, it can become on average slightly more challenging to later prove the starting date of the ten-year extinction period if the product has prior to the accident been retransferred one or, especially, multiple times. On the one hand, this is because the passing of time gradually increases the possibility that records or other information are lost, although not every second-hand product is necessarily ‘old’.¹⁸⁶⁰ On the other hand, this is because ‘traceability’ and other product identification information, which can help parties subject to primary liability to deduce precisely when they had placed an individual product on the market,¹⁸⁶¹ is often present on packaging or in product documentation. And, as already discussed *supra* nrs. 280-281 and 288 with regards to other harmonised product liability rules, such information is relatively easily lost by the time an already second-hand product causes an accident.

Fortunately, the General Product Safety Regulation 2023/988/EU now requires manufacturers and other defendants who place products on the market to indicate, in principle on the product itself, a “*type, batch or serial number or other element enabling the identification of the product*”.¹⁸⁶² Placing this information on packaging or in product documentation is only allowed if “*the size or nature of the product does not allow*” that the product itself would bear this information.¹⁸⁶³ Future digital product passports, which can be expected to record when a product is placed on the market, might fulfil a similar role in helping defendants in the original distribution chain of second-hand products to prove the extinction period’s expiration (see *infra* nr. 345). There is a small chance that traceability information or a future QR-code linking to a digital product passport, are lost even when they were affixed to the product itself, as a result of wear and tear or the product accident itself. A future ‘product passport registry’ may perhaps still provide relief in such instance (see *infra* nr. 347).

¹⁸⁵⁹ Art. 17(1)a PLD-2024: “[...] *the date on which the defective product which caused the damage was placed on the market or put into service*”. See *infra* nr. 333.

¹⁸⁶⁰ See *supra* footnote 1855.

¹⁸⁶¹ Mere distributors of later retransferred products may be on their own unable to deduce the applicable extinction period’s starting date from this information. But if traceability information or a future digital product passport is available, these parties are likely not subject to secondary liability to begin with, since these same information sources tend to also identify primarily liable parties, to whom the distributor can refer the injured party in order to exempt himself from liability. See *supra* nrs. 280-281 and *infra* nrs. 303 and 345.a.

¹⁸⁶² Arts. 9(5), 11(1) and 13(1) General Product Safety Regulation 2023/988/EU.

¹⁸⁶³ Art. 9(5) *ibid.*

In each case, it seems plausible that these regulatory innovations will make in the future easier for defendants to prove the extinction period's expiration, also in the more complex lifecycle of second-hand products. This can be seen as an additional argument to amend the period's duration, as argued *supra* nr. 247, by more efficiently basing it on the actual expected lifetimes, considering the possibilities of circular strategies, of different products.

Section C. Liability of retransferrors (resellers, donors and barterers of second-hand goods)

§ 1. Primary and secondary liability of retransferrors

a. Overview of possible defendant qualifications

298. IN ADDITION TO SPECIFIC POSSIBILITIES OF PRIMARY LIABILITY AS IMPORTERS, SUBSTANTIAL MODIFIERS AND QUASI-MANUFACTURERS, RETRANSFERRORS ARE GENERALLY SUBJECT TO SECONDARY LIABILITY AS DISTRIBUTORS – As discussed *supra* nr. 279, products remain within the material scope of EU product liability harmonisation when they happen to be retransferred and become second-hand. Not only does this allow for the previously discussed continued possibility of 'strict' product liability of defendants in the original distribution chain of those products when these cause an accident during or after said retransfer. It also means that retransferrors themselves can be held liable for accidents caused by those products which they have resold, donated or bartered. At least, this is the case to the extent that they qualify as one of the types of defendants subject to the personal scope of EU product liability harmonisation (cf. *supra* nrs. 176-178).

- a. On the one hand, there are several possibilities for a retransferror to qualify as a primarily liable defendant (see also Figure 11, *supra* nr. 278). But in each of these cases, specific conditions must be fulfilled.

First of all, when the product was first distributed and used during its initial use phase outside the EU and the retransferror has imported it as a second-hand product in the EU, he can of course be held liable as an importer.¹⁸⁶⁴ The new Directive excludes this liability if the product's manufacturer is established inside the EU, the product has been exported and then reimported as second-hand.¹⁸⁶⁵ But it also adds possibilities to claim in such an event against the manufacturer's authorised representative, if such a party

¹⁸⁶⁴ Art. 3(2) PLD-1985. See *supra* nr. 176.c.

¹⁸⁶⁵ Art. 8(1)c(i) PLD-2024. This is in contrast to a majority view on the basis of the PLD-1985 (see *supra* footnote 1029).

has been appointed, or the fulfilment service provider, if there is no other defendant established within the EU.¹⁸⁶⁶ E-commerce is indeed a major contemporary driver behind imports of durable consumer goods, also when these are second-hand, which is part of so-called ‘recommerce’.

Second, a retransferor can affix distinguishing features on the product which he resells, donates or barter or on its (new) packaging. In such an event, it is possible that he qualifies as a quasi-manufacturer,¹⁸⁶⁷ which has seemingly become only more likely as a result of recent CJEU case law. Since this is a major possibility in practice for retransferors to be subject to primary harmonised product liability, it is examined in more detail *infra* nrs. 304-306.

And third, perhaps already on the basis of the PLD-1985 but definitely in the future on the basis of art. 8(2) PLD-2024, a retransferor can be held liable if he, outside the original manufacturer’s control, ‘substantially modifies’ a second-hand product. Either, this can occur intentionally, for example as a result of repairs, refurbishments, combining second-hand products with other products, ancillary information or accessories or separating such products from the latter when this was originally accompanying the product when it was placed on the market. Or such a substantial modification can occur inadvertently, for example as a result of improper transportation or storage, mishandling of a product or losing accompanying product documentation or accessories. The important (new) rule of art. 8(2) PLD-2024 is studied in more detail in the Chapter on product repairs and refurbishments (see *infra* nrs. 437 et seq.). Nevertheless, given how this rule is also pertinent to the potential liability of retransferors (and other product distributors), it is also discussed already *infra* nrs. 307-309 in this specific context of second-hand product redistribution.

- b. On the other hand, the most straightforward possibility for retransferors to be held liable on the basis of the PLDI, for which no additional requirements must be fulfilled when someone resells, donates or barter a product, is the secondary liability as suppliers according to art. 3(3) PLD-1985 or as distributors according to art. 8(3) PLD-2024 (see also Figure 11 *supra* nr. 278). Since this is the default harmonised product liability of retransferors, it is also further discussed in this Paragraph. Although this secondary liability is well-known, uncertainty surrounds some niche theoretical questions that are accentuated in the retransfer context and thus studied in-depth *infra* nr. 301.
- c. It is important to signal already here that the aforementioned distinction between primary liability of retransferors as importers, quasi-manufacturers and substantial product modifiers, on the one hand, and secondary liability as mere distributors, on the other hand, is not just limited to the difference between primary and secondary liability, as most overviews of harmonised product liability would make you believe.

¹⁸⁶⁶ Art. 8(1)c(ii)-(iii) PLD-2024. See *supra* nr. 178.c. Note that neither the manufacturer’s authorised representative nor the fulfilment service provider are strictly speaking actually retransferors but rather, in these cases, agents of the manufacturer and of the importing retransferor, respectively. See art. 4(1)(13) PLD-2024.

¹⁸⁶⁷ Art. 3(1) PLD-1985; arts. 4(10)b and 8(1)a PLD-2024. See also *supra* nrs. 176.b and 178.b.

Actually, there exists also a fundamental difference in terms of defect assessment as well as the extinction period, which again becomes more pronounced in the retransfer context due to the longer time period between when the product was originally placed on the market and the later retransfer as an already second-hand product. Hence, these theoretically important but in the linear economic context often ignored aspects are examined *infra* nrs. 317-322 and 331-334.

- d. Finally, many retransferors of consumer goods are in practice prosumers, such as individuals engaging in P2P recommerce or P2P donations, online, at yard sales or in physical second-hand goods store (see also *supra* nrs. 68.a and 80-82). While such retransferring prosumers can only be liable based on one of the aforementioned defendant qualifications, it must be determined for each individual prosumer whether he is actually subject to the PLD's scope of application, as discussed *supra* nrs. 197-198.

299. POSSIBILITY OF RECOURSE CLAIM BY LIABLE RETRANSFERROR AGAINST OTHER LIABLE PARTIES, UNLIKELY TO BE SUCCESSFUL IN THE EVENT OF SECONDARY LIABILITY AS A DISTRIBUTOR – If a retransferor is held liable based on one of the aforementioned primary or secondary grounds of harmonised product liability, each examined Member State affords the possibility of a recourse claim against other parties liable for the same product accident on the basis of the PLDI or another liability theory.¹⁸⁶⁸

Unfortunately for the retransferor, if he is liable as a distributor because he has failed to timely refer the injured party to more upstream defendants,¹⁸⁶⁹ he is likely unable as well to (later) identify and claim against the second-hand product's manufacturer or any other primarily liable party.¹⁸⁷⁰ After all, there is no particular reason why he might now suddenly be able to identify these parties for the purposes of his recourse claim. This unfortunate position of defendants subject to secondary liability is all the more ironic because both the criterion of causal shares used for apportionment in current Belgian and German law and in French law for no-fault liability, as well as the alternative apportionment criterion of gravity of fault, would otherwise in most cases result in a (close to) complete indemnification of the distributor by especially a manufacturer subject to primary liability.¹⁸⁷¹

In contrast, if the retransferor is held liable as an importer, quasi-manufacturer or substantial product modifier (see *supra* nr. 298.a), he is likely capable of successfully identifying and claiming in recourse against another liable party, like the second-hand product's original manufacturer. Although in these cases there can be a bigger internal liability of the

¹⁸⁶⁸ See arts. 8(1) PLD-1985; art. 12(1) PLD-2024.

¹⁸⁶⁹ The distributor ('supplier' according to the PLD-1985) cannot exonerate himself by identifying a more upstream distributor who is not a primarily liable party nor his own direct distributor. See *infra* nr. 301.c.

¹⁸⁷⁰ FRANCE: The recourse claim of suppliers is in French law furthermore subject to a limitation period of only 1 year (art. 1245-6, second section CC FR).

¹⁸⁷¹ See in this sense according to German rules on *Mitverschulden* Graf von Westphalen, '3. Produkthaftungsgesetz', § 50, nr. 16; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3606, 5; Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 5 ProdHaftG, nr. 10; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 5, nr. 17.

retransferor depending on the applicable apportionment criterion's factual assessment, the retransferor subject to primary harmonised product liability will likely still be able to obtain a substantial indemnification. For example, German scholars who apply their causal shares criterion consider that a quasi-manufacturer¹⁸⁷² and according to some also an importer¹⁸⁷³ can almost always obtain complete indemnification by claiming in recourse against the defective product's manufacturer. Of course, between contractual parties there can be specific contractual arrangements relating to recourse and apportionment, which tend to be in a B2B context only subject to general limitations on contractual freedom of national law.

b. Distributor: the general possibility of secondary liability

300. SECONDARY LIABILITY OF RETRANSFERRORS AS DISTRIBUTORS – Every retransferor, except certain prosumers who manage to evade the scope of harmonised product liability (see *supra* nrs. 197-198), automatically qualifies as a 'supplier' under the PLD-1985 or a 'distributor' under the PLD-2024.¹⁸⁷⁴ This is true regardless whether the retransfer is a resale, donation or barter contract (see *supra* nrs. 80-82).¹⁸⁷⁵ Art. 4(14) PLD-2024 confirms this by defining 'distributor' broadly as "*any natural or legal person in the supply chain that makes a product available on the market, other than the manufacturer or importer of that product;*".¹⁸⁷⁶ The definition of the equally new 'making available on the market' concept, makes clear that this can also encompass donations.¹⁸⁷⁷ The PLD-1985 has never defined 'supplier', but A-G. MENGOTTI described it as "*an intermediary involved in the marketing or distribution chain of the defective product*".¹⁸⁷⁸ 'Supplier' is interpreted in the literature as any person who delivers products to consumers, not only through transfers of ownership but also by providing temporary access to them as a

¹⁸⁷² Graf von Westphalen, '3. Produkthaftungsgesetz', § 50, nr. 15; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3606, 5; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 5, nr. 17.

¹⁸⁷³ Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3606, 5. It is more precise to still entertain the possibility that a product may be (only) defective because it was produced for a market with its own safety expectations outside the EU and it has become defective as a result of the importer's decision to import said product into the EU (without design or information modifications). See Oechsler, Staudinger, 'Produkthaftungsgesetz', § 5, nr. 18.

¹⁸⁷⁴ Art. 3(3) PLD-1985; arts. 4(14) and 8(3) PLD-2024. See also *supra* nrs. 177-178.d-e.

¹⁸⁷⁵ Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 4.100.

¹⁸⁷⁶ Note that the 'quasi-manufacturer' is subsumed in the 'manufacturer' definition of art. 4(10)b PLD-2024.

¹⁸⁷⁷ Art. 4(7) PLD-2024: "*'making available on the market' means any supply of a product for distribution, consumption or use on the Union market in the course of a commercial activity, whether in return for payment or free of charge;*". Of course, a donation must still occur 'in the course of a commercial activity' in order to be subject to the new rules of harmonised product liability. See on the identical concept in EU product regulation Commission Notice 'The 'Blue Guide' on the implementation of EU product rules 2022' [2022] OJ C247/1, 19: "*Commercial activity is understood as providing goods in a business related context. Non-profit organisations may be considered as carrying out commercial activities if they operate in such a context. This can only be appreciated on a case by case basis taking into account the regularity of the supplies, the characteristics of the product, the intentions of the supplier, etc. In principle, occasional supplies by charities or hobbyists should not be considered as taking place in a business related context.*"

¹⁸⁷⁸ A-G. Mengotti, opinion C-495/10, 27 October 2011, ECLI:EU:C:2011:706, nrs. 29-32.

service,¹⁸⁷⁹ while excluding agents who merely provide transportation and delivery services for the actual supplier.¹⁸⁸⁰

There is no reason why these principles would remain limited to only the first chain of distribution to the initial consumer of a product, which would exclude retransfers of second-hand products. After all, as confirmed by the original PLD-1985 proposal's explanatory memorandum, the goal of the secondary liability rule is precisely to maximize the likelihood that injured parties are referred to the primary liable manufacturer and, if the distributor fails to do so, that injured parties remain protected by being able to claim directly against actors who supplied the defective product.¹⁸⁸¹ The risk-allocation and accident-prevention functions underlying the Directives' stated goal of protecting injured parties,¹⁸⁸² are not achieved if distributors would be no longer be subject to harmonised product liability if they would happen to distribute a second-hand rather than a new product (see *supra* nr. 79 on the concept of 'retransfers'). In conclusion, retransferors definitely qualify as suppliers or distributors,¹⁸⁸³ who are subject to the secondary liability rule of art. 3(3) PLD-1985 and art. 8(3) PLD-2024 respectively.

301. SECONDARY LIABILITY OF RETRANSFERRORS: THEORETICAL QUESTIONS AND PROPOSED MINOR AMENDMENTS RELATING TO NON-LINEAR AND POTENTIALLY COLLABORATIVE DISTRIBUTION – The fact that redistributors are liable on a secondary basis as distributors, opens up some more niche theoretical questions that are not or barely discussed in the existing literature. The underlying reason why seems to be the implicit focus on a linear economic model of consumer good distribution.

- a. First of all, what if a retransferor, likely the second-hand product's previous user, does not make a profit from donating, bartering or reselling products or is not sufficiently active and organised in these activities to qualify as a distributor subject to harmonised product liability (see *supra* nrs. 197-198)? Actually, such a retransferor cannot be held

¹⁸⁷⁹ See Taschner and Frietsch, *Kommentar*, 335; Borghetti, *La responsabilité du fait des produits*, 484; Graf von Westphalen, '3. Produkthaftungsgesetz', § 49, nrs. 77-79; Delforge, 'Le défaut de sécurité au sens de la loi du 25 février 1991', 345-346; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 72; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 8.32; Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 4, nr. 51.

¹⁸⁸⁰ Graf von Westphalen, '3. Produkthaftungsgesetz', § 49, nrs. 78-79; Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 4, nr. 51; P. Ehring, '§ 4 ProdHaftG' in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 36. This last demarcation is now somewhat nuanced by the novel possibilities under the PLD-2024 of secondary liability of certain online platforms and primary liability of fulfilment service providers (arts. 4(13)(16) and 8(1)c(iii)(4) PLD-2024). See also *supra* nr. 178.c-e.

¹⁸⁸¹ PLD Explanatory Memorandum 1976, nr. 9. See also Markovits, *La Directive C.E.E. du 25 juillet 1985*, 152; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3605, 23; Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 4, nr. 48.

¹⁸⁸² See *supra* nrs. 4, 105-109 and 168 on how the goal of protecting injured parties stated in the Directives (in the PLD-1985 and in a lot of the literature stated somewhat incorrectly as 'consumer protection') actually refers to the fundamental underlying policy aims of accident-prevention and reparation.

¹⁸⁸³ See, e.g., Howells, 'strict liability', nr. 4.79; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 9.121.

liable based on art. 8(3) PLD-2024 or can perhaps successfully invoke the neither for-profit nor professional defence of art. 7(3) PLD-1985, which would mean that he does not have to refer the injured party to the manufacturer, importer or his own previous distributor. In such an event, the product's 'traceability' becomes crucially important for the injured party (see *supra* nr. 281 and *infra* nr. 302), who otherwise risks being unable to make any claim since he cannot identify any defendant subject to harmonised product liability. Of course, national law may still offer possibilities to claim on the basis of a product liability theory *sensu lato* against such a prosumer-retransferrer.¹⁸⁸⁴

- b. Second, can the retransferrer escape his secondary liability as a distributor by referring the injured person to his own (re)transferrer although the latter is not subject to harmonised product liability, as previously described? This is a very likely scenario in the context of second-hand consumer goods, because B2C resellers often receive such goods from their initial users through P2B resales or donations (see *supra* nr. 80). Art. 3(3) PLD-1985 states that the supplier can exonerate himself when he informs the injured person within a reasonable time of the identity of either the manufacturer¹⁸⁸⁵ or of "*the person who supplied him with the product.*" Since the EU legislator does not add any extra qualification for the preceding link in the distribution chain to whom the injured party is referred, it would be a stretch to additionally require that this person should himself be a potential defendant for a claim based on the PLDI.¹⁸⁸⁶ Of course, such an interpretation that would go beyond the text of the Directive to the potential detriment of the retransferrer liable as a distributor, would align with the Directive's goals of risk-allocation and accident-prevention (see *supra* nr. 168). Yet, the secondary nature of the liability of suppliers and the fact that all persons can theoretically fall under at least the PLD-1985's personal scope of application and must themselves subsequently prove the 'neither for-profit nor professional' defence of art. 7(c) PLD, speak in favour of a literal interpretation where the potential liability of the person to whom the injured party is referred to would not matter. Moreover, such an interpretation corresponds with the generally agreed view that only the injured party and not the supplier bears the risk that a successful claim can be made against the preceding actor in the distribution chain to whom he is referred to, which amongst others includes the risk that this person is not insolvent ('judgement-proof').¹⁸⁸⁷

¹⁸⁸⁴ See art. 13 PLD-1985; art. 2(4)b PLD-2024. The PLD-2024 even allows claims on the basis of theories with the same basis as harmonised product liability against prosumer-retransferrers who have never been subject to the personal scope of harmonisation as a potential defendant (see *supra* nr. 213.a). In my opinion, the same is not possible vis à vis prosumer-retransferrers who managed to successfully invoke the neither for-profit nor professional defence of art. 7(c) PLD-1985 (see *supra* nr. 213.c).

¹⁸⁸⁵ See *supra* nr. 177 on the possibility for the distributor to refer back to other persons subject to primary liability than the manufacturer, such as an importer or quasi-manufacturer.

¹⁸⁸⁶ See seemingly in favour of such an interpretation C. Hodges, 'Product liability of suppliers: the notification trap' (2002) 27 *European Law Review* 758, 759.

¹⁸⁸⁷ Taschner and Frietsch, *Kommentar*, 336; Graf von Westphalen, '3. Produkthaftungsgesetz', § 49, nr. 107; M. Kruithof, 'Wie is aansprakelijk voor schade veroorzaakt door onveilige producten?' in I. Claeys and R. Steennot (eds.), *Aansprakelijkheid, veiligheid en kwaliteit*. PUC W. Delva nr. 40 (Kluwer 2015) 158;

It therefore seems that the retransferor can escape his secondary liability under the PLD-1985 by referring the injured party to the person from whom he has himself received the second-hand consumer good, even when this person can for example successfully invoke the neither for-profit nor professional defence of art. 7(c) PLD-1985 or has not acted in the course of a commercial activity under the PLD-2024 (see *supra* nrs. 197-198). The injured person then ends up with being informed on the identity of a person who cannot be held liable based on the PLDI and who is under no obligation to (try to) refer the injured person to another person who can be held liable on the basis of this ‘quasi-strict’ liability theory instead (see also *supra* nr. 301.a). This seems undesirable in light of both the Directive’s goals and this dissertation’s normative framework (cf. *supra* nrs. 130 and 168) and it might therefore be better if art. 3(3) PLD-1985 would be amended by explicitly stipulating that the person to whom the plaintiff is referred cannot be able to successfully invoke the defence of art. 7(c) PLD-1985. After all, the PLDI based on the PLD-1985 will continue to apply for the foreseeable future to accidents involving second-hand products.¹⁸⁸⁸

Fortunately, as the result of another last-minute amendment, the final adopted version of art. 8(3)b PLD-2024 no longer steps into the same pitfall, since it explicitly states that the distributor can only exonerate himself by identifying within one month “*an economic operator or its own distributor, [...]*.”¹⁸⁸⁹ The definition of distributor refers back to ‘making a product available on the market’ and thus excludes actors who cannot be held liable based on the PLDI.¹⁸⁹⁰ In other words, under the rules of harmonised product liability applicable to products placed on the market in the future, there is no longer an issue that a distributor could exonerate himself by referring the injured party to his own supplier while it would be not possible to claim against the latter based on harmonised product liability.

- c. Third, can the retransferor escape his secondary liability by referring the injured person to a defendant subject to primary liability, even when this person falls outside the personal scope of application of the PLDI? Similar to the preceding discussion, the answer is radically different between the two Directives.

Art. 3(3) PLD-1985 allows the supplier to exonerate himself simply when he can inform the injured person of “*the producer*”, which can be understood as encompassing also the importer or quasi-producer (see *supra* nr. 177). There is no extra requirement and it is thus perfectly possible, for example for a second-hand goods supplier, to exonerate himself under the PLD-1985 by referring the injured recipient or third party to an original (quasi-)producer or even importer of said product who will be able to successfully invoke the neither for-profit nor professional defence of art. 7(c) PLD-1985. Again, this is undesirable in light of this dissertation’s and the Directive’s key normative goals of

Verhoeven, *Productaansprakelijkheid en productveiligheid*, 76; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3605, 29; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 4, nr. 112.

¹⁸⁸⁸ See art. 21 PLD-2024.

¹⁸⁸⁹ Cf. art. 7(5)b PLD Proposal 2022: “*the distributor fails to identify the economic operator or the person who supplied the distributor with the product [...]*.”

¹⁸⁹⁰ Art. 4(7)(14) PLD-2024.

risk-allocation and accident-prevention. Hence, it would be better if art. 3(3) PLD-1985 would be amended by explicitly stipulating that the supplier can only exonerate himself if he refers the injured person to someone who cannot successfully invoke the defence of art. 7(c) PLD-1985.

In contrast, art. 8(3)b PLD-2024 requires for exoneration from secondary liability that the distributor “*identifies] an economic operator [...], as referred to in point (a) [...]*.”¹⁸⁹¹ This refers to all the defendants subject to primary liability for the same product accident on the basis of art. 8(1) PLD-2024. All the underlying concepts, including the umbrella-term ‘economic operator’, are now defined in a manner that requires a ‘commercial activity’,¹⁸⁹² which excludes that the injured party would be referred to for example a prosumer or charity acting outside the course of a commercial activity, against whom harmonised product liability claims would not be possible (see *supra* nr. 198). Only for the ‘manufacturer’, ‘quasi-manufacturer’ and ‘authorised representative’, this is unfortunately not the case. Hence, a very literal reading of the PLD-2024 would theoretically allow a distributor to exonerate himself from secondary liability by referring the injured party to a (quasi-)manufacturer or authorised representative who cannot be held liable themselves based on the PLDI, because they did not act in the course of a commercial activity and therefore have neither ‘placed the product on the market’ nor ‘put it into service’.¹⁸⁹³ For authorised representatives, it can be argued that their activity has by nature always a commercial character as broadly understood in EU product regulation. Yet, prosumers can perfectly manufacture or quasi-manufacture a product outside a commercial activity, which means that they cannot be held liable under the PLD-2024 (see *supra* nr. 198).

This leads to a gap¹⁸⁹⁴ in protection by the PLD-2024, which runs contrary to the Directive’s and this dissertation’s goals of (efficient) risk-allocation and accident-prevention. Therefore, it would be preferable that the definition of (quasi-)manufacturer in art. 4(10) PLD-2024 would be amended by explicitly requiring that the activities of these actors must occur ‘in the course of a commercial activity’.¹⁸⁹⁵ Arguably, with an

¹⁸⁹¹ Note that art. 7(5)b PLD Proposal 2022 less precisely required the distributor “*to identify the economic operator*”.

¹⁸⁹² Art. 4(7)-(8)(12)-(16) PLD-2024.

¹⁸⁹³ See arts. 2(1) and 4(7)-(9) *ibid.* See also on these concepts *supra* nr. 198 and *infra* nr. 323.

¹⁸⁹⁴ Naturally, in those cases, there will always be a person who has subsequently ‘placed this product on the market’, otherwise there would be no secondary liability of a retransferor or other distributor to begin with (arts. 4(7)(14) and 8(3) *ibid.*). Yet, the problem is that the identity of this potential defendant subject to primary liability is apparently unknown to the injured party, who resorts to claiming against said distributor who now can exonerate himself by referring the injured party to someone who is not liable under the PLD-2024.

¹⁸⁹⁵ A similar amendment to the definition of authorised representative in art. 4(10)-(11) PLD-2024, does not seem desirable, because the liability of such authorised representative has precisely been introduced to ensure that injured parties can always claim against a party subject to primary liability within the EU. And if it would hypothetically be possible that a third-country manufacturer could appoint a (first-time) authorised manufacturer who acts outside a ‘commercial activity’ and, in doing so, avoid harmonised product liability altogether, this would of course be highly undesirable in light of the goals of the Directive and the normative criteria of this dissertation (see *supra* nrs. 130 et seq. and 168).

eye on long-term relevance, this amendment to the PLD-2024 is needed more than the aforementioned proposed amendment to art. 3(3) PLD-1985.¹⁸⁹⁶

- d. Fourth, can the injured party, instead of claiming against the product's (last) retransferor, claim directly against an actor more upstream in the product's distribution chain, who would also be subject to secondary liability as a distributor? The answer seems to be positive under both Directives.¹⁸⁹⁷ Art. 3(3) PLD-1985 states that the injured party who cannot identify a primary liable party, can hold "*each supplier of the product*" liable on a secondary basis. Likewise, art. 8(3) PLD-2024 holds that "*each distributor of the defective product is liable*" where the conditions for secondary liability are fulfilled. Admittedly, in cases where an injured party can immediately identify an actor in the distribution chain who is not his own distributor nor the manufacturer or importer, there is a likelihood that this actor is actually already liable on a primary basis as a quasi-manufacturer who has affixed distinguishing features on the product (see *infra* nrs. 304-306). Nevertheless, it is conceivable, especially in a circular economic context of multiple retransfers, that the recipient of a second-hand product for example receives a copy of a proof of purchase, transactional logbook or other document from the retransferor which refers to the latter's own distributor while this party does not qualify as a quasi-manufacturer. This possibility to claim directly against a preceding distributor, can be particularly useful when the product was prior to the accident last supplied through a P2P retransfer, like a resale at a yard sale or on a P2P 'recommerce' platform.¹⁸⁹⁸
- e. And fifth, can the retransferor who is subject to secondary liability as a distributor, exonerate himself by referring the injured person to another distributor than his own direct supplier who is also not the second-hand product's (quasi-)manufacturer, importer or other defendant subject to primary liability pursuant to art. 3(1)(2) PLD-1985 or art. 8(1) PLD-2024?¹⁸⁹⁹ Based on a literal reading of both Directives, the answer seems to be no, although the Portuguese and Norwegian PLDI's implementing the PLD-1985 are reported to explicitly state otherwise.¹⁹⁰⁰ Art. 3(3) PLD-1985 holds that a supplier can

¹⁸⁹⁶ This is not only because the new Directive will over time completely replace the old rules. This is also because the PLD-1985 has with the defence of art. 7(c) PLD-1985 a different logic than the, by more recent EU product regulation inspired, approach of the PLD-2024, which strives to directly channel harmonised product liability claims to actors 'in the course of a commercial activity'.

¹⁸⁹⁷ See with regards to the PLD-1985 Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 8.34.

¹⁸⁹⁸ After all, in such cases, it may no longer be possible to identify or effectively contact the prosumer-retransferor or the latter may not be subject to the PLDI (see *supra* nr. 301.a), which removes the possibility to either force him to identify preceding liable parties or to otherwise claim against him on the basis of harmonised product liability.

¹⁸⁹⁹ In the literature, this question is often not dealt with explicitly because it is stated that the supplier can exculpate himself through identifying the unclear concept of 'an intermediary supplier' (*Zwischenlieferant* or *Vorlieferant*). E.g., Taschner and Frietsch, *Kommentar*, 335; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3605, 27-29; P. Ehring, '§ 4 ProdHaftG' in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 40.

¹⁹⁰⁰ See Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 8.47 who quote a report which I could not verify stating that the implementing laws of Norway and Portugal would hold that "*it is enough for a*

only evade liability by referring the injured party to either the producer or “*the person who supplied him with the product.*” Art. 8(3)b PLD-2024 confirms this as well by referring to “*its own distributor*”. Hence, in more complex product distribution chains like those involving one or more retransfers, the injured party is able to claim directly against more upstream distributors, but the retransferor or another distributor subject to the PLDI can only exonerate himself by referring the injured party to his own direct distributor, if a person subject to primary liability cannot be identified.

Of course, an injured party might in practice be actually satisfied with the fact that his retransferor who is liable on a secondary basis, refers him to a more upstream supplier who is not the retransferor’s own, direct distributor,¹⁹⁰¹ since he can claim directly against this party. But the retransferor is strictly speaking not exonerated by this, so the injured party can theoretically continue to hold him liable on a joint basis.¹⁹⁰²

302. SECONDARY LIABILITY OF RETRANSFERRORS: THEIR INCREASED LIABILITY RISK AND THE CHALLENGE OF BEING ABLE TO TIMELY IDENTIFY OTHER LIABLE PARTIES – The preceding section discussed how a retransferor can exonerate himself from secondary liability by referring the injured party either to his own direct distributor to himself or immediately to a primarily liable party. A major underlying challenge with which specifically retransferors are confronted, is the fact that second-hand goods are on average much more frequently ‘anonymous’, which means that it is not possible to identify a defendant subject to primary liability like a (quasi-)manufacturer or importer.¹⁹⁰³ This is due to the fact that an initially non-anonymous product can lose this information before or after it is retransferred, as a result of successive use or the retransfer process. The packaging on which one of the primary liable parties was identified, might have been lost during the product’s initial use phase or simply not included when the initial user resells, barter or donates it. Alternatively, the product itself may have borne markings that identify a (quasi-)manufacturer or importer but these may have worn off or become illegible by the time an already retransferred product causes

supplier to identify any previous supplier, not just the one directly preceding it in the supply chain.” See also in a similar sense ibid., nr. 8.32; Howells, ‘strict liability’, nr. 4.98: “It is a subsidiary liability which only applies where the supplier fails to identify higher links in the supply chain.”

¹⁹⁰¹ E.g., a B2C retransferor of an anonymous second-hand product may no longer be able to identify his own P2B distributor or may not want to brush off the injured party – although he can do so – by referring him to such a party who is probably not subject to the PLDI and against whom claims on the basis of national liability are likely to be unsuccessful as well. In such an event, the B2C retransferor is possibly still able to inform the injured party of a more upstream distributor, such as the initial B2C seller who has sold the product initially to the consumer who ended up being the retransferor’s own P2B supplier. The injured party, once being aware of this more upstream distributor of the product (who is actually at least three transactions removed from him) can in principle claim directly against this party on a secondary basis, as discussed in this section. Additionally, it is worth noting that this more upstream distributor, likely a B2C seller, is in most cases part of the product’s initial distribution chain (before it became second-hand) and may therefore also be more likely to be still able to identify a (quasi-)manufacturer or importer (cf. *infra* nr. 302).

¹⁹⁰² See also art. 8(1) PLD-1985; art. 13(1) PLD-2024.

¹⁹⁰³ E. Van Gool, ‘De nieuwe richtlijn productaansprakelijkheid en circulaire economie’ (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 414.

an accident. Additionally, certain smaller durable consumer goods are by nature distributed without individual markings or accompanying documents.¹⁹⁰⁴ While a distributor in the original distribution chain of such products may still know the producer, for example through bulk packaging, this knowledge is of course lost at the time of a retransfer. Furthermore, there is always also the general possibility that a product becomes anonymous through (partial) destruction in an eventual product accident.

This increased risk for retransferors of being unable to exonerate themselves from secondary liability, is all the more problematic because these actors precisely have little chance of a successful recourse claim, simply because they are only liable when they were unable to timely identify a primary liable defendant or their own distributor to begin with (see *supra* nr. 299).

Several German courts and scholars hold that a distributor should not worry about ‘later anonymised products’, because they are allegedly only subject to secondary liability if a product was already anonymous at the time when they themselves supplied it.¹⁹⁰⁵ However, as criticised by WAGNER, this is a distributor-friendly and somewhat fault-based interpretation which neither the text of art. 3(3) PLD-1985 nor of art. 8(3) PLD-2024 support. Both provisions simply require that an injured party fails to personally identify a defendant subject to primary liability, regardless of the underlying cause or its timing.¹⁹⁰⁶ Moreover, this interpretation would be difficult to correctly implement in practice and, above all, would run contrary to the risk-allocation and accident-prevention goals underlying harmonised product liability’s secondary liability rule.¹⁹⁰⁷ A retransferor or another distributor for that matter thus seems to be also subject to secondary liability when his product still identified a manufacturer, importer or quasi-manufacturer when he resold, bartered or donated it and it only became anonymous afterwards.

As FAIRGRIEVE AND GOLDBERG indicate, the obvious solution for retransferors who are faced with the aforementioned increased risk of being liable as a distributor for an anonymous second-hand product, is to maintain or ensure access to adequate records regarding the past distributors of each product which they retransfer.¹⁹⁰⁸ As a side note, under art. 8(3)b PLD-2024, this would mean that it is insufficient to record the name of only their own prosumer-supplier who cannot personally be held liable as a distributor and to try to identify and record preceding actors in the product’s distribution chain who are viable defendants (see *supra* nr. 301.b). Indeed, since the secondary liability mechanism precisely aims to remedy situations

¹⁹⁰⁴ See Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 9.121 (discussing how the likelihood that second-hand goods distributors can exonerate themselves depends on not only adequate records but also on the nature of those goods).

¹⁹⁰⁵ E.g., OLG Düsseldorf 7 April 2000, 14 U 293/99, MDR 2000, 1075, *Juris*, nr. 3; OLG Saarbrücken 12 October 2006, 8 UH 363/06 – 94, MDR 2007, 768, *Juris*, nr. 8; Taschner and Frietsch, *Kommentar*, 333-334; Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 48, nr. 82; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3605, 25; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 4, nr. 100.

¹⁹⁰⁶ Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 4, nr. 54.

¹⁹⁰⁷ See sources cited *supra* footnote 1881. See also *supra* nr. 235.

¹⁹⁰⁸ Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 9.121. See also generally on the need for distributors to keep records during 10 years in order to exonerate themselves from secondary liability Howells, ‘strict liability’, nr. 4.99; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 534.

where injured parties are confronted with anonymous products (see *supra* nrs. 177 and 300), it can actually be expected from retransferors subject to the PLDI that they make an effort in adequately recording from whom they receive the products which they later resell, donate or barter. However, this is in practice far from always self-evident.

First of all, for certain smaller products, particularly those that tend to have a bulk nature, it can be very difficult at a practical level to keep records on possible defendants for each product.¹⁹⁰⁹ Examples might be spare parts, second-hand construction materials, small tools, glasses or cutlery.

Second, retransferors can be prosumers who have become subject to secondary product liability on only a very incidental, recent basis, which is potentially also for themselves totally unexpected (cf. *supra* nrs. 197-198 on the conditions under which prosumers can be subject to harmonised product liability based on both the PLD-1985 and the PLD-2024). From an *ex ante* perspective, such non-traditional distributors may not yet be aware of the need to keep records on the origin of second-hand products which they for example resell online or at flea markets. Moreover, even when they have in the meantime become aware of the opportune nature of this best practice, they might not have known this when they originally acquired these products, possibly a long time ago.¹⁹¹⁰

And third, it is possible that a retransferor does have some idiosyncratic manner to identify his own distributor or even a primarily liable defendant in relation to a specific second-hand product which he has resold, bartered or donated, but he might be insufficiently organised and too overwhelmed to do so in a timely fashion. For example, he might eventually refer the injured party to the wrong person and require time to realize and rectify this mistake. Art. 3(3) PLD-1985 requires that the supplier refers the injured party to the correct person “*within a reasonable time*”, which some Member States have specified in a fixed period.¹⁹¹¹ Art. 8(3)b PLD-2024 now fixes the time granted to the distributor at the relatively short period of only one month.

303. SECONDARY LIABILITY OF RETRANSFERRORS: THE INCREASING IMPORTANCE OF PRODUCT (“TRACEABILITY”) REGULATION – The challenge faced by retransferors, in particular prosumers when these are nevertheless subject to secondary harmonised product liability, to timely inform

¹⁹⁰⁹ Howells, ‘strict liability’, nr. 4.79; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 9.121, footnote 447. FAIRGRIEVE AND GOLDBERG refer to a discussion by STAPLETON of industrial bulk and processing of scrap metal. Even if these products were never (intended to be) disposed of and never qualified as waste, their use in an industrial context suggests that they are re-used in a new production process rather than being merely redistributed, which results in my opinion in primary liability for manufacturing a new product instead of a secondary liability as a distributor (see *infra* nr. 356). See also Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 4, nr. 118.

¹⁹¹⁰ See on the greater challenge for prosumers compared to professional distributors to identify a party subject to primary liability or their own distributor E. Van Gool, ‘De nieuwe richtlijn productaansprakelijkheid en circulaire economie’ (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 414. See also Howells, ‘strict liability’, nr. 4.79.

¹⁹¹¹ E.g., FRANCE: within three months after receiving the request from the injured party (art. 1245-6, first section CC FR). GERMANY: within one month after receiving this request (§ 4(3) Produkthaftungsgesetz). See also *supra* footnote 1034.

the injured party of the identity of their own distributor or of a defendant subject to primary liability, is fortunately for them increasingly alleviated by product ‘traceability’ regulation.

As discussed *supra* nr. 281, the rather optional and quite lax traceability guideline of art. 5(1), fourth section (a) General Product Safety Directive 2001/95/EC, is for new products that are placed on the market now replaced by the more detailed and stringent rules of the General Product Safety Regulation 2023/988/EU. This includes a requirement to indicate the name and address of the product’s manufacturer, importer or quasi-manufacturer, in principle on the product itself rather than on packaging or product documentation, which are especially likely to be lost during the lifecycle of a second-hand product.¹⁹¹²

Additionally, as discussed *supra* nr. 282, the Digital Services Act imposes on online platforms which intermediate distance contracts between consumers and traders, obligations to ensure that such traders provide to them identifying information, that they verify this information and that they make it available on their platform.¹⁹¹³ This can theoretically help retransferrors to identify their own distributors, if they happen to have themselves obtained the second-hand product through ‘recommerce’. In other cases, a retransferror himself resells or barterers his products through an online platform to a new consumer and it is after an accident the latter or an injured third party who uses the platform’s traceability information to identify the retransferror to claim against him on the basis of secondary harmonised product liability.

Nevertheless, the importance of the Digital Services Act’s traceability information is limited in several ways. First of all, it only relates to ‘traders’, which for example excludes prosumers, even if those would still be potentially liable under the PLD-1985 because they fail to prove the stringent ‘neither for-profit nor professional defence’ (see *supra* nr. 197). Second, platform providers are required to delete all traceability information six months after a relationship with a trader has ended,¹⁹¹⁴ which seems like an unnecessary short period (see *supra* nr. 282). And third, the ability to identify an online retransferror who qualifies as a distributor loses its added value if a primarily liable party can already be identified through the aforementioned product safety traceability information.

Finally, future digital product passports can potentially provide a comprehensive solution to this issue of identifying defendants for accidents caused by second-hand products, which plagues not only injured parties but also retransferrors when they are still identifiable and subject to secondary liability. Compared to even the new product safety requirements, the passport’s digital information does not wear off and is not lost when the product is destroyed in an accident. This planned techno-regulatory innovation and its implications for harmonised product liability are further discussed *infra* nrs. 343-347.

¹⁹¹² See Arts. 9(5)-(6), 11(1)-(3) and 13(1) General Product Safety Regulation 2023/988/EU. See also the possibility for even more stringent, potentially digitalized ‘specific traceability requirements’ for hazardous products in art. 18 *ibid*.

¹⁹¹³ Art. 30(1)-(3)(7) Digital Services Act.

¹⁹¹⁴ Art. 30(5) *ibid*.

c. Quasi-manufacturer: the main specific possibility of primary liability

304. THE RETRANSFERROR'S LIABILITY RISK AS A QUASI-MANUFACTURER: LIMITED IF THERE IS A SEPARATE SUBJECTIVE REQUIREMENT, AS GENERALLY ACCEPTED PRIOR TO *FENNIA/PHILIPS* – Retransferrors, in particular well established B2C resellers, often affix markings and/or branded packaging to their second-hand products.¹⁹¹⁵ They are even more likely to do so when they have first repaired or refurbished said product (see also *infra* nr. 432). This gives rise to a significant risk of primary liability based on the PLDI as a result of being qualified as a 'quasi-manufacturer', sometimes also called an 'apparent manufacturer' or 'self-brander' (see generally *supra* nrs. 176.b and 178.a).

Traditionally, an extensive interpretation is given to the objective component of the quasi-manufacturer concept in art. 3(1) PLD-1985 and art. 4(10)b PLD-2024, which both refer to "*putting his name, trade mark or other distinguishing feature on the product*".¹⁹¹⁶ Neither a full name nor contact details nor a protected trademark are required. A quasi-manufacturer can thus be identified through a mere logo or acronym.¹⁹¹⁷ The quasi-manufacturer must not have permanently affixed his distinguishing feature to the product itself but may have put a sticker on the product or only put distinguishing features on the product's packaging, on product documentation or even, in case of the absence of the aforementioned possibilities, on a mere delivery note.¹⁹¹⁸ Hence, a B2C reseller with his own physical or online second-hand store who in some way puts his own identifying information or branding on the second-hand products he resells, such as through affixing stickers or using packaging bearing his logo, qualifies according to this traditionally broadly interpreted objective component of the quasi-manufacturing concept.

¹⁹¹⁵ See also E. Van Gool, 'De nieuwe richtlijn productaansprakelijkheid en circulaire economie' (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 414.

¹⁹¹⁶ More precisely, art. 4(10)b PLD-2024, refers to "*who, by putting their name, trade mark or other distinguishing features on that product*".

¹⁹¹⁷ See Taschner and Frietsch, *Kommentar*, 325; Delforge, 'Le défaut de sécurité au sens de la loi du 25 février 1991', 341-342; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3605, 13; Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 4, nr. 37.

¹⁹¹⁸ See OLG Düsseldorf 28 June 2000, 22 W/00, NJW-RR 2001, 458, 458-459; Taschner and Frietsch, *Kommentar*, 325, 348; Howells, 'strict liability', nr. 4.90; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3605, 14; Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 4, nr. 39; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 4, nr. 60; P. Verbruggen, 'De quasi-producent in het productaansprakelijkheidsrecht' (2022) *Tijdschrift voor Consumentenrecht en Handelspraktijken* 219, 224. See also Trib. Namur 14 November 1997, JLMB 1998, 644 (implicitly accepting use of sticker for qualification as quasi-producer); Verhoeven, *Productaansprakelijkheid en productveiligheid*, 65 (*ibid.*). But see Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 4, nr. 39.

Normally, this is offset by an additional subjective element. According to a majority of courts,¹⁹¹⁹ scholars¹⁹²⁰ and in keeping with the explanatory memorandums for both the original proposal for the PLD-1985 and for the Strasbourg Convention,¹⁹²¹ a person only becomes a quasi-manufacturer if the aforementioned distinguishing features make the general public believe that this person is the product's actual manufacturer. French-speaking Belgian authors emphasize that the quasi-manufacturer must also actually intend to achieve this effect.¹⁹²² The latter is in my opinion not required, because only the impression created towards the public should be relevant in light of the PLD-1985's goal of protecting injured parties, which the CJEU now seems to confirm.¹⁹²³ German courts and authors adopt a related but slightly broader interpretation, by requiring that the trust created by the affixed

¹⁹¹⁹ E.g., BELGIUM: Trib. Namur 14 November 1997, *JLMB* 1998, 644; Mons 8 September 2003, *JLMB* 2005, 1823; Mons 13 January 2012, *DCCR* 2013, 105, note S. Vandemaele. FRANCE: Cass. FR civ. (1^{re} Ch.) 21 October 2020, nr. 19-18.689, *D.* 2020, 2064, note C. Quézel-Ambrunaz, *RTD civ.* 2021, 155, note P. Jourdain. GERMANY: See also decisions cited *infra* footnote 1924.

¹⁹²⁰ M. Faure and W. Van Buggenhout, 'Produktenaansprakelijkheid: De Europese Richtlijn: Harmonisatie en Consumentenbescherming?' (1987) *Rechtskundig Weekblad* 1, 8, nr. 15; Markovits, *La Directive C.E.E. du 25 juillet 1985*, 148; I. Demuyne, 'De bescherming van de consument tegen gevaarlijke, gebrekkige en niet-conforme producten' in Vlaamse Conferentie der Balie van Gent (ed.), *De consument in het recht: verword, verwaand of miskend?* (Maklu 2003) 35; C. Weinmann, 'Trademark Licensors and Product Liability Claims: A European Perspective' (2005) 95 *The Trademark Reporter* 1394, 1410-1411; Howells, 'strict liability', nr. 4.93; Vansweevel and Weyts, *Handboek aansprakelijkheidsrecht*, 530; N. Estienne, 'Les personnes responsables. Rapport belge' in GRERCA (ed.), *La responsabilité du fait des produits défectueux* (IRJS 2013) 70; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 64-65; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 8.21. See also the French-speaking Belgian and German sources cited *infra* footnotes 1922 and 1924. Note that no proof is required that the individual consumer who used the concerned product was actually convinced that the quasi-manufacturer was the actual producer. Instead, the impression created towards the general public is decisive, which makes this a subjective approach *in abstracto* (E. Van Gool, 'Case Fennia v. Koninklijke Philips NV (C-264/21): Towards a broader interpretation of the 'apparent producer', 'quasi-producer' or 'self-brander' subject to EU product liability' (2022) *Revue Européenne de Droit de la Consommation / Journal of European Consumer Law* 279, 282).

¹⁹²¹ PLD Explanatory Memorandum 1976, nr. 8 ("[...] any person who [...] represents himself as its producer [...]"); Council of Europe, 'Explanatory Report to the European Convention on Products Liability in regard to Personal Injury and Death', 27 January 1977, *European Treaty Series* nr. 19, 9 ("[...] by inducing the user to believe that he is the producer [...]").

¹⁹²² B. Dubuisson et al., *La responsabilité civile. Chronique de jurisprudence 1996-2007*, vol 1, *Le fait générateur et le lien causal* (Larcier 2009) 268; C. Delbrassinne, 'L'identification du producteur dans la loi relative à la responsabilité du fait des produits défectueux (annot. Mons 13 Janvier 2013)' (2014) *Forum de l'assurance* 239, 243; Delforge, 'Le défaut de sécurité au sens de la loi du 25 février 1991', 341; I. Lutte and J.-L. Fagnart, 'Livre 33bis' in X. (ed.), *Responsabilités. Traité théorique et pratique* (Kluwer 2020 update) 21.

¹⁹²³ CJEU 7 July 2022, C-264/21, *Fennia v. Philips NV*, ECLI:EU:C:2022:536. As discussed in the next section, the Court seemingly excludes any additional, subjective requirement, which definitely excludes a requirement relating to the quasi-manufacturer's intention. See also how this requirement of intent is no longer mentioned in Dubuisson et al., *Chronique de jurisprudence 2008-2020 – Volume 1*, 380-382.

distinguishing feature should make the public believe that the person to whom the distinguishing feature refers, has assumed at least some responsibility for the product's safety.¹⁹²⁴

Consequently, a retransferor who affixes distinguishing features to a second-hand product, its packaging or even its documentation while the product's actual manufacturer is still clearly indicated or who adds a visible disclaimer regarding the limited nature of his role as a mere distributor or service provider, does traditionally not qualify as a quasi-manufacturer.¹⁹²⁵ However, this now seems to be upended by a recent decision of the CJEU, as discussed below.

Finally, it is worthwhile to emphasize that any retransferor who meets these requirements, incurs primary liability as a quasi-manufacturer. It does not matter whether the product is resold, bartered or donated,¹⁹²⁶ whether it has been leased or borrowed or whether only a service like a repair has been provided, since persons can theoretically also qualify as a quasi-manufacturer if they have neither owned nor distributed a product in some manner but have still affixed a distinguishing feature and meet the aforementioned subjective requirement.

305. THE RETRANSFERROR'S LIABILITY RISK AS A QUASI-MANUFACTURER: OSTENSIBLY A SUBSTANTIAL INCREASE AFTER *FENNIA/PHILIPS* – In its 2022 *Fennia/Philips* decision, the CJEU seems to have upended the aforementioned understanding of the quasi-manufacturer concept.¹⁹²⁷ This is among others to the detriment of retransferors, who are now much more likely to be held liable on a primary basis as second-hand product quasi-manufacturers.

In this case, a coffee machine which caused a fire had been manufactured by Saeco, an Italian subsidiary of Philips. The machine bore trade marks of both Philips and Saeco as well as a CE marking which included Saeco's logo, its address in Italy and the words 'made in

¹⁹²⁴ BGH 21 June 2005, VI ZR 238/03, *NJW* 2005, 2695, 2696; OLG Stuttgart 24 September 2009, 7 U 89/09, *NZM* 2010, p. 626, *Juris*, nr. 35; OLG Düsseldorf 14 March 2012, 15 U 122/10, *MPR* 2012, p. 50, *Juris*, nr. 82; OLG Hamm 5 February 2016, I-7 U 84/15, *Juris*, nrs. 47-48; Taschner and Frietsch, *Kommentar*, 325, 347-348; Graf von Westphalen, '3. Produkthaftungsgesetz', § 49, nrs. 45-46; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 4, nr. 54.

¹⁹²⁵ If distinguishing features that refer both to the actual manufacturer and to the potential quasi-manufacturer are present on the product, it is a factual assessment whether the impression is created that the quasi-manufacturer is the product's actual manufacturer. *See, e.g.*, Cass. FR civ. (1^{re} Ch.) 21 October 2020, nr. 19-18.689, *JCP* 2020, n° 1276, note B. Parance, *RTD civ.* 2021, 155, note P. Jourdain, *Gaz. Pal.* 2020, nr. 391d5, 42, note C. Berlaud (quasi-manufacturer qualification withheld, despite identification of actual manufacturer in smaller print also present on product).

¹⁹²⁶ Naturally, certain donors and other retransferring prosumers can sometimes evade harmonised product liability based on the neither for-profit nor professional defence of art. 7(c) PLD, which the PLD-2024 now replaces with a general liability requirement of acting in the course of a commercial activity. *See supra* nrs 197-198.

¹⁹²⁷ *See* for overviews of the pre-existing majority view, which always included some subjective requirement relating to the consumer's belief about the manufacturer's identity, and how this seemingly contrasts with *Fennia/Philips* J.-S. Borghetti, 'L'apposition de sa marque sur un produit suffit à rendre le distributeur responsable du défaut de sécurité' (2022) *Recueil Dalloz* 2076, nrs. 19-21; E. Van Gool, 'Case Fennia v. Koninklijke Philips NV (C-264/21): Towards a broader interpretation of the 'apparent producer', 'quasi-producer' or 'self-brander' subject to EU product liability' (2022) *Revue Européenne de Droit de la Consommation / Journal of European Consumer Law* 279, 281-288.

Romania’.¹⁹²⁸ The Finnish Supreme Court asked the CJEU how to interpret the quasi-producer concept in art. 3(1) PLD-1985 and “whether certain factors that would exclude liability may be taken into account, such as the fact that the particulars affixed to that product indicate that the manufacturer is a different undertaking from the trade mark proprietor.”¹⁹²⁹ In its decision which emphasized the goal of protecting injured parties through a broad interpretation of the ‘producer’ concept,¹⁹³⁰ the CJEU replied that art. 3(1) PLD-1985 “does not require that the person who has put his name, trade mark or other distinguishing feature on the product, or who has authorised those particulars to be put on the product, also present himself as the producer of that product in some other way.”¹⁹³¹

It therefore seems, especially in light of the particular facts of the underlying case and the resulting request for a preliminary ruling, that the Court only requires the objective element of art. 3(1) PLD-1985 and no longer requires that the quasi-producer additionally creates a subjective impression of effectively being the product’s actual producer.¹⁹³² This is at least the outcome when the decision is taken at face value, since some observers try to interpret the decision in accordance with the *status quo ante* by still requiring a subjective element (cf. *supra* nr. 304).¹⁹³³ The consequence of interpreting the decision at face value is that retransferrals

¹⁹²⁸ CJEU 7 July 2022, C-264/21, *Fennia v. Philips NV*, ECLI:EU:C:2022:536, nr. 9. Admittedly, this last element could cause some confusion, although it referred to manufacturing activities of Saeco in Romania and Philips was clearly presented as a Dutch and not as a Romanian company.

¹⁹²⁹ *Ibid.*, nr. 14.

¹⁹³⁰ *Ibid.*, nrs. 31-33. See also *supra* nr. 168.

¹⁹³¹ *Ibid.*, nrs. 38, 40.

¹⁹³² J.-S. Borghetti, ‘L’apposition de sa marque sur un produit suffit à rendre le distributeur responsable du défaut de sécurité’ (2022) *Recueil Dalloz* 2076, nrs. 3-14; E. Van Gool, ‘Case Fennia v. Koninklijke Philips NV (C-264/21): Towards a broader interpretation of the ‘apparent producer’, ‘quasi-producer’ or ‘self-brander’ subject to EU product liability’ (2022) *Revue Européenne de Droit de la Consommation / Journal of European Consumer Law* 279, 286-288; J.-S. Borghetti, ‘Taking EU Product Liability Law Seriously: How Can the Product Liability Directive Effectively Contribute to Consumer Protection?’ (2023) 1 *French Journal of Legal Policy* 136, 160. See also T. Lenz, ‘Angabe des Namens, des Warenzeichens oder eines Erkennungszeichens auf einem Produkt keine Voraussetzung für Haftung als ‘Hersteller’ (Anmerkung EuGH C-264/21)’ (2023) *Entscheidungen zum Wirtschaftsrecht und Kurzkommentare (EWiR)* 13, nr. 2.

¹⁹³³ E.g., P. Verbruggen, ‘De quasi-producent in het productaansprakelijkheidsrecht’ (2022) *Tijdschrift voor Consumentenrecht en Handelspraktijken* 219, 220; D. Verhoeven, ‘Het begrip “schijnproducent” uit de Richtlijn Productaansprakelijkheid verduidelijkt (?) door het Hof van Justitie’ (2023) *Droit de la Consommation / Consumentenrecht (DCCR)* 92, 98 (“Een te restrictieve en letterlijke lezing van dit arrest zou de indruk kunnen wekken dat het louter aanbrengen van een naam, merk of ander herkenningsteken op zichzelf reeds voldoende is om te zeggen dat iemand als schijnproducent aansprakelijk kan gesteld worden. [...] Dit lijkt niet de correcte interpretatie van het begrip “schijnproducent” te zijn, zodat het maar ten eerste de vraag is of het arrest daadwerkelijk in die zin moet begrepen worden.”); T. Wilrich, ‘Die Verantwortung des Quasi-Herstellers gem. ProdHaftG (Anmerkung EuGH C-264/21)’ (2023) *Lebensmittel & Recht* 145, 149-150. These authors are in my opinion correct that the text of art. 3(1) PLD-1985 indeed requires a subjective element, which consists of creating the impression of being the product’s actual producer, as discussed in the preceding section. However, this is in itself insufficient to therefore conclude that the CJEU’s ruling must necessarily be (re)interpreted in this manner. The language of the *Fennia/Philips* decision excludes explicitly any other requirement than the objective aspect of affixing distinguishing

who affix logos, names or other distinguishing features on their second-hand products or on the accompanying packaging or documentation, can be held liable as quasi-manufacturers for a subsequent product accident, although it is possible to identify the actual manufacturer, for example through original branding of the product, or although it is well known or even disclaimed in small print that the retransferor's features merely refer to the product's distribution and not to its actual manufacturing. As a striking example, BORGHETTI refers to an airline company being liable as the quasi-manufacturer of an airplane on which it has affixed its name.¹⁹³⁴

Admittedly, when they are held liable as quasi-manufacturers, retransferors still have a reasonable chance of successfully claiming on a recourse basis against the second-hand product's actual manufacturer, importer or another party subject to primary liability. This can potentially even lead to a complete indemnification (cf. *supra* nr. 299). Nevertheless, successful recourse claims are far from certain and are at least costly in terms of resources and time.

Fennia/Philips therefore appears to drastically expand the quasi-manufacturer's liability risk, which can be particularly problematic for B2C resellers or other retransferors who are unaware of this consequence when they put their own branding, stickers or packaging on a second-hand product. In turn, such professional resellers may in the future start to refrain from these activities, which can potentially diminish the commercial attractiveness of the crucial circular economic strategy of product retransfers. Moreover, it can also be questioned whether the *Fennia/Philips* case law is desirable in light of this dissertation's normative framework (see Figure 7 *supra* nr. 130). Actors for whom the quasi-manufacturer qualification's traditional subjective impression requirement is not fulfilled, seem less suited to be held liable as 'risk-takers' ('wrongdoers') of an abnormal risk, pursuant to the risk-internalisation principle that best articulates corrective justice in stricter product liability (see *supra* nrs. 127 and 128.c). And especially those actors who only expected to incur a secondary liability as distributors, may especially in a transitional phase also be much more risk-averse and ill-suited to spread and charge through prices the liability risk corresponding with suddenly being qualified as a quasi-manufacturer (see also *supra* nr. 106 on efficient risk-allocation). More problematically, it seems that this expansion of the quasi-manufacturer qualification is not really efficient in terms of accident-prevention since these extra defendants have limited possibilities to take increased care and, in comparison with importers or quasi-manufacturers under the *status quo ante*, they will have on average much less market power to steer manufacturers in placing safer products on the market (see *supra* nr. 108). In return, there is obviously an inefficient increase in administrative costs, especially as a result of the aforementioned recourse claims. And, because these more occasional quasi-manufacturers also have fewer technical resources to successfully defend themselves, there may be on average

features, while the question submitted to the Court clearly referred to factual evidence available to the public that somebody else than the potential quasi-producer was the product's actual producer. Nowhere does the decision discuss a subjective element. If the CJEU would have still considered this as a requirement, the subjective element should have been in light of the facts of the underlying case and the preliminary reference undeniably still have been mentioned by the Court as an obviously indispensable consideration.

¹⁹³⁴ J.-S. Borghetti, 'Taking EU Product Liability Law Seriously: How Can the Product Liability Directive Effectively Contribute to Consumer Protection?' (2023) 1 *French Journal of Legal Policy* 136, 160.

in comparison with claims against other primary defendants also a slight increase in inaccurate judgements, which is highly inefficient (cf. *supra* nrs. 111 and 249).

This dissertation therefore argues that the *Fennia/Philips* case law should be abandoned or at least elucidated in a manner which again requires some subjective element consisting of creating vis à vis the public of being the actual manufacturer, pursuant to the *status quo ante* discussed *supra* nr. 304.

As a side note, another preliminary reference is currently pending before the CJEU, *Ford Italia*, which concerns the inverse situation where the objective element is not fulfilled: the potential quasi-manufacturer – an intermediary distributor, Ford Italia, who has timely informed the injured party of the manufacturer’s identity – has not in any way affixed his own name or other distinguishing feature on a car. Only the subjective requirement is fulfilled to a considerable extent, because Ford Italia has partially the same name as the actual manufacturer, belongs to the same corporate group and uses the same licensed trademarks (which were thus not placed by Ford Italia on this car). In his opinion, A-G. CAMPOS SÁNCHEZ-BORDONA, advises the CJEU to rule that also in such a situation this defendant must be liable on a primary basis as a quasi-manufacturer.¹⁹³⁵ This case is less relevant to the situation of often completely independent retransferors who affix features to or package their second-hand products. Nevertheless, this reference and opinion illustrate a general tendency to further expand the quasi-manufacturer concept based on a perceived contribution to ‘consumer protection’,¹⁹³⁶ which is at least from an economic perspective misguided.¹⁹³⁷ Furthermore, the Advocate-General adopts in his opinion arguments that again require a subjective element for a quasi-manufacturer qualification, despite *Fennia/Philips*.¹⁹³⁸ It therefore will be interesting to see how the Court itself will ultimately decide in this *Ford Italia* case and to what extent it will elucidate or even correct *Fennia/Philips*.

306. THE RETRANSFERROR’S LIABILITY RISK AS A QUASI-MANUFACTURER: DOUBT ABOUT APPROACH ADOPTED IN ART. 4(10)B PLD-2024 – The original Commission proposal for a new Directive described, what this dissertation calls a ‘quasi-manufacturer’, as any person “*who markets that product under its name or trademark*”.¹⁹³⁹ In comparison with the existing definition in art. 3(1) PLD-1985, this would noticeably have removed the ostensibly subjective requirement that a quasi-producer of a product “*presents himself as its producer*”. It was unclear whether the Commission wanted with this new definition to codify the *Fennia/Philips* decision,¹⁹⁴⁰ which the

¹⁹³⁵ A-G. Campos Sánchez-Bordona, opinion C-157/23, 18 April 2024, ECLI:EU:C:2024:332.

¹⁹³⁶ Ibid., nrs. 31, 33, 71.

¹⁹³⁷ See *supra* nrs. 113-119 for the actual effects for ‘consumers’ in general in terms of equity. See also the efficiency criticisms raised in this section against *Fennia/Philips*’ expansion of the quasi-manufacturer concept. See also *supra* nr. 168 on how ‘consumer protection’ is a flawed understanding of the PLD-1985’s underlying goals and how it also protects third parties.

¹⁹³⁸ A-G. Campos Sánchez-Bordona, opinion C-157/23, 18 April 2024, ECLI:EU:C:2024:332, nrs. 39, 42, 44-45.

¹⁹³⁹ Art. 4(11) in Commission, ‘Proposal for a Directive of the European Parliament and of the Council on liability for defective products’ COM(2022) 495 final.

¹⁹⁴⁰ E. Van Gool, ‘De nieuwe richtlijn productaansprakelijkheid en circulaire economie’ (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 414.

CJEU issued only two months before and in which it indeed seems to have exactly negated a separate subjective requirement in art. 3(1) PLD-1985 (see *supra* nr. 305). Perhaps more likely, the Commission just wanted to mimic the terminology of the General Product Safety Regulation 2023/988/EU, which defines ‘quasi-manufacturer’ in this manner.¹⁹⁴¹ Nevertheless, the preceding General Product Safety Directive 2001/95/EC had a ‘quasi-producer’ definition which was textually identical to art. 3(1) PLD,¹⁹⁴² and it is yet unclear whether the new definition in the General Product Safety Regulation 2023/988/EU actually entails a change.

With this background in mind, it may be telling that as a result of amendments proposed by both the Council and the Parliament,¹⁹⁴³ the final adopted version of art. 4(10)b PLD-2024 now returns to the existing definition of art. 3(1) PLD, by referring in the definition of ‘manufacturer’ to “*any natural or legal person, who [...] by putting their name, trademark or other distinguishing features on that product, presents themselves as its manufacturer*”.

Does this mean that the new Directive also adopts again the subjective requirement of actually creating an impression among the general public of being the true manufacturer, which was commonly accepted in national case law and literature prior to *Fennia/Philips* (see *supra* nr. 304)? Unfortunately, this is far from certain. It can be argued to the contrary that the new Directive merely reconfirms the exact phrasing of art. 3(1) PLD-1985 as interpreted by the CJEU in *Fennia/Philips*. In other words, if the EU legislator had wanted to depart from this decision,¹⁹⁴⁴ it should have adopted in its operative part even clearer language imposing a separate, subjective requirement.

¹⁹⁴¹ Art. 3(8) General Product Safety Regulation 2023/988/EU: “‘*manufacturer*’ means any natural or legal person who manufactures a product or has a product designed or manufactured, and markets that product under that person’s name or trademark;”. See also in general regarding the Commission’s goal to integrate the terminology of EU product regulation in the new product liability Directive *supra* nr. 25.c.

¹⁹⁴² Art. 2(i) General Product Safety Directive 2001/95/EC 2001/95. Both concepts were interpreted analogously in practice, which included a subjective requirement that an impression is created by the would-be quasi-producer that he is the actual producer. See regarding the general product safety concept P. Cartwright, ‘The Regulation of Product Safety’ in G. Howells (ed.), *The Law of Product Liability* (2nd edn., Butterworths 2007) nr. 9.35; S. Van Camp, ‘Productveiligheid en Product Recall’ (2010) *Tijdschrift voor Belgisch Handelsrecht* 451, 459, footnote 74; T. Klindt, *Produktsicherheitsgesetz: Kommentar* (3rd edn., Beck 2021) § 2, nr. 119. See *supra* nr. 304 regarding the traditional understanding of the concept in harmonised product liability law.

¹⁹⁴³ The Council proposed to simply return to the existing definition of art. 3(1) PLD-1985 (art. 4(11) amended draft-PLD-Proposal 2022 in EU Council, ‘Mandate for negotiations with the European Parliament on Proposal for a Directive of the European Parliament and of the Council on liability for defective products’ 2022/0302(COD), 15 June 2023, 35). The Parliament also wanted to reintroduce the ostensibly more subjective element of “*thereby presenting itself as a manufacturer*” but attempted to combine this with the Commission proposal’s definition inspired by art. 3(8) General Product Safety Regulation 2023/988/EU (art. 4(11)b amended draft PLD-Proposal-2022 in EU Parliament, ‘Report of 12 October 2023 on the proposal for a directive of the European Parliament and of the Council on liability for defective products’ A9-0291/2023, 43).

¹⁹⁴⁴ While the Commission proposal was published in 2022 so shortly after the Court’s decision in *Fennia/Philips* that it might have been unaware of its content or far-reaching consequences (cf. footnotes 1928 and 1939), this cannot be said of the EU legislator which only in early 2024 reached its final political compromise, constituting the PLD-2024.

Recital 36 PLD-2024 holds that the manufacturer definition includes “any person who presents themselves as the manufacturer by putting, or authorising a third party to put, their name, trade-mark or other distinguishing feature on a product, since by doing so that person gives the impression of being involved in the production process or of assuming responsibility for it.” This can be read as a rebuke of *Fennia/Philips*, while instead requiring that the quasi-manufacturer’s objective action must make the general public either believe that he is the actual manufacturer or, according to the German interpretation, at least make them believe that he has assumed responsibility for the product which creates trust (see *supra* nr. 304). At the same time, this can to the contrary also be read as a confirmation of *Fennia/Philips*, according to which the mere objective fact of affixing the distinguishing feature suffices to automatically and irrefutably create this impression of involvement in the production process or of assuming responsibility for it.

In conclusion, given the language of art. 4(10)b and recital 36 PLD-2024 in comparison with art. 3(1) PLD-1985, it remains necessary that the CJEU itself in a new decision either abandons or elaborates *Fennia/Philips* by clearly reintroducing a separate, subjective requirement (see *supra* nrs. 304-305). In the absence thereof, retransferors and many other actors in both the circular and linear economy risk to incur primary harmonised product liability when they have merely affixed their name or other distinguishing feature on a product for which it is very clear that they are not the actual manufacturer. An amendment to the text of the Directive, although less likely in the near future, would of course offer more certainty. A mere edit of recital PLD-2024 could already suffice, in which it could more unequivocally confirm that art. 4(10)b PLD-2024 must effectively be read as requiring a separate objective and a separate subjective requirement, which must both cumulatively be fulfilled by a person before he can be subject to primary liability as a quasi-manufacturer. This would confirm an in my opinion desirable return to the interpretation generally accepted prior to *Fennia/Philips* (and perhaps soon, prior to *Ford Italia*), as outlined *supra* nr. 304.

d. Substantial product modifier: the ‘new’ specific possibility of primary liability

307. PRIMARY LIABILITY OF RETRANSFERRORS BASED ON ART. 8(2) PLD-2024 – Art. 8(2) PLD-2024 subjects any person to primary liability who “*substantially modifies a product outside the manufacturer’s control and thereafter makes it available on the market or puts it into service*”. This rule can in the future also apply to distributors of products in general and to retransferors in particular.¹⁹⁴⁵ By nature, a retransferor acting in the course of a commercial activity ‘makes

¹⁹⁴⁵ Note that the new Directive will only apply to products placed on the market or put into service 24 months after its entry into force (art. 21 PLD-2024). This means that art. 8(2) *ibid.* will apply to a person who puts an independently substantially modified product into service but not to those who subsequently only make the same product available on the market. Second-hand products which have been placed on the market prior to this date and are substantially modified in the course of a distribution process, like a retransfer, therefore remain subject to the PLD-1985 because these products are neither replaced on the market nor put into service. See also *supra* nrs. 265-266 and *infra* nr. 450 on why it would be better to amend art. 8(2) PLD-2024, by changing the reference from ‘making available’ to ‘placing on the market’.

a product available on the market’.¹⁹⁴⁶ Elsewhere, this dissertation discusses in more detail what precisely constitutes a ‘substantial modification’ (see *supra* nr. 262.a and *infra* nrs. 444-446) and outside the ‘manufacturer’s control’ (see *supra* nr. 262.b and *infra* nrs. 402-404).¹⁹⁴⁷ But for our purposes here, it suffices to observe that it can consist of any product modification done by a retransferor either intentionally or inadvertently, without the original manufacturer’s authorisation or consent, which changes the product in some manner compared to its original risk assessment, resulting in either a change in hazards or an increase in the product’s overall level of risk.¹⁹⁴⁸

A retransferor might for example intentionally repair, refurbish,¹⁹⁴⁹ tweak, update, repack-age or refold the second-hand product. Or he might remove or instead change either the product’s information, like use instructions, or the product’s accessories, like control devices and tools.¹⁹⁵⁰ Whether any of these actions constitute such a ‘substantial modification’ is a factual assessment heavily determined by the resulting safety implications. For example, a reseller of a second-hand angle grinder might have removed the crossbar in order to make the product usable in smaller spaces but, in doing so, also removed a safety mechanism. Or a reseller might, in order to make a second-hand kitchen robot more attractive, remove an already worn warning sticker and leave out a leaflet with safety instructions, for example on disconnecting the device while cleaning it.

Moreover, retransferors can also inadvertently modify second-hand products in a substantial manner, since arts. 4(18) and 8(2) PLD-2024 do not require intentional conduct. This might consist of a reseller, barterer or donor who lose or forget to transmit crucial product accessories or product documentation, like in case of the kitchen robot mentioned above. Or the retransferor might mix those with information and accessories from other products through disorganisation. Yet, it might also result from improper transportation, dis- and reassembly, storage or handling of a product during the retransfer process. For example, playground equipment is donated to a charity by a holiday park but incorrect dis- and reassembly has created a sharp corner which injures a child. Or a reseller of an avalanche airbag has tested and improperly reinserted the airbag in the backpack, making it malfunction at the critical moment, when the airbag could have saved a skier’s life.

Authors like HOWELLS, KATZENMEIER AND VOIGT and VERHOEVEN argue that a similar principle should already apply under the PLD-1985. Likely inspired by a then-applicable rule from general product safety regulation which considered as a ‘producer’ any actor in a distribution chain who might affect a product’s safety properties (see *infra* nr. 439), they hold that

¹⁹⁴⁶ Art. 4(7) PLD-2024. See also *infra* 323.

¹⁹⁴⁷ Note that in case of a substantial modification within the manufacturer’s control, a claim against the manufacturer becomes possible in response to which the latter cannot invoke the posteriority defence for a defect arising as a result of the post-marketing substantial product modification (art. 11(2)d *ibid*). See also *infra* nr. 413.

¹⁹⁴⁸ Arts. 4(5)(18) *ibid*.

¹⁹⁴⁹ Other forms of ‘reproduction’ according to this dissertation’s typology, namely ‘remanufacturing’ and ‘re-using’ products and components in a new product manufacturing process (see *supra* nrs. 120-124), go even further and do not merely ‘modify’ a product according to art. 8(2) PLD-2024 but rather consist of placing an entirely new product on the market or putting it into service. See *infra* nrs. 356 et seq.

¹⁹⁵⁰ See also *infra* nr. 399 on the potential role in the defect assessment of ancillary services and products.

distributors and in particular traders of second-hand goods who affect the safety configuration of those products, must be subject to primary liability.¹⁹⁵¹ This is discussed further *infra* nr. 440, where a decision by the Düsseldorf appeals court is also cited which applied this principle under the German PLDI to a distributor, who ultimately turned out not to have affected the safety properties of the rope he sold by cutting and repackaging it.¹⁹⁵² Note, however, that the Commission explicitly rejected this approach in a report in 2000.¹⁹⁵³

Finally, it is worth noting that primary liability based on art. 8(2) PLD-2024 is limited to the substantially modified part of the product.¹⁹⁵⁴ Hence, for other parts of the product, a retransferor is only still liable based on the default secondary liability (see *supra* nrs. 300-303). Although unclear, it can be argued that the same principle of a liability limited to the effective impact on a product would apply as well under the PLD, since the past rule of general product safety regulation which inspired this view was also limited “*insofar as their activities may affect the safety properties of a product*”.¹⁹⁵⁵

308. NO LIABILITY BASED ON ART. 8(2) PLD-2024 FOR SUBSTANTIAL MODIFICATIONS RESULTING FROM THE PRODUCT’S SECOND-HAND STATUS, BECAUSE IT IS REQUIRED THAT THE RETRANSFERROR ‘SUBSTANTIALLY MODIFIES’ THE PRODUCT PERSONALLY – The application to retransferors of the rule of art. 8(2) PLD-2024 and its disputed counterpart under the PLD-1985 raises the question how to interpret the myriad potential ‘substantial modifications’ second-hand products might have potentially undergone as a result of prior (mis)use, loss of product documentation and accessories by the previous user or even wear and tear.¹⁹⁵⁶ Do retransferors also become liable for such past changes to second-hand products, if they happen to have ‘substantially modified’ those products, as discussed above? It is necessary to make a theoretical distinction here.

On the one hand, when we would already accept that a retransferor is liable based on any ground of harmonised product liability, as a distributor, as a quasi-manufacturer or also now as a substantial modifier, the question of the posteriority defence arises. As examined *infra* nrs. 317-322, at least the new art. 11(1)c PLD-2024 opts for a personal interpretation of this defence vis à vis retransferors and other defendants. This means that the retransferor will not be able to invoke the defence for defects in the now second-hand product which

¹⁹⁵¹ Howells, ‘strict liability’, nr. 4.78; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3605, 5; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 81-82. But see G. Wagner, ‘Produkthaftungsgesetz’ in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024), § 4, nr. 26.

¹⁹⁵² OLG Düsseldorf 22 September 2000, 22 U 208/99, NJW-RR 2001, 458.

¹⁹⁵³ Commission, ‘Report on the Application of Directive 85/374 on Liability for Defective Products’, COM(2000) 893 final, 23-24. See *infra* nr. 630.

¹⁹⁵⁴ Art. 11(1)g PLD-2024. See also *supra* nr. 267 and *infra* nrs. 454-456.

¹⁹⁵⁵ Art. 2(d), third section Council Directive 92/59/EEC of 29 June 1992 on general product safety [1992] OJ L228/24, 26; art. 2(e)iii General Product Safety Directive 2001/95/EC 2001/95. This provision now no longer exists and is replaced by the more general rule on ‘substantial modifications’ of art. 13(2)-(3) General Product Safety Regulation 2023/988/EU. See also *infra* nr. 439.

¹⁹⁵⁶ Note that ‘normal wear and tear’ resulting from reasonably foreseeable product use does not constitute a defect (see *supra* nrs. 231 et seq.), but it might strictly speaking ‘substantially modify’ a product pursuant to art. 4(18) PLD-2024.

originated after it was originally placed on the market but prior to the retransfer, even if he is only held liable as a distributor.¹⁹⁵⁷

On the other hand, the question at hand here is situated at a preceding level, namely the requirements for a retransferor to be held liable at all as a substantial modifier. Are past modifications to the now second-hand product, like damage and lost information and accessories which resulted from the prior use phase, necessarily attributable to the retransferor as ‘substantial modifications’ ‘outside the manufacturer’s to a product which he has subsequently made available on the market pursuant to art. 8(2) PLD-2024 (cf. *supra* nr. 307)?

The answer is no. Art. 8(2) PLD-2024 requires that the potentially liable person “*substantially modifies*” the product and subsequently makes it available on the market (or puts it into service). The substantial modification must therefore have been personally done by the retransferor, although this can consist of not only actions but also omissions and of both intentional and non-intentional conduct (see *supra* nr. 307). It does not suffice that a product has already been substantially modified before it is held or otherwise controlled by the retransferor, who subsequently makes it available.

The reseller of the aforementioned kitchen robot therefore risks being held liable on the basis of art. 8(2) PLD-2024 if he has personally lost or removed the warning sticker or safety leaflet with instructions to disconnect the device before cleaning it or to never leave it within reach of children or pets while connected. In contrast, if the safety leaflet was already lost or the warning sticker already worn off when the reseller acquired the device, it can no longer constitute a substantial modification caused personally by the retransferor pursuant to art. 8(2) PLD-2024. Note again that, if he is nevertheless held liable based on some ground of secondary or primary harmonised product liability, he will under the PLD-2024 be unable to invoke the posteriority defence vis à vis those modifications which occurred prior to the retransfer process.¹⁹⁵⁸ In many circumstances it can of course still be possible to hold such a retransferor liable on the basis of national contractual or extracontractual liability law, even when he has not personally made the second-hand product defective.

309. ATTRACTIVENESS OF GOING BACK IN THE REDISTRIBUTION CHAIN TO RETRANSFERRORS WHO ARE PREVIOUS COMMERCIAL USERS OF A PRODUCT, BECAUSE LIABILITY BASED ON ART. 8(2) PLD-2024 REQUIRES THAT THE RETRANSFERROR HAS PERSONALLY ‘SUBSTANTIALLY MODIFIED’ THE PRODUCT – Finally, a retransferor who is held liable might often be the product’s previous user and not merely a redistributing intermediary like a professional reseller. In the aforementioned example, the second-hand angle grinder might, at least in first instance, be resold by a professional contractor who has extensively used the device and who has personally removed the crossbar to make the grinder more versatile in smaller spaces. Art. 8(2) PLD-2024 does not require that the product must be substantially modified either shortly before or during the process of making the product available on the market or putting it into service. Hence, it

¹⁹⁵⁷ Only for the primary liability as a substantial modifier, there is ostensibly a drafting error in art. 11(1)c PLD-2024, which theoretically still allows a retransferor liable on the basis of art. 8(2) *ibid.* to invoke this defence for such defects which originated after the product was placed on the market but prior to the retransfer. See *supra* nr. 266.b and *infra* nr. 463.

¹⁹⁵⁸ Art. 11(1)c PLD-2024. See also *supra* footnote 1957.

seems possible that a retransferor has substantially modified the product, intentionally or inadvertently, many years prior to making the product available on the market, for example during personal use.

The kitchen robot is for example first used during many years in a professional kitchen where the safety information wears off or is lost and is then resold to a professional reseller of such devices, who subsequently resells it to a new user who gets injured. In such a case, the injured party can claim directly against either of these resellers based on their secondary liability as distributors (see *supra* nr. 301.c).¹⁹⁵⁹ But the first reseller has used the kitchen robot in a manner which might have substantially modified it outside the manufacturer's control and then made it available again on the market. As discussed above, this would make it possible to hold this defendant directly liable based on art. 8(2) PLD-2024, which can be especially interesting when the product's manufacturer or other primarily liable defendant higher up in the distribution chain can invoke a posteriority defence because the wearing or loss of the safety information is deemed to have not been reasonably foreseeable when the product was originally on the market (see Figure 9 *supra* nr. 239).¹⁹⁶⁰ After all, art. 8(2) PLD-2024 allows claims against any person who has substantially modified a product outside the manufacturer's control and subsequently made it available on the market, regardless whether the product has in the meantime been redistributed again once or even multiple times.

Consequently, especially in the context of semi-professional and 'migrated goods',¹⁹⁶¹ plaintiffs now have a relatively strong interest in going back in the redistribution chain to identify previous users of those products who might have intentionally or inadvertently 'substantially modified' those products and subsequently retransferred them or made them otherwise available again on the market. Nevertheless, it must again be reiterated that any liability for a substantial product modification based on art. 8(2) PLD-2024 remains limited to parts of the product "*affected by the modification*".¹⁹⁶²

Finally, when those previous users were prosumers, they might not be subject at all to harmonised product liability.¹⁹⁶³ And even if they are ultimately qualified as exercising a sufficiently organised, consistent 'commercial activity' as resellers (see *supra* nr. 198), products they have previously used themselves have not been 'substantially modified' by them in the course of the same commercial activity, which is restricted to a retransfer business and not their past private use of consumer goods. Hence, it only seems possible to successfully invoke art. 8(2) PLD-2024 against retransferors who have substantially modified their

¹⁹⁵⁹ Art. 3(3) PLD-1985; art. 8(3) PLD-2024.

¹⁹⁶⁰ Art. 7(b) PLD-1985; art. 11(1)c PLD-2024.

¹⁹⁶¹ This is a concept from product safety regulation, which refers to products designed for professional use but which subsequently end up being used by consumers. General product safety rules become applicable to those products if this migration had been reasonably foreseeable (recital 9 General Product Safety Regulation 2023/988/EU). Harmonised product liability does of course not limit its material scope in the same manner, but rather limits the heads of damage which can be claimed. See *supra* nrs. 175 and 190.

¹⁹⁶² Art. 11(1)g PLD-2024. See also *supra* nr. 267 and *infra* nrs. 454-456.

¹⁹⁶³ Arts. 1, 2(1), 4(7)(15) and 8(2) PLD-2024. If the disputed equivalent of art. 8(2) *ibid.* under the PLD-1985 would be invoked, a defending prosumer might in some cases be able to prove the defence of art. 7(c) PLD-1985. See *infra* nrs. 437-441.

second-hand products in the course of a prior use phase that also had a commercial nature, which excludes prosumers reselling their own privately used second-hand goods.

§ 2. Defect assessment

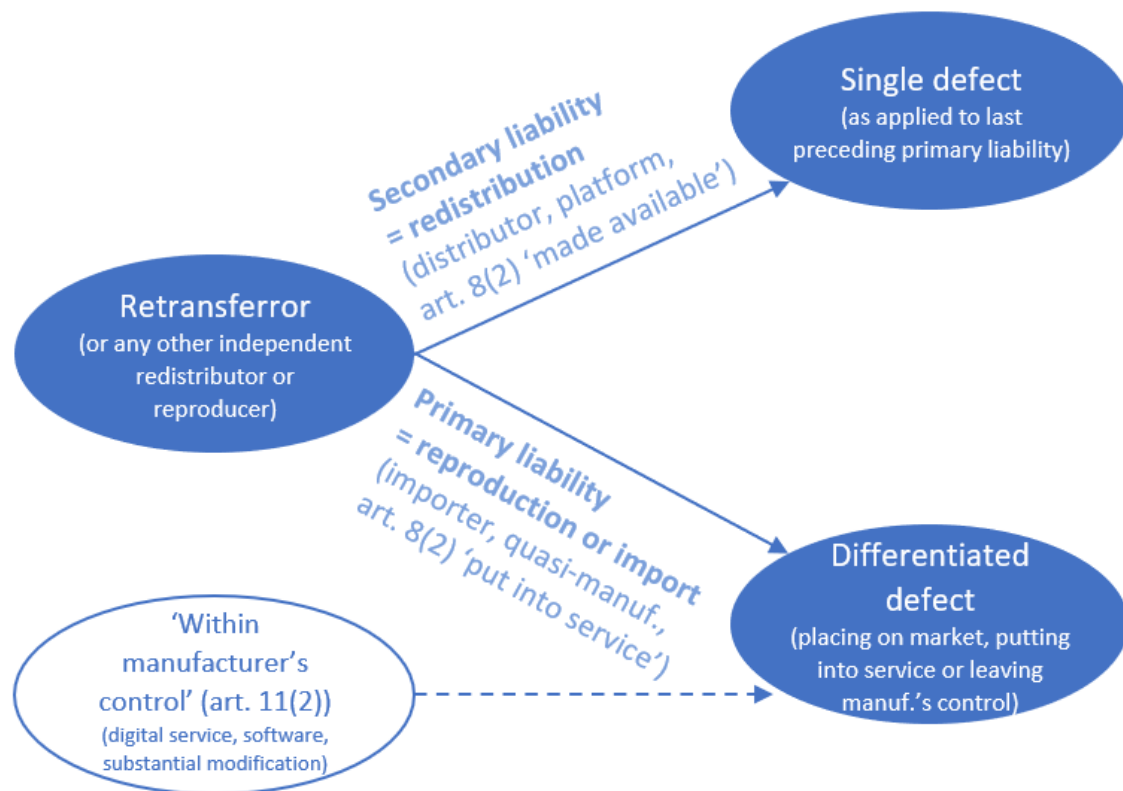


Figure 12: Single defect concept for primary liability and differentiated defect concept for secondary liability, applied to the retransferor's perspective and including the irregularities of arts. 8(2) and 11(2) PLD-2024.

a. Single defect concept applicable to retransferor's secondary liability and primary liability as a substantial modifier

310. **SINGLE DEFECT:** IF THE RETRANSFERROR IS ONLY LIABLE AS A DISTRIBUTOR (SECONDARY LIABILITY), THEN DEFECTIVENESS MUST BE EVALUATED IN LIGHT OF THE SAFETY EXPECTATIONS EXISTING WHEN THIS PRODUCT WAS PLACED ON THE MARKET OR LEFT THE MANUFACTURER'S CONTROL (LAST PRECEDING PRIMARY LIABILITY) – When a retransferor is held liable based on the PLDI as a distributor of a second-hand product (see *supra* nrs. 298-303), an intuitive reflex for many lawyers is to assess whether the product is defective in light of the retransferor's actions or omissions and/or according to safety expectations applicable at the time of the retransfer.

This might¹⁹⁶⁴ also be the approach that several scholars take when they declare that the public's legitimate safety expectations are generally lower for second-hand products compared to new products.¹⁹⁶⁵

However, such an approach is incorrect, because looking at the retransferor's conduct and fixing the liability assessment at the time of the retransfer are features that both run contrary to the theoretical structure of harmonised product liability and instead correspond with non-harmonised contractual or extracontractual liability of retransferors. The product defect assessment according to the PLDI does first of all not focus, at least not directly and initially,¹⁹⁶⁶ on a person's conduct and can only consider the design, information, functioning and other elements of the state of the product itself (see also *supra* nr. 101.c on the etymology of specific 'product liability'). Second, and this is crucial at this stage, the PLDI's defect assessment is based on the safety expectations that exist at the time when the product was (originally) "put into circulation"¹⁹⁶⁷ according to art. 6(1)c PLD-1985 or either "placed on the market"¹⁹⁶⁸ or "put into service"¹⁹⁶⁹ according to art. 7(2)e PLD-2024.¹⁹⁷⁰ When we talk about a retransfer or any form of distribution, a product has always been 'placed on the market', which means that the 'put into service' criterion is not relevant, even if the product was originally 'put into service' before it was subsequently 'placed on the market'.¹⁹⁷¹ While the more refined terminology of the PLD-2024 has clarified this by making a distinction with the concept of "making a product available on the market",¹⁹⁷² which the PLD-1985's 'putting into circulation' concept fails to make, it has also made matters more complicated by creating in art. 11(2) PLD-2024 exceptions to the posteriority defence (see *supra* nr. 196). These require art. 7(2)e PLD-2024 to

¹⁹⁶⁴ Alternatively, this may be a cryptic but more correct reference to the posteriority defence or an equally correct but cryptic reference to the possibility that safety standards may have been lower at the time when a product was put into circulation which has in the meantime become second-hand. See *supra* nrs. 285 and 291.

¹⁹⁶⁵ See sources cited *supra* footnote 1800.

¹⁹⁶⁶ Ultimately, the product's defect assessment integrates at least for design and information defects indirectly reflections according to a fault-based standard about the conduct of the actors who have placed the product on the market or put it into service, just like some of the PLD defences draw out similar reflections. See *supra* nrs. 173-174.

¹⁹⁶⁷ See also *supra* nr. 184 and *infra* nr. 318 on this, in the PLD-1985 not defined, concept.

¹⁹⁶⁸ Art. 4(8) PLD-2024: "‘placing on the market’ means the first making available of a product on the Union market;”.

¹⁹⁶⁹ Art. 4(9) *ibid.*: "‘putting into service’ means the first use of a product in the Union in the course of a commercial activity, whether in return for payment or free of charge, in circumstances in which that product has not been placed on the market prior to its first use;”.

¹⁹⁷⁰ See Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 2, nr. 8; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 4, nr. 124. See also analogously *supra* nr. 285 on the harmonised product liability of manufacturers and original distributors of later retransferred products.

¹⁹⁷¹ It is theoretically possible that a person self-manufactures a product for use in the course of his commercial activity, like a childcare making a mini-playground fence or a gardener making a tool to prune high branches, which is subsequently placed on the market as a second-hand product (e.g. the childcare or gardener ceases his activities).

¹⁹⁷² Art. 4(7) PLD-2024: "‘making available on the market’ means any supply of a product for distribution, consumption or use on the Union market in the course of a commercial activity, whether in return for payment or free of charge;”.

stipulate a third possible, latest moment to which the defect assessment must return, namely “*the moment in time when the product left the control of the manufacturer*”.¹⁹⁷³ This is only relevant for digital service and software supplies or product modifications that still occur ‘within the manufacturer’s control’, which thus postpone in time the moment to which a defect assessment must return. Yet, for the sake of simplicity, the following sections do not every single time discuss this additional possibility explicitly.

What does this now mean for the defect assessment with regards to the possible grounds of harmonised product liability of product retransferors? It means that, if the retransferor is merely liable on a secondary basis as a distributor, he only makes the second-hand product available on the market, while this same product has already at an earlier date been placed on the market by a person subject to primary liability. Therefore, the eventual secondary liability of the retransferor must be assessed in light of the legitimate safety expectations held by the public at that earlier date when the product was placed on the market.

This defect assessment is therefore identical to the one applicable to the liability of the last preceding defendant who is liable for the product on a primary basis, which can be a manufacturer, importer or quasi-manufacturer. Consequently, this is called in this dissertation a ‘single defect’ concept. The single defect applies to all forms of secondary liability based on the PLDI, such as (re)distributors like retransferors, lessors or lenders as well as, to the extent that they are liable, online platforms (see *supra* nr. 178.e).

This is only different if the retransferor would be liable on a primary basis, because either he has ‘reproduced’ the product as a quasi-manufacturer or he has ‘imported’ it.¹⁹⁷⁴ In such instances, the retransferor no longer merely ‘makes the product available’ but rather ‘places on the market’ a (partially) new product. This leads to a ‘differentiated defect’ assessment, which is examined *infra* nrs. 315-316. Hence, it becomes clear that the aforementioned ‘single defect’ assessment is linked to the lifecycle of a product in a given configuration, once it has been placed on the market (or either put into service or leaves the manufacturer’s control), which lasts until and to the extent that a new primary liability applies due to the fact that this product is ‘reproduced’ such as by a quasi-manufacturer or substantial product modifier.

311. SINGLE DEFECT: IF THE RETRANSFERROR HAS INDEPENDENTLY SUBSTANTIALLY MODIFIED A PRODUCT AND THEREAFTER ‘MADE IT AVAILABLE’ (PRIMARY LIABILITY), THEN DEFECTIVENESS MUST STILL BE EVALUATED IN LIGHT OF THE SAFETY EXPECTATIONS EXISTING WHEN THIS PRODUCT WAS PLACED ON THE MARKET OR LEFT THE MANUFACTURER’S CONTROL – The preceding discussion omitted one hypothesis to keep matters clear and because this concerns a novelty introduced by the PLD-2024 that seems theoretically questionable. As we have seen, retransferors become subject to primary liability based on art. 8(2) PLD-2024 (or its disputed equivalent under the PLD-1985), if they independently¹⁹⁷⁵ and personally in the course of their own commercial

¹⁹⁷³ See arts. 4(5) and 11(2) *ibid*.

¹⁹⁷⁴ See also in general *supra* nr. 74 on how the PLD and specific product liability in general have been constructed around the fundamental notions of product (re)production and (re)distribution.

¹⁹⁷⁵ This refers to art. 8(2) PLD-2024’s requirement that the substantial modification must not occur ‘within the manufacturer’s control’, as defined in art. 4(5) *ibid*. If this requirement is not fulfilled, then no separate primary liability based on art. 8(2) *ibid*. arises but, instead, the existing liability of defendants

activity,¹⁹⁷⁶ ‘substantially modify’ a product, either intentionally or inadvertently, such as a result of bad transportation, storage or handling conditions (see *supra* nr. 307). Retransferrors, just like other actors who distribute products, will by nature ‘make this substantially modified product available on the market’, which is another requirement of art. 8(2) PLD-2024. Curiously, this means according to art. 7(2)e PLD-2024 that the defect assessment for this potential primary liability of retransferrors must not be based on this moment when the substantially modified product is retransferred but rather also return to the moment when the original product was placed on the market by a (quasi-)manufacturer or importer. The ‘single defect’ concept therefore also applies to the primary liability of retransferrors as substantial product modifiers pursuant to art. 8(2) PLD-2024.

This would be entirely different if our defendant would not further distribute (‘make available’) his intentionally or inadvertently substantially modified product and rather use it in his own commercial activity (‘putting into service’).¹⁹⁷⁷ In such case, primary liability based on art. 8(2) PLD-2024 must be evaluated according to a defect assessment that fixates on the moment when this substantially modified product is put into service,¹⁹⁷⁸ which is called *infra* nrs. 315-316 a ‘differentiated defect’ concept. Such difference in outcomes under art. 8(2) PLD-2024 seems arbitrary and hard to justify. Elsewhere, this dissertation argues that, because of this and other reasons, it would be desirable to amend art. 8(2) PLD-2024 by making clear that a substantially modified product is ‘placed on the market’ rather than ‘made available’ (see *supra* nrs. 265-266 and *infra* nrs. 450-453). Such amendment would, among other things, ensure the theoretical coherence by fully tying all forms of primary liability to this ‘differentiated’ defect assessment. It would also mean that a retransferrer liable based on art. 8(2) PLD-2024 for *de lege ferenda* ‘placing on the market’ a product that he has in a commercial activity substantially modified, would be subject to a ‘differentiated’ rather than the previously discussed ‘single defect’ assessment.

312. CONSEQUENCE OF SINGLE DEFECT: EVEN MORE VERY LIMITED, INDIRECT RELEVANCE OF RETRANSFERROR’S CONDUCT FOR THE DEFECT ASSESSMENT – The single defect concept has far-reaching ramifications, which are not always appreciated in practice. For example, it means that it strictly speaking does not matter for the potential harmonised product liability of a B2C trader who does not quasi-manufacture or import the second-hand products he resells, that one of those products at the time of resale had been recalled and/or that it was publicly known that said product posed serious safety risks. It even does not matter that such retransferrer, who is subject to secondary liability as a distributor or primary liability as a substantial

in the product’s distribution chain is simply extended to this moment in time (art. 7(2)e *ibid.*), based on an exception to the posteriority defence (art. 11(2)d *ibid.*).

¹⁹⁷⁶ See *supra* nrs. 308-309 on the fact that the intentional or inadvertent substantial modification must be done personally by the retransferrer, as a part of his commercial activity, for liability based on art. 8(2) *ibid.* to arise.

¹⁹⁷⁷ The distinction between ‘making available’ (art. 4(7) *ibid.*) and ‘putting into service’ (art. 4(9) *ibid.*) is not always easy to make. See for more guidance on the same concepts in EU product regulation Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 19, 23-24.

¹⁹⁷⁸ Art. 7(2)e PLD-2024.

modifier, did not inspect or test the product or failed to report to his customer the presence of potentially hazardous damage or wear and tear of which he is aware. Likewise, such a retransferor's failure to relay important product safety information is not directly pertinent to the PLDI's single defect assessment. Of course, all these omissions by the retransferor can potentially give rise to national contractual or extracontractual liability to the extent it has not been harmonised.¹⁹⁷⁹ But they theoretically do not matter for the single defect assessment of harmonised 'strict' product liability, notwithstanding the reality that they might incorrectly prejudice a judge who looks at harmonised strict product liability too much through the lens of his own national, most often fault-based liability law.

When the retransferor is liable based on art. 8(2) PLD-2024 for substantially modifying the now second-hand product and for – at least *de lege lata* – subsequently making it available, the single defect assessment is mentally even more demanding. While the product has substantially changed in terms of product safety as a result of the retransferor's intentional or inadvertent conduct (cf. *supra* nr. 307), it remains necessary to evaluate its defectiveness in light of the legitimate safety expectations that the public held at the time when this product was last placed on the market prior to this modification, by a (quasi-)manufacturer or importer. The artificial nature of this assessment and the way how it is difficult to reconcile with the primary liability that is imposed on the retransferor, precisely motivate the previously discussed proposed amendment to art. 8(2) PLD-2024 (see *supra* nrs. 265-266 and 311).

Personal conduct of the retransferor liable as a distributor or, *de lege lata*, liable as a substantial modifier, can at best be indirectly indicative of the fact that the product was defective when it was placed on the market. For example, the failure of a donor or barterer to find and remediate a defect in a second-hand product, might be indicative of the reasonable foreseeability, evaluated at the time when the product was placed on the market, that certain structural weaknesses in the product could result in issues which would later be hard to spot by a retransferor. Or a reseller's failure to relay important warnings or use instructions might be indicative of an overreliance in the original product design on information that had always been already unlikely to be properly relayed across a more complex product lifecycle (see *supra* nrs. 287-288 and *infra* nr. 314). In case of the retransferor's liability as a substantial modifier, the extent to which the second-hand product now derogates from its initial safety configuration will on average make it more likely that it is qualified as defective according to the legitimate safety expectations held by the public at the time when the product was originally placed on the market.

313. CONSEQUENCE OF SINGLE DEFECT: THEORETICAL DIFFICULTIES IN DETERMINING APPLICABLE SAFETY EXPECTATIONS, WHICH ARE EXACERBATED WHEN THE RETRANSFERROR IS SUBJECT TO SECONDARY LIABILITY – OECHSLER points out that it is often difficult to determine the legitimate safety expectations held by the public when the product was originally 'put into circulation' (placed on the market) and that this is especially challenging for distributors subject to secondary liability,¹⁹⁸⁰ which is the default liability risk for retransferors (see *supra* nr. 298). After all, distributors can only be held liable to begin with, because both the plaintiff and they failed to

¹⁹⁷⁹ See *supra* nrs. 171 and 207-219 on the extent of the PLD's maximum harmonisation.

¹⁹⁸⁰ Oechsler, Staudinger, 'Produkthaftungsgesetz', § 4, nr. 124.

(timely) identify either a primary liable party in the product's distribution chain or their own distributor (see *supra* nrs. 177 and 301). And, if those parties cannot be identified, it also seems theoretically challenging to determine and prove the moment when the product was placed on the market for the purposes of the defect assessment, for which the plaintiff bears the initial burden of proof. As we will see *infra* nr. 335, this also causes issues for retransferors subject to secondary liability when they have to prove this same past date as the starting date of the extinction period which they might want to invoke in their defence.¹⁹⁸¹

Sometimes, this may be less of an issue, because a product, even when it is second-hand, can still have identifiable features that are known to have been used only before or after a certain date. Alternatively, there might even be on the product, its packaging or its documentation information on the timing of the product's actual manufacturing or import, in a manner that does not reveal the identity of persons to whom the retransferor as a distributor might otherwise direct the plaintiff in order to exonerate himself.¹⁹⁸² Yet, this last hypothesis becomes less likely for products placed on the market in the near future, since new, much more foolproof general product safety traceability requirements require to identify manufacturers, importers or quasi-manufacturers but not the time when the product was placed on the market.¹⁹⁸³ In general, the aforementioned workarounds are not very precise or dependable. It thus remains overall challenging for parties, especially when retransferors are subject to secondary liability, to precisely determine the applicable safety expectations according to the 'single defect' assessment, due to being unable to determine the date when the product was placed on the market.

Although this uncertainty about the exactly applicable safety expectations is something that a retransferor can potentially use to challenge an alleged product defect, safety expectations evolve in most cases only gradually and relatively slowly. Therefore and in light of the extinction period of in principle only ten years,¹⁹⁸⁴ it generally suffices in practice for plaintiffs to choose a moment in time sufficiently prior to the retransfer to serve as a point of reference to establish the applicable safety expectations.¹⁹⁸⁵ In the future, digital product passports can potentially provide to both plaintiffs and defendants information on precisely when the product was placed on the market, which can thus also aid the defect assessment (see *infra* nrs. 344-345.b).

¹⁹⁸¹ The same issue might also theoretically frustrate the posteriority defence invoked by a retransferor, at least if this defence is interpreted in a 'manufacturer-specific' manner. However, most authors who are explicit on this matter favour a 'personal' interpretation of the PLD-1985's posteriority defence, although this varies depending on the retransferor's qualification. Such 'personal' interpretation is now also confirmed by art. 11(1)c PLD-2024. See *infra* nrs. 321-322 and 324-326.

¹⁹⁸² As discussed *supra* nr. 301.e, the distributor cannot in my opinion exonerate himself by identifying a more upstream distributor who is not a primarily liable party nor his own direct distributor.

¹⁹⁸³ See arts. 9(5)-(6), 11(1)-(3) and 13(1) General Product Safety Regulation 2023/988/EU. See also *supra* nrs. 281 and 303.

¹⁹⁸⁴ Art. 11 PLD-1985; art. 17 PLD-2024. The more time that may have allegedly elapsed prior to the retransfer, the more likely it becomes that the ten-year extinction period has already expired before court proceedings were initiated. The defendant himself bears the burden of proving the latter, in contrast to the defect assessment for which the plaintiff at least initially bears the burden of proof.

¹⁹⁸⁵ Oechsler, Staudinger, 'Produkthaftungsgesetz', § 4, nr. 124.

314. APPLYING THE SINGLE DEFECT CONCEPT TO CLAIMS AGAINST RETRANSFERRORS SUBJECT TO SECONDARY LIABILITY AS A DISTRIBUTOR OR PRIMARY LIABILITY AS A SUBSTANTIAL MODIFICATOR – The concrete outcome of the single defect concept is that liability based on the PLDI of a retransferor who has only redistributed or substantially modified the second-hand product, is assessed identically to the liability based on the PLDI of the primarily liable defendant who has last placed this same product on the market, like a manufacturer, importer or quasi-manufacturer (see *supra* nrs. 310-311). This is the defect assessment for harmonised product liability of defendants in the second-hand product's original distribution chain, which has already been studied in the first Section of this Chapter. Hence, it generally suffices here to only outline the key principles and refer back to the more in-depth discussion above. The only crucial, overarching guideline is thus that the product defectiveness for the liability of these retransferors subject to secondary liability as a distributor or (at least *de lege lata*) subject to primary liability as a substantial modifier, must be assessed in light of this past moment when the product has been last placed on the market.¹⁹⁸⁶

- a. On the one hand, the resold, bartered or donated¹⁹⁸⁷ product may have a traditional manufacturing, design or information defect that is entirely unrelated to the fact that a retransfer occurred. These possibilities are manifold and form the object of the traditional literature focused on a linear distribution model. The possibilities of such defects are therefore not further discussed here.
- b. On the other hand, there are defects that broadly relate to the fact that a retransfer occurred.

In case the retransferor is liable based on art. 8(2) PLD-2024, the defect alleged by the plaintiff will likely be the direct result of the substantial modification, which after all requires a derogation from the product's initial safety configuration or its compliance with applicable safety rules.¹⁹⁸⁸ Moreover, if the product defect established by the plaintiff is "*related to a part of the product not affected by the modification*", then the defending retransferor will be able to invoke a specific defence that exonerates him from primary liability based on art. 8(2) PLD-2024.¹⁹⁸⁹ Of course, the defects that result from inadvertent or intentional modifications to the product by the retransferor, for which this defence cannot be successfully invoked, can be of very different kinds. Accidental damage to the product during transportation or storage might present itself as a manufacturing defect. Intentional modifications that are part of a refurbishing or repurposing attempt, will appear as design defects. And removing crucial safety information will present itself as an information and/or design defect (cf. *supra* nr. 307).

¹⁹⁸⁶ Art. 6(1)c PLD-1985; art. 7(2)e PLD-2024. See also *supra* nrs. 184 and 310-311.

¹⁹⁸⁷ In case of a donation, there is of course a possibility that the retransferor is ultimately not liable based on the PLDI, in particular under the PLD-2024. See *supra* nr. 197 and *supra* footnote 1877.

¹⁹⁸⁸ Art. 4(18) PLD-2024. See also *infra* nrs. 440 et seq.

¹⁹⁸⁹ Art. 11(1)g *ibid.* See also *supra* nr. 267 and *infra* nr. 454. This defence does not exclude the continued application of the (parallel) secondary liability of the retransferor as a distributor based on art. 8(3) *ibid.*

In case the retransferor is only subject to secondary liability as a distributor, then the defect assessment will effectively be identical to the defect considerations for the potential liability of defendants in the second-hand product's original distribution chain, as further discussed below.

Yet, at the outset, it is worthwhile to highlight another peculiar category, namely cases where the retransfer coincided with a repurposing of the product or a serious product misuse. For example, second-hand car and truck tires have been resold or donated to a youth organisation to serve as playground objects. An individual has obtained through bartering a step ladder or wooden crates, which he repurposes as furniture. Or, perhaps most likely in the retransfer context, a recipient is so unfamiliar with his second-hand product, like an outdoor item or tool, that he unintentionally acquires and uses it for a woefully incorrect purpose, in an improper environment or in combination with other products for which it was never designed but for which other products may exist. As explained *supra* nr. 255, the plaintiff is able in all these cases of serious product misuse or repurposing to prove a defect by simply demonstrating that the product did not provide the safety the public was entitled to when it was placed on the market, with regards to the particular purpose the product was being misused or repurposed for at the time of the accident. The retransferor is then very likely to raise the posteriority defence, by arguing that the repurposing or serious misuse had not been reasonably foreseeable when the product was placed on the market (see Figure 10 *supra* nr. 255).

- c. For other potential defects that broadly relate to the fact that a retransfer occurred and the manner in which this happened, it is necessary to make a similar application of the recognised concrete defect assessment criteria (see *supra* nrs. 182-188), as already outlined earlier in this Chapter with regards to the potential liability of defendants in the second-hand product's original distribution chain (see *supra* nrs. 286-290).

First of all, arguably the most important criterion is to consider whether at the time when the product was placed on the market, it had been reasonably foreseeable that this product would be retransferred in these particular circumstances, including transportation, storage, dis- and reassembly and use by a new, unfamiliar user (see *supra* nrs. 183 and 286). A retransfer of course means that a product's lifetime is extended, which might furthermore lead to questions whether the product had an abnormal lack of durability and whether this concrete (re)use had still been reasonably foreseeable when the product was placed on the market (see *supra* nr. 232).

Second, the retransferred product's nature must be considered, since it can be inherently different from other products in how it can safely withstand the retransfer process and be used independently and reliably by a new user (see *supra* nrs. 185 and 287).

Third, a product may be very reliant on instructions and warnings regarding safe dis- and reassembly, transportation, storage, installation and use, especially by an unfamiliar new user. When feasible, a safer design is generally preferable over information (see *supra* nr. 182). And product information, depending on how it is communicated, can be prone to being lost before or not being relayed during a retransfer (see *supra* nr. 288).

Finally, product safety rules and standards can be relevant to the retransfer process, including on dis- and reassembly, transportation, storage, installation and use by a new,

unfamiliar consumer. Additionally for new products of specifically regulated categories, Ecodesign rules can theoretically also offer useful requirements on reliability, durability and transferability to determine whether these are defective due to being insufficiently conducive to safe retransfers or longer periods of use (see *supra* nrs. 251 and 289). Particularly important in this regard is the final adopted version of art. 7(1) PLD-2024, which allows for a direct defect qualification if a product “*does not provide the safety [...] that is required under Union or national law.*”¹⁹⁹⁰

- d. Finally, art. 10(2)c PLD-2024’s presumption of a defect in cases of obvious product malfunctions, can in principle also be applied to harmonised product liability claims against retransferors who are held liable as a distributor or substantial product modifier. As already discussed *supra* nr. 290, the fact that a durable consumer good is resold, bartered or donated after prior use can generally be considered as still being part of “*reasonably foreseeable use or ordinary circumstances*”,¹⁹⁹¹ although this must of course always be determined in light of the concrete circumstances of each case.

b. Differentiated defect concept applicable to retransferor’s primary liability as an importer or quasi-manufacturer

315. DIFFERENTIATED DEFECT: IF A RETRANSFERROR IS SUBJECT TO PRIMARY LIABILITY AS AN IMPORTER OR QUASI-MANUFACTURER, THEN DEFECTIVENESS MUST BE EVALUATED IN LIGHT OF THE (NEW) SAFETY EXPECTATIONS EXISTING WHEN HE PLACES THE (PARTIALLY NEW) PRODUCT ON THE MARKET – As already discussed *supra* nrs. 298 and 304-306, a retransferor may not just redistribute an existing product but actually be subject to primary liability because he imports or quasi-manufactures a second-hand product. In these instances, the retransferor does not just ‘make a product available on the market’, but rather ‘places a (partially new) product on the market’.¹⁹⁹² This means, according to art. 7(2)e PLD-2024 that the defect assessment must focus on this moment, instead of for example the earlier moment when the now quasi-manufactured product was already once ‘placed on the market’ by another person or ‘left the control of the manufacturer’. This is why this dissertation calls this, in contrast with the ‘single defect’ discussed in preceding sections, a defect assessment that is ‘differentiated’ from any previously applicable defect assessment, which may still continue to apply in parallel to other defendants involved with the same product earlier in its lifecycle. Although the PLD-1985 does not state this as explicitly, arguably a similar ‘differentiated defect’ principle applies to the liability of importers and quasi-producers based on arts. 3(1)-(2) *juncto* 6(1)c PLD-1985.¹⁹⁹³

¹⁹⁹⁰ See *supra* nrs. 180 and 289 regarding art. 7(1) *ibid.* and its application in the retransfer context. See *supra* nr. 251 on a functional interpretation of this provision vis à vis Ecodesign requirements which partially contribute to accident-prevention. See also art. 10(2)b *ibid.*

¹⁹⁹¹ Art. 10(2)c *ibid.*

¹⁹⁹² Art. 4(7)-(8) *ibid.* See also on these concepts, as used in EU product regulation Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 19-23.

¹⁹⁹³ See also *infra* nrs. 320-321 the discussions in the existing literature on how to apply the defences of art. 7 PLD-1985 vis à vis importers and quasi-producers, with a clear majority each time in favour of ‘personal interpretations’.

Note that this ‘differentiated defect assessment’, which applies generally to defendants who ‘place on the market’ or ‘put into service’ products that have already been ‘placed on the market’ before, theoretically fits well with the concept of primary liability. How it is different from the ‘single defect’ assessment applicable to secondary liability (see *supra* nr. 310), seems to be one¹⁹⁹⁴ of the key differences between primary and secondary product liability. Nevertheless, the final adopted version of art. 8(2) PLD-2024 does not afford us such clear-cut theoretical coherence, because it stipulates that substantial modifiers ‘make products available’, which results in an odd combination of primary liability with a ‘single defect’ assessment (see *supra* nr. 311). Hence, this dissertation proposes to amend this (see also *supra* nr. 265 and *infra* nr. 450).

In each case, the ‘differentiated defect’ concept, which is at least *de lege lata* only applicable to retransferors when they qualify as an importer or quasi-manufacturer, crucially results in a shift to the legitimate safety expectations held by the public at the time when the retransferor himself places the second-hand product on the market (see Figure 12 *supra* nr. 310). In many cases, this moment in time is relatively close to the moment of the second-hand product’s physical transfer and final delivery at the completion of the complete retransfer process.¹⁹⁹⁵ Yet, technically, there is in most cases some time between the actual placing on the market of the product and the physical transfer to a recipient. For example, a second-hand product is already ‘placed on the market’ when it is online or through other distance selling techniques offered from outside the EU for sale to customers inside the EU.¹⁹⁹⁶ Or a reseller of second-hand goods already ‘makes those goods available on the market’ when he offers them in his physical or digital store.¹⁹⁹⁷

Concretely, the ‘differentiated defect’ concept implies that, if safety expectations have become more stringent at the time when an importing or quasi-manufacturing retransferor places a second-hand product on the market, in comparison with the time when the product had been originally (quasi-)manufactured or imported into the EU, then the defect assessment must be based on this newer, more stringent standard. For example, a B2C reseller puts his own branding on a second-hand bike or cradle, which was originally placed on the market many years ago when safety standards for these products were lower. Or a second-hand reclining desk chair which has been manufactured abroad many years ago but is now imported into the EU, requires a defect assessment that is based on the public’s legitimate safety expectations existing at the time of import. Perhaps this last differentiated defect assessment is most intuitive, due to the clear administrative steps before an imported product is released for free circulation into the EU.¹⁹⁹⁸

¹⁹⁹⁴ Other differences are of course the secondary liability mechanism itself (see *supra* nrs. 177 and 301), the possibility that certain defences might be applied to distributors in a ‘manufacturer-specific’ rather than a ‘personal’ manner (see *infra* nr. 322) and the starting date of the applicable extinction period (see *infra* nr. 333).

¹⁹⁹⁵ See *supra* nrs. 79-82 on retransfers (resales, barter and donations) in general.

¹⁹⁹⁶ See with regards to the same concepts in EU product regulation Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 21-22.

¹⁹⁹⁷ See *ibid.*, 19. See also on the concept of ‘making available’ *infra* nr. 323.

¹⁹⁹⁸ See with regards to the same concepts in EU product regulation Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 22-23.

Conversely, it is in rarer cases possible that safety expectations have lowered over time, for example when new scientific knowledge has eased past safety concerns previously based on the precautionary principle for a particular chemical substance or high-tech product. In such cases, the defect assessment for the retransferor's primary liability must be based on these lower safety expectations existing when the second-hand product is placed on the market after being quasi-manufactured or imported.¹⁹⁹⁹

Finally, this 'differentiated defect' assessment also applies when product redistributors or reproducers apply different circular strategies than retransfers, like renting, repairing or refurbishing products, and in doing so incur a primary liability for placing a new product on the market or putting a new product into service (see also Figure 12 *supra* nr. 310). This pivotal point therefore also surfaces in other Chapters.

316. APPLYING THE DIFFERENTIATED DEFECT CONCEPT TO CLAIMS AGAINST IMPORTING OR QUASI-MANUFACTURING PRODUCT RETRANSFERRORS – Determining whether an imported or quasi-manufactured product placed on the market by a retransferor, meets the newly established, legitimate safety expectations held by the public at that time, relies on the general defectiveness test and the concrete defect assessment criteria which have already been studied at a general level *supra* nrs. 179 et seq.

The whole breadth of possible accident risks and defect considerations must not be reiterated here, especially because the traditional defect concept has already been examined in a large amount of case law and literature. In essence, all these considerations apply here. Yet, according to the 'differentiated defect' assessment, they must be fixated on the moment when the retransferor as an importer or quasi-manufacturer places the second-hand product on the market. It is prohibited to apply the safety expectations existing when the original product was perhaps already placed on the market by a manufacturer or another importer or quasi-manufacturer.

Additionally, it is worth noting that the more in-depth analysis *supra* nrs. 232-237, 256-259 and 286-290 of defectiveness of a product in light of the possibility that it is later reused, repurposed or retransferred, is not only indirectly but also directly relevant here. After all, in a truly circular economy, there is a substantial likelihood that an already once retransferred, second-hand product ends up being subsequently reused, repurposed or retransferred again. The same holds true for considerations of the defect assessment specific to the fact that a product can be later repaired, refurbished, remanufactured or re-used (see for example *infra*

¹⁹⁹⁹ Admittedly, it is somewhat ironic and from the perspective of corrective justice seemingly unfair, that a retransferor who is liable as a distributor or substantial modifier would not benefit from this relaxation of applicable safety expectations. Yet, in most cases, the 'single defect' rule to which these defendants are subject is much more beneficial to them than this 'differentiated defect' alternative, since safety expectations tend more often to increase over time. Hence, at the level of a general rule, this difference in treatment still seems justified, especially when considering the reduced control over accident risks of mere distributors subject to only secondary liability and when considering this dissertation's proposal to *de lege ferenda* to subject all substantial product modifiers to a 'differentiated defect' assessment by amending art. 8(2) PLD-2024 (see *supra* nrs. 265 and 311).

nrs. 368-408). All these potential considerations also apply to the differentiated defect assessment of an importing or quasi-manufacturing retransferor.

§ 3. Defences

a. 'Personal' or 'manufacturer-specific' defences?

i. The PLD's key question of how to interpret the defences and the 'putting into circulation' concept in application to different defendants

317. SHOULD THE DEFENCES BE INTERPRETED FROM THE RETRANSFERROR'S POINT OF VIEW OR FROM THE POINT OF VIEW OF THE MANUFACTURER? – An important theoretical question lies hidden at the core of the old product liability Directive, but is brought to the foreground by circular redistribution and reproduction strategies like product retransfers, which result in an increase of potential defendants. Perhaps because it is less apparent in a linear system of product distribution, it has received limited attention in the existing literature. For example, in the existing sources on the Belgian and French implementations of the PLD-1985, this question has to my knowledge not yet been clarified, at least with regards suppliers, quasi-producers and importers.²⁰⁰⁰ But it is considered in passing by several German and English-speaking authors.²⁰⁰¹ This is the question how the defences, especially those of art. 7 PLD-1985, should be interpreted when they are invoked by another defendant than the producer who has originally put the now defective product into circulation. Should the substantive requirements for the defence be appreciated from the point of view of this other defendant, like a retransferor who qualifies as an importer, a quasi-producer or a supplier? Or should the defences still be interpreted from the point of view of the original producer, even when they are invoked by another defendant?

The reason why this theoretical question is more acute in a context of product retransfers, is because a lot more time and possibilities for posterior defect origins have passed between the moment when a product was for the first time put into circulation by a producer and when it was later retransferred as a second-hand product. This time difference drastically increases the practical difference between both interpretations in terms of outcomes for example for the posteriority or development risk defences.²⁰⁰² Moreover, an independent retransferor

²⁰⁰⁰ See only the interesting passage Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 540 (alluding to the possibility that the posteriority defence, in case of liability of a quasi-producer or supplier, might have to be assessed at a later date than the moment when the product was originally put into circulation, recognizing that products may be put into circulation multiple times). Only regarding the component producer, do several Belgian and French authors remark that there is logically a difference in assessment of various defences compared to when they are invoked by the final product producer.

²⁰⁰¹ See sources cited in the following sections.

²⁰⁰² E. Van Gool, 'De nieuwe richtlijn productaansprakelijkheid en circulaire economie' (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 415. See also discussions on this question, specifically in the context of liability of second-hand goods suppliers Howells, 'strict liability', nr. 4.80; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nrs. 13.28-13.32.

generally lacks the contractual relationships and exchange of product safety information which most suppliers in a linear distribution chain have with the original producer.

Art. 7 PLD-1985 states only that “*the producer shall not be liable [...] if he proves*” any of the Directive’s defences, which have been generally introduced *supra* nrs. 194-201. Nevertheless, most defendants are elsewhere in the PLD-1985 “*deemed to be*” or “*treated as*” a producer.²⁰⁰³ Does this mean that these other defendants can invoke the defences in the same way as the producer? It is commonly accepted that when defences are invoked by the component producer, they must necessarily be interpreted from his individual point of view and not from the point of view of the final product producer. For example, when a component producer invokes the neither for-profit nor professional, not put into circulation or posteriority defences, he will only be successful if he personally instead of the producer meets the corresponding conditions. Hence, these defences are interpreted in manner which this dissertation describes as ‘personal’ vis à vis the component producer and not ‘producer-specific’. The question now is which defences the other potential defendants can similarly invoke from a personal perspective or whether (some) defences only apply in a producer-specific manner.

Interestingly, all defendant qualifications existing under the PLD-1985 other than the final product and component producers, are possible qualifications of retransferrers: importer, quasi-producer and supplier (see *supra* nr. 298). Moreover, a retransferrer can also be liable as a substantial product modifier (see *supra* nr. 307). Hence, this is a good point in the dissertation to answer this theoretical question for each of these possible qualifications, although it has of course also great significance for other typology units discussed in other Chapters and for harmonised product liability in general.

318. ‘PUTTING INTO CIRCULATION’ AND THE PLD-2024’S TAKE – The interpretation of the defences is intertwined with the interpretation of the PLD-1985’s pivotal concept of ‘putting into circulation’. Do importers, quasi-producers and/or suppliers also put a product into circulation?

While the PLD-1985 itself is silent on this matter (see *supra* nr. 194), the French legislator has answered this question negatively, by stipulating “*Un produit ne fait l'objet que d'une seule mise en circulation.*”²⁰⁰⁴ It may seem like the CJEU has also adopted this view in *Declan O’Byrne*,²⁰⁰⁵ but the Court has actually only clarified in this decision when an original producer ‘puts a product into circulation’ according to art. 11 PLD-1985 (see *infra* nr. 332) and not necessarily what this might mean for other defendants, let alone what this would mean with regards to other provisions like the defences of art. 7 PLD-1985, which the Court took care to

²⁰⁰³ See art. 3(2)-(3) PLD-1985. See also how the ‘quasi-producer’ is part of the definition of producer in art. 3(1) PLD-1985.

²⁰⁰⁴ Art. 1245-4, 2nd section CC FR. Note that this specification has been left out of the *Projet de réforme de la responsabilité civile* (Garde des sceaux 2017). See in favour of this single putting into circulation concept Bloch and Poumarède, ‘L’indemnisation des victimes de produits’, nr. 6312.61. See also the authors cited *infra* footnotes 2044-2045 who adopt a producer-specific interpretation when defences are invoked by suppliers.

²⁰⁰⁵ CJEU 9 February 2006, C-127/04, *Declan O’Byrne*, ECLI:EU:C:2006:93, nr. 32 : “[...] Article 11 of the Directive is to be interpreted as meaning that a product is put into circulation when it is taken out of the manufacturing process operated by the producer and enters a marketing process in the form in which it is offered to the public in order to be used or consumed.”

emphasize in *Declan O'Byrne*.²⁰⁰⁶ Others hold that it should be possible to put the same product multiple times into circulation,²⁰⁰⁷ if only because the injured party would otherwise be disadvantaged by a single, more rapidly expiring extinction period²⁰⁰⁸ or because several actors would otherwise not be able to invoke defences of art. 7 PLD-1985 from their own personal perspective,²⁰⁰⁹ as discussed in the following sections.

The UK legislator has adopted at least for the posteriority defence a middle ground, by determining that only parties subject to primary liability qualify for the equivalent of 'putting into circulation' in art. 7(b) PLD-1985's posteriority defence, but not suppliers.²⁰¹⁰ As we will see in the next sections, a relatively similar distinction between primary and secondary liability has also been adopted by some German²⁰¹¹ authors with regards to various defences, but is now partially called into doubt again by the PLD-2024. Overall, there is a clear tendency towards personal interpretations of the defences, which effectively seems to correspond better with aims of corrective justice for some defences and with goals of efficient risk-allocation and accident-prevention, for others (see *infra* nrs. 320-322).

Although the PLD-2024 simultaneously complicates matters by introducing new defendant categories, it overall answers this complex theoretical question more clearly than the PLD-1985. This is because art. 11 PLD-2024 explicitly differentiates between at least some defendants, because it has removed one defence²⁰¹² and because it employs the more refined concepts from EU product regulation of 'placing on the market', 'putting into service' and 'making available' to replace the single, ambivalent 'putting into circulation' concept used in art. 7 PLD-1985.²⁰¹³ The following sections mainly focus on how this question how to interpret

²⁰⁰⁶ See *ibid.*, nrs. 23-26 where the Court contrasts the concept 'putting into circulation' in art. 7 PLD-1985 and its past case law in *Veefald* with the use of the same concept in art. 11 PLD, which "is, on the other hand, of a neutral character." (*ibid.* nr. 26).

²⁰⁰⁷ E.g., Taschner and Frietsch, *Kommentar*, 337, 424; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 540; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 284.

²⁰⁰⁸ A. Guégan-Lécuyer, 'La mise en circulation. Rapport français' in GRERCA (ed.), *La responsabilité du fait des produits défectueux* (IRJS 2013) 298. See *infra* nrs. 331-334.

²⁰⁰⁹ See the authors cited *infra* footnotes 2019, 2033 and 2039, who advocate for personal interpretations when defences are invoked by importers, quasi-producers or suppliers.

²⁰¹⁰ Section 4(1)b(2) Consumer Protection Act 1987 of 15 May 1987, *UK Public General Acts*, 1987 c. 43. UK authors are aware of the potential difference with the PLD-1985's single 'putting into circulation' concept. See, e.g., Howells, 'strict liability', nr. 4.80; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nrs. 8.53-8.64, 13.29. See also *infra* nr. 333 on how this results in different interpretations of the extinction period vis à vis defendants subject to primary and secondary liability, respectively.

²⁰¹¹ Although not every German author advocates in favour of a personal interpretation vis à vis each defendant type (see following sections), the debate in the German literature appears to have been influenced by statements in the parliamentary proceedings of the German PLDI in favour of multiple moments of putting a product into circulation and, correspondingly, personal interpretations of the defences vis à vis different defendants.

²⁰¹² The 'neither for-profit nor professional defence' of art. 7(c) PLD-1985 is no longer part of the PLD-2024, which instead generally requires the plaintiff to prove that a defendant acted in a commercial capacity. See *supra* nr. 197.

²⁰¹³ E. Van Gool, 'De nieuwe richtlijn productaansprakelijkheid en circulaire economie' (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 415. See also G. Veldt, 'The New Product Liability Proposal - Fit for

the defences must be answered under the PLD-1985, given the lack of clarity combined with the fact that the rules of the old Directive will continue to apply for quite some time, especially to accidents caused by second-hand products.²⁰¹⁴ Yet, the analysis will simultaneously pay attention how the PLD-2024 deals with this issue, not only because this will be increasingly important in the future but also because this can help to interpret art. 7 PLD-1985.

ii. Substantial product modifier (art. 8(2) PLD-2024)

319. LIABILITY FOR SUBSTANTIALLY MODIFYING A PRODUCT PURSUANT TO ART. 8(2) PLD-2024: ALL DEFENCES ARE PERSONAL, BUT ONLY WITH REGARDS TO THE MODIFIED PRODUCT PART – First of all, there is the situation where a product has been substantially modified outside the manufacturer’s control according to art. 8(2) PLD-2024 or its uncertain PLD-1985 equivalent (see *infra* nrs. 437-441), for example as a result of a repair or as a result of serious damage during a retransfer (cf. *supra* nr. 307 and *infra* nr. 442). Art. 11(1)g PLD-2024 provides a new, specific defence: “*that the defectiveness that caused the damage is related to a part of the product not affected by the modification*” (see *supra* nr. 267 and *infra* nr. 454). This defence can obviously (and even exclusively) be invoked by the substantial product modifier in a personal manner.

For the other defences, it is not explicitly confirmed that they can also be invoked in a personal way by this new defendant. Early commentaries on the PLD Proposal 2022 do not dwell on this question. Yet, art. 8(2) PLD-2024 appears to imply as much, by uniquely²⁰¹⁵ declaring that the concerned person “*shall be considered a manufacturer of that product for the purposes of paragraph 1.*” Art. 8(1) PLD-2024 is the general provision imposing primary liability on the product’s manufacturer, who is pursuant to art. 10(1)a-f PLD-2024 entitled to invoke all other defences. Moreover, applying various defences to substantial product modifiers in a manufacturer-specific manner could lead to outcomes that seem to run contrary to a corrective justice rationale, by not imputing liability to a person when he takes an ‘abnormal risk’.²⁰¹⁶

the Digital Age or in Need of Shaping Up?’ (2023) *Journal of European Consumer and Market Law* 24, 31. See *supra* nr. 25.c on the general aim of the PLD-2024 to better align (the terminology of) harmonised product liability with EU product regulation.

²⁰¹⁴ See art. 21 PLD-2024.

²⁰¹⁵ In contrast to the PLD, which subsumes several defendant categories in the ‘producer’ notion (cf. each section of art. 3 PLD-1985), the PLD-2024 takes care to consistently use different identifications for the different categories of possible defendants. The unique statement that the person liable based on art. 8(2) PLD-2024 “*shall be considered a manufacturer*”, therefore seems to carry comparatively more weight compared to art. 3 PLD-1985 for the purposes of interpreting how to apply the different defences.

²⁰¹⁶ See also especially *supra* nrs. 127 and 128.c on the corrective justice and risk-internalisation justification for harmonised product liability. *E.g.*, the substantial product modifier could according to a manufacturer-specific interpretation invoke the not put into circulation (art. 7(a) PLD-1985; art. 11(1)a-b PLD-2024) or the compliance (art. 7(d) PLD-1985; art. 11(1)d PLD-2024) defences simply based on the fact that a manufacturer or importer met these requirements when they originally placed the product on the market or put it into service. Yet, rather absurdly, the substantial product modifier would according to such an interpretation lack the possibility to invoke these same defences when he himself did neither put the substantially modified product into service nor made it available or when he himself was compelled by binding regulation to modify the product in this particular manner that rendered it defective.

Furthermore, also in light of this dissertation's primary normative criteria of efficient risk-allocation and accident-prevention, which align with the Directive's stated goals, it seems more desirable to instead interpret vis à vis substantial product modifiers all defences in a personal manner (see *mutatis mutandis* arguments raised *infra* nrs. 320-322).

Crucially, the defendant who is held liable based on art. 8(2) PLD-2024, can only invoke these various defences to the extent that he has modified the product. For other parts of the product, he can rely on the aforementioned, specific defence of art. 11(1)g PLD-2024. For example, if he invokes the compliance defence of art. 11(1)d PLD-2024, the defendant only has to prove that the eventual defect in the specific product part(s) modified by him, is the result of compliance with binding regulation. As another example, the substantial product modifier can invoke the posteriority defence of art. 11(1)c PLD-2024 only vis à vis later defect origins that were not yet reasonably foreseeable at the time when he made the substantially product available or put it into service and that have rendered specifically the part(s) affected by the modification defective.²⁰¹⁷ For defects in other parts of the product, whether they arose before or after the modification and whether they had been reasonably foreseeable or not, the substantial modifier can simply invoke the specific defence of art. 11(1)g PLD-2024.

A person liable based on art. 8(2) PLD-2024, can additionally be liable for the entire product in a different capacity. For example, if he is a retransferor who has intentionally or inadvertently modified the second-hand product, he will also be liable as a distributor or potentially even as a quasi-manufacturer or importer (see *supra* nr. 298). If so, he will be able to invoke for such liability the defences of art. 11(1)a-f PLD-2024 with regards to the entire product, although it is examined below whether he can do so on a personal or a manufacturer-specific basis.

Finally, note that the text of art. 11(1)c PLD-2024's posteriority defence has seemingly forgotten that an independent substantial product modifier liable based on art. 8(2) PLD-2024 *de lege lata* also 'makes a product available on the market', while art. 11(1)c PLD-2024 seems to explicitly restrict the personal interpretation of the posteriority defence to defendants who 'make products available on the market' to "*in the case of a distributor*". This would mean that defendants liable based on art. 8(2) PLD-2024 who 'make the substantially modified product available' has the benefit of a manufacturer-specific interpretation of the posteriority defence, while the same defendant who 'puts the substantially modified product into service' could only invoke the defence in a personal manner (see also *supra* nr. 266.b). Elsewhere, this dissertation argues because of this issue and other reasons to *de lege ferenda* amend art. 8(2) PLD-2024 by confirming that an independent substantial product modifier 'places on the market' the product to the extent it has been substantially modified (see *supra* nrs. 265-266, 311 and *infra* nr. 450). This would solve the issue with the posteriority defence described above, since art. 11(1)c PLD-2024 would then also apply in a personal manner to substantial product modifiers for defects arising after they 'placed on the market' a substantially modified product. Nevertheless, especially in the absence of such an amendment, it would be desirable that "*in the case of a distributor*" would be removed in art. 11(1)c PLD-2024, due to the

²⁰¹⁷ See also Figure 9 *supra* nr. 239 with regards to the posteriority defence (art. 7(b) PLD-1985; art. 11(1)c PLD-2024).

confusion it currently sows regarding independent substantial product modifiers and to a lesser extent regarding online platform providers.²⁰¹⁸

iii. Importer

320. THE IMPORTER: ALL DEFENCES SHOULD BE PERSONALLY INTERPRETED – Although only German authors seem to discuss this explicitly, there is an apparent consensus that a person who is held liable on a primary basis as an importer, can invoke all defences of art. 7 PLD-1985 in a personal manner.²⁰¹⁹ For example, the development risk defence of art. 7(e) PLD, when invoked by an importer, must be assessed at the moment in time when the product is imported into the EU.²⁰²⁰ As an exception, TASCHNER AND FRIETSCH interpret the compliance defence of art. 7(d) PLD-1985 in a producer-specific manner,²⁰²¹ although they seem to state otherwise elsewhere.²⁰²² Anyhow, a producer-specific interpretation of this defence would be undesirable. Not only would this run contrary to corrective justice, since it would create a potential disconnect between product liability and abnormal risk-taking (see *supra* nrs. 127 and 128.c). It would also run contrary to the Directive's and this dissertation's goals of risk-allocation and accident-prevention (see *supra* nrs. 130 and 168), since it would mean that an importer could try to invoke (in vain)²⁰²³ less-protective third-country regulation applicable to the production steps which caused the product defect but that he could not invoke EU or Member State product regulation or other rules to which he himself was subject when he imported the product into EU.²⁰²⁴ Additionally, the two reputable authors claim that, although it is theoretically

²⁰¹⁸ Note, however, that art. 8(4) PLD-2024 explicitly declares that the same secondary liability of distributors “shall also apply, *‘mutatis mutandis’*, to any provider of an online platform that allows consumers to conclude distance contracts with traders and that [...]” It therefore seems less problematic to apply the current version of art. 11(1)c PLD-2024 in a personal manner vis à vis this novel defendant.

²⁰¹⁹ See Taschner and Frietsch, *Kommentar*, 132, 137, 145-146, 152, 193, 206-207 (regarding all defences except ‘compliance’); Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3605, 22 (regarding all defences); Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 1, nrs. 24, 39 (regarding ‘not put into circulation’ and ‘neither for-profit nor professional’ defences); Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 1, nrs. 79, 96, 116 (regarding ‘posteriority’, ‘neither for-profit nor professional’ and ‘development risk’ defences); P. Ehring, ‘§ 1 ProdHaftG’ in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nrs. 65, 76, 89, 96, 112 (regarding all defences); European Law Institute, *ELI Draft of a Revised Product Liability Directive* (2022) 21-22 (regarding ‘development risk defence’). See also implying a personal application to importers of the posteriority defence (and arguably also of other defences), because these actors are explicitly included in the equivalent of ‘putting into circulation’ of art. 7(b) PLD-1985 in the UK PLDI (see *supra* footnote 2010), Howells, ‘strict liability’, nrs. 4.80, 4.275-4.276; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nrs. 9.123-13.29-13.32.

²⁰²⁰ Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3605, 22.

²⁰²¹ Taschner and Frietsch, *Kommentar*, 198. See also P. Ehring, ‘§ 1 ProdHaftG’ in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 96.

²⁰²² Taschner and Frietsch, *Kommentar*, 145-146.

²⁰²³ Binding rules of third countries are unlikely to be accepted for a compliance defence. See Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 1, nr. 108.

²⁰²⁴ See also Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 46, nr. 61. Note that a textual argument can

correct, it would be practically meaningless to personally apply the neither for-profit nor professional defence to importers, because these actors would allegedly always act in a professional capacity.²⁰²⁵ This is in my opinion also incorrect, given the not truly new phenomenon of ‘direct import’ into the EU by prosumers who might be able to successfully invoke this defence, like individual travellers and now increasingly international P2P (and P2B) e-commerce and recommerce by prosumers (see also *supra* nrs. 68 and 80).

The personal interpretation of each of the defences of art. 7 PLD-1985 vis à vis the importer can be read in art. 3(1) PLD-1985’s statement that the importer “*shall be deemed to be a producer*”.²⁰²⁶ But it especially rings true because an importer is the only person responsible for placing a product from a third country on the internal market with its applicable liability rules and regulatory standards. An importer is therefore from the perspective of harmonised product liability actually more akin to an EU producer than the third-country producer who manufactured his imported product. Moreover, the liability of the importer clearly intends to save injured parties the trouble of trying to claim against non-EU defendants,²⁰²⁷ which further solidifies this defendant’s position as functionally equivalent to an EU producer. Most importantly, personally applying all defences to the importer seems to better serve the Directive’s and this dissertation’s normative goals of risk-allocation and accident-prevention (see *supra* nrs. 130 and 168), since it results in applying the defences at a later point in time and according to (slightly) more stringent rules and standards compared to when the defences would have to be applied from the perspective of the third-country producer.²⁰²⁸ Finally, a personal application of all defences vis à vis importers also seems desirable in light of corrective justice and risk-internalisation (see *supra* nrs. 127 and 128.c), because it ensures that ‘quasi-strict’ product liability is more accurately imposed when the importer effectively took an abnormal risk. For example, it means that he can invoke the not put into circulation, posteriority or neither for-profit nor professional defences when these apply to his personal situation rather than to the situation of the third-country producer.²⁰²⁹

Art. 11(1) PLD-2024 now confirms a personal interpretation of all defences vis à vis the importer,²⁰³⁰ which required for the development risk defence an amendment to the PLD

be made that the compliance defence is tied to the product rather than the person of a defendant and therefore could be invoked ‘personally’ by any defendant with regards to any binding regulation that applies to the product at the time of the defendant’s act of (re)producing or (re)distributing the product. See *infra* nr. 322.a.c.

²⁰²⁵ Taschner and Frietsch, *Kommentar*, 193. Note that the ‘importer’ definition in art. 3(2) PLD-1985 explicitly requires a commercial activity.

²⁰²⁶ European Law Institute, *ELI Draft of a Revised Product Liability Directive* (2022) 21-22.

²⁰²⁷ PLD Explanatory Memorandum 1976, nr. 10.

²⁰²⁸ See also *supra* nrs. 135-142 on why a stricter product liability rule with a contributory fault defence can in normal circumstances be considered as generally more efficient in terms of risk-allocation and accident-prevention than a more traditionally fault-based rule and why this can generally also be extended to a more circular economic context.

²⁰²⁹ See also earlier in this section similar arguments with regards to the compliance defence of arts. 7(d) PLD-1985 and 11(1)d PLD-2024.

²⁰³⁰ Art. 11(1)a PLD-2024 does this explicitly. Art. 11(1)c *ibid.* employs the terms “*placed on the market*” and “*put into service*”, which encapsulate the importer (art. 4(8)(12) *ibid.*). And art. 11(1)d *ibid.* does not

Proposal 2022.²⁰³¹ Consequently, the final adopted version of art. 11(1)e PLD-2024 now also allows a personal interpretation of the development risk defence vis à vis the importer at the time when he places a product on the internal market.

However, the PLD-2024 also introduces two new defendants, the ‘authorised representative’ and the ‘fulfilment service provider’, who can be held liable for products produced in third-countries either along with or instead of the importer.²⁰³² On the basis of the adopted text of art. 11(1)a-b PLD-2024, it appears that these new defendants can strictly speaking not invoke the not put into circulation defence. This seems a difference in treatment compared to importers which is hard to justify. And although it might simply be a drafting mistake, it arguably requires an amendment to be corrected. In the absence thereof, it might be possible to try to interpret art. 11(1)a PLD-2024 in a manner that allows an importer-specific interpretation of this defence to the authorised representative or fulfilment service provider, although it can be argued that this would be *contra legem*. Additionally, these new defendants are at best also only able to invoke the posteriority defence of art. 11(1)c and the development risk defence of art. 11(1)e in an importer-specific rather than a personal manner. This can be considered logical. But an explicit clarification would be welcome in light of the overall dominance of personal applications of defences in the new Directive.

iv. Quasi-producer (‘quasi-manufacturer’)

321. THE QUASI-PRODUCER (‘QUASI-MANUFACTURER’): ALL DEFENCES SHOULD BE PERSONALLY INTERPRETED – Like in case of the importer, explicit confirmation that all defences should be personally interpreted vis à vis quasi-producers (‘quasi-manufacturers’ in the PLD-2024) is only found in the German literature but does not seem to be disputed elsewhere.²⁰³³

provide any possible limitation. The defences of art. 11(1)f-g *ibid.* are by nature restricted to the component manufacturer and the independent substantial product modifier, respectively.

²⁰³¹ Art. 10(1)e PLD Proposal 2022 explicitly limited the development risk defence to “*in the case of a manufacturer*”, which was rightly criticised by the EUROPEAN LAW INSTITUTE (European Law Institute, *ELI Draft of a Revised Product Liability Directive* (2022) 21-22). Both the Council and the Parliament then proposed to remove this unnecessary limitation (art. 10(1)e amended draft PLD Proposal 2022 in EU Council, ‘Mandate for negotiations with the European Parliament on Proposal for a Directive of the European Parliament and of the Council on liability for defective products’ 2022/0302(COD), 15 June 2023, 46; art. 10(1)e amended draft PLD Proposal 2022 in EU Parliament, ‘Report of 12 October 2023 on the proposal for a directive of the European Parliament and of the Council on liability for defective products’ A9-0291/2023, 58-59).

²⁰³² Art. 8(1)c(ii)-(iii) PLD-2024. *See also supra* nr. 178.c.e.

²⁰³³ *See* Taschner and Frietsch, *Kommentar*, 132, 137, 145-146, 152, 193, 206-207 (regarding all defences except ‘compliance’); Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 46, nrs. 29, 60 (regarding ‘not put into circulation’ and ‘compliance’ defences); Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3605, 17 (regarding all defences); Wagner, *MüKo BGB*, ‘Produkthaftungsgesetz’, § 1, nr. 39 (regarding ‘neither for-profit nor professional’ defence); Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 1, nrs. 79, 96, 116 (regarding ‘posteriority’, ‘neither for-profit nor professional’ and ‘development risk’ defences); P. Ehring, ‘§ 1 ProdHaftG’ in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nrs. 65, 76, 89, 96, 112 (regarding all defences). *See also* implying the personal application to quasi-producers of the posteriority defence (and arguably also of other

As notable exceptions, TASCHNER AND FRIETSCH include quasi-producers in their aforementioned producer-specific interpretations of the compliance defence of art. 7(d) PLD-1985 and the neither for-profit nor professional defence of art. 7(c) PLD-1985.²⁰³⁴ The arguments raised *supra* nr. 320 against this view based on corrective justice, risk-allocation and accident-prevention, can be reiterated here. A quasi-producer such as a B2C reseller should be able to invoke binding rules applicable to him when he distributes his self-branded product, but he should not be able to escape liability because he distributed defective products with the sole excuse that the defect was the unavoidable result of rules to which the producer was subject at the time of manufacturing.²⁰³⁵ And the likelihood that quasi-producers invoke the neither for-profit nor professional defence, has substantially increased as a result of the apparent expansion of this qualification by the *Fennia/Philips* decision (see *supra* nr. 305) in combination with the increase in P2P product redistribution activities via online platforms.

As another exception, WAGNER claims that the not put into circulation defence of art. 7(a) PLD-1985 can only apply to quasi-producers in a producer-specific manner.²⁰³⁶ Yet, it seems absurd that a quasi-producer could invoke the defence when he self-brands and distributes a product which its actual producer not yet wanted to put into circulation (and which the quasi-producer theoretically might even have obtained illegally), while the quasi-producer would not be able to invoke the defence when he would find himself in this exact position, for example because his not yet inspected or even recalled, self-branded product causes an accident at his own facility.²⁰³⁷

The preceding examples of concrete defences illustrate why interpreting also vis à vis quasi-producers all defences in an exclusively personal manner, makes sense according to not only this dissertation's but also the Directive's normative goals (see in particular *supra* nrs. 127, 128.c, 130, 168 and 320). As another example, quasi-producers can only invoke the posteriority defence of art. 7(b) PLD-1985 for defects originating after they have themselves put the self-branded product into circulation and not for defects that originated before that time but after the time when the product was earlier put into service ('placed on the market') by a producer or importer. Finally, as a purely textual argument in favour of this personal interpretation, one can refer to the fact that the quasi-producer is included in art. 3(1) PLD-1985's literal definition of a producer.

The PLD-2024 copies this last approach in the definition of manufacturer and thus also 'quasi-manufacturer' in art. 4(10). The new Directive adds perhaps slightly more uncertainty compared to its predecessor, because all (of the now numerous) other defendants than the

defences), because these actors are explicitly included in the equivalent of 'putting into circulation' of art. 7(b) PLD-1985 in the UK PLDI (see *supra* footnote 2010) Howells, 'strict liability', nrs. 4.80, 4.275-4.276; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nrs. 9.123-13.29-13.32.

²⁰³⁴ Taschner and Frietsch, *Kommentar*, 193, 198. But see Taschner and Frietsch, *Kommentar*, 145-146.

²⁰³⁵ Note that a textual argument can be made that the compliance defence is tied to the product rather than the person of a defendant and therefore could be invoked 'personally' by any defendant with regards to any binding regulation that applies to the product at the time of the defendant's act of (re)producing or (re)distributing the product. See *infra* nr. 322.a.c.

²⁰³⁶ Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 1, nr. 24.

²⁰³⁷ See Graf von Westphalen, '3. Produkthaftungsgesetz', § 46, nr. 29; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3605, 17.

quasi-manufacturer have suddenly received in separate definitions, while art. 11(1) PLD-2024 explicitly names all major individual defendant categories with the exception of the quasi-manufacturer. Nevertheless, it can to the contrary also be read as an even stronger affirmation that the quasi-manufacturer must as much as possible be assimilated to the actual manufacturer. In addition to the aforementioned policy reasons, this therefore further strengthens the conclusion that all defences of also art. 11(1) PLD-2024 must be personally applied vis à vis quasi-manufacturers.

v. Supplier ('distributor')

322. THE SUPPLIER ('DISTRIBUTOR'): DISPUTED IN THE CONTEXT OF THE PLD-1985, A MOSTLY PERSONAL APPROACH IN PLD-2024 – Finally, there is the question on how to apply the various defences when they are invoked by suppliers ('distributors' in the PLD-2024). These defendants fulfil a role which is admittedly the most dissimilar to the producer's role, not only in terms of substance but also in terms of elapsed time, which is especially true in case of retransferrors and other product redistributors in long circular product lifecycles. For example, when a second-hand product reseller invokes the posteriority defence, it makes a significant difference in terms of liability outcomes and the reseller's own role whether this defence would be applied to him in also a personal or a producer-specific manner (see also *supra* nr. 324-326). Moreover, suppliers are merely subject to a secondary liability, which presents itself in terms of responsibility or 'culpability' in terms of corrective justice, as only a derivative of the primary liability of other defendants and in particular of the producer.²⁰³⁸ Perhaps because of this, the literature paints a more mixed picture on how to interpret the defences vis à vis this particular defendant category, which is so crucial for the liability of retransferrors (see *supra* nrs. 298-303).

- a. A sizeable group of authors proposes to apply also vis à vis suppliers all defences of the PLD-1985 in a personal manner.²⁰³⁹ This finds support in the text of art. 3(3) PLD-1985, which states that the supplier of a product "*shall be treated as its producer*". On average, this is generally beneficial to injured parties pursuant to the main goal of the Directives (see *supra* nr. 168), because the defences are thus evaluated at a later point in time. For certain defences, like the not put into circulation defence of art. 7(a) PLD-1985 or the

²⁰³⁸ See PLD Explanatory Memorandum 1976, nr. 9.

²⁰³⁹ Taschner and Frietsch, *Kommentar*, 132, 137, 145-146, 152, 193, 206-207, 337 (regarding all except 'compliance'); Howells, 'strict liability', nrs. 4.268-4.271, 4.275-4.276 (implicitly applying 'neither for-profit nor professional defence' to suppliers; interpreting the PLD-1985 as providing a 'personal posteriority defence' to suppliers, in contrast to the UK PLDI); Graf von Westphalen, '3. Produkthaftungsgesetz', § 49, nr. 109 (regarding all defences); Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nrs. 9.123, 13.30-13.32 (interpreting the PLD-1985 as providing a 'personal posteriority defence' to suppliers, in contrast to the UK PLDI); P. Ehring, '§ 1 ProdHaftG' in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nrs. 76, 89, 96, 112 (regarding all defences except 'put into circulation'). See also arts. 8 and 10 European Law Institute, *ELI Draft of a Revised Product Liability Directive* (2022) 20, 23 (proposing that all defined 'economic operators', can invoke the remaining defences, including 'distributors' from the perspective when they made a product available on the market).

neither for-profit nor professional defence of art. 7(c) PLD, a personal interpretation intuitively makes sense because a producer-specific interpretation leads to outcomes that seem odd and hard to justify from in particular standpoint of corrective justice.²⁰⁴⁰ Additionally, the text of the compliance defence of art. 7(d) PLD-1985 actually refers only to “*compliance of the product*”, which potentially allows any possible defendant to invoke it as long as it relates to a binding rule that applied to the product at the time of the defendant’s involvement, like the moment when a supplier (re)distributed the product.

For other defences, it is a less clear-cut matter and deciding on a personal or producer-specific interpretation leads to questions about the true nature of secondary harmonised product liability.²⁰⁴¹ For example, a personal interpretation of the development risk defence seemingly implies an expectation that suppliers should at the time of supply consult and consider the most advanced level of globally accessible, specialist knowledge about the product’s potential accident risks.²⁰⁴² Or, perhaps most noteworthy in practice, a personal interpretation of the posteriority defence would mean that a supplier becomes liable for defects originating after a product was first put into circulation by a producer or importer but before the supply occurs.²⁰⁴³ Especially for retransferors, this makes a huge difference, due to the intervening use phase and two distribution processes that may have rendered a product defective in the meantime (cf. *supra* nr. 292). In other words, a personal interpretation of the posteriority defence implies that suppliers, notwithstanding the fact that they are only subject to a secondary liability, are *de facto* expected to have extensively inspected, perhaps even tested the products they supply. Yet, even regardless of the efforts they take, the quasi-strict nature of

²⁰⁴⁰ A producer-specific interpretation would mean that suppliers could invoke the defence of art. 7(a) PLD-1985 when the product was not placed on the market (put into circulation) by the producer or assumed importer (and perhaps illegally obtained by the supplier), while the suppliers could not invoke it when they never made the product available (put into circulation) but somebody else did. Likewise, it would mean that suppliers could invoke the defence of art. 7(c) *ibid.* when the preceding producer or importer acted neither for-profit nor in a professional capacity while they nevertheless do and that they could not invoke it when they themselves acted neither for-profit nor in a professional capacity. Both situations would clearly run contrary to the corrective justice and risk-internalisation rationales (see *supra* nrs. 127 and 128.c) by severing the link between ‘quasi-strict’ product liability and the person who profits from taking an abnormal risk.

²⁰⁴¹ See Howells, ‘strict liability’, nr. 4.275 (regarding the producer-specific interpretation applied by the UK PLDI): “*This may be a natural consequence of only imposing subsidiary liability on suppliers [...]*.”; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 4, nr. 122: (regarding an argument in favour of a personal interpretation of the posteriority defence) “*Im systematischen Zusammenhang des ProdHaftG überzeugt dieses Argument indes nicht. Dies zeigt sich schon an dem Umstand, dass regelmäßig nur der Hersteller und nicht der Lieferant haftet [...]. Diese Regelung impliziert aber, dass der Gesetzgeber es bewusst in Kauf genommen hat, dass Händler und Lieferanten - wie es den üblichen Begleitumständen des Warenabsatzes entspricht - das Produkt ohne Haftungsfolgen in ihrem Gewahrsam halten und dort den von ihnen ausgehenden Sicherheitsgefahren aussetzen dürfen.*”

²⁰⁴² See Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 49, nr. 110. See also *supra* nr. 200 on the development risk defence.

²⁰⁴³ See Howells, ‘strict liability’, nrs. 4.80, 4.275-4.276.

harmonised product liability means that they will in the absence of a producer-specific posteriority defence automatically be liable for all proven ‘defects’ in the product that caused damage and that only arose after the product was originally put into circulation (‘placed on the market’) but before they did so (‘made available’).

- b. Another group of German authors has therefore adopted producer-specific interpretations. Some among them seem to argue in favour of this for all defences invoked by a supplier.²⁰⁴⁴ Others do so only for specific defences.²⁰⁴⁵ The main reason for this producer-specific interpretation is the secondary nature of the supplier’s liability, which acknowledges that a mere supplier has in comparison with a producer only little control over most product accident risks. This can be read as an argument based on corrective justice and in particular the risk-internalisation principle, because if suppliers have limited control over accident risks, they fit less the categorisation as the ‘takers’ of an abnormal risk (see *supra* nrs. 127 and 128.c). Yet, this can be especially read as an argument based on this dissertation’s normative criterion of efficient accident-prevention. If suppliers have fewer possibilities to take increased care and, in doing so, prevent more accidents, then it makes in comparison with other defendants less sense to expand their liability, for example by personally applying the posteriority defence to them.

To be sure, the personal interpretation of the posteriority defence vis à vis suppliers actually concerns a liability for defects against which (quasi-)producers or importers are able to invoke the posteriority defence themselves, namely ‘post-marketing’ defects. This is therefore, with the narrow exception under the new Directive of art. 11(2) PLD-2024, a matter of national law (see also *supra* nr. 213.d). In addition to the possible contractual liability of the supplier with regards to such defects that arose after the product was originally put into circulation (‘placed on the market’), also extracontractual fault-based liability for post-marketing obligations of various actors is helpful in already providing incentives to various actors to take increased care in order to prevent such ‘post-marketing’ accident risks. In terms of efficient accident-prevention (see also *supra* nr. 108.c), this seems a much more desirable approach than imposing a ‘quasi-strict’ liability for these defects on suppliers by means of a personal interpretation of the posteriority defence. After all, suppliers remain relatively ill-equipped to identify and prevent most of these defects without inefficiently incurring very high costs that are ultimately borne by consumers.

In contrast to this posteriority and to a lesser extent the development risk defences, there seem to be little to no arguments to also apply a producer-specific interpretation to the other defences of art. 7 PLD-1985. Such an approach seems to lead to particularly undesirable consequences for especially the not put into circulation and neither for-profit nor professional defences, as discussed *supra* nr. 322.a.

²⁰⁴⁴ Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3605, 30-31; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 4, nr. 64; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 4, nrs. 122-124.

²⁰⁴⁵ E.g., Taschner and Frietsch, *Kommentar*, 198 (regarding ‘compliance defence’, but see *ibid.*, 145-146); P. Ehrling, ‘§ 1 ProdHaftG’ in P. Ehrling and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nrs. 65-68 (regarding ‘not put into circulation defence’).

- c. Although these theoretical questions on the interpretation of the defences to distributors did not figure prominently in the PLD-1985 review process,²⁰⁴⁶ art. 11(1) PLD-2024 nevertheless settles the current debate *de lege lata* in favour of almost exclusively personal interpretations. Art. 11(1)b PLD-2024 unequivocally confirms that a distributor can personally invoke the not put into circulation defence, which seems desirable given the aforementioned reasons. The compliance defence of art. 10(1)d PLD-2024 is again phrased in a product-oriented manner that allows any ‘economic operator’, including apparently a distributor, to invoke it.²⁰⁴⁷ At least at a general level, this seems desirable in light of corrective justice, which after all requires a notion of ‘wrongdoing’ and thus also non-compliance. Yet, whether this is efficient in terms of accident-prevention depends of course on the actual content of the relevant “*legal requirement[s]*”.²⁰⁴⁸ Most significantly, art. 11(1)c PLD-2024 now confirms unequivocally that the posteriority defence must be applied also to distributors in a personal manner. The merits of this rule can be debated.²⁰⁴⁹ Nevertheless, as discussed *supra* nr. 322.b-c, it makes secondary harmonised product liability substantially stricter, in a manner that seems to find at best modest support in arguments of corrective justice and risk-internalisation and that seems to run directly contrary to efficient accident-prevention. Especially for retransfers of second-hand products, the consequences of art. 11(1)c PLD-2024’s personal interpretation of the posteriority defence seems harsh and difficult to reconcile with the fact that they just happen to be subject to secondary liability due to the second-hand product’s anonymous nature (see *supra* nr. 302). National liability theories, both the distributor’s contractual liability and extracontractual fault-based liability of various actors for post-marketing defects, seem much better placed to provide efficient incentives to different actors to prevent products becoming defective in the time between the moment when these are placed on the market and the moment when these are made available by a distributor. Additionally, as explained *infra* nr. 405, art. 11(1)c PLD-2024’s personal application of the posteriority defence to distributors causes theoretical issues when combining this rule with the current versions of arts. 4(5) and 7(2)e PLD-2024.²⁰⁵⁰

²⁰⁴⁶ But see arts. 8 and 10 European Law Institute, *ELI Draft of a Revised Product Liability Directive* (2022) 20, 23.

²⁰⁴⁷ Note the absence to a reference to any person in the main part of art. 11(1)d PLD-2024 (“*that the defectiveness that caused the damage is due to compliance of the product with legal requirements*”), which ostensibly means that this defence can be invoked by any “*economic operator*” based on the general, introductory part of art. 11(1) *ibid.*

²⁰⁴⁸ Art. 11(1)d *ibid.*

²⁰⁴⁹ See, e.g., the following recent, forceful argument in favour of adopting a primary liability of distributors more generally (which goes further than just a personal interpretation of the posteriority defence) J.-S. Borghetti, ‘Taking EU Product Liability Law Seriously: How Can the Product Liability Directive Effectively Contribute to Consumer Protection?’ (2023) 1 *French Journal of Legal Policy* 136, 160-161, 164-167.

²⁰⁵⁰ Note, however, that this last issue would already be resolved by another amendment proposed by this dissertation *infra* nrs. 404 and 405.c, namely to restrict the concept of ‘manufacturer’s control’ in art. 4(5)a(ii) PLD-2024 to ‘substantial modifications’ only.

Consequently, this dissertation advocates to amend art. 11(1)c PLD-2024, by removing “or, in the case of a distributor, made available on the market”.

- d. Only the development risk defence of art. 11(1)e PLD-2024 does not follow this same pattern and must apparently be interpreted in a manufacturer-specific (or importer-specific) manner, even in the final adopted version which had removed the previous restriction of the defence to manufacturers (see *supra* nr. 320). This is because art. 11(1)e only refers to “the time when the product was placed on the market, put into service or in the period in which the product was within the manufacturer’s control” and does not refer to ‘making available on the market’,²⁰⁵¹ which would have referred to the product (re)distribution activity of a distributor,²⁰⁵² like a product retransferor. Similar arguments as just raised above regarding the posteriority defence, justify why the development risk defence should indeed be applied to distributors in a producer- or importer-specific manner. After all, they are merely subject to secondary liability and generally lack the resources and time to verify the state of the art, as discussed above. However, when this line of reasoning is followed, it becomes all the more questionable that the posteriority defence of art. 11(1)c is nevertheless applied to distributors in a personal manner).

- e. Additionally, the PLD-2024 introduces the ‘online platform’ as an extra type of defendant, who is subject to the same secondary liability as the distributor albeit only in specific circumstances.²⁰⁵³ Similar to the ‘authorised representative’ and ‘fulfilment service provider’ (see also *supra* nr. 320), the ‘online platform’ is not mentioned in the defences listed in art. 11(1) PLD-2024 and he is also not explicitly equated with the distributor concept for the purposes of applying other provisions.

Consequently, the online platform can neither invoke in a personal manner the development risk defence of art. 11(1)e PLD-2024, nor the not put into circulation defence of art. 11(1)b PLD-2024 nor the posteriority defence of art. 11(1)c PLD-2024. If he would invoke them, these defences must ostensibly be applied in a manufacturer-specific (or importer-specific) manner. The not put into circulation and posteriority defences can theoretically even be interpreted in a distributor-specific manner vis à vis the online platform, which seems the more preferable option given the platform’s closer proximity to the role of a distributor than to the role of a manufacturer or importer and given the text of art. 8(4) PLD-2024.²⁰⁵⁴ Any personal interpretation of these defences seems unavailable to online platforms, which sharply contrasts with the fact that the not put into circulation and posteriority defences are now personally applied to distributors in

²⁰⁵¹ See also art. 10(1)e amended draft PLD Proposal 2022 in EU Council, ‘Mandate for negotiations with the European Parliament on Proposal for a Directive of the European Parliament and of the Council on liability for defective products’ 2022/0302(COD), 46; art. 10(1)e amended draft PLD Proposal 2022 in EU Parliament, ‘Report of 12 October 2023 on the proposal for a directive of the European Parliament and of the Council on liability for defective products’ A9-0291/2023, 58-59.

²⁰⁵² See art. 4(7) PLD-2024.

²⁰⁵³ Art. 8(4) PLD-2024. See *supra* nr. 178.e.

²⁰⁵⁴ Art. 7(6) *ibid.*: “Paragraph 5 shall also apply to any provider of an online platform that [...]” Art. 7(5) *ibid.* is the provision that imposes secondary liability on the distributor.

art. 11(1)b-c PLD-2024. This is an unnecessary difference in treatment between the online platform and the distributor, which is perhaps a drafting mistake but which nevertheless requires an amendment. Obviously, if *de lege ferenda* the posteriority defence would no longer be applied to distributors in a personal manner, as advocated for above, then it seems logical that also the online platform would follow suit and that he could only invoke this defence in a manufacturer- or importer-specific manner.

b. Not put into circulation defence

323. PRODUCT ACCIDENTS OCCURRING DURING RETRANSFER PROCESS: NO HARMONISED PRODUCT LIABILITY OF RETRANSFERRORS, AT LEAST IF NOT PUT INTO CIRCULATION DEFENCE IS PERSONALLY INTERPRETED – *Supra* nr. 283, it has been discussed how defendants in a second-hand product's original distribution chain can be held liable based on the PLDI for accidents that occur during the retransfer process and how, in this context, a particularly prominent role is played by the rules on the heads of damage that can be claimed. In contrast, retransferors themselves cannot be held liable based on the PLDI for damage occurring during this same retransfer process. At least, this holds true if the not put into circulation defence of arts. 7(a) PLD-1985 and 11(1)a-b PLD-2024 is personally applied to them. As just discussed *supra* nrs. 319-322, this is for each of the many possible defendant qualifications of retransferors the majority view held by the German- and English-speaking scholars who are explicit on this matter.²⁰⁵⁵ Moreover, art. 11(1)a-b PLD-2024 now also confirms this personal interpretation explicitly with regards to all possible defendant qualifications of retransferors. A reseller of an anonymous second-hand product can, thus, for example invoke this defence when said product turns out to be defective and causes a fire in his storage facility, both when he was in the process of importing, quasi-manufacturing, substantially modifying or simply distributing this product.

When applying this defence according to a personal interpretation to retransferors, it is important to know when precisely they 'put a product into circulation'. If they import, quasi-manufacture or substantially modify the product, this moment seems rather straightforward (but see *infra* nr. 412.a for a more detailed analysis). Yet, when does this precise moment occur if the retransferor is subject to only secondary liability as a distributor? How should the defence for example be interpreted if the second-product causes damage while it is being offered to consumers in a store or while being transported? The often-cited guidance provided by the CJEU in *Declan O'Byrne*²⁰⁵⁶ actually concerned only the perspective of a producer, when a product entered a distribution phase for the first time, and focused on art. 11 rather than 7(a) PLD-1985 (see *supra* nrs. 194 and 318).

²⁰⁵⁵ But note that this is contrary to the current French PLDI, which holds that a product can be put into circulation only once (art. 1245-4, 2nd section CC FR), as well as the UK PLDI, which excludes distribution by a supplier who is only subject to secondary liability from the notion of 'putting into circulation' (Section 4(1)b(2) Consumer Protection Act 1987 of 15 May 1987, *UK Public General Acts*, 1987 c. 43). See *supra* nr. 318.

²⁰⁵⁶ CJEU 9 February 2006, C-127/04, *Declan O'Byrne*, ECLI:EU:C:2006:93, nr. 32: "Therefore the reply to the first question must be that Article 11 of the Directive is to be interpreted as meaning that a product is put into circulation when it is taken out of the manufacturing process operated by the producer and enters a marketing process in the form in which it is offered to the public in order to be used or consumed."

In the terminology of the new Directive, this question concerns the interpretation of when a distributor precisely “*makes the product available on the market*” according to art. 11(1)b PLD-2024. ‘Making available on the market’, which is defined in the PLD-2024 in an identical manner as in EU product regulation,²⁰⁵⁷ is described by the Commission in the Blue Guide as including “*any offer for distribution, consumption or use on the Union market which could result in actual supply in relation to products already manufactured (e.g. an invitation to purchase, advertising campaigns).*”²⁰⁵⁸ Therefore, if this authoritative yet non-binding Commission guidance on product regulation is extended to these new harmonised product liability provisions, then a retransferor subject to secondary liability would no longer be able to invoke the not put into circulation defence when a second-hand product causes an accident while it is offered for resale in his store or when it is transported to a recipient.

In other words, the liability protection provided to retransferors and other distributors by the not put into circulation defence, even when it is personally interpreted, is more limited than one might anticipate.

c. Posteriority defence

324. THE IMPACT OF THE POSTERIORITY DEFENCE ON THE POTENTIAL LIABILITY OF RETRANSFERRORS IS FURTHER LIMITED IF THE DEFENCE IS PERSONALLY INTERPRETED AND IF A DIFFERENTIATED DEFECT CONCEPT APPLIES – It has already been explained *supra* nr. 290 why the posteriority defence’s importance should not be overestimated for harmonised product liability claims against defendants in the original distribution chain of products that later become second-hand and cause damage.²⁰⁵⁹ The same principles can be reiterated here for claims against the retransferors of those same second-hand products. Posterior defect origins that had already been reasonably foreseeable when the product was placed on the market, are all irrelevant to the posteriority defence (see also Figure 9 *supra* nr. 239). Many circumstances specifically relating to future retransfers, like transport conditions, errors in dis- or reassembly or misuse by the product’s new user, are to a considerable extent effectively reasonably foreseeable when a durable consumer good is placed on the market.²⁰⁶⁰ And harmonised product liability claims

²⁰⁵⁷ Cf. art. 4(7) PLD-2024; art. 3(6) General Product Safety Regulation 2023/988/EU: “‘*making available on the market*’ means any supply of a product for distribution, consumption or use on the Union market in the course of a commercial activity, whether in return for payment or free of charge;”.

²⁰⁵⁸ Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 19. See also *ibid.*, 19: “*The making available of a product supposes an offer or an agreement (written or verbal) between two or more legal or natural persons for the transfer of ownership, possession or any other right (44) concerning the product in question after the stage of manufacture has taken place. The transfer does not necessarily require the physical handover of the product.*” See for criticism against this broad interpretation by the Commission of ‘making available on the market’, which is still relatively recent in origin, T. Klindt, *Produktsicherheitsgesetz: Kommentar* (3rd edn., Beck 2021) § 2, nr. 30a.

²⁰⁵⁹ Cf. the following references to the posteriority defence in the scarce harmonised product liability literature that specifically discusses accidents caused by second-hand products Taschner and Frietsch, *Kommentar*, 238-239; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3603, 5; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 9.113; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 2, nr. 8; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 2, nr. 10.

²⁰⁶⁰ See also *supra* nr. 286.

against retransferrors are often time-barred through expiration of the extinction period, which is often easier to prove for a defendant than the posteriority defence.²⁰⁶¹ Furthermore, if a second-hand product has not been repurposed or otherwise seriously misused, then the plaintiff is unable to invoke the aforementioned ‘easy’ proof of product defectiveness, which immediately shifts the debate to the posteriority defence (see Figure 10 *supra* nr. 255).

The importance of the posteriority defence for retransferrors is further restricted, when this defence is applied to them in a personal manner. This is because, as discussed *supra* nrs. 317 et seq., a personally interpreted posteriority defence ensures that retransferrors can no longer invoke this defence for posterior defect origins which occurred after the product was originally placed on the market but before the retransferror made the product available or placed it on the market. For example, someone who barter a second-hand washing machine can no longer invoke the defence for a defect that resulted from improper handling of the device during its initial use phase, even when this had not been reasonably foreseeable when the washing machine was originally placed on the market and would thus constitute a posterior defect origin for example for an original manufacturer. Or a reseller of a baby co-sleeper becomes unable to invoke the defence for a defect caused by shoddy conditions of dis-assembly and transportation during the resale process, even when these had not been reasonably foreseeable when the co-sleeper was initially placed on the market by an importer. As discussed *supra* nrs. 320-322, a majority of authors who are explicit on this matter, agree that the posteriority defence should effectively be interpreted in such a personal manner vis à vis retransferrors, whether they are held liable as an importer, as a quasi-manufacturer, as a substantial product modifier or even as a distributor. Art. 11(1)c PLD-2024 now explicitly confirms such a personal interpretation of the posteriority defence vis à vis all possible qualifications of retransferrors. Nevertheless, this dissertation, along with a minority of authors under the PLD-1985, is not in favour of this solution with regards to the distributor qualification and argues that their secondary liability should be combined with a manufacturer-specific interpretation of this defence instead (see *supra* nr. 322.b-c).

And, third, the role of the posteriority defence is even further restricted if a retransferror is subject to primary liability as an importer or quasi-manufacturer. As discussed *supra* nrs. 315-316, a differentiated defect concept then applies, which looks at the safety expectations held by the public at the time when this retransferror placed his imported or quasi-manufactured second-hand product on the market. And if those safety expectations have become more stringent compared to the time when the original product was placed on the market,²⁰⁶² then this also means that more circumstances which can occur after the retransfer, have become reasonably foreseeable for the purposes of the defect assessment. This in turn excludes that these circumstances can be invoked by the retransferror in a posteriority defence (see Figure 9 *supra* nr. 239).

²⁰⁶¹ See also *supra* nrs. 296-297 and *infra* nrs. 334-337.

²⁰⁶² See *supra* footnote 1999 on the much rarer scenario where safety expectations relating to a particular accident risk have become less stringent over time, where the ‘differentiated defect assessment’ consequently works to the detriment of a retransferror who has placed a second-hand product (again) on the market.

In conclusion, when a reseller, donor or barterer of the aforementioned second-handwashing machine or co-sleeper is held liable on either a secondary or primary basis and assuming that the personal interpretation of the posteriority defence is also under the PLD-1985 generally accepted, then he can only invoke this defence for circumstances that occur after the retransfer itself and that had not been reasonably foreseeable at that time. Additionally, if he is held liable as a quasi-manufacturer or importer, then the safety expectations applicable to the differentiated defect assessment can also have become slightly more stringent, which would further reduce the subsequent circumstances for which he might still successfully invoke a posteriority defence.

325. IF THE POSTERIORITY DEFENCE IS PERSONALLY INTERPRETED, A PRODUCT'S SECOND-HAND NATURE AND THE DURATION OF ITS PAST USE PROVIDE ONLY FOR THE PERIOD AFTER THE RETRANSFER A LIMITED, INDIRECT PROOF OF DEFECT POSTERIORITY – As discussed *supra* nrs. 231 and 240, the fact that a product has already been used during some time or has been in lengthy (re)distribution processes, provides a limited factual presumption of a posterior defect origin or even that there is no defect to begin with due to normal wear and tear.²⁰⁶³ And as discussed *supra* nr. 292, the mere fact that a product has been retransferred one or multiple times, regardless of the duration of its past use and (re)distribution phases,²⁰⁶⁴ equally offers a similar factual presumption of defect posteriority. This is because retransfers entail risks, which may have been not reasonably foreseeable at the time of the relevant defect assessment,²⁰⁶⁵ of incorrect dis- and reassembly or installation, uncaredful transportation, improper storage, mishandling in second-hand goods stores, unfamiliarity of the recipient with the product and inadequate downstream communication of product information.²⁰⁶⁶ This retransfer-specific factual presumption provides again only a limited, indirect proof of a posterior defect origin, which can be easily refuted by elements suggesting the defect's anteriority instead, like the particular nature of the defect or accident (see *supra* nrs. 240 and 292).

However, only the manufacturer and other defendants in a later retransferred product's original distribution chain, can fully benefit from both of these refutable factual presumptions. For retransferors, this would actually only be the case if the defence would apply to them in

²⁰⁶³ See also PLD Explanatory Memorandum 1976, nr. 13; Howells, 'strict liability', nr. 4.277; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 542; Graf von Westphalen, '3. Produkthaftungsgesetz', § 55, nr. 15; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3602, 46; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 9.113; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 1, nr. 77; P. Ehring, '§ 1 ProdHaftG' in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 73.

²⁰⁶⁴ According to this dissertation's typology, it is possible for a second-hand product to have barely been used prior to being retransferred. See *supra* nr. 79.

²⁰⁶⁵ See *supra* nrs. 310-316 on the single defect assessment if a retransferor is held liable as a distributor (or substantial product modifier) and the differentiated defect assessment if he is held liable as an importer or quasi-manufacturer. See also Figure 9 *supra* nr. 239 on the difference between defect assessment and posteriority defence based on the reasonable foreseeability of a circumstance at the time when a product is placed on the market or put into service.

²⁰⁶⁶ See *supra* nrs. 286-287 and 292-293. See also Taschner and Frietsch, *Kommentar*, 190, 238-239; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 2, nr. 10.

a manufacturer-specific manner, but a majority view under PLD-1985 and art. 11(1)c PLD-2024 adopt a personal interpretation instead, even for retransferors who are merely subject to secondary liability as distributors (cf. *supra* nrs. 319-322). As just discussed *supra* nr. 324, this personal interpretation means to the contrary that all circumstances occurring before the moment when the retransferor places the second-hand product on the market or makes it available, actually become irrelevant for the defence. For example, the fact that a gas BBQ is already quite old, has been used and retransferred before by multiple consumers, has been subject to long or uncaredful (re)distribution processes or has been repaired or refurbished in the past, are all considerations that cannot not be invoked by a B2C reseller of said BBQ for the purposes of a posteriority defence. Instead, a retransferor can only invoke these same factual presumptions for the possible extended use phase(s), subsequent redistribution processes and repairs or refurbishments that might still occur after his own retransfer.²⁰⁶⁷ It is precisely the disproportionate consequences of this personal interpretation vis à vis in particular distributors subject to only secondary liability, which drive this dissertation's proposal to amend art. 11(1)c PLD-2024 and adopt of a producer-specific interpretation of art. 7(b) PLD-1985, as argued *supra* nr. 322.b-c.

326. IF THE DEFENCE IS PERSONALLY INTERPRETED, THERE ARE FEWER POSSIBILITIES OF DIRECT PROOF OF DEFECT POSTERIORITY, INCLUDING ON THE BASIS OF THE PRODUCT DEFECT TYPOLOGY – More significant than the factual presumption mentioned in the previous section, is concrete, direct evidence of the posterior origin of a particular defect in a second-hand product. This continues to hold true if the posteriority defence is applied to a retransferor in a personal manner (see *supra* nrs. 319-325). Yet, once more, it must be emphasized that a personal interpretation substantially restricts the scope also for such direct proof of defect posteriority. For example, a donor or barterer of a second-hand e-bike cannot refer to the fact that said e-bike had been damaged, modified, incorrectly repaired or inadequately dis- and reassembled, transported or stored in a not reasonably foreseeable²⁰⁶⁸ manner prior to the retransfer, even when he can directly prove such circumstances according to the posteriority defence's standard of probability,²⁰⁶⁹ such as through recognition by the plaintiff, the e-bike's technical state, lifecycle data collected by 'smart' capabilities of the e-bike or even a future digital product passport. Only direct proof of circumstances that occur after the retransferor himself has placed the second-hand product on the market or made it available and that had not been

²⁰⁶⁷ In a truly more circular economy, it will increasingly frequently happen that products are used long after a retransfer and are subsequently redistributed again and/or repaired or refurbished. However, the extinction period of in principle 10 years of course limits the temporal scope of potential liability in a much more absolute manner. See *infra* nrs. 334-337.

²⁰⁶⁸ If these circumstances had been reasonably foreseeable, they are already irrelevant to the posteriority defence even if it would be interpreted in a producer-specific manner. Circumstances that had already been reasonably foreseeable when a product is placed on the market or put into service, need to be considered as part of the product defect assessment. See Figure 9 *supra* nr. 239.

²⁰⁶⁹ Art. 7(b) PLD-1985; art. 11(1)c PLD-2024. See also on this harmonised standard of probability *supra* nr. 195.

reasonably foreseeable at that time, can provide direct proof of the retransferor's personally interpreted posteriority defence.²⁰⁷⁰

Also here, the defect typology can offer some insight into possible direct proof of defect posteriority. Defects of a posterior origin tend to present themselves mostly as manufacturing defects, while both design and information defects can have a noticeably anterior origin since they are often clear outcomes of the original manufacturing phase.²⁰⁷¹ Yet, as discussed *supra* nrs. 241 and 293, this distinction must be nuanced, especially in a more circular economic context. Most of the apparent manufacturing defects remain actual manufacturing defects. Information defects can still have a posterior origin, because product safety information may have been inadequately relayed or even changed during a previous retransfer. And even design defects may actually result from intentional or inadvertent changes to the structure of a product after it was placed on the market. For example, improper dis- and reassembly during future redistribution processes or inadequate repairs of our aforementioned e-bike can affect its design after the retransferor has made it available or placed it on the market. Note that such posterior product modifications now also have the potential to lead to a separate liability based on art. 8(2) PLD-2024 for the person independently conducting it.²⁰⁷²

327. ART. 11(2)A-C PLD-2024'S EXCEPTION: DIGITAL EXTENSION OF HARMONISED PRODUCT LIABILITY'S SCOPE ALSO APPLIES TO RETRANSFERRORS – Finally, the 'digital exception to the posteriority defence' applies according to art. 11(2) PLD-2024 to all 'economic operators'.²⁰⁷³ Hence, many retransferors subject to harmonised product liability, either on a secondary or a primary basis, may in the future no longer be able to invoke the defence for posterior defect origins that either result from digital services or software supplied 'within the manufacturer's control'²⁰⁷⁴ or that result from a lack of necessary software 'updates or upgrades'²⁰⁷⁵ to maintain the product's required level of safety.

This dynamic extension of the assessment whether safe (embedded) software is made available or put into service seemingly lasts for the full duration of the applicable extinction period, since a European Parliament amendment²⁰⁷⁶ to change this to the main product's reasonable expected lifespan was unfortunately not adopted (see *supra* nr. 242). The extinction

²⁰⁷⁰ See *supra* nrs. 319-322 on how vis à vis all possible defendant qualifications of a retransferor the dominant interpretation of art. 7(b) PLD-1985 is such a personal interpretation and how this is confirmed by art. 11(1)c PLD-2024.

²⁰⁷¹ See Taschner and Frietsch, *Kommentar*, 135, 189; Graf von Westphalen, '3. Produkthaftungsgesetz', § 55, nrs. 12, 17-18; Wagner, *MüKo BGB*, 'Produkthaftungsgesetz', § 1, nr. 35; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 1, nr. 80; P. Ehring, '§ 1 ProdHaftG' in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 70. See also Fairgrieve et al., 'Product Liability Directive', 92; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 13.27.

²⁰⁷² See *supra* nrs. 262 and 307 and *infra* nrs. 442 et seq.

²⁰⁷³ Art. 4(15) PLD-2024 defines 'economic operator' as encompassing all possible defendants.

²⁰⁷⁴ Art. 4(5) PLD-2024 defines 'manufacturer's control'. See also *infra* nrs. 402-404.

²⁰⁷⁵ See *supra* footnote 1581 on the distinction between both concepts.

²⁰⁷⁶ Art. 10(2) amended draft PLD Proposal 2022 in EU Parliament, 'Report of 12 October 2023 on the proposal for a directive of the European Parliament and of the Council on liability for defective products' A9-0291/2023, 59.

period of in principle 10 years is of course sufficiently long to encompass one or more retransfers in the lifecycle of a durable consumer good with embedded software and possibly supplied digital services. Until the extinction period expires (see *infra* nrs. 331 et seq.), a retransferor would thus be subject to secondary or in some cases primary liability for defects in supplied digital services or software or for failures to supply in terms of product safety necessary software updates or upgrades.

B2C resellers and other retransferors subject to harmonised product liability, are of course unlikely to supply themselves these digital services, software updates and upgrades. Moreover, in contrast to non-manufacturing actors in the product's original distribution chain (see *supra* nr. 295), many retransferors and especially those held liable as distributors or substantial product modifiers, are unlikely to have contractual relationships with the manufacturers of these products, which could otherwise be helpful to ensure that no liability under this new art. 11(2)a-c PLD-2024 would arise or to provide contractual recourse rights in the event it nevertheless does. Furthermore, retransferors who are liable on a secondary basis as distributors, are even unlikely to be able to make any successful (non-contractual) recourse claim at all, since they failed to exonerate themselves by timely identifying the manufacturer or other liable party (see *supra* nr. 298).

Consequently, art. 11(2)a-c PLD-2024 substantially increases the liability risk of retransferors of products with (embedded) software and especially those among them who are only subject to secondary liability, for example B2C resellers as well as many prosumers who resell or barter smartphones, laptops, smart devices or various other technological products.²⁰⁷⁷ They can no longer invoke the posteriority defence for safety defects in digital services, software updates and upgrades provided after a product was placed on the market or the lack of updates or upgrades necessary to maintain safety, while they are mostly unable to supply or correct such defects themselves. And in case of liability, they risk being unable to successfully claim in recourse against other liable parties, which is all the more ironic since they would otherwise in most case be able to obtain significant and possibly even complete indemnification (see *supra* nr. 298).

This relative imbalance illustrates again why it be preferable to still adopt the aforementioned European Parliament amendment and limit the duration of this new 'digital exception to the posteriority defence' to the reasonably expected lifespan of the associated products instead of the current extinction period,²⁰⁷⁸ as argued *supra* nr. 242.

In conclusion, art. 11(2)a-c PLD-2024 makes it on average slightly less attractive to resell, donate or barter second-hand products with embedded software and supplies of digital services. This unfortunately helps to entrench a linear economic model in this in terms of environmental impact significant sector.

²⁰⁷⁷ See *supra* nrs. 197-198 on the potential liability of prosumers under the PLD-1985 and the PLD-2024, respectively.

²⁰⁷⁸ Elsewhere, this dissertation has of course argued to also amend the current fixed extinction period to a period based on the expected lifetimes of products (see *supra* nr. 247). This would of course help to simultaneously also improve the duration of art. 11(2) PLD-2024.

d. Neither for-profit nor professional defence

328. ART. 7(c) PLD-1985 AND THE ‘COMMERCIAL ACTIVITY’ REQUIREMENT IN THE PLD-2024 – A defence which is particularly important to the potential harmonised product liability of many product retransferors in a more circular and collaborative economy, is the neither for-profit nor professional defence of art. 7(c) PLD-1985. Many second-hand durable consumer goods are resold, bartered or donated by prosumers on mostly a P2P and sometimes a P2B basis, both through online platforms and in-person such as at yard sales or among acquaintances. The defence of art. 7(c) PLD-1985 determines in such cases whether the retransferring prosumer can be held liable on the basis of a PLD, either as a supplier, quasi-producer, importer or potentially even a substantial modifier. In reality, many prosumers who have retransferred a product on an occasional basis will be unsuccessful in proving this defence, simply because they have made a small profit. The PLD-2024 abolishes this defence and, makes it instead incumbent on the plaintiff to prove that the defendant acted in the course of ‘a commercial activity’.²⁰⁷⁹ Finally, the fact that a second-hand product is donated rather than resold or bartered, makes no automatic difference but also has to be evaluated in light of either of these rules.²⁰⁸⁰

The substantive requirements of art. 7(c) PLD-1985 and its replacement in the PLD-2024 have already been examined *supra* nrs. 197-198. Regarding of art. 7(c) PLD-1985, a completely personal interpretation vis à vis all possible defendant qualifications of retransferors has been argued for earlier in this Chapter. After all, this is likely the most ‘defendant-specific’ of all defences for which a producer-specific interpretation would lead to quite absurd outcomes (see *supra* nrs. 317 et seq.).

§ 4. Limitation and extinction periods

a. Three-year limitation period: towards a personal interpretation

329. THE SIGNIFICANCE IN THE SECOND-HAND GOODS CONTEXT OF WHETHER TO INTERPRET THE LIMITATION PERIOD IN A PRODUCER-SPECIFIC OR A PERSONAL MANNER: WHICH ACTOR’S IDENTITY SHOULD THE PLAINTIFF KNOW OR REASONABLY HAVE KNOWN FOR IT TO COMMENCE? – To which defendant(s) does art. 10(1) PLD-1985²⁰⁸¹ refer, when it holds that its three-year limitation period only starts after plaintiffs effectively become or reasonably should have become aware of “*the identity of the producer*”? After all, other defendant categories like importers,²⁰⁸² suppliers and quasi-

²⁰⁷⁹ Arts. 2(1), 4(7)-(16) and 8 *ibid*.

²⁰⁸⁰ A donor can still be liable as a distributor, quasi-manufacturer, importer or substantial product modifier, if the neither for-profit nor professional defence of art. 7(c) PLD-1985 would fail or if the plaintiff would prove under the PLD-2024 the new ‘commercial activity’ requirement for liability. See also *supra* nrs. 298 et seq.

²⁰⁸¹ See *supra* nr. 202 on the limitation period in general.

²⁰⁸² See *infra* nr. 330, where it is argued that a producer-specific interpretation should be replaced by an importer-specific interpretation if products have been imported into the EU.

producers are either “*deemed to be*” or “*treated as*” identical to the ‘producer’.²⁰⁸³ Can the limitation period only start once the plaintiff is or reasonably should have become aware of the identity of the actual producer of the final product? Or does a separate limitation period exist for every harmonised product liability claim by a plaintiff for the same damage but against different defendants, each of which then commences only after the plaintiff becomes or reasonably should have become aware of this particular defendant’s identity? This question is very similar to the *supra* nrs. 317-322 already extensively discussed two possible interpretations of the Directive’s substantive defences. Art. 10(1) PLD-1985’s limitation period can therefore also be interpreted in either a ‘producer-specific’ manner, which would bring about a single period for all potential grounds of harmonised product liability resulting from a single product accident, or a ‘personal’ manner, which would bring about separate periods per defendant.

The stakes of this theoretical question are significantly raised in a second-hand goods context, because retransfers increase the number of potential defendants but also lead to fewer associations or contractual ties between the defendants in the product’s original distribution chain and the retransferors as new defendants. Retransfers furthermore result in more ‘anonymous products’, for which defendants in the product’s original distribution chain cannot be identified and for which retransferors might already on a secondary basis effectively be held liable.²⁰⁸⁴

And, while the section clarifies how the PLD-2024 provides a clear answer to this question, the pertinence of the question on how to correctly interpret art. 10(1) PLD-1985’s limitation period is not going away any time soon. After all, it will continue to govern all products placed on the market or put into service prior to the new Directive’s entry into force.²⁰⁸⁵

330. A MAJORITY INTERPRETS ART. 10(1) PLD-1985 IN A PERSONAL MANNER AND THIS APPROACH, RESULTING IN SEPARATE LIMITATION PERIODS PER DEFENDANT, IS CONFIRMED BY ART. 16 PLD-2024 – Some Belgian and French courts and scholars interpret art. 10(1) PLD-1985 in a producer-specific manner.²⁰⁸⁶ Although in French scholarship, this seems to be not stated explicitly, it can be textually inferred and in particular be deduced from the stipulation in the French PLDI that a product can only be put ‘once’ into circulation.²⁰⁸⁷ Such producer-specific interpretation means that all harmonised product liability claims by a plaintiff against different defendants but relating to the same damage, are governed by a single three-year limitation period, which

²⁰⁸³ See art. 3 PLD-1985.

²⁰⁸⁴ See *supra* nrs. 302-303 on the increased risk of secondary liability when second-hand products are re-distributed and on the importance in this regard of product ‘traceability’ regulation.

²⁰⁸⁵ Art. 21 PLD-2024.

²⁰⁸⁶ E.g., BELGIUM: Kh. Ieper 24 June 2002, RW 2005-06, 1229, 1231; Rb. Gent 7 May 2004, *T.Gez.* 2007-08, 162, 167; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 549; Tilleman and Van Den Abeele (collab.), *Gevolgen van de koop*, 1012; Dubuisson et al., *Chronique de jurisprudence 2008-2020 – Volume 1*, 408. FRANCE: G. Pignarre and S. Pimont, ‘L’action en responsabilité et la prescription. Rapport français’ in GRERCA (ed.), *La responsabilité du fait des produits défectueux* (IRJS 2013) 354 (holding that only knowledge about damage and defect suffices to start the limitation period for a claim against the supplier, since this means that the producer’s identity is unknown).

²⁰⁸⁷ Art. 1245-4, 2nd section CC FR.

can only start after the plaintiff has or reasonably should have become aware of the producer's identity. Only for products that are imported into the EU, an 'importer-specific' interpretation should logically be adopted instead,²⁰⁸⁸ since such import is the moment when the product is 'put into circulation' in the EU's internal market (see also *supra* nr. 320). This means for example that, if an imported product is later resold, bartered or donated as second-hand, the limitation period for the retransferor's liability would only commence after the plaintiff is or should have become aware of the importer's identity but not of the third-country producer's identity.²⁰⁸⁹

Such producer-/importer-specific interpretation is quite friendly to plaintiffs, because it results in many cases where a claim against another defendant than the producer or importer can already be made but no limitation periods starts to run, simply because the producer or importer is not yet known. This naturally aligns with the Directive's aim of protecting injured parties (see *supra* nr. 168). At the same time, however, in those cases where a claim against other defendants is possible but the limitation period does not yet run, this approach undermines the limitation period's goals of achieving legal certainty, insurability, societal peace and limiting evidentiary challenges.²⁰⁹⁰ It is for these reasons that this producer-specific interpretation seems to be not necessarily beneficial for purposes of risk-allocation and accident-prevention and, from an economic perspective, it can be considered as inefficient (see *supra* nr. 141.a).

A majority of the literature and case law interprets art. 10(1) PLD-1985 instead in a personal manner.²⁰⁹¹ This means that a separate limitation period exists for every claim by a plaintiff

²⁰⁸⁸ *Contra* Dubuisson et al., *Chronique de jurisprudence 2008-2020 – Volume 1*, 408.

²⁰⁸⁹ Although a plaintiff can theoretically also claim against the third-country producer of a product that has been imported into the EU by another party (see *supra* footnote 1030), his knowledge of the third-country producer's identity is arguably insufficient to start the limitation period of art. 10 PLD-1985. The goal of protecting injured parties (see *supra* nr. 168) pursued when adopting a producer-specific interpretation, should be brought to its logical conclusion, which is to adopt an importer-specific interpretation if a product has been imported into the EU. The PLD-1985 clearly aims to save plaintiffs the trouble of claiming against defendants outside the EU (see, e.g., PLD Explanatory Memorandum 1976, nr. 10). This also means that knowledge of the identity of these third-party defendants should not suffice to commence the limitation period, in contrast to knowledge about the identity of the importer (or the manufacturer's authorised representative or fulfilment service provider, based on art. 8(1)c PLD-2024). See also *supra* footnote 2019 on the consensus to personally interpret all defences vis à vis the importer.

²⁰⁹⁰ See PLD Explanatory Memorandum 1976, nr. 27; Markovits, *La Directive C.E.E. du 25 juillet 1985*, 246; Taschner and Frietsch, *Kommentar*, 41. See also relating to the identical three-year limitation period in the Strasbourg Convention, which served as the blueprint for art. 10 PLD-1985: "For the better administration of justice and avoidance of abuses, [...]" (Council of Europe, 'Explanatory Report to the European Convention on Products Liability in regard to Personal Injury and Death', 27 January 1977, *European Treaty Series* nr. 19, 12) See also on the same goals of limitation periods in general A. Collin, *Pour une conception renouvelée de la prescription* (Lextenso éditions 2010) 3-65; D. Deferme, *Bevrijdende verjaring in het privaatrecht* (die Keure 2023) 9-74.

²⁰⁹¹ E.g., **BELGIUM**: Memorie van toelichting bij het Wetsontwerp betreffende de aansprakelijkheid voor produkten met gebreken, *Parl.St.* Kamer 1989-1990, nr. 1262/001, 22; Liège 26 June 2014, *JLMB* 2015, 603, 605; Liège 21 January 2016, *JLMB* 2017, 1187, 1190; Verhoeven, *Productaansprakelijkheid en*

against a different defendant for the same damage, which can start at the earliest when the plaintiff becomes or reasonably should have become aware of this particular defendant's identity. This might be disadvantageous to plaintiffs who are only aware of the identity of other defendants than the product's producer or importer, like a possible retransferor, and who wait more than three years before claiming against those defendants.²⁰⁹² Yet, it seems difficult to justify why plaintiffs should only be subject to limitation periods when they are aware of the identity of the actual producers or importers of a harmful product but not when they are only aware of the identity of other defendants and are able to claim against those other defendants. Such vast difference in the protection offered by the limitation period to quasi-producers, substantial product modifiers, suppliers and other defendants,²⁰⁹³ compared to producers and importers, seems undesirable. Moreover, it seems potentially detrimental to the attractiveness of engaging in retransfers, since this circular strategy generally leads to potential liability as a supplier or, alternatively, as a quasi-producer or substantial modifier (see *supra* nrs. 298 et seq.).

This is why this dissertation argues to interpret art. 10(1) PLD-1985 in accordance with this majority view and contrary to the French position, in a personal manner vis à vis different defendants. This helps to avoid an imbalance between different types of defendants that would be difficult to reconcile with corrective justice, since otherwise profiting producers and importers can hardly be considered as lesser 'wrongdoers' than other defendants. More importantly, a personal interpretation is also preferable in terms of economic efficiency, since it avoids an arbitrary extension of the limitation period where it offers benefits of avoiding incorrect decisions, reducing administrative costs and improving insurability (see *supra* nr. 141.a).

Fortunately, this is the position that art. 16(1)c PLD-2024 now explicitly adopts by requiring that the maintained three-year limitation period only starts after the injured party became or reasonably should have become aware of, among others, "*the identity of the relevant economic operator that can be held liable for that damage under Article 8.*" And an 'economic operator' refers to every possible defendant category.²⁰⁹⁴

productveiligheid, 282-283. FRANCE: C. Caillé, 'Responsabilité du fait des produits défectueux' in X. (ed.), *Répertoire de droit civil* (Dalloz.fr 2018 update) nr. 96. GERMANY: Taschner and Frietsch, *Kommentar*, 413; Graf von Westphalen, '3. Produkthaftungsgesetz', § 53, nr. 7; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3609, 3; Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 12, nr. 10; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 12, nr. 8. SEE ALSO: B. Carron and F. Krauskopf, 'La prescription et la péremption dans la responsabilité du fait des produits' in C. Chappuis and B. Winiger (eds.), *La responsabilité du fait des produits* (Schultess 2018) 176.

²⁰⁹² The possible suspension and interruption of the limitation period are determined by nation law. See art. 10(2) PLD-1985; art. 16(2) PLD-2024.

²⁰⁹³ E.g. online platforms. See arts. 4(16) and 8(4) PLD-2024.

²⁰⁹⁴ Art. 4(15) PLD-2024.

b. Ten-year extinction period: towards a hybrid interpretation based on distinguishing between secondary and primary liability

331. THE SIGNIFICANCE IN THE SECOND-HAND GOODS CONTEXT OF WHETHER TO INTERPRET THE EXTINCTION PERIOD IN A PRODUCER-SPECIFIC OR PERSONAL MANNER: WHAT IS ITS STARTING DATE WHEN CLAIMS ARE MADE AGAINST OTHER DEFENDANTS THAN THE PRODUCER? – Art. 11 PLD-1985 subjects harmonised product liability to an extinction period of ten years “*from the date on which the producer put into circulation the actual product which caused the damage*”.²⁰⁹⁵ Similar to the questions on how to interpret the substantive defences and limitation period, which have been previously discussed in this Chapter (see *supra* nrs. 317-322 and 329-330), the old Directive fails to clarify how this provision must be applied vis à vis other defendants than the producer.

Should it be interpreted in a ‘producer-specific’ manner, which would crucially mean that a retransferor subject to primary or secondary liability benefits from the fact that a single ten-year extinction period has already been running since the producer originally put the product into circulation? If the product has been imported into the EU, an ‘importer-specific’ interpretation should arguably be adopted instead (see analogously *supra* nr. 330), which would similarly result in a single extinction period that starts when the imported product is put into circulation. Given the already criticised relatively short and inflexible nature of the current extinction period (see *supra* nr. 246), such a producer- or importer-specific interpretation would mean that many retransferors are never subject to any harmonised product liability risk to begin with, simply because they have resold, donated or bartered the second-hand good more than ten years after this starting date.²⁰⁹⁶ And in many other cases, this ten-year period is bound to expire relatively soon after the retransfer, either before an eventual accident occurs or before the injured recipient or third party subsequently manages to initiate court proceedings.²⁰⁹⁷ After all, although some second-hand products might still be relatively new,²⁰⁹⁸ many have had one or more relatively long preceding use phases and additional time has furthermore elapsed during the original and subsequent (re)distribution phases, which then all count towards the single extinction period which started when the product was initially placed on the market (see *supra* nrs. 244 and 296).

Or should the extinction period be interpreted in a ‘personal’ manner, which would generally mean that a separate ten-year period starts when any act of reproduction or redistribution, such as by a retransferor, leads to potential liability based on the PLDI of a new defendant? This would make a vast difference for the prospects of successful harmonised

²⁰⁹⁵ See *supra* nrs. 203 and 244 on the extinction period in general.

²⁰⁹⁶ This would of course not be true for retransferors who are liable on a primary basis for importing an already second-hand product into the EU (see *supra* nr. 298.a).

²⁰⁹⁷ This is the only possibility to suspend the extinction period based on arts. 11 PLD-1985 and 17 PLD-2024 (in contrast to the limitation period based on arts. 10(2) PLD-1985 and 16 PLD-2024). See CJEU 2 December 2009, C-358/08, *Aventis Pasteur v. OB*, ECLI:EU:C:2009:744, nr. 45; Taschner and Frietsch, *Kommentar*, 421-422; P. Le Tourneau, *Responsabilité des vendeurs et fabricants* (5th edn., Dalloz 2015) nr. 22.342; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 284; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3610, 5.

²⁰⁹⁸ ‘Second-hand’ is defined in this dissertation as products that have been used before however briefly and lightly. See *supra* nr. 79.

product liability claims against retransferors. Instead of the aforementioned single extinction period which has often already expired or will soon expire at the time of the second-hand product's resale, donation or barter, the potential secondary or primary liability of these retransferors would only expire if no court proceedings have yet been initiated ten years after the retransfer itself.

It is thus clear that this is a question which significant importance in legal practice, especially in more circular product lifecycles where possible defendants like retransferors only enter the picture possibly many years after the now second-hand product had been originally put into circulation.

332. LACK OF CONSENSUS ON HOW TO INTERPRET THE EXTINCTION PERIOD OF ART. 11 PLD-1985 – Although it has come close on occasions,²⁰⁹⁹ the CJEU has never elucidated how art. 11 PLD-1985 should be interpreted vis à vis other defendants than the producer or importer. It has only suggested that the notion of ‘putting into circulation’ in art. 11 PLD-1985 may need to be interpreted in a different, less stringent manner than the same notion in art. 7 PLD-1985 (see also *supra* nrs. 194 and 323).²¹⁰⁰ National legislators, case law and scholars have adopted diverging interpretations.

At one end of the spectrum, the French PLDI has adopted a 100% producer-specific interpretation of the extinction period, as confirmed by the rejection in parliamentary proceedings of distinct extinction periods for different defendants²¹⁰¹ and the resulting statement in art. 1245-4 CC FR that a product can only be put once into circulation.²¹⁰² Although seemingly not discussed in French sources, if a product has been imported into the EU, an

²⁰⁹⁹ See notably CJEU 9 February 2006, C-127/04, *Declan O’Byrne*, ECLI:EU:C:2006:93; CJEU 2 December 2009, C-358/08, *Aventis Pasteur v. OB*, ECLI:EU:C:2009:744. In these related cases, the Court never ruled on applying the extinction period to the supplier, because this party could no longer be held personally liable as a result of timely referring the plaintiff to its parent company, the actual producer, and because it was the claim against the latter for which court proceedings had not been initiated prior the expiration of ten-year period. The Court ruled instead in *Declan O’Byrne* that the starting date of ‘putting the product into circulation’ should be (also in a corporate group) be functionally interpreted as the time when the product is taken out of the manufacturing process and enters a marketing process (see *supra* nr. 194) and in *Aventis Pasteur* that, if the producer as a parent company has in fact determined the putting into circulation of the product by the supplier, its subsidiary, such producer can be substituted in the timely initiated court proceedings for such supplier (see *supra* footnote 1176). But see on the interpretation of art. 11 PLD-1985 vis à vis component producers A-G. Trstenjak, opinion C-358/08, 8 September 2009, ECLI:EU:C:2009:254, nr. 106.

²¹⁰⁰ CJEU 9 February 2006, C-127/04, *Declan O’Byrne*, ECLI:EU:C:2006:93, nrs. 25-26. See also A. Guégan-Lécuyer, ‘La mise en circulation. Rapport français’ in GRERCA (ed.), *La responsabilité du fait des produits défectueux* (IRJS 2013) 296.

²¹⁰¹ The French *Sénat* was in favour of “une notion multiple de la mise en circulation” (personal interpretation). But the *Assemblée Nationale*, which followed the Government’s proposal by advocating for “une notion unique” (producer-specific interpretation) arguing that this increases legal certainty, ultimately won out in the bicameral negotiations that led to art. 1245-4 CC FR. See *Sénat*, Adoption d’une proposition de loi en deuxième lecture, Procès-verbal séance 21 avril 1998, doc. *Sénat*, nr. 6.

²¹⁰² See in favour of this unitary notion of putting a product into circulation P. Le Tourneau, *Responsabilité des vendeurs et fabricants* (5th edn., Dalloz 2015) nr. 22.141; Bloch and Poumarède, ‘L’indemnisation des victimes de produits’, nr. 6312.61.

importer-specific rather than a producer-specific interpretation still seems more logical (see *supra* nrs. 330-331).²¹⁰³ Some French scholars criticize this single extinction period, because it shortens the period during which claims against suppliers and other downstream actors are possible, which is especially acute in the second-hand goods context (see *supra* nr. 331).²¹⁰⁴ An aversion to such diminished protection of injured parties might explain why French judges seem eager to delay the extinction period's starting date in ways that potentially violate the Directive.²¹⁰⁵ Then again, a single extinction period can actually be beneficial for injured parties when it would conversely also encompass claims against component or material producers, for which the extinction period's starting date would be postponed to the moment when a final product is put into circulation.²¹⁰⁶

At the other end of the spectrum, the Belgian and German authors who explicitly discuss this question advocate in favour of a 100% personal interpretation of the extinction period vis à vis different defendants,²¹⁰⁷ in accordance with the explanatory memoranda of their

²¹⁰³ Curiously, French authors do not seem to explicitly discuss the application of the extinction period vis à vis importers. The solution advocated for *supra* footnote 2089, to only allow an importer-specific interpretation once a product has been imported into the EU and to reject a combination of both producer-specific and importer-specific interpretations, would still meet art. 1245-4 CC FR's requirement of a single 'putting into circulation' (i.e. a single extinction period for all possible claims).

²¹⁰⁴ E.g., A. Guégan-Lécuyer, 'La mise en circulation. Rapport français' in GRERCA (ed.), *La responsabilité du fait des produits défectueux* (IRJS 2013) 298; Viney, Jourdain and Carval, *Les régimes spéciaux et l'assurance*, 4th edn., 45.

²¹⁰⁵ E.g., Cass. FR civ. (1^{re} Ch.) 21 October 2020, nr. 19-18.689, D. 2020, 2064, note C. Quézel-Ambrunaz, *JCP* 2020, nr. 1276, note B. Parance, *RTD civ.* 2021, 155, note P. Jourdain. In this decision, the French Cour de Cassation seems to allow, if the requirements of factual control of the *Aventis Pasteur* case law (see *supra* footnote 1176) are fulfilled, that the starting date of the – according to the French PLDI – single extinction period becomes the date when a subsidiary supplies a product to a third party rather than the date when the parent company producer first supplied this product to the subsidiary. In *Aventis Pasteur*, the CJEU did not change the starting date of the extinction period but only allowed to substitute the parent producer for the subsidiary supplier in proceedings that had been timely initiated according to the extinction period applicable to when the producer had put the product originally into circulation (see *supra* footnote 2099).

²¹⁰⁶ See Viney, Jourdain and Carval, *Les régimes spéciaux et l'assurance*, 4th edn., 45-46 (proposing that only a separate extinction period would apply if a component or material causes damage before being integrated in a more complex product, but to afterwards retain a single extinction period which starts when the final product is put into circulation); Brun, *Responsabilité civile extracontractuelle*, 5th edn., 538 (advocating for separate extinction periods for component producers). *Contra* Bloch and Pouma-rède, 'L'indemnisation des victimes de produits', nr. 6312.63.

²¹⁰⁷ E.g., Taschner and Frietsch, *Kommentar*, 424; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 551; Graf von Westphalen, '3. Produkthaftungsgesetz', § 53, nr. 16; Delforge, 'Le défaut de sécurité au sens de la loi du 25 février 1991', 317; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 284-285; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3610, 2-3; I. Lutte and J.-L. Fagnart, 'Livre 33bis' in X. (ed.), *Responsabilités. Traité théorique et pratique* (Kluwer 2020 update) 58; Wagner, MüKo BGB, 'Produkthaftungsgesetz', § 13, nr. 6; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 13, nr. 5; P. Ehring, '§ 13 ProdHaftG' in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 7; F. George, 'La responsabilité du fait des produits défectueux' in F. George and R. Jafferalli (eds.), *Manuel de droit de la responsabilité civile* (Anthemis 2022) 546. See also Markovits, *La*

national PLDI's.²¹⁰⁸ Although uncertain, this view might have also been already adopted in the explanatory memorandum of the Strasbourg Convention, which has an identical extinction period which became the blueprint for art. 11 PLD-1985.²¹⁰⁹

A personal interpretation avoids some of the interpretative issues of the producer-specific interpretation discussed above. Importantly, it can be considered as overall more protective of injured parties and thus better aligned with the Directive's goals (see *supra* nr. 168). This is because claims against downstream distributors tend to be more numerous than direct claims by injured parties against upstream component or material producers.²¹¹⁰

333. A HYBRID INTERPRETATION THAT DISTINGUISHES BETWEEN PRIMARY LIABILITY AND SECONDARY LIABILITY, IS BROUGHT FORWARD BY ART. 17 PD-2024 – Between those two positions, various hybrid interpretations of the extinction period are possible.²¹¹¹ The in my opinion most interesting and coherent hybrid approach is offered by the UK PLDI, which limits a personal interpretation to the primary liability of producers, importers and quasi-producers and fixes the extinction period's starting point for the secondary liability of suppliers at the last time when a primarily liable defendant had placed the product into circulation.²¹¹² This theoretically fits well with the distinctions between primary and secondary liability in terms of harmonised product liability's personal scope (see *supra* nrs. 176-177) and in terms of whether a single or a differentiated defect assessment applies (see Figure 12 *supra* nr. 310), although

Directive C.E.E. du 25 juillet 1985, 253 (advocating, prior to the French PLDI, for different extinction period starting points when there are 'multiple producers'); B. Carron and F. Krauskopf, 'La prescription et la péremption dans la responsabilité du fait des produits' in C. Chappuis and B. Winiger (eds.), *La responsabilité du fait des produits* (Schultess 2018) 189 (personal interpretation, Swiss law based on the PLD-1985).

²¹⁰⁸ Memorie van toelichting bij het Wetsontwerp betreffende de aansprakelijkheid voor produkten met gebreken, *Parl.St.* Kamer 1989-1990, nr. 1262/001, 14-15, 22-23; Deutscher Bundestag, 'Entwurf eines Gesetzes über die Haftung für fehlerhafte Produkte', *BT 11. Wahlperiode*, Druksache 11/2447, 25.

²¹⁰⁹ Council of Europe, 'Explanatory Report to the European Convention on Products Liability in regard to Personal Injury and Death', 27 January 1977, *European Treaty Series* nr. 19, 13: "It should be noted that where there are several producers there may be different starting dates under Article 7, action (sic) thus becoming barred at different times." It remains unclear whether this only refers to the situation where multiple producers *sensu stricto* (i.e. component and final product producers) are jointly liable or the situation where also other types of defendants than actual producers are liable.

²¹¹⁰ It is at least rare, when a claim against a component or material producer is possible, that a claim against the jointly liable final product producer, is not possible because the latter would be, for example, insolvent, not identifiable or not liable based on art. 7(c) PLD-1985's neither for-profit nor professional defence. According to a personal interpretation, the final product producer's liability would always extinguish at a later date than the component or material producer's liability.

²¹¹¹ E.g., the solution advocated for by VINEY, JOURDAIN AND CARVAL or the one advocated for by BRUN, which each still aim to award a separate extinction period to component and material producers in the context of the French producer-specific interpretation (see *supra* footnote 2106).

²¹¹² Section 11A(3) Limitation Act 1980 of 13 November 1980, *UK Public General Acts*, 1980, c. 58 *juncto* schedule 1(1) and section 4(2) Consumer Protection Act 1987 of 15 May 1987, *UK Public General Acts*, 1987 c. 43. See also Howells, 'strict liability', nr. 4.318; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 17.158.

this last theoretical parallel is in light of current art. 8(2) PLD-2024 incomplete.²¹¹³ Moreover, it aligns with the underlying basic distinction between (re)production and (re)distribution activities in all of modern product liability law (see *supra* nr. 74), but also with the similarity from an internal market perspective between producers and importers (see *supra* nr. 320).

Given the theoretical coherence and persuasive nature of this approach, one must seek in the text of the PLD-1985 for an explanation why it has never really been taken up outside the UK PLDI. The PLD-1985 does not distinguish between defendants when it uses the term ‘putting into circulation’ and it declares that suppliers “*shall be treated as*” producers,²¹¹⁴ which makes it difficult to argue that art. 11 PLD-1985 should be applied differently to suppliers compared to primarily liable defendants like importers and quasi-producers.

However, art. 17(1) PLD-2024 now clearly adopts such a distinction between defendants subject to primary and secondary liability, by stipulating that the ten-year extinction period starts from “*the date on which the defective product which caused the damage was placed on the market or put into service*” or “*in the case of substantially modified products, the date on which that product was made available on the market or put into service following its substantial modification.*”²¹¹⁵

‘Placing on the market’ and ‘putting into service’ in art. 17(1)a PLD-2024 target manufacturers, importers and quasi-manufacturers, since these terms encompass all situations where a (newly rebranded) product is first supplied or used in the course of a commercial activity within the EU.²¹¹⁶ And the reference in art. 17(1)b PLD-2024 to ‘substantial modification’ removes any doubt that, when someone substantially modifies a product according to either art. 8(2) PLD-2024 or art. 11(2)d PLD-2024, also a new ten-year extinction period comes into existence. Since art. 17(1) PLD-2024 does not mention the moment when the product was “*made available*”, distributors are not subject to a separate, personally applicable extinction period. Instead, the secondary liability of these defendants already extinguishes ten years after a (quasi-)manufacturer, importer or substantial modifier had last placed this particular product on the market.

In summary, this means for retransferors that the extinction period of the PLD-2024 should be applied personally to them, in the less numerous cases where they are liable as either quasi-manufacturers, importers or substantial modifiers of a second-hand product. In contrast, in the more common scenarios where retransferors are only liable as distributors

²¹¹³ Art. 8(2) PLD-2024 combines a primary liability with a single defect assessment for substantial product modifiers who ‘make products available on the market’, which this dissertation has criticised and for which it proposes an amendment. See *supra* nrs. 265 and 311.

²¹¹⁴ Art. 3(3), 7(a) and 11 PLD-1985. See also *supra* nr. 318.

²¹¹⁵ Art. 17(1)a and 17(1)b PLD-2024, respectively. Note how this provision of art. 17(1)b *ibid.* is only necessary because art. 8(2) *ibid.* talks about ‘making a substantially product available on the market’ rather than ‘placing it on the market’, as criticised by this dissertation *supra* nrs. 265 and 311.

²¹¹⁶ Art. 4(7)-(9) PLD-2024. See on how quasi-manufacturers place a new product on the market rather than only make an existing one available, at least from the perspective of the identical concepts in EU product regulation, Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 35 (“*In this respect, the economic operator that places the product on the market under its name or trademark becomes automatically the manufacturer for the purposes of Union harmonisation legislation.*”); C. Piovano, *Der Hersteller im europäischen Produktsicherheitsrecht* (Fachmedien Recht und Wirtschaft 2020) nr. F.II.1.e.

(see *supra* nrs. 298 et seq.), the extinction period of art. 17 PLD-2024 applies to them according to a (re)producer- or importer-specific interpretation.

This approach of art. 17 PLD-2024, which distinguishes between primary and secondary liability, is theoretically convincing, as discussed above. It furthermore results in a more tailored application of the extinction period vis à vis different defendants subject to primary liability. This seems overall desirable for protecting injured parties and in terms of corrective justice, since it would be hard to justify that these persons who also profit from taking ‘abnormal risks’ would benefit from shorter extinction periods than manufacturers (see also *supra* nrs. 127, 128.c and 168). That distributors subject to secondary liability, like most product retransferors, do profit from an extinction period that has potentially already been running for a while, fits better with their more limited control over most accident risks (see *supra* nr. 322.b-c on this dissertation’s arguments against a personal interpretation of the posteriority defence vis à vis these defendants). Avoiding another extension of liability by means of separate extinction periods for each application of secondary liability, could also be considered as economically inefficient for the reasons discussed *supra* nr. 141.a.

In conclusion, this dissertation supports the solution of art. 17 PLD-2024 and the same interpretation that distinguishes between primary and secondary liability should be, pursuant to the UK PLDI and contrary to the ‘French approach’, also be extended to the extinction period of art. 11 PLD-1985.

c. Ten-year extinction period: applied to the liability of retransferors

334. IMPACT OF THE EXTINCTION PERIOD ON THE LIABILITY RISK OF RETRANSFERRORS: A SHARP CONTRAST BETWEEN TWO GROUPS – The preceding discussion on whether to interpret the extinction period in a manufacturer-specific or in a personal manner, largely determines its impact on the harmonised product liability risk of retransferors.

If a retransferor is only subject to secondary liability as a distributor and if either the aforementioned art. 17 PLD-2024 applies or if art. 11 PLD-1985 is interpreted in a (‘French’) producer-specific manner, then the fixed, ten-year extinction period has the same, major impact as it has on the liability of defendants in the second-hand product’s original distribution chain, as already discussed *supra* nr. 296. The extinction period then has been running since the particular product was originally placed on the market, by a manufacturer, importer, quasi-manufacturer or, based on art. 17(2) PLD-2024, since a substantially modified version of the product was last ‘made available’.²¹¹⁷ And many, although not all,²¹¹⁸ durable second-hand products have of course already been in use during a relatively long period of time before they are resold, donated or bartered as second-hand and subsequently cause an accident.

²¹¹⁷ In the latter scenario, the substantial product modifier liable based on art. 8(2) PLD-2024 is only liable for parts of the product affected by the modification (art. 10(1)g *ibid.*). Persons who are liable for placing the pre-existing product on the market or making it available, remain liable for the unaffected parts.

²¹¹⁸ This dissertation considers any prior use, even if relatively brief and not intensive, as sufficient to make a product second-hand at the occasion of a subsequent transfer of ownership. See *supra* nr. 79.

The original distribution and the retransfer processes can furthermore entail extra periods of storage, transportation and handling, which all count towards the extinction period.

Consequently, there is a substantial likelihood that the secondary liability of retransferors based on art. 17 PLD-2024 or their primary or secondary liability based on the producer-specific interpretation of art. 11 PLD, is effectively already extinguished before a second-hand product even causes an accident or before an injured party subsequently manages to initiate court proceedings (see *supra* nr. 296). The significant criticism issued earlier (see *supra* nr. 246) against the current fixed, ten-year extinction period of art. 11 PLD-1985 and art. 17(1) PLD-2024, can therefore be reiterated here. It substantially limits the application of harmonised product liability to second-hand products. This is why this dissertation has proposed *supra* nr. 247 to adopt *de lege ferenda* an extinction period with a duration based on the reasonably expected lifetime of each individual product, when it is placed on the market or put into service.

In a sharp contrast, in the other cases, the extinction period suddenly loses most of its significance for shielding retransferors against harmonised product liability. This second group consists, on the one hand, of all cases where a retransferor is liable under the PLD-2024 on a primary basis as a quasi-manufacturer,²¹¹⁹ importer or a substantial modifier of a second-hand product and, on the other hand, of all potential liabilities of a retransferor based on the PLD-1985 if art. 11 PLD-1985 is interpreted according to a fully-personal ('Belgian and German') interpretation. In these cases, the retransferor is subject to a separate, newly started ten-year extinction period, which plays the same role as in the standard, linear economic liability of manufacturers and importers of new products. Of course, especially in a more circular economy with increasingly longer product lifetimes, it remains theoretically possible that the liability of such retransferors still extinguishes a decade after the retransfer, because their second-hand product might still cause an accident sufficiently long afterwards and/or because an injured party fails to timely initiate court proceedings. Nevertheless, this will remain much rarer than how often the extinction period will expire in the aforementioned, first group of cases.

Overall, the first group, where the extinction period has a major impact on the potential liability of retransferors, seems to be significantly larger than the second, at least under the new rule of art. 17 PLD-2024. This is due to the fact that retransferors are in practice mostly liable on only a secondary basis as distributors of second-hand products (see *supra* nrs. 298 et seq.). Conversely, although fewer retransferors will be potentially liable based on the PLD-2024 as quasi-manufacturers, importers or substantial product modifiers, those who nevertheless incur such primary liability now have a much smaller chance that they will benefit from the ten-year extinction period, which only starts when they have placed a (partially) new product on the market.

335. THE CHALLENGE TO PROVE THE EXTINCTION PERIOD'S STARTING DATE FOR THE FIRST GROUP OF RETRANSFERRORS AND IN PARTICULAR FOR THOSE SUBJECT TO SECONDARY LIABILITY UNDER THE PLD-1985 OR PLD-2024 – Interestingly, the prior distinction is somewhat offset by the fact that the

²¹¹⁹ See *supra* footnote 2116 on how quasi-manufacturers also 'place a product on the market' according to art. 17(1)a PLD-2024 rather than merely 'make a product available' such as a distributor.

first group consisting of those retransferors who enjoy an extinction period which has already started before the retransfer, are much more likely to encounter practical difficulties in successfully invoking it. This is because it is more difficult for them to prove with sufficient certainty the extinction period's (exact or approximative) starting date, which is when the product was placed on the market (or put into service) pursuant to the PLD-2024 or when the producer (or importer) put the product into circulation pursuant to the PLD-1985 (see *supra* nrs. 331-333).

As already discussed *supra* nr. 313 in the context of the single defect assessment, the challenge for a retransferor to figure out this precise moment is particularly pronounced when he is only liable as a distributor under the PLD-2024 or as a supplier under the PLD-1985. After all, secondary liability implies that this retransferor has failed to timely identify the (quasi-)manufacturer, importer or person who supplied him with the product.²¹²⁰ Consequently, such retransferor subject to secondary liability probably also lacks information on when the corresponding product was placed on the market.

Furthermore, the recent general product safety traceability requirement to indicate, in principle on products themselves, a “*type, batch or serial number or other element enabling the identification of the product*”,²¹²¹ is less helpful to retransferors who did not themselves affix this information. Such retransferors are on their own probably unable to deduce from this, let alone prove, the date when a product was placed on the market. This only seems possible either if this date is by chance included in the provided traceability information, although the General Product Safety Regulation 2023/988/EU does not require to do so, or if the retransferor happens to be part of the product's original distribution chain or has direct relationships with those actors. In both instances, the retransferors might still be able to deduce from this limited identification information the date when a product was placed on the market. In the future, this date might be more easily retrieved from a digital product passport (see *infra* nrs. 344-345.b). However, any of these possibilities is unlikely to be helpful for retransferors who still find themselves held liable on a secondary basis. This is because, if the General Product Safety Regulation 2023/988/EU's traceability requirements would be complied with²¹²² or if a digital product passport would be available in the future, then both plaintiff and retransferor can normally retrieve in the same manner the identity of the person who has placed the product on the market. In such situations, there would normally be no possibility for secondary liability of a retransferor to begin with (see *supra* nrs. 281 and 303 and *infra* nr. 345.a). Additionally, even when traceability information or future QR-codes of digital product passports have been placed on a second-hand product, they can still be damaged by wear and tear or a product accident (see *supra* nr. 281 and *infra* nr. 346).

For the time being, retransferors might therefore have to rely on more indirect evidence to prove the expiration of the extinction period which governs their liability based on art. 17(1)a PLD-2024 as a distributor or based on art. 11 PLD-1985 according to a producer-specific interpretation. Possible examples of such circumstantial evidence are the second-hand product's

²¹²⁰ See *supra* nrs. 177 and 301 on the persons to whom the supplier based on art. 3(3) PLD-1985 and the distributor based on art. 8(3) PLD-2024 may timely refer the injured party to exonerate himself.

²¹²¹ Arts. 9(5), 11(1)-(3) and 13(1)(2) General Product Safety Regulation 2023/988/EU. See *supra* nr. 297.

²¹²² Arts. 9(6), 11(1)-(3) and 13(1)(2) *ibid*.

state, publicly available information about the product type's last manufacturing date, information about when the product was previously or last retransferred²¹²³ or other information from which the date when the product was placed on the market can potentially be deduced (see also *supra* nr. 313). Since the retransferor fully bears the burden of proving the extinction period's expiration according to the applicable national standard of proof (see *supra* nrs. 205-206), he might regularly fail in providing this required evidence.

There is thus a substantial chance that harmonised product liability claims against the aforementioned retransferors, for which the extinction period has in reality already elapsed, can nevertheless still proceed due to purely evidentiary difficulties.²¹²⁴ While this might make the supply-side of the circular retransfer strategy slightly less attractive, it also undermines the extinction period's policy goals of providing legal certainty, socio-judicial peace, balancing the liability risk and ensuring possible insurability (see also from an economic perspective *supra* nr. 141.a).²¹²⁵

336. THE RELATIVE EASE TO PROVE THE EXTINCTION PERIOD'S STARTING DATE FOR THE SECOND GROUP OF RETRANSFERRORS – In contrast, resellers, donors or barterers of second-hand products who are subject to primary liability under the PLD-2024 or those subject to art. 11 PLD-1985 if this provision would be interpreted in a personal manner (see *supra* nr. 334), have the small consolation that it is at least easier for them to prove in the future a potential expiration of the applicable extinction period, precisely because this period only starts when they themselves place the second-hand product on the market. Importers, quasi-manufacturers and substantial product modifiers of almost all second-hand products,²¹²⁶ are now required by the General Product Safety Regulation 2023/988/EU to indicate, in principle more durably on the product itself, the aforementioned product identification traceability information.²¹²⁷ If they at the same time keep records during at least ten years about the time when they have placed specific products on the market,²¹²⁸ they stand a very good chance of being able to prove the extinction period's expiration, if they would still be held liable for a product accident relatively long after they quasi-manufactured, imported or substantially modified a second-hand product.

337. APPLYING THE EXTINCTION PERIOD FOR THE LIABILITY OF RETRANSFERRORS IN RELATION TO ART. 11(2)A-C PLD-2024'S EXCEPTION TO THE POSTERIORITY DEFENCE – For the sake of simplicity, the preceding discussion made abstraction of art. 11(2)a-c PLD-2024's 'digital exception to the

²¹²³ Also for these retransferors who are not subject to a separate, newly started extinction period, it can therefore be beneficial to keep adequate records in order to later more successfully prove the expiration of the extinction period which was already running at the time of the retransfer. See also Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 17.156.

²¹²⁴ It is worth noting that most of the new evidentiary rules proposed by arts. 9-10 PLD-2024 only come to the aid of the plaintiff and not the defendant. See *supra* nr. 206.

²¹²⁵ See sources cited *supra* footnotes 1599-1601.

²¹²⁶ But see art. 2(2)i(3) General Product Safety Regulation 2023/988/EU (exclusions for antiques and for products placed on the market as clearly requiring a repair or reconditioning prior to being used).

²¹²⁷ Arts. 9(5), 11(1)-(3) and 13(1)(2) *ibid.* See *supra* nr. 297.

²¹²⁸ See Howells, 'strict liability', nr. 4.316; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 17.156.

posteriority defence' for posterior defect origins that either result from digital services or software supplied within the manufacturer's control or that result from a lack of software updates or upgrades that would have been necessary to maintain the product's required level of safety.²¹²⁹ Similarly, it has not elaborated on the similar rule of art. 11(2)d PLD-2024 either. As discussed *supra* nr. 248, there does not seem to be a separate extinction period that starts at the time of a supply of potentially defective digital services or software or the lack thereof if this had been necessary to maintain the security of a product with embedded software. This is because a European Parliament amendment was not adopted that would have created differentiated extinction periods for each posterior defect origin covered by art. 11(2)a-c PLD-2024's 'digital exception to the posteriority defence'.²¹³⁰

Infra nr. 465, this dissertation discusses the extinction period applicable to defendants in the original distribution chain of a product that has been substantially modified 'within the manufacturer's control' and for which no posteriority defence can be invoked based on art. 11(2)d PLD-2024. There, it is argued that it makes more sense to start in this situation a new extinction period, if only because based on the new art. 17(1)b PLD-2024 a new period starts when the same substantial modification occurs 'outside the manufacturer's control' and the separate liability based on art. 8(2) PLD-2024 applies. This solution *de lege ferenda* might actually also be desirable for those defendants in the original distribution chain subject to the 'digital exception to the posteriority defence' of art. 11(2)a-c PLD-2024. At least in light of the Directive's goal of protecting injured parties (see *supra* nr. 168) this seems a desirable solution. And corrective justice understood according to the risk-internalisation principle (see *supra* nrs. 127 and 128.c) also supports the fact that the extinction period should only start at the latest moment when someone took an 'abnormal risk' that may injure others.

Section D. Contributory fault of users of second-hand goods

338. CONTRIBUTORY FAULT AS A DEFENCE TO VERTICAL CLAIMS BY INJURED RETRANSFER-RECIPIENTS – If manufacturers, other defendants in the original distribution chain or retransferors face a vertical harmonised product liability claim by the recipient of a second-hand product, they have according to both the Belgian, French and German PLDI the possibility to invoke the contributory fault defence of art. 8(2) PLD-1985 or art. 13(2) PLD-2024.²¹³¹ This can lead to

²¹²⁹ Importantly for the potential primary or secondary harmonised product liability of retransferors, this *de facto* obligation to ensure the absence of defects in supplied digital services or software or to provide software updates or upgrades necessary to maintain product safety, also applies in theory to retransferors. See *supra* nr. 327.

²¹³⁰ Art. 14(2) amended draft PLD Proposal 2022 in EU Parliament, 'Report of 12 October 2023 on the proposal for a directive of the European Parliament and of the Council on liability for defective products' A9-0291/2023, 61.

²¹³¹ The "may" in art. 8(2) PLD-1985 and art. 13(2) PLD-2024 is likely directed only at the national judge and

either a partial reduction or a complete exclusion of the defendant's liability (see *supra* nr. 191). Recipients who merely acquire and use a second-hand product, cannot be held directly liable on the basis of harmonised product liability.²¹³² Within this liability theory, their conduct can only be appreciated through the lens of the contributory fault mechanism (see also *supra* nr. 272).

There are fewer possibilities for defendants to invoke the contributory fault defence when injured third parties claim diagonally based on the PLDI for damage resulting from a second-hand product accident, simply because third parties are less likely to have contributed to the accident through conduct qualifying as a contributory fault according to national law. Nevertheless, if they are held liable for damage suffered by such a third party, defendants in the original distribution chain and retransferors, can try to claim in recourse based on an extracontractual fault-based liability against the recipient who used the second-hand product at the time of the accident. An injured third party can of course also claim directly, in a horizontal manner against said recipient based on extracontractual liability, like fault-based liability or the Belgian and French *responsabilité du fait des choses*.

339. RECIPIENT'S CONTRIBUTORY FAULT MUST BE ASSESSED INDEPENDENTLY FROM DEFECT ASSESSMENT AND POSTERIORITY DEFENCE – It might be intuitive to let the determination of the recipient's contributory fault rely on whether a given acquisition and use of a second-hand product had not been 'reasonably foreseeable' when the product was originally placed on the market, which plays a pivotal role in the harmonised product liability assessment for claims against both defendants in the product's original distribution chain as well as against retransferors (see *supra* nrs. 286, 314 and 316). Although this has been implied by certain scholars,²¹³³ this dissertation argues instead that both should be strictly separated (see also *supra* nr. 274).

On the one hand, it is possible that the recipient has effectively committed a contributory fault, even though the second-hand product was also already defective when it was placed on the market. For example, an electric blanket might overly rely on safety warnings on its packaging instead of a safer design or warnings that are more permanently present on the product itself. At the time of placement on the market, it may have already been reasonably foreseeable that the blanket would one day be resold without its original packaging to a recipient who is unaware that he should never cover such a blanket while using it or that he should dispose it once certain parts are damaged. Yet, the injured recipient who claims based on the PLDI against the blanket's (quasi-)manufacturer, importer or reseller, may simultaneously also have committed a (contributory) fault because he used it despite the fact that some heating wires have become visibly exposed through wear and tear.

not at the national legislator, which would imply an exception to maximum harmonisation. See *supra* nr. 191.

²¹³² This can of course change if the recipient as a prosumer either redistributes the product or substantially modifies it according to art. 8(2) PLD-2024 and if he, under the PLD-1985, fails to prove the defence of art. 7(c) PLD-1985 or, under the PLD-2024, would act in the course of a commercial activity (see *supra* nrs. 197-198).

²¹³³ See, e.g., sources cited *supra* footnotes 1690 and 1692.

On the other hand, when the use of a second-hand product causes an accident, it remains of course possible that there is neither harmonised product liability nor a (contributory) fault. For example, the user of an second-hand electric blanket which is ultimately deemed to also offer in the following situation all the safety legitimately expected by the public, might be a diabetic who is suddenly losing sensitivity to heat in his legs and feet and who suffers burns as a result of turning up the blanket's temperature too high for too long. Or the composite handlebar of a second-hand racing bike may crack as a result of highly intensive past use over cobble stones, for which the weakening of the material could not have been observed by the recipient, while this bike is considered to have nevertheless not been defective when it was placed on the market.²¹³⁴

Finally, it is important to note that the recipient's (contributory) fault is factually assessed at a later moment in time than the defect assessment.²¹³⁵ For example, it can be disputed whether the development risk defence can be successfully invoked for the placing on the market of a new, trademarked type of frying pan, which used in an innovative way metallurgy and chemicals that were generally considered safe at that time.²¹³⁶ But if it is generally known many years later that these pans pose serious health risks and if they have been recalled, the second-hand acquisition of such a pan and continued use may still qualify as a (contributory) fault. Note that these same facts may nevertheless lead to liability of the pan's retransferor, although this will in most cases have to be based on national (extra-)contractual liability rather than the PLDI, due to the 'single defect' assessment discussed earlier in this Chapter²¹³⁷

²¹³⁴ Also for the potential liability based on the PLDI of the bike's retransferor, it is important that a single defect assessment is applied which returns to the moment when the bike was originally placed on the market or put into service, at least if the retransferor only redistributed the product (see *supra* nrs. 310 et seq.). The fact that the retransferor did not replace worn components or failed to inform the recipient about the potential impact of prior use, are in such cases only relevant to national (extra-)contractual liability.

²¹³⁵ The potential contributory fault is of course assessed at the time of the plaintiff's conduct which has causally contributed to the accident. For the harmonised product liability of not only defendants in the original distribution chain but also of retransferors who merely redistribute a second-hand product, the defect assessment occurs when the product was placed on the market (see *supra* nrs. 285 and 310). For retransferors who have quasi-manufactured, imported or substantially modified the product, the defect assessment occurs when they place the (partially) new product on the market (see *supra* nr. 315). Although the latter is a later moment in time than the original product's placing on the market, this is still before the moment when the plaintiff's potential contributory fault should be assessed.

²¹³⁶ This example illustrates the significance for the potential harmonised product liability of the retransferor, who may for example have resold the pan when it had already been recalled and known to be unsafe, of clarifying whether the development risk defence of art. 7(e) PLD-1985 and art. 11(1)e PLD-2024 should be interpreted in a personal or a producer-specific. See *supra* nrs. 319-322.

²¹³⁷ If the retransferor is only subject to secondary liability as a distributor (or, at least *de lege lata*, subject to primary liability as a substantial product modifier), then a 'single defect' assessment applies based on art. 6(1)c PLD-1985 and 7(2)e PLD-2024. This means that such more recent developments cannot be considered in the defect assessment for the harmonised product liability of such a retransferor (see *supra* nrs. 310 and 314). This would only be different pursuant to a 'differentiated defect' concept if the retransferor would be subject to primary liability as an importer or quasi-manufacturer of the second-hand pan (see *supra* nrs. 315-316). Of course, the retransferor can always still be

340. USE OF A SECOND-HAND PRODUCT: SOME POTENTIAL TO QUALIFY AS A (MOSTLY NON-INTENTIONAL) FAULT – There are innumerable ways how the recipient can commit a contributory fault, such as by modifying a second-hand product in certain ways or by damaging and subsequently using it without taking precautions.²¹³⁸ These have already been extensively discussed in the existing literature. What interests us here, are those potential contributory faults that broadly relate to the retransfer process and the product's second-hand nature. For example, a recipient might make clear errors in reassembling or installing second-hand furniture or sports equipment. He can imprudently place newly acquired second-hand items with dangerous moving parts like a kitchen robot or angle grinder within reach of unsupervised children. Or he may use second-hand items in an uncareful manner, for example in terms of hand placement, not wearing protective equipment or overburdening the technical capacity. A recipient might furthermore use a second-hand product in combination with incompatible items, like a child seat in the wrong car or a basketball backboard against an insufficiently strong wall. Alternatively, he may store the product in improper conditions prior to using it, such as electrical or outdoor equipment in humid conditions or near pests.

The main suspect for a contributory fault in the retransfer context, is of course the basic decision to acquire and use a particular second-hand product. In this regard, it is worth reiterating that second-hand products according to this dissertation's typology can potentially still be relatively new and barely used (see *supra* nr. 79). And, even for seemingly obsolete second-hand products, acquiring and using them constitutes 'reusing' a consumer good, which is a circular strategy that does not necessarily constitute a fault, as already discussed *supra* nrs. 275-276. It has been argued above that using a second-hand product can in general still be considered as a part of "*reasonably foreseeable use*" or "*ordinary circumstances*" for the purposes of the new defect presumption of art. 10(2)c PLD-2024 (see *supra* nrs. 290 and 314.d). Yet, this is definitely not true for every single resale, donation or barter of an already second-hand product and for subsequently using such product. Certain retransfers and decisions to use a second-hand product without a prior repair or other precaution, effectively constitute a contributory fault. This must be assessed in light of the concrete circumstances of each case, according to the applicable national rules on contributory fault, which in most cases boil down to whether a normal, prudently acting consumer would have acted in this manner.

The risk that the recipient's conduct qualifies as a contributory fault is admittedly higher if he not just reuses a second-hand product but if he repurposes it.²¹³⁹ For example, he may have bought second-hand wooden crates to use as a basis for a self-made lounge-set or used car batteries to make a home battery for energy saving purposes. Even repurposing can sometimes still be part of a product's reasonably foreseeable use, but in many cases this is

held liable for his own conduct based on non-harmonised national contractual or extracontractual liability (see also relating to Belgian law *supra* nrs. 208-214).

²¹³⁸ Note that this can lead to primary harmonised product liability of the recipient himself based on art. 8(2) PLD-2024, if this would occur in the course of a commercial activity. See also *supra* nrs. 262 and 307-308.

²¹³⁹ Here the risk of potential harmonised product liability of the recipient based on art. 8(2) PLD-2024 is even higher, although still quite remote. See *supra* nr. 262.

definitely not the case (see *supra* nrs. 257-260). Hence, also when a second-hand product is repurposed, it must be examined in light of the case's concrete circumstances whether this qualifies as a contributory fault.

For a defendant who might want to invoke the contributory fault defence, it can be interesting that art. 9(2) PLD-2024 now offers to him the seemingly quite unconditional right to request the disclosure of relevant evidence held by the plaintiff (see *supra* nr. 206.a). This can consist of information about the date and condition of the second-hand product when the recipient received and started using it, evidence related to the concrete conditions in which the product was transported, used and stored, etc.

Finally, since an intentional contributory fault can completely exclude the defendant's liability according to Belgian but also largely according to French and German law,²¹⁴⁰ it is important to emphasize that conduct by a recipient is unlikely to qualify as a fault with the intention to cause damage. Acquiring a second-hand product and using it in any of the aforementioned manners, constitutes in most cases only negligence, if it even qualifies as a contributory fault at all. The recipient does in most cases not intentionally pursue to cause and likely personally suffer from damage that may result from his conduct (see also *supra* nr. 275).

Section E. Distinguishing among defendants and plaintiffs

341. THE MUCH STRONGER POSITION OF DEFENDANTS IN A SECOND-HAND PRODUCT'S ORIGINAL DISTRIBUTION CHAIN COMPARED TO RETRANSFERRORS – In the previous Chapter, it has been observed that manufacturers and to a lesser extent importers and quasi-manufacturers are generally in a stronger position when they have to defend against a claim than distributors, even when the latter are still part of the harmful product's original distribution chain. This is because distributors have on average a much-reduced access to key information to dispute a product's defectiveness or prove the various defences. This difference, which can be seen as a justification for the current distinction between primary and secondary liability, applies to harmonised product liability in general. Yet, it is especially pronounced when harmful products have been reused or repurposed (see *supra* nrs. 249 and 269).

The analysis of harmonised product liability in this Chapter leads to the significant conclusion that a much greater difference in the relative strength of the position of different defendants arises, once an accident has been caused by a retransferred product. Defendants in the product's original distribution chain, ranging from the strongest position of the manufacturer to the comparatively weaker position of original distributors,²¹⁴¹ are on average still

²¹⁴⁰ See *supra* footnotes 1762-1764.

²¹⁴¹ Distributors in the original distribution chain remain in a comparatively weaker position than the manufacturer (and to a lesser extent the importer and quasi-manufacturer). Nevertheless, these

much better placed than retransferors to refute the plaintiff's proof of defect and causation and to prove defences like the posteriority defence or contributory fault, as summarized below. Ironically, retransferors bear especially when they are subject to merely secondary liability as distributors an increased liability risk. This further raises the importance of traceability requirements and in the future perhaps a digital product passport, to ensure that harmonised product liability remains also in growing second-hand goods economy concentrated at the level of primarily liable defendants who have placed a (partially) new product on the market (see *supra* nrs. 280-282 and 302-303 and *infra* nr. 345.a).

- a. First of all, defendants in the product's original distribution chain are better placed than retransferors to dispute that the second-hand product was defective when it was placed on the market, since they have better knowledge about the product's design, original product information, relevant safety regulation and industry standards. This is also generally true for potential defects that specifically relate to the retransfer process, such as vulnerability to certain transportation, storage, (un)packaging, dis- and reassembly, installation and first use of a product by a new, unfamiliar user (see *supra* nrs. 286-289 and 314). Especially manufacturers are in a strong position, since they have most technical expertise relating to the products they produce. Nevertheless, importers and quasi-manufacturers and to a lesser extent distributors in the original distribution chain²¹⁴² tend to still have, compared to retransferors, better technical knowledge on the new products they place on the market or make available as well as commercial and contractual ties with the manufacturer, which may also include contractual recourse rights. Furthermore, defendants in the original distribution chain have better information on precisely when the product was placed on the market and on the standards that existed and use that was reasonably foreseeable at that time. This further highlights the significance of the 'single defect' concept applicable to retransferors who only redistribute (or *de lege lata* substantially modify) a product. Retransferors evade this disadvantage

original distributors still have (indirect) commercial ties and potential contractual recourse rights vis à vis these other defendants in the original distribution chain, which retransferors normally lack. Moreover, claims against original, non-(quasi-)manufacturing and non-importing distributors of a product that later becomes second-hand, are relatively rare. Aided by traceability information, the original manufacturer, importer or quasi-manufacturer will be mostly targeted or, alternatively, the retransferor will be held liable on either a secondary or primary basis (see *supra* nrs. 280-282 and 302-306). It therefore makes sense to pay little attention to mere distributors in the original distribution chains of second-hand products, although this defendant indeed in comparison with retransferors occupies a kind of middle ground in terms of the relative strength of its position. See also the next footnote.

²¹⁴² If the original distribution chain is not limited to an intra-group context, importers and quasi-manufacturers can be expected to have on average more market power vis à vis manufacturers than mere distributors. After all, they are responsible for either introducing a third-country product into the EU market or have the added brand value to make it profitable to affix one's own distinguishing features onto someone else's product. These are also the underlying economic motivations for subjecting these defendants to primary liability, unlike the distributor (see *supra* nrs. 176 and 304-306). See also *supra* the preceding footnote.

only if they happen to be liable on a primary basis for importing or quasi-manufacturing a second-hand product (see *supra* nrs. 310-316).²¹⁴³

- b. Second, these same differences make defendants in the original distribution chain also better placed to prove that a product only became defective as a result of circumstances that were not reasonably foreseeable when the product was placed on the market.²¹⁴⁴ This not only relates to negative evidence relating to quality control measures but also to positive evidence, like technical proof that a defect was caused by improper transportation, reassembly and installation or that a particular type of apparent manufacturing defect or accident must have been the result of not reasonably foreseeable misuse by new users of the second-hand product (see *supra* nrs. 293 and 325). Moreover, the posteriority defence's relevance for retransferrors is further restricted if it is interpreted personally vis à vis importers, quasi-manufacturers and distributors (see *supra* nr. 324). This is the majority position under the PLD-1985 and now confirmed by art. 11(1)c PLD-2024, although this dissertation has proposed to revert back to a producer-specific interpretation for distributors (see *supra* nr. 322.b-c). Furthermore, defendants in the original distribution chain are generally more capable to ensure that supplied digital services and software are not defective and that software updates and upgrades necessary to maintain a product's safety are supplied pursuant to art. 11(2)a-c PLD-2024's 'digital exception to the posteriority defence' (see *supra* nrs. 295 and 327).
- c. Third, the same technical knowledge about the product's nature, its design, its information, relevant standards and known safety risks, makes defendants in the original distribution chain also on average better placed than retransferrors to prove that a recipient has committed a contributory fault (see *supra* nrs. 338-340). Admittedly, retransferrors may have communicated directly with the recipient, which offers them a chance to better assess how he plans to transport, install, use and store the second-hand product as well as to potentially warn about specific risks. However, this specific benefit which can also be relevant for the aforementioned posteriority defence, is in practice more difficult to prove and leverage as a harmonised product liability defendant than technical arguments that more directly relate to the product itself (see also *supra* nr. 249).
- d. Finally, only if the limitation period is interpreted in a personal manner, as now confirmed by art. 16 PLD-2024, does this three-year period protect retransferrors at best in a similar manner as manufacturers (see *supra* nrs. 329-330). Inversely, only if the extinction period is not applied in a personal manner vis à vis retransferrors, do they benefit from the earlier starting date of this extinction period that is always enjoyed by

²¹⁴³ Cf. the position of repurposers held liable based on art. 8(2) PLD-2024 compared to defendants in the product's original distribution chain, discussed *supra* nr. 270.

²¹⁴⁴ One may argue that a product's second-hand nature at the time of the accident provides limited, indirect evidence of defect posteriority. However, this factual presumption's modest advantage is only enjoyed by retransferrors to whom the posteriority defence is applied in a producer-specific manner under the PLD-1985 (see *supra* nrs. 324-325) and is always enjoyed by defendants in the original distribution chain of a product that later became second-hand (see *supra* nr. 292).

defendants in the original distribution chain like (quasi-)manufacturers and importers who are subject to primary liability because they have placed the product on the market. Art. 17 PLD-2024 now confirms such a manufacturer-specific interpretation of the extinction period for retransferors who are as mere distributors subject to secondary liability, but all retransferors who are subject to primary liability bear the disadvantage of a new extinction period with a later starting date (see *supra* nrs. 331-334).

342. THE RECIPIENT'S POSITION AS A PLAINTIFF CAN IN TERMS OF STRENGTH BE CONSIDERED AS A HALFWAY HOUSE BETWEEN THE POSITIONS OF AN ORIGINAL CONSUMER AND OF A THIRD PARTY, RESPECTIVELY – In the previous Chapter, it has been observed that reusers and repurposers are as plaintiffs in an overall stronger position than injured third parties.²¹⁴⁵ This difference is considerably more pronounced when products have been reused or repurposed prior to causing an accident (see *supra* nrs. 250 and 270). In contrast, when consumer goods have been retransferred to a recipient, the latter's position as a potential plaintiff based on the PLDI is not as strong as the position enjoyed by consumers who suffer damage during a product's initial use phase. Nevertheless, the position as a plaintiff of a recipient remains stronger than the position of an injured, actual third party.²¹⁴⁶

Compared to original consumers who have been supplied a new product by actors in the original distribution chain, recipients receive second-hand products for which defendants can overall invoke more easily the extinction period or, in case of defects, the posteriority defence (see *supra* nrs. 292, 296, 325 and 334). Additionally, the retransferors who supply them these products tend to be less informed about technical aspects of the specific product (see *supra* nr. 341) and important product information, such as information present on the product's packaging or documentation, might be lost at the time of the retransfer (see *supra* nrs. 288 and 314).

However, recipients still remain for their vertical harmonised product liability claims in a stronger position than injured third parties for their diagonal claims. They still receive some information about the second-hand product, they become more familiar with it during the subsequent use phase and they are often privileged to concrete information about factual circumstances surrounding the accident. In contrast, a true bystander (see also *supra* nr. 159) who suffers damage in a product accident, may lack most of such information which is key for a successful claim based on the PLDI.

A broad and dynamic implementation of digital product passports could help in the future to mitigate these asymmetries between plaintiffs, at least when injured third parties would be able to access (relevant parts of) these passports when necessary (see *infra* nr. 345.b). Already in the near future, plaintiffs in the weakest position can potentially receive relief from the

²¹⁴⁵ This is a general difference between vertical and diagonal product liability relationships (see also *supra* nr. 5) and from an *ex ante* economic perspective it might be considered as actually being offset by the fact that third parties profit in reality the most from the product liability system (see *supra* nrs. 112 et seq.).

²¹⁴⁶ Third parties who are not purely accidental bystanders but rather acquaintances or even household members of the consumer, might of course be supported by the latter when making a diagonal claim. On the flipside, such third parties are much less likely to claim horizontally against those same consumers. See also *supra* nr. 159.

disclosure of evidence mechanism proposed by arts. 9 and 10(2)a PLD-2024, from other defect presumptions offered to challenged plaintiffs by art. 10 PLD-2024 or potentially by non-harmonised national rules of evidence and civil procedure (see *supra* nrs. 205-206).

Section F. Digital product passports

343. DIGITAL PRODUCT PASSPORTS – The literature on green informatics, product engineering and circular economy has been discussing during past years the potential role and practical operation of future digital product passports. In the circular economy context, they can be broadly described as datasets specific to a product or product component which are accessible via electronic means and which aim to enable circular strategies by sharing information between stakeholders across the product's or component's lifecycle.²¹⁴⁷ They would thus serve as an information infrastructure for the circular economy.²¹⁴⁸ On the one hand, a product passport can be 'static', which means that it only includes information made available by the manufacturer and that it can only be consulted by downstream stakeholders, like distributors, consumers, maintenance and repair service providers. On the other hand, a product passport can be 'dynamic', which means that some of these other stakeholders can also update it throughout the product's or component lifecycle with information on performance, product servicing, custody and ownership, product modifications, etc.²¹⁴⁹ Although initial discourse on product passports focused on the static variant and although dynamic product passports are much more challenging to implement, recent research mostly tends to favour the more dynamic variant with varying degrees of accessibility among stakeholders, since it can more comprehensively remedy the information deficit which hinders the effective implementation of different circular strategies in practice.²¹⁵⁰

²¹⁴⁷ See Commission, 'A European strategy for data' (Communication) COM(2020) 66 final, Appendix, 27; Bundesministerium für Umwelt, 'Was ist ein digitaler Produktpass?' <<https://www.bmu.de/faqs/qa-umweltpolitische-digitalagenda>>; C. Plociennik et al., 'Towards a Digital Lifecycle Passport for the Circular Economy' (2022) 105 *Procedia CIRP* 122, 122-123; D. Langley et al., 'Orchestrating a smart circular economy: Guiding principles for digital product passports' (2023) 169 *Journal of Business Research* 114259, 4. See also art. 2(28) Ecodesign for Sustainable Products Regulation 2024: "'digital product passport' means a set of data specific to a product that includes the information specified in the applicable delegated act adopted pursuant to Article 4 and that is accessible via electronic means through a data carrier in accordance with Chapter III;"

²¹⁴⁸ C. Ducuing and R. Reich, 'Data governance: Digital product passports as a case study' (2023) 24 *Competition and Regulation in Network Industries* 3, 11-12.

²¹⁴⁹ R. Koppelaar et al., 'A Digital Product Passport for Critical Raw Materials Reuse and Recycling' (2023) 15 *Sustainability* 1405, 3.

²¹⁵⁰ E.g., K. Berger, J.-P. Schögl and R. Baumgartner, 'Digital battery passports to enable circular and sustainable value chains: Conceptualization and use cases' (2022) 353 *Journal of Cleaner Production* 131492, 10-13; C. Plociennik et al., 'Towards a Digital Lifecycle Passport for the Circular Economy' (2022) 105 *Procedia CIRP* 122; S. Jensen et al., 'Digital product passports for a circular economy: Data needs for product life cycle decision-making' (2023) 37 *Sustainable Production and Consumption* 242,

344. THE ADVENT OF DIGITAL PRODUCT PASSPORTS IN EU PRODUCT REGULATION: FROM BATTERIES TO ECODSIGN – In 2020, the Commission announced that it would develop such digital product passports as part of its data and circular economy policies (see *supra* nr. 65).²¹⁵¹

The pioneering implementation is the new EU batteries regulation, which requires that batteries placed on the market or put into service in the EU from 18 February 2027 onwards must bear a QR-code providing electronic access to general information like the manufacturer's identity and key technical information. For electric vehicle, 'light means of transport' and heavy industrial batteries, this is expanded to a genuine 'battery passport', which should provide throughout the battery's lifecycle up-to-date, detailed information that is considered relevant for safely and efficiently implementing various circular strategies.²¹⁵² The 'battery passport' will to a limited extent be dynamic in nature. While most information will be freely accessible by the public, some information sensitive from a safety or intellectual property perspective, such as the battery's detailed composition and instructions for dismantling, will be reserved for authorities and 'persons with a legitimate interest'.²¹⁵³ The producer or importer who has placed the battery on the market or put it into service, will remain responsible for providing continuous access to the battery passport and ensuring that its information is accurate, complete and up-to-date.²¹⁵⁴ Transfers of this responsibility only occur when economic actors remanufacture or re-use batteries or if they are discarded as waste. Retransferrers acting in the course of a commercial activity only become responsible for developing a new battery passport, which must still link to the original battery passport, if they 'repurpose' a battery prior to redistributing it (see also *supra* nr. 264).²¹⁵⁵

The key regulatory framework which the EU will now use to develop in the future digital product passports for other product categories, is the very recently adopted Ecodesign for Sustainable Products Regulation 2024. If adopted, all future Ecodesign requirements for its vast scope of products,²¹⁵⁶ will need to stipulate that those products can only be placed on the

251-253; R. Reich et al., 'Defining the goals of Product Passports by circular product strategies' (2023) 116 *Procedia CIRP* 257. See also M. Heinrich and W. Lang, *Materials Passports - Best Practice. Innovative Solutions for a Transition to a Circular Economy in the Built Environment* (TU München 2019) 21-26.

²¹⁵¹ Commission, 'A European strategy for data' (Communication) COM(2020) 66 final, Appendix, 26-27: "the Commission will [...] [e]stablish a common European data space for smart circular applications making available the most relevant data for enabling circular value creation along supply chains. [...] Digital 'product passports' will be developed, that will provide information on a product's origin, durability, composition, reuse, repair and dismantling possibilities, and end-of-life handling."

²¹⁵² Arts. 13(6) and 77-78 Parliament and Council Regulation 2023/1542/EU of 12 July 2023 concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020 and repealing Directive 2006/66/EC [2023] OJ L191/1, 38, 72-74. See also on the 'battery passport' C. Ducuing and R. Reich, 'Data governance: Digital product passports as a case study' (2023) 24 *Competition and Regulation in Network Industries* 3, 6-7.

²¹⁵³ Arts. 77(2) and 78(b)(g) and Annex XIII *ibid.*, 74, 108-109. This will need to be further implemented in implementing acts by the Commission (art. 77(9) *ibid.*).

²¹⁵⁴ Arts. 13(6)(7) and 77(4) *ibid.*, 38, 73.

²¹⁵⁵ Art. 77(7) *ibid.* See also art. 3(17)(22)(31)(65) *ibid.*

²¹⁵⁶ See art. 2(1) Ecodesign for Sustainable Products Regulation 2024: "'product' means any physical good that is placed on the market or put into service;"

market or put into service when a product passport is made available.²¹⁵⁷ Precise requirements for each product type's passport, will be specified in the corresponding implementing Ecodesign requirements, which are to be issued by the Commission in the future. Nevertheless, the art. 2(16) Ecodesign for Sustainable Products Regulation 2024 already imposes several technical and substantive minimum requirements, which still leave a lot of flexibility for future developments and sector-specific concerns. Moreover, it appears that the previously summarized rules of the pioneering 'battery passport' are likely to serve as a blueprint for many of the first, future Ecodesign requirements relating to product passports.²¹⁵⁸

For example, the Ecodesign product passports will also operate through a data carrier, like a QR-code, which shall be physically present on the product, its packaging or on accompanying documentation.²¹⁵⁹ Likewise, the obligation to create and provide to the designated categories of stakeholders free access to the product passport is borne by the person who places the concerned product on the market or puts it into service,²¹⁶⁰ such as its (re)manufacturer or importer. The implementing Ecodesign requirements will specify how dynamic the passports for each product category become, by specifying the rights or obligations of different stakeholders to access or modify specific information in the passports, when and how new passports should be created and how long passports should remain available.²¹⁶¹ The Commission is tasked with setting up and maintaining a 'product passport registry', which will store at least the unique product identifiers and data carriers that link to the actual passports.²¹⁶²

345. THE PRACTICAL SIGNIFICANCE OF DIGITAL PRODUCT PASSPORTS FOR HARMONISED PRODUCT LIABILITY, IN PARTICULAR IN THE SECOND-HAND GOODS CONTEXT – The preceding sections on harmonised product liability for accidents caused by reused, repurposed and second-hand products, have already repeatedly referred to the potential significance in practice, for both plaintiffs and defendants, of digital product passports. Their actual role in future product

²¹⁵⁷ Arts. 7(1)(2) and 9(1) *ibid.* But see the limited possibilities for the Commission to issue ecodesign regulations without product passport requirements in art. 8(4) *ibid.*

²¹⁵⁸ See also K. Berger, J.-P. Schögl and R. Baumgartner, 'Digital battery passports to enable circular and sustainable value chains: Conceptualization and use cases' (2022) 353 *Journal of Cleaner Production* 131492.

²¹⁵⁹ Art. 9(2)b-c Ecodesign for Sustainable Products Regulation 2024. See also art. 2(30) *ibid.*

²¹⁶⁰ Arts. 7(1) and 9(1) *ibid.* See also art. 2(40)-(41) *ibid.*

²¹⁶¹ Art. 9(2)f-h *ibid.*

²¹⁶² Art. 13 *ibid.* It is worth noting that a similar undertaking by the Commission in the original batteries regulation proposal to set up and run an 'electronic exchange system', disappeared in the final adopted Regulation. The latter now only requires that the battery passports are sufficiently interoperable and machine-readable to allow them to be easily integrated in a future public database, whether operated by public authorities or industry (art. 77(5) Parliament and Council Regulation 2023/1542/EU of 12 July 2023 concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020 and repealing Directive 2006/66/EC [2023] OJ L191/1, 73). The same obligation is now also included in art. 10(1)d Ecodesign for Sustainable Products Regulation 2024. See also on the combination of both decentralised and centralised data governance of product passports in both legislative initiatives C. Ducuing and R. Reich, 'Data governance: Digital product passports as a case study' (2023) 24 *Competition and Regulation in Network Industries* 3, 15-17.

accident cases will of course depend on when and for which product types the Commission will issue implementing Ecodesign requirements and which requirements those rules will impose in terms of content, access rights and required dynamic updates of the corresponding product passports (see *supra* nr. 344). Nevertheless, to get at this stage a grip on their potential future impact, it is worth summarizing here how they can influence, even upend future (harmonised) product liability. This summary is structured by three aims of product passports that are explicitly declared in art. 9(3) Ecodesign for Sustainable Products Regulation 2024.²¹⁶³

- a. First of all, product passports can help to “*improve traceability of products along the value chain.*”²¹⁶⁴ The Ecodesign for Sustainable Products Regulation 2024 lists that product-specific implementing regulations must, among others, specify “*one or more data carriers to be used*” and other information that can help to identify the product’s manufacturer, importer or other economic operators.²¹⁶⁵ When products have been used for a long period of time or have been retransferred, product passports can thus in the future potentially greatly aid injured parties as well as retransferors who risk being held liable on a secondary basis, to identify (quasi-)manufacturers, importers or substantial product modifiers (see, e.g., *supra* nrs. 228, 279-280 or 302).

The same applies to some extent for identifying repurposers, although here the issue is more pronounced that the regulatory obligations of self-identification and of either updating product passports or making new ones available, only apply to persons acting in a commercial capacity (see *supra* nr. 264).

The ultimate outcome might be that secondary liability of suppliers based on art. 3(3) PLD-1985 or distributors based on art. 8(3) PLD-2024 will mostly lose its relevance, when in the future all products and components would have digital product passports, accessible through QR-codes and a public database, which identify (quasi-)manufacturers, importers and substantial product modifiers. Only when these last economic actors would have (re)produced or (re)distributed products in the collaborative economy, outside a commercial activity, would they not be identified by the passports and would secondary liability retain a role, although they would then at least under the PLD-2024 also not be subject to harmonised product liability (see *supra* nr. 198).

- b. Second, at least as important for the outcome of product liability claims, is the potential of product passports to “*ensure that actors along the value chain can easily access and understand product information relevant to them*”.²¹⁶⁶ Product passports can for example

²¹⁶³ Note that some of these features are with regards to energy efficiency of products today potentially already achieved via the recent ‘European Product Database for Energy Labelling (EPREL)’, which may serve as a source of inspiration. See art. 4 Parliament and Council Regulation 2017/1369/EU of 4 July 2017 setting a framework for energy labelling and repealing Directive 2010/30/EU [2017] L198/1, 9; A. Michel, *Premature Obsolescence: In Search of an Improved Legal Framework* (Intersentia 2023), 394.

²¹⁶⁴ Art. 9(3)c Ecodesign for Sustainable Products Regulation 2024.

²¹⁶⁵ Art. 8(2)a-b and Annex III *ibid.* See also art. 2(29) *ibid.* (“‘data carrier’ means a linear barcode symbol, a two-dimensional symbol or other automatic identification data capture medium that can be read by a device;”) art. 2(31) *ibid.* (“‘unique operator identifier’ means a unique string of characters for the identification of an actor involved in a product’s value chain;”).

²¹⁶⁶ Art. 9(3)a *ibid.*

enable both injured parties and defendants to determine the product's normal useful lifespan, dates on which it was placed on the market, put into service or made available, provide information on past maintenance, repair or repurposing interventions and relay use instructions or product safety information which may otherwise be lost when a product has been reused or retransferred. Such information can be key to determine whether a product is defective, to prove or disprove the posteriority defence or to determine whether the extinction period has expired (see, e.g., *supra* nrs. 234, 241, 245, 297 and 334).

Potentially, a very comprehensive and dynamic regulatory design of product passports may even provide information on the wearing of parts, conditions and intensity of use of a product as well as potentially damaging events that occurred (see also *supra* nr. 253). Technologically advanced product categories, like cars, e-bikes and household 'smart devices', are prime targets for these types of more ambitious and dynamic passports.²¹⁶⁷ Logging such very detailed information on a product's lifecycle, could of course be even more instructive for disputes on product defectiveness, the posteriority defence or causation. At the same time, this would raise more questions concerning privacy and data protection and whether this is necessary for at least product liability purposes, when rules of civil evidence might provide alternatives (see also *supra* nr. 206).

However, more than the other two potential functions of digital product passports for product liability law discussed in this section, this function of disseminating warnings, use instructions and other product information is challenged by the fact that many consumers will in practice not (prior to an eventual accident) consult, process and act on this information. On the one hand, this relates to the general behavioural limitations of consumers that necessitate the overall prioritization of product design over reliance in the aforementioned 'safety hierarchy' (see *supra* nr. 182). On the other hand, using digital product passports as an instrument for this purpose is further limited by the fact that many individual consumers lack the 'digital skills' or resources to scan QR-codes and retrieve product information online.²¹⁶⁸ This issue will only to some extent diminish over time and certain consumers furthermore have visual or motorical impairments which prevent them from effectively consulting this digital resource. Hence, one cannot overly or exclusively rely on information provided to consumers through digital product passports to make products safer.

- c. And, third, product passports can "*facilitate the verification of product compliance by competent national authorities*".²¹⁶⁹ From a product accident perspective, this is of course more directly relevant to product safety regulation than civil product liability law (see Figure 1 *supra* nr. 4). Nevertheless, violations of product (safety) regulation can of

²¹⁶⁷ Of course, dedicated sectoral regulation for different technologies, such as artificial intelligence, may impose even more comprehensive 'logging' and 'transparency' requirements that can be useful for plaintiffs as well as more downstream defendants in technological product distribution chains.

²¹⁶⁸ See also already generally in relation to online product safety information C. Hodges, *European Regulation of Consumer Product Safety* (Oxford University Press 2005) 126-127.

²¹⁶⁹ Art. 9(3)b Ecodesign for Sustainable Products Regulation 2024.

course be indicative of product defectiveness and proof of regulatory compliance may indicate a lack of defectiveness, with either limited factual presumption still remaining refutable (see *supra* nrs. 10.d, 187 and 198).²¹⁷⁰ The fact that product passports can provide both parties access to information relating to product compliance, can therefore help to more quickly resolve product liability cases and allow injured parties to become less dependent on product safety enforcement action by public authorities to strengthen a product liability claim.

346. TOWARDS MORE FOOLPROOF DIGITAL PRODUCT PASSPORTS WHICH ARE ALSO ACCESSIBLE, WHEN NEEDED, TO THIRD PARTY PLAINTIFFS – Notwithstanding the aforementioned potential benefits, it is necessary to point out two potential risks of relying on product passports to resolve product liability claims.

On the one hand, digital product passports for physical consumer goods continue to use physical ‘data carriers’, mostly QR-codes, for which the Commission can determine in implementing regulations whether they need to be present on the product itself, on packaging or documentation.²¹⁷¹ Similar to traceability information on products (see *supra* nrs. 280-282), original packaging or documentation can be lost, especially when products become second-hand, and even information printed on a product may disappear through wear and tear, intensive use or bad storage. Although the Ecodesign for Sustainable Products Regulation 2024 itself unfortunately does not require this in general terms, future implementing requirement should thus prioritize the engraving, gluing or printing in an indelible manner of the data carrier on the products themselves. Inspiration can be drawn from the new traceability requirements of the General Product Safety Regulation 2023/988/EU and the requirement in the Batteries Regulation on affixing the ‘batteries passport’ QR-codes preferably on batteries themselves.²¹⁷² Even then, a product might still be lost in its entirety in a product accident, such as in a fire, explosion or other chemical reaction. To overcome those challenges, it can be useful that not only economic operators but also their consumers are identified in product passports and that at least the products owned by them are if necessary only by public authorities searchable in the ‘product passport registry’ mentioned *supra* nr. 344. This would of course be particularly sensitive from the aforementioned privacy and data protection perspective and require strict rules on data processing.

On the other hand, there is a substantial risk that injured consumers are better able than injured third parties to access and strategically leverage as a plaintiff the information stored in digital product passports. This would confirm the already observed broader asymmetry between these plaintiffs in terms of the relative strength of their vertical and diagonal claims, respectively (see *supra* nrs. 250 and 342). Third party plaintiffs could therefore try to overcome this issue by applying more general solutions, like combining diagonal with horizontal

²¹⁷⁰ Art. 7(2)f-g PLD-2024.

²¹⁷¹ Arts. 2(29) and 9(2)b-c Ecodesign for Sustainable Products Regulation 2024.

²¹⁷² Cf. arts. 9(6), 11(1)-(3) and 13(1) General Product Safety Regulation 2023/988/EU; art. 13(7) Parliament and Council Regulation 2023/1542/EU of 12 July 2023 concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020 and repealing Directive 2006/66/EC [2023] OJ L191/1, 38. See also *supra* nr. 281.

claims, which can allow jointly²¹⁷³ liable co-defendants to strengthen the plaintiff's case by claiming in recourse against the other defendant and providing arguments for the latter's liability, or leveraging the possibilities of arts. 9-10 PLD-2024 and national rules of evidence to order a disclosure or obtain other evidentiary relief. At the same time, through the aforementioned 'product passport registry' or other public database, the pertinent information in product passports could perhaps also be made accessible to third party plaintiffs if they can demonstrate to have suffered damage resulting from an accident in which the concerned product was specifically involved.

347. PRODUCT LIABILITY FOR DEFECTS IN (DIGITAL) PRODUCT PASSPORTS? – DE BRUYNE, DHEU AND DUCUING raise in a pioneering article the question whether incorrect information in a (digital) product passport can make a product defective and give rise to liability based on the PLDI. These authors hold that this would currently be unclear and warrant clarification.²¹⁷⁴ In my opinion, however, there should be little doubt that the information included in a product passport which directly relates to the product, remains ancillary to said product and can indeed be decisive for determining whether it is actually defective.²¹⁷⁵ After all, a product passport will not be fundamentally different compared to information on the product's packaging or documentation like user manuals. These have always been considered to be part of art. 6(1)a PLD-1985's and art. 7(2)a PLD-2024 "*presentation of the product*" defect assessment criterion.²¹⁷⁶ And, importantly, a product passport is generally available when the associated product is placed on the market, put into service or made available, as required for considering it as part of a product's defect assessment pursuant to art. 6(1)c PLD-1985 and art. 7(2)c PLD-2024 (see also *infra* nr. 399).

It is more complicated when a dynamic product passport is updated later during the product's lifecycle. If such 'post-marketing' information in a passport, for example updated use or repair instructions, would render a product defective, then it is still part of the product's defect assessment if a claim based on the PLDI is made against a quasi-manufacturer or importer who have added this flawed information to the passport and subsequently placed the product on the market, pursuant to the then applicable 'differentiated defect' assessment (see *supra* nrs. 315-316). In contrast, this would not be the case if the defendant, like a distributor (or *de lege lata* a substantial modifier) has merely made the product available, which leads to a 'single defect' assessment (see *supra* nrs. 310-311). Nevertheless, the posteriority defence of at least art. 11(1)c PLD-2024 now applies in a personal manner to all these defendants, which means that they cannot invoke it for changes to the product after it was placed on the market but before they made it available (see *supra* nr. 324). Moreover, it can be argued that product passport updates, at least those which occur 'within the manufacturer's control',

²¹⁷³ Art. 8(1) PLD-1985; art. 13(1) PLD-2024.

²¹⁷⁴ J. De Bruyne, O. Dheu and C. Ducuing, 'The European Commission's Approach To Extra-Contractual Liability and AI - An evaluation of the AI liability directive and the revised product liability directive' (2023) 51 *Computer Law & Security Review* 105894, 18-19.

²¹⁷⁵ See Fairgrieve et al., 'Product Liability Directive', 47.

²¹⁷⁶ See in particular art. 7(2)a PLD-2024: "*the presentation of the product, including the instructions for installation, use and maintenance*". See also *supra* nr. 182 and *infra* nrs. 380 and 389 et seq.

are even subject to the ‘digital exception to the posteriority defence of art. 11(2)a-c PLD-2024. This last provision now seems to extend for the full duration of the applicable extinction period (see *supra* nrs. 242, 248 and 327). Of course, liability claims based on non-harmonised national (extra-)contractual liability law also remain possible against those economic actors responsible for updating product passports with incorrect information, like dangerous use or repair instructions.

The uncertainty of DE BRUYNE, DHEU AND DUCUING may stem from the CJEU’s relatively recent decision in *VI v. Krone*, where it excluded information, namely health advice included in a (physical) newspaper, from the PLD-1985’s material scope by ruling that it constituted a service rather than a product.²¹⁷⁷ And recital 13 PLD-2024 now also implies that information itself falls outside harmonised product liability’s material scope (see *infra* nr. 402). However, in its motivation of the aforementioned decision, the Court took care to observe that the information in question was not ancillary to the newspaper copy, which was itself a product, like information on its use instructions would have been. Instead, the newspaper copy was merely the medium for a service provision, which was the provision of journalistic information to its readers.²¹⁷⁸ In contrast, most if not all information in digital product passports concerns the presentation or use of the associated product, which makes it relevant to the defect assessment of the latter pursuant to art. 6(1)a PLD-1985 and art. 7(2)a PLD-2024, as discussed above.

As an extra argument, the aforementioned authors remark that the persons who have to make available product passports and update them, do not necessarily correspond with the potential defendants based on harmonised product liability law for an ensuing accident caused by the corresponding product.²¹⁷⁹ However, countless existing (EU and national) product safety rules, both of a general and sectoral nature, impose on various actors similar obligations, including obligations relating to product information. This does not diminish the fact that the PLD-1985 establishes a ‘quasi-strict’ liability (see *supra* nr. 173), which allows injured parties to hold specific persons liable for damage caused by a defective product,

²¹⁷⁷ CJEU 10 June 2021, C-65/20, *VI v. KRONE*, ECLI:EU:C:2021:471. See also already in this sense Howells, ‘strict liability’, nr. 4.64. *Contra* Fairgrieve et al., ‘Product Liability Directive’, 47-49; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 57-58.

²¹⁷⁸ CJEU 10 June 2021, C-65/20, *VI v. KRONE*, ECLI:EU:C:2021:471, nr. 36: “*In the present case, it must be observed that the service in question, namely the provision of inaccurate advice, is unrelated to the printed newspaper, which constitutes its medium. More specifically, that service does not concern either the presentation or the use of the latter. Therefore, that service is not part of the inherent characteristics of the printed newspaper which alone permit an assessment as to whether the product is defective.*” See also J.-S. Borghetti, ‘Un contenu erroné rend-il un journal défectueux?’ (2021) *Recueil Dalloz* 1952, nr. 6; E. Van Gool, ‘Over de verhouding van informatie tot het toepassingsgebied van de productaansprakelijkheidsrichtlijn’ (2021) *SEW: Tijdschrift voor Europees en Economisch Recht* 677, 679.

²¹⁷⁹ J. De Bruyne, O. Dheu and C. Ducuing, ‘The European Commission’s Approach To Extra-Contractual Liability and AI - An evaluation of the AI liability directive and the revised product liability directive’ (2023) 51 *Computer Law & Security Review* 105894, 18. When, for example, (re)manufacturers or importers are held liable based on the PLDI, there is of course a significant correlation with the persons who place products on the market or put them into service, who have to make product passports available according to arts. 7(1) and 9(1) Ecodesign for Sustainable Products Regulation 2024. Nevertheless, the Commission will indeed stipulate in the various implementing Ecodesign requirements which persons can and should update the information included in the passports (art. 9(2)g *ibid.*).

regardless how this defect came to be. Of course, a defendant can theoretically try to invoke the compliance defence of art. 7(d) PLD-1985 and art. 11(1)d PLD-2024 (see *supra* nr. 198). This would only apply in very extreme situations, where Ecodesign implementing requirements would have directly required the inclusion of particular information in a product passport that inevitably made the product defective, for example because it misled persons about the safety of certain dis- and re-assembly or repair processes (see also *infra* nr. 379.d).

Chapter 4. Repairing and refurbishing products

Section A. Overview

348. REPAIRING AND REFURBISHING PRODUCTS: BASIC CONCEPTS TO BE UNDERSTOOD ALONGSIDE REMANUFACTURING – As examined in Part II, ‘repair’ consists of correcting identified faults in an obsolete product by bringing it back to working condition, possibly by replacing parts, which remains in terms of scope limited to those faults and does not have to result in a quality equivalent to the original, newly manufactured version of the product (see *supra* nr. 88). ‘Refurbishing’ consists of bringing a product in its entirety to a satisfactory working and/or cosmetic condition, by repairing, replacing or refinishing all major components that are found to be damaged or on the point of failure, which can still result in an overall quality that is inferior to the original version of the product when it was newly manufactured (see *supra* nr. 89). ‘Remanufacturing’ consists of disassembling a product (‘core’), inspecting, reprocessing and replacing parts, reassembling and testing the new, remanufactured product and, in doing so, bringing it to a condition that at least meets all the quality requirements of the original newly manufactured product (see *supra* nr. 90). Additionally, when second-hand spare parts are used in either of these three circular strategies, this is called in this dissertation re-use of spare parts (see *supra* nr. 91).

This Chapter focuses on the application of harmonised product liability law to ‘repaired’ and ‘refurbished’ products. The much simpler harmonised product liability rules applicable to ‘remanufacturing’ and ‘re-use’ are also more briefly examined in this Chapter *infra* nrs. 356-365, because there exists in terms of applicable rules under the PLD-1985 and PLD-2024 a dramatic difference between both sets of circular strategies.

Some basic concepts and distinctions which are factually important for this Chapter, have been outlined *supra* nr. 86. First of all, product repairs can be performed by prosumers, who also very occasionally conduct product refurbishments. If a consumer repairs his own products, which he likely owns, this is called ‘self-repair’.²¹⁸⁰ Second, many repairs and arguably most refurbishments are performed by original manufacturers and their affiliated partners in the product’s original distribution and service networks. These are called ‘original’ repairs and refurbishments. Third, both repairs and refurbishments can be also performed by other,

²¹⁸⁰ See also on the distinction between ‘self-’, ‘independent’ and ‘original repair’ E. Terryn, ‘A Right to Repair? Towards Sustainable Remedies in Consumer Law’ (2019) *European Review of Private Law* 851, 853, 864; E. Van Gool, ‘A European ‘right to repair’: Yes! But how (far)?’ *CCM Blog* (2021) <<https://law.kuleuven.be/ccm/blog/?p=68>>; B. Dao, ‘Unlocking consumer freedom: EU Parliament votes yes to right to repair’ (2023) <<https://eeb.org/unlocking-consumer-freedom-eu-parliament-votes-yes-to-right-to-repair>>.

third parties, who are mostly professional businesses but sometimes also prosumers or non-profit organisations (see also *supra* nrs. 197-198 regarding the potential liability under the PLD-1985 and PLD-2024 of prosumers). These activities are called ‘independent’ repairs and refurbishments. Note that remanufacturing is in practice virtually always an ‘original’ activity by a product’s original manufacturer or his authorised network, although ‘independent’ remanufacturing is theoretically possible.²¹⁸¹ And fourth, all three²¹⁸² circular activities can be performed either by the product’s owner, such as self-repairs by prosumers or original and independent repairs, refurbishments and remanufacturing by actors who have first obtained the product, or offered as a service by original or independent service-providers. Finally, this dissertation has also already introduced the ‘right to repair’ concept and underlying socio-legal movement.²¹⁸³ This manifests itself now in regulatory initiatives which are referenced in this Chapter to the extent that they can influence the application of harmonised product liability rules.

349. POTENTIAL CLAIMS – Repaired and refurbished products challenge harmonised product liability precisely because they occupy a middle ground in the spectrum of product reproduction (see also *supra* nr. 74). It is generally clear on the basis of different liability theories that other people can be held liable when a product has been completely changed and is placed on the market as a new product, which is briefly examined *infra* nrs. 356 et seq. in relation to actual product remanufacturing and reuse. But it is more challenging to determine precisely when and why this shift occurs, for example when only certain parts of a product are repaired and replaced or when a refurbishment process completely retains a product’s original design and presentation.

The result is that more parties are potentially liable. On the one hand, there are the original product’s (quasi-)manufacturer, importer and distributors. On the other hand, there are the intervening repairers and refurbishers, who to some extent change the product. As this Chapter will demonstrate, both groups can sometimes be simultaneously liable for the same product accident on the basis of solely harmonised product liability law,²¹⁸⁴ while non-harmonised national liability theories of course continue to apply in parallel (see *supra* nr. 171). In case of original activities, the repairer or refurbisher can be expected to have easier access to authentic repair information and spare parts, which can make a difference compared to independent actors. In cases of self-repair or self-refurbishment activities by prosumers,

²¹⁸¹ Remanufacturing by independent third parties without a license agreement with the original manufacturer, risks infringing on intellectual property rights. Nevertheless, depending on the product and the applicable intellectual property protection, this can be possible and it is at least technically feasible. See also G. Hatcher, W. Ijomah and J. Windmill, ‘Design for remanufacture: a literature review and future research needs’ (2011) 19 *Journal of Cleaner Production* 2004, 2006.

²¹⁸² Remanufacturing is in practice almost exclusively performed by companies who own the product or have first received it as waste. In the latter case, a ‘preparation for re-use’ recovery process is first needed. See *supra* nrs. 90 and 94.

²¹⁸³ See on this concept in particular *supra* footnotes 356-357, 492 and 497.

²¹⁸⁴ See, e.g., Liège 18 October 2004, *JLMB* 2005, 212; E. Van Gool, ‘De nieuwe richtlijn productaansprakelijkheid en circulaire economie’ (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 416.

vertical claims are more likely to be challenged by a contributory fault defence. But if third parties get injured by such activities, they might not only claim diagonally against actors in the product's distribution and service chain but also potentially horizontally against the self-repairing or self-refurbishing prosumer, for which art. 8(2) PLD-2024 now provides a limited possibility in addition to options on the basis of national extracontractual liability. And, of course, if either only the defendants in the original product's distribution chain or only the repairer or refurbishers would be held liable, there is a substantial chance that this defendant will try to claim in recourse against the other.²¹⁸⁵

350. STRUCTURE OF THE ANALYSIS – As outlined in the previous section, product repairs and refurbishments do not negate the potential for harmonised product liability of manufacturers and other defendants in the affected product's original distribution chain. Instead, the possibility that these circular strategies intervene in the future lifecycle of products they place on the market or make available, just raises extra questions on the correct application of their liability based on the PLDI, especially regarding the defect assessment. Hence, Section B of this Chapter studies harmonised product liability of actors in the original distribution chain of products that later cause accidents during or after an intervening repair or refurbishment.

Section C focuses on harmonised product liability of product repairers and refurbishers themselves. A prominent role is played here by the (new) rules of arts. 8(2) and 11(2)d PLD-2024. To correctly analyse the applicable rules, it will be important to not only perceive the technical differences between repairs and refurbishments but to also distinguish between self-, independent and original repairers and refurbishers, according to the aforementioned 'personal typology' (see *supra* nr. 348). For theoretically more challenging aspects of interpreting the defect assessment, the substantive defences and the limitation and extinction periods vis à vis actors who intervene later in the lifecycle of a product, this Section C will fortunately be able to build on insights already established in the previous Chapter on retransfers.

²¹⁸⁵ See with regards to recourse claims for the same product accident based on the PLDI art. 8(1) PLD-1985; art. 12(1) PLD-2024.

Section B. Liability of defendants in the original distribution chain of subsequently repaired or refurbished products

§ 1. Scope of application

a. Ratione materiae

351. REPAIRED OR REFURBISHED PRODUCTS REMAIN ‘PRODUCTS’ – As discussed *supra* nrs. 223, 254 and 279, products do not fall outside the material scope of harmonised product liability simply because they are already in use for a long time, have been repurposed or have been retransferred. Likewise, products that have been repaired or refurbished continue to be ‘products’ according to art. 2 PLD-1985 and art. 4(1) PLD-2024. In contrast, remanufactured products should in my opinion literally be qualified as newly manufactured (see *infra* nrs. 352.d and d). The fact that repaired and refurbished products continue to fall within the PLD-1985’s material scope of, seems to be undisputed and is accepted, mostly implicitly, in both case law²¹⁸⁶ and literature.²¹⁸⁷ Recital 39 PLD-2024 now explicitly confirms the same.

Additionally, this largely matches with art. 2(3) General Product Safety Regulation 2023/988/EU, which explicitly declares that its regulatory framework applies to “*products [...] whether [...], repaired or reconditioned.*” The same provision then adds that “[*i*]*t does not apply to products to be repaired or reconditioned prior to being used where those products are placed or made available on the market and are clearly marked as such.*” However, the absence of such an explicit carve-out in the PLD-1985 and PLD-2024, seems to confirm that harmonised product liability continues to apply as well to products that have been placed on the market in a state requiring a repair or refurbishment prior to being used and which bear a clear, corresponding marking.²¹⁸⁸ Given the different functions of both sets of rules (see *supra* nrs. 10), it is in

²¹⁸⁶ E.g., BELGIUM: Liège 18 October 2004, *JLMB* 2005, 212, 213-214; Antwerpen 28 October 2009, *TBBR* 2011, 381, 383-385, note D. Verhoeven. GERMANY: KG 3 April 2014, 20 U 253/12, *MedR* 2014, 825.

²¹⁸⁷ E.g., Taschner and Frietsch, *Kommentar*, 239, 314; Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 49, nr. 26; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3605, 3-5; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nrs. 8.09, 9.114; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 3-4, nr. 24; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 4, nr. 24; I. Lacroix, *Recht op herstellen: aansprakelijkheids- en verbintenisrechtelijke implicaties van de circulaire economie* (die Keure 2022) 57-59; P. Verbruggen and J. van Vliet, ‘Duurzaamheid in het buitencontractueel aansprakelijkheidsrecht: De belofte van drie Europese wetgevingsvoorstellen’ (2023) 7407 *Weekblad voor Privaatrecht, Notariaat en Registratie* 276, 285-286; J. Wassink and M. Loos, ‘Productaansprakelijkheid in het digitale tijdperk: De Richtlijn productaansprakelijkheid bij de tijd gebracht’ (2023) *Nederlands Tijdschrift voor Europees Recht* 22, 25.

²¹⁸⁸ To obtain the exemption from general product safety requirements, it still seems advisable that the product is not only “*clearly marked*” (art. 2(3) General Product Safety Regulation 2023/988/EU) but that

my opinion defensible that producers, importers or distributors of such products can postpone the extensive *ex ante* general product safety requirements for a product that still has to be repaired or refurbished before being used, while they remain subject to *ex post* product liability if this product, before the necessary repair or refurbishment occurs, nevertheless causes damage.²¹⁸⁹ After all, this precisely matches with the from an economic perspective observed ‘enforcement costs advantage’ of product liability over product safety regulation, which is much more significant in the heterogeneous context of repairs and refurbishments (see *supra* nrs. 152-154).

b. *Ratione personae*: the impact of intervening repairs and refurbishments

352. A SUBSEQUENT REPAIR OR REFURBISHMENT HAS NO IMPACT ON THE LIABILITY OF DEFENDANTS IN THE ORIGINAL PRODUCT’S DISTRIBUTION CHAIN, UNDER BOTH THE PLD-1985 AND THE PLD-2024 – This dissertation argues that redistributing or using a repaired or refurbished product amounts neither to the original ‘putting into circulation’ of a new product according to the PLD-1985 nor to the ‘placing on the market’ or ‘putting into service’ of an entirely new product according to the PLD-2024.²¹⁹⁰ As explained *infra* nrs. 353-354, when a repair or refurbishment for example qualifies as an independent substantial modification according to art. 8(2) PLD-2024, the product’s original manufacturers and distributors are not simply exempted from potential harmonised product liability.²¹⁹¹ Likewise, when a repair or refurbishment qualifies as a ‘quasi-manufacturing’ (see also *infra* nr. 432), then defendants in the same product’s original distribution chain also continue to be subject to primary and potentially even secondary liability for an ensuing accident occurring during or after the repair of the now quasi-manufactured product. And when a repair or refurbishment occurs ‘within the manufacturer’s control’ pursuant to art. 11(2)d PLD-2024, then nothing really changes to the liability of existing product liability defendants, since their liability has now only expanded as a result of this new exception to the posteriority defence (see also *supra* nrs. 195-196 and *infra* nr. 413).

the economic actors also “clearly informs” the recipient about the exemption (art. 2(a) General Product Safety Directive 2001/95/EC 2001/95). See Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 16; P. Cartwright, ‘The Regulation of Product Safety’ in G. Howells (ed.), *The Law of Product Liability* (2nd edn., Butterworths 2007) nr. 9.51.

²¹⁸⁹ Note that the PLD-1985 and PLD-2024 also lack the exemptions for “antiques” and other carved-out products explicitly listed in art. 2(2) General Product Safety Regulation 2023/988/EU. Hence, it is similarly accepted that harmonised product liability applies in principle to all these products. See, e.g., regarding antiques *supra* nrs. 223 and 279.

²¹⁹⁰ See arts. 6, 7 and 11 PLD-1985; arts. 2(1), 4(7)-(9), 7(2)e, 11(1) and 17(1) PLD-2024. See also regarding these key concepts in previous Chapters *supra* nrs. 184, 194-201, 203, 310-316, 323 and 331-333.

²¹⁹¹ See also E. Van Gool, ‘De nieuwe richtlijn productaansprakelijkheid en circulaire economie’ (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 416; J. Wassink and M. Loos, ‘Productaansprakelijkheid in het digitale tijdperk: De Richtlijn productaansprakelijkheid bij de tijd gebracht’ (2023) *Nederlands Tijdschrift voor Europees Recht* 22, 25-27. Contra V. Ulfbeck, ‘Circularity in Servitization: Managing the Need for Product Change in Contract and Product Liability Law’ in B. Keirshilck and others (eds.), *Servitization and Circular Economy: Economic and Legal Challenges* (Intersentia 2023) 106. Note that recital 39 PLD-2024 contains a sentence that seems to indicate otherwise, but this is refuted *infra* nr. 353.

Consequently, original manufacturers, importers, quasi-manufacturers and distributors who are subject to liability for products that are later repaired or refurbished, fully continue to be liable on the same basis as before.²¹⁹² The same applies to the PLD-2024's new, niche defendant categories,²¹⁹³ which are for the sake of simplicity not needlessly mentioned again every single time in the following sections. All these defendants in the original product's distribution chain may of course try to invoke for example the posteriority defence, which becomes particularly important when a repair, refurbishment or attempt thereto has intervened later in the product's lifecycle (see *infra* nrs. 413-419). But their primary or secondary liability for defects in the repaired or refurbished product essentially continues to apply unabated. This is true regardless whether it was a self-, independent or original repairer or refurbisher who intervened and whether this actor himself can additionally be held liable on the basis of harmonised product liability, as discussed in the next Section.

- a. While various arguments in support of this view are offered in this and the following two sections, it is worthwhile to emphasize that this is arguably also the most straightforward interpretation of the operative parts of the two Directives. After all, neither the PLD-1985 nor the PLD-2024, with the exception of one recital,²¹⁹⁴ explicitly refers to 'repairs', 'refurbishments' or an equivalent term (cf. *supra* nrs. 85 et seq.). And, as explained *infra* nrs. 353-354, the new, pivotal arts. 8(2) and 11(1)g PLD-2024 also at least implicitly support this view that the liability of actors in the product original distribution chain does not fundamentally change simply because a product happens to be later repaired or refurbished, even when this involves a substantial modification that is performed independently ('outside the manufacturer's control').

²¹⁹² See, e.g., BELGIUM: Liège 18 October 2004, *JLMB* 2005, 212 (manufacturer liable for placing defective product on the market, notwithstanding subsequent repair); Antwerpen 28 October 2009, *TBBR* 2011, 381, note D. Verhoeven (manufacturer potentially liable for placing defective product on the market, but exempted due to posteriority defence based on subsequent, flawed repair). SEE ALSO: Howells, 'strict liability', nr. 4.170; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 4, nr. 24; I. Lacroix, *Recht op herstellen: aansprakelijkheids- en verbintenissenrechtelijke implicaties van de circulaire economie* (die Keure 2022) 77-83.

²¹⁹³ I.e. the manufacturer's authorised representative, the fulfilment service provider and the online platform (art. 4(11)(13)(16) PLD-2024). These defendants retain the same relationship vis à vis the original product as the importer and distributor, respectively. See *supra* nr. 178.

²¹⁹⁴ Recital 39 PLD-2024 does refer to repair and refurbishment (and also to remanufacturing, see *infra* nr. 356). However, when read together with arts. 8(2) and 11(1)g PLD-2024, this recital must ultimately be interpreted as supporting this dissertation's interpretation, as discussed *infra* nrs. 353-354.

- b. Existing case law²¹⁹⁵ and literature²¹⁹⁶ relating to the PLD-1985 confirm this unequivocally with regards to ‘repair’ activities. However, in relation to ‘refurbishments’, several, mostly German authors hold to the contrary that this circular strategy should be qualified as manufacturing a new product.²¹⁹⁷ Alternatively they consider this as a case-specific factual assessment where courts can qualify in light of concrete circumstances at least certain refurbishments as producing a new product that is subsequently ‘put into circulation’ for the first time.²¹⁹⁸

It is possible that some of these authors instead intend to refer to what this dissertation understands, in accordance with specialised literature and standards, as ‘remanufacturing’ (cf. *supra* nr. 90). This would then actually support this dissertation’s analysis with regards to this last circular strategy, which it considers to be radically different from repairs and refurbishments (see *infra* nrs. 356 et seq.).

Yet, by using terms like *Generalüberholung*, *Modernisierung*, ‘renovated’ or ‘overhauled’, it seems more likely that they nevertheless refer effectively to what this dissertation understands as ‘refurbishing’ (cf. *supra* nr. 89). If so, these German authors claim that a refurbisher becomes liable as a manufacturer who places a new product on the market. For actors in the product’s original distribution chain, this would mean either that they would no longer be subject to any harmonised product liability or, more likely, that they would only remain liable as (quasi-)manufacturers or importers of components used by the refurbisher in producing a (new) final product. Both these interpretations are refuted *infra* nrs. 353 and 354 with regards to the hypothesis that the refurbishment would qualify as an independent substantial product modification pursuant to art. 8(2) PLD-2024.

²¹⁹⁵ E.g., BELGIUM: Liège 18 October 2004, *JLMB* 2005, 212, 213-214 (original producer held liable); Antwerpen 28 October 2009, *TBBR* 2011, 381, 383-385, note D. Verhoeven (original producer ultimately not held liable based on posteriority defence as well as lack of causation). GERMANY: KG 3 April 2014, 20 U 253/12, *MedR* 2014, 825, *Juris*, nrs. 70-71: “Damit wurde aber keine neue Prothese geschaffen bzw. ‘erfunden’, sondern eine Reparatur der Prothese durch Austausch des schadhafte Teils vorgenommen. Der Annahme, dass es bei einem Austausch eines - auch gegenüber dem Vorgänger modifizierten - Teils eines Gesamtprodukts um die Herstellung eines neuen Produktes im Sinne der ProdHaftG handelt, steht nicht nur - wie das Landgericht zutreffend bemerkt (Seite 6 unten des Urteils) - der Regelungszweck des ProdHaftG entgegen.”

²¹⁹⁶ See Taschner and Frietsch, *Kommentar*, 239, 314; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3605, 3-4; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 8.09; Wagner, *MüKo BGB*, ‘Produkthaftungsgesetz’, § 4, nr. 24; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 4, nr. 24; I. Lacroix, *Recht op herstellen: aansprakelijkheids- en verbintenissenrechtelijke implicaties van de circulaire economie* (die Keure 2022) 57-59.

²¹⁹⁷ Taschner and Frietsch, *Kommentar*, 239; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3605, 5; Wagner, *MüKo BGB*, ‘Produkthaftungsgesetz’, § 4, nr. 24; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 4, nr. 25. See also European Law Institute, *European Commission's Proposal for a Revised Product Liability Directive: Feedback of the European Law Institute* (2022) 13-14; J. Wassink and M. Loos, ‘Productaansprakelijkheid in het digitale tijdperk: De Richtlijn productaansprakelijkheid bij de tijd gebracht’ (2023) *Nederlands Tijdschrift voor Europees Recht* 22, 25.

²¹⁹⁸ Howells, ‘strict liability’, nr. 4.86; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nrs. 8.09, 9.114. See also P. Verbruggen and J. van Vliet, ‘Duurzaamheid in het buitencontractueel aansprakelijkheidsrecht: De belofte van drie Europese wetgevingsvoorstellen’ (2023) 7407 *Weekblad voor Privaatrecht, Notariaat en Registratie* 276, 286.

- c. Note that the former General Product Safety Directive 2001/95/EC explicitly considered someone “*who reconditions the product*” as a ‘producer’.²¹⁹⁹ This might partially explain the aforementioned interpretations by German scholars relating to refurbishments under the PLD-1985. Conspicuously, however, the new definition of ‘manufacturer’ in art. 3(8) General Product Safety Regulation 2023/988/EU, which is very similar to the definition of the same concept in art. 4(10) PLD-2024, now no longer mentions ‘reconditioning’, ‘refurbishment’ or any circular strategy for that matter. The rules of the General Product Safety Regulation 2023/988/EU are not entirely identical to how this dissertation interprets the role of repairs and refurbishments in harmonised product liability law, as discussed *infra* nr. 353. Nevertheless, the fact that this regulatory framework which significantly inspired the PLD-2024 now no longer automatically qualifies a ‘reconditioner’ as a ‘manufacturer’, supports the view that not only repairs but also refurbishments should not be considered as manufacturing and placing on the market or putting into service an entirely new product.
- d. Furthermore, it would make little sense, from a technical perspective informed by the engineering literature on circular strategies, to decide the question of whether a new product is placed on the market or put into service on the basis of a sharp distinction between repairing, on the one hand, and refurbishing and remanufacturing, on the other hand. A technical distinction between repair, refurbishment and remanufacturing has been outlined *supra* nrs. 88-90. A refurbishment, although it still concerns a product in its entirety, does not disassemble, inspect and renew a product in a sufficiently in-depth and methodical manner to qualify as a complete ‘reproduction’, unlike an actual remanufacturing process (cf. *infra* nr. 356).²²⁰⁰ A refurbishment is actually much more comparable to a repair activity than to remanufacturing in terms of how

²¹⁹⁹ Art. 2(e)i General Product Safety Directive 2001/95/EC 2001/95. See also T. Klindt, *Produktsicherheitsgesetz: Kommentar* (3rd edn., Beck 2021) § 2, nr. 121 (discussing this rule pursuant to the German term *Wiederaufarbeitung*; seemingly arguing for an interpretation limited to what this dissertation understands as remanufacturing).

²²⁰⁰ See, e.g., G. Hatcher, W. Ijomah and J. Windmill, ‘Design for remanufacture: a literature review and future research needs’ (2011) 19 *Journal of Cleaner Production* 2004, 2005: “*Remanufacture can be considered superior to the similar end-of-life strategies repair and reconditioning because the end result will be a higher quality of product with a longer extended life, making it more commercially viable [...]*.”; M. den Hollander, C. Bakker and E. Hultink, ‘Product Design in a Circular Economy: Development of a Typology of Key Concepts and Terms’ (2017) 21 *Journal of Industrial Ecology* 517, 522-523: “*Remanufacturing is often taken to be an equivalent, or a variety, of refurbishing. This article, however, argues that the two are not the same. [...] Remanufacturing is a term for a series of industrial processes in a factory environment [...] that result in a new product with a warranty that is identical to that of an equivalent product manufactured out of all new parts.*”; Y. Chen and F. Chen, ‘On the Competition between Two Modes of Product Recovery: Remanufacturing and Refurbishing’ (2019) 28 *Production and Operations Management* 2983, 2985: “*In sum, a remanufactured product generally achieves ‘as-new’ quality and is given a new lifetime similar to that of a new product, while a refurbished product is ‘like-new’ with a remaining service-life generally less than that of a new product [...]*.” See also *infra* nrs. 356 et seq.

relatively superficially and not at an in-depth, sub-component level it renews a product.²²⁰¹

- e. This is why this dissertation argues instead for a more coherent distinction – applicable to the PLD-1985, which will continue to govern many product accidents in the following years,²²⁰² and to the PLD-2024 – between repair and refurbishment, on the one hand, and remanufacturing, on the other hand. Only the latter results in either placing a new product on the market, putting it into service or, according to the PLD-1985’s language, putting a truly new product into circulation. In contrast, repairs and refurbishments, even those qualifying under art. 8(2) PLD-2024, do not fundamentally change the primary or secondary liability of defendants in the original product’s distribution chain, although these actors may of course try to invoke among others the posteriority defence (see *infra* nrs. 412 et seq.) and although the repairer or refurbisher themselves may simultaneously be liable in parallel (see *infra* nrs. 424 et seq.).

353. A REPAIR OR REFURBISHMENT QUALIFYING UNDER ART. 8(2) PLD-2024 DOES NOT MEAN THAT DEFENDANTS IN THE ORIGINAL PRODUCT’S DISTRIBUTION CHAIN ARE NO LONGER SUBJECT TO ANY HARMONISED PRODUCT LIABILITY – Art. 8(2) PLD-2024 imposes a new, primary liability on independent repairers and refurbishers who have substantially modified a product in light of its initial product safety assessment (see *infra* nrs. 442 et seq.). A possible interpretation of this rule could be that, when a repair or refurbishment that meets all requirements of art. 8(2) PLD-2024 occurs, the product’s original (quasi-)manufacturers, importers and distributors are no longer subject to any liability based on the PLDI. This is suggested by WASSINK AND LOOS in their early commentary on the PLD Proposal 2022.²²⁰³ And, at first sight, it also seems to find support in one sentence of what is now recital 39 PLD-2024.²²⁰⁴ However, such an interpretation would in my view be contrary to the new Directive’s operative text when art. 8(2) is read together with art. 11(1)g PLD-2024. Instead, as the previous section has already

²²⁰¹ See, e.g., A. King et al., ‘Reducing waste: repair, recondition, remanufacture or recycle?’ (2006) 14 *Sustainable Development* 257, 261: “The fact that a reconditioned product is clearly not new (and thus not offering the latest functionality or aesthetic styling of new product) means that it has the same market acceptance issues as products that have been repaired.”; M. den Hollander, C. Bakker and E. Hultink, ‘Product Design in a Circular Economy: Development of a Typology of Key Concepts and Terms’ (2017) 21 *Journal of Industrial Ecology* 517, 522: “Refurbishing, or its equivalent reconditioning, is the process of returning an obsolete product to a satisfactory working and/or cosmetic condition, that may be inferior to the original specification, by repairing, [...]. Generally, any warranty on a refurbished product [...] is less than that of a newly manufactured equivalent.”

²²⁰² Art. 21 PLD-2024.

²²⁰³ J. Wassink and M. Loos, ‘Productaansprakelijkheid in het digitale tijdperk: De Richtlijn productaansprakelijkheid bij de tijd gebracht’ (2023) *Nederlands Tijdschrift voor Europees Recht* 22, 24. But see also *ibid.*, 25-27.

²²⁰⁴ Recital 39 PLD-2024: “[...] When a product is substantially modified and is thereafter made available on the market or put into service, it is considered to be a new product. Where the modification is made outside the control of the original manufacturer, it should be possible to hold the person that made the substantial modification liable as a manufacturer of the modified product, since under relevant Union legislation that person is responsible for the product’s compliance with safety requirements. [...]”

outlined, this dissertation argues that the original (quasi-)manufacturers, importers and distributors of a later repaired or refurbished product remain fully liable, regardless whether said repair or refurbishment qualifies as a substantial modification according to art. 8(2) PLD-2024.²²⁰⁵

First of all, the apparent interpretation based on recital 39 PLD-2024 and WASSINK AND LOOS would exempt those actors in the product's original distribution chain from harmonised product liability, while they and in particular the manufacturer could still have prevented various defects in the meanwhile substantially modified product they placed on the market, put into service or made available, for example by making it more repair-friendly (see *infra* nrs. 373 et seq.). In light of this dissertation's normative criterion of efficient accident-prevention as well as corrective justice premised on the risk-internalisation principle (see in particular *supra* nrs. 108, 127 and 128.c), it is difficult to see why such actors should then suddenly no longer be subject to harmonised product liability, simply because the product they placed on the market, put into service or made available happened to be subsequently repaired or refurbished pursuant to art. 8(2) PLD-2024.

Second, if those actors in the product's original distribution chain were to be completely exempted from harmonised product liability, the new defence of art. 11(1)g PLD-2024 (see *infra* nr. 454) would open up the real possibility that injured parties can no longer hold anyone liable for damage caused by a defective product. After all, if the defect that caused the damage would relate to a part of the product that was not affected by the substantially product modifying repair or refurbishment, then the repairer or refurbisher could fully exempt himself by invoking art. 11(1)g PLD-2024. Such gap in protection of the risk-averse injured consumer or third party would run clearly contrary to not only the Directive's goals but also this dissertation's normative criteria of efficient risk-allocation and corrective justice 'rectification' for an injured person (see in particular *supra* nrs. 106, 127 and 168).

Third, it is admittedly true that the interpretation by WASSINK AND LOOS and seemingly put forward by recital 39 PLD-2024 would make harmonised product liability converge even more with current EU product regulation. According to art. 13(2)-(3) General Product Safety Regulation 2023/988/EU, which is very similar to art. 8(2) PLD-2024, any person who "*substantially modifies the product, [...] shall be subject to the obligations of the manufacturer*". This means that the original manufacturer is no longer responsible for regulatory compliance of the new, substantially modified parts of the product.²²⁰⁶ Sectoral product regulation applies a similar principle.²²⁰⁷ However, one must keep the different nature of *ex ante* product safety regulation and *ex post* product liability law in mind (see also *supra* nrs. 10). It is practically unrealistic to

²²⁰⁵ This was already assumed in the two previous Chapters, where the potential liability of repurposers and retransferors based on art. 8(2) PLD-2024 was discussed completely in parallel to the potential harmonised product liability of defendants in the same product's (original) distribution chain. See *supra* nrs. 262-268 and 307-309.

²²⁰⁶ Note that these persons still remain responsible for not substantially modified parts of the product. See art. 13(2) General Product Safety Regulation 2023/988/EU.

²²⁰⁷ See Commission Notice 'The 'Blue Guide' on the implementation of EU product rules 2022' [2022] OJ C247/1, 17-18. This rule on 'substantial product modifications' in earlier versions of the Blue Guide Commission guidance was actually the sources of inspiration for current art. 13(2)-(3) General Product Safety Regulation 2023/988/EU and subsequently art. 8(2) PLD-2024.

have multiple actors who are simultaneously responsible for the same active regulatory requirements for the same product at the same time, like completing a conformity assessment. This is a consequence of how heterogeneity in terms of actors which results from circular strategies, makes product safety regulation comparatively more complex and costly (see *supra* nr. 153). In contrast, *ex post* harmonised product liability can benefit from having partially overlapping liabilities of multiple co-defendants, who can all contribute to the goals of accident-prevention and risk-allocation, as discussed above.

In conclusion, actors in a product's original distribution chain must continue to be subject to harmonised product liability for damage caused by a defective product that has been placed on the market, put into service or made available by them. There is no reason why they would have to be suddenly exempted from primary or secondary liability when the product is subsequently repaired or refurbished, even when this would qualify as a substantial product modification 'outside the manufacturer's control' pursuant to art. 8(2) PLD-2024.²²⁰⁸ And when an intervening repair or refurbishment that substantially modifies the product would happen to occur 'within the manufacturer's control', then the applicable liability of defendants in the original distribution chain is even extended to this modified, repaired or refurbished product pursuant to art. 11(2)d PLD-2024's exception to the posteriority defence.²²⁰⁹

354. A REPAIR OR REFURBISHMENT QUALIFYING UNDER ART. 8(2) PLD-2024 DOES NOT MEAN THAT DEFENDANTS IN THE ORIGINAL PRODUCT'S DISTRIBUTION CHAIN BECOME ONLY 'COMPONENT' (QUASI-)MANUFACTURERS OR IMPORTERS – An alternative and already more convincing but in my opinion still incorrect interpretation could consist of applying to repairs or refurbishments that meet the requirements of art. 8(2) PLD-2024, the principles this dissertation reserves for re-manufactured products (cf. *infra* nrs. 356 et seq.). Concretely, this would mean that, when a product is independently substantially modified in light of its initial product safety assessment through a repair or refurbishment and then put into service or 'made available',²²¹⁰ not only said repairer or refurbisher becomes liable based on art. 8(2) PLD-2024. Defendants in the product's original distribution chain would according to this view still remain liable, but only so as upstream (quasi-)manufacturers, importers or distributors of 'components',²²¹¹

²²⁰⁸ E. Van Gool, 'De nieuwe richtlijn productaansprakelijkheid en circulaire economie' (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 416. See also J. Wassink and M. Loos, 'Productaansprakelijkheid in het digitale tijdperk: De Richtlijn productaansprakelijkheid bij de tijd gebracht' (2023) *Nederlands Tijdschrift voor Europees Recht* 22, 25-27.

²²⁰⁹ See arts. 4(5) and 7(2)e PLD-2024. See also *supra* nr. 196 and *infra* nr. 413.

²²¹⁰ Elsewhere, this dissertation argues to amend art. 8(2) PLD-2024 by stating that a substantially modified product is 'placed on the market' rather than 'made available', which solves various theoretical problems. See *supra* nrs. 265-266 and *infra* nrs. 450-453.

²²¹¹ Note that art. 8(1)(3) PLD-2024 creates in impression that a secondary liability of a merely intermediary 'component distributor', would not be possible. Nevertheless, this dissertation argues *de lege lata* to read the references in art. 8(3) PLD-2024 to 'product' also as referring to 'components', which are after all technically also products. *De lege ferenda*, this dissertation proposes to add a reference to 'component' in art. 8(3) PLD-2024. A secondary liability of upstream component distributors is on the basis of arts. 2-3 PLD-1985 definitely possible. See *infra* nr. 359.

which the repairer or refurbisher liable based on art. 8(2) has subsequently used in his ‘final product’.

Given the reasons discussed *supra* nr. 353, this would actually be preferable over the already rejected alternative to altogether exempt these actors in the original distribution chain from harmonised product liability. Nevertheless, based on the arguments raised below, it is preferable to also reject this ‘component interpretation’ of art. 8(2) PLD-2024 in favour of the theoretically more coherent solution presented *supra* nr. 352: to preserve without any change the harmonised product liability of actors in the original distribution chain of a later independently, substantially modified product, while such actors can of course still invoke the posteriority defence of art. 11(1)c PLD-2024.

- a. First of all, especially a repair but also a refurbishment can be quite limited in scope, level of technical detail and intensity.²²¹² A substantial modification pursuant to art. 8(2) PLD-2024 can furthermore be limited to affecting only a minor part of a product, such as a single safety mechanism (see *infra* nrs. 444-445). Repairs and refurbishments qualifying under art. 8(2) PLD-2024 are therefore often brief, targeted and relatively superficial processes which are then not intuitively regarded as truly manufacturing a new product.

Additionally, it would feel at odds with the common understanding of the consumer goods industry to then suddenly qualify the actors subject to primary liability in the product’s original distribution chain as (quasi-)manufacturers or importers of product components. After all, these actors have for all intent and purposes placed a finished consumer good on the market or put it into service that might be defective and cause damage. Simply because the product happens to be later independently repaired or refurbished pursuant to art. 8(2) PLD-2024, they do not suddenly start fitting the image of actual component manufacturers. The latter are supposed to be upstream suppliers who provide separate components and materials, which generally do not yet have the separate functionality of a finished product and which do not yet meet all regulatory requirements for placing it on the market or putting it into service, unlike our defendants who have effectively placed on the market or put into service a final product.

In conclusion, this ‘component’ interpretation of actors in the original distribution chain of products that are later independently repaired or refurbished pursuant to art. 8(2) PLD-2024, feels counter-intuitive. In comparison, when products have been truly remanufactured, this is not so much an issue, since remanufacturing supposes an industrial setting as well as the implementation of all the steps that are also taken in a traditional, linear manufacturing process (see *infra* nrs. 356 et seq.).

- b. Second, the component defence of art. 7(f) PLD-1985 and art. 11(1)f PLD-2024 is specifically created for actual upstream (quasi-)manufacturers and importers of components (see *supra* nr. 201). Yet, this defence cannot be meaningfully invoked by actors in the original distribution chain of a final product who would suddenly, as a result of an

²²¹² See *supra* nrs. 88-89. See also *supra* footnote 2201.

intervening application of art. 8(2) PLD-2024, be considered as component (quasi-)manufacturers or importers.

They cannot claim that “*the defectiveness of the product in which that component has been integrated is attributable to the design of that product*”,²²¹³ because they have themselves designed (or either imported or quasi-manufactured) the product in its entirety. The independent repairer or refurbisher has only subsequently intervened and, while he has substantially modified the product in terms of its safety configuration, he has not integrated this original product in a broader product design. Likewise, they can definitely not claim that a potential defect “*is attributable [...] to the instructions given by the manufacturer of that product to the manufacturer of the component*”.²²¹⁴ When they originally (quasi-)manufactured or imported their product, they could perhaps reasonably expect that their product would later be substantially modified by an independent repairer or refurbisher, but they could not time travel and ask the latter for instructions. It is thus clear that the chronological sequence of events is in this hypothesis entirely reversed and that the specific ‘component defence’ is theoretically unavailable to actors in a finished product’s original distribution chain who would be incorrectly categorized as ‘component’ (quasi-)manufacturers or importers due to an intervening application of art. 8(2) PLD-2024.

- c. Third, the actors who would remain only liable as component (quasi-)manufacturers or importers, are unable to claim in recourse against the repairer or refurbisher, if the latter can successfully invoke the defence of art. 11(1)g PLD-2024. Repairers and refurbishers liable based on art. 8(2) PLD-2024 will actually quite frequently be able to exonerate themselves via this defence (see also *infra* nr. 454), since countless product defects are not affected by a repair or refurbishment, which by nature remains more limited in terms of scope, technical detail and level of scrutiny (see *supra* nrs. 88-89). In contrast, actual component (quasi-)manufacturers and importers can, if facilitated by national rules on recourse, in theory always claim in recourse against their final product manufacturers, because the latter are by definition liable based on the PLDI for placing on the market or putting into service a defective product, when they themselves are found to be liable for a defective component in said product.²²¹⁵
- d. Fourth, this imbalance, where as a consequence of art. 11(1)g PLD-2024 the supposed ‘final product manufacturer’ (i.e. the repairers or refurbishers) would bear actually a lower harmonised product liability risk than the supposed upstream ‘component (quasi-)manufacturers and importers’ (i.e. the actors in the product’s original distribution chain), is exacerbated by the reality that these repaired or refurbished products will in practice mostly identify the latter and not the former. Injured parties are thus induced to potentially exclusively claim against those ‘component (quasi-)manufacturers and importers’. Although actors liable on the basis of art. 8(2) PLD-2024 must theoretically fulfil new ‘traceability requirements’ pursuant to almost identical rules in

²²¹³ Art. 11(1)f PLD-2024. See also art. 7(f) PLD-1985.

²²¹⁴ Art. 11(1)f PLD-2024. See also art. 7(f) PLD-1985.

²²¹⁵ See arts. 3(1) and 5 PLD-1985; arts. 8(1)a-b and 12(1) PLD-2024.

EU product regulation,²²¹⁶ this requirement is in practice less likely to be complied with, because it is challenging for most commercial repairers and refurbishers to determine *ex ante* when they substantially modify a product and to be sufficiently familiar with regulatory requirements which normally apply only to manufacturers and importers.²²¹⁷ Consequently, not only original branding but also traceability information that still refers to actors in the original distribution chain, will thus remain present on the repaired or refurbished product. And, in those circumstances, an injured party will more likely claim against those identified actors in the original product's distribution chain.²²¹⁸

- e. In summary, the preceding arguments demonstrate how a 'component' interpretation of the role of defendants in the original distribution chain of products that are later (in a repair or refurbishment) substantially modified pursuant to art. 8(2) PLD-2024, is both factually and legal theoretically unconvincing.

On the flipside, it must be admitted that there are no strong arguments against this interpretation based on the PLD-2024's policy goals and/or this dissertation's normative framework.²²¹⁹ There is a possibility that the aforementioned theoretical challenges slightly increase the overall administrative costs of these product liability rules, which would of course be undesirable (see *supra* nrs. 111). And labelling persons who profit from placing on the market or putting into service finished products that later turn out to cause damage to others, merely as upstream suppliers of 'components', is perhaps less satisfactory in terms of corrective justice (see *supra* nrs. 127 and 128.c). After all, this qualification has slightly weaker connotations of 'wrongdoing' or 'abnormal risk-taking' than a qualification as (quasi-)manufacturers or importers who as the final responsible parties have intentionally brought 'finished products' outside the professional manufacturing process and into contact with vulnerable consumers and third parties.²²²⁰

Nevertheless, in terms of substantive outcomes, especially in terms of efficient risk-allocation and accident-prevention, there is little to no difference with the interpretation this dissertation has argued for *supra* nr. 352, namely, to let an intervening application of art. 8(2) PLD-2024 have no theoretical impact whatsoever on the liability of defendants in the original product's distribution chain other than delivering possible

²²¹⁶ See art. 13(2) General Product Safety Regulation 2023/988/EU; Commission Notice 'The 'Blue Guide' on the implementation of EU product rules 2022' [2022] OJ C247/1, 18-19, 34, 67.

²²¹⁷ Note how this illustrates again how in a more 'heterogeneous' circular economic context the 'fundamental enforcement costs advantage' of *ex post* product liability over *ex post* product safety regulation increases. See *supra* nrs. 152-154.

²²¹⁸ This obviously exacerbates the previously mentioned inabilities of these actors to avail themselves of the component defence of art. 11(1)f PLD-2024 or to claim in recourse against the repairer or refurbisher, if the latter can invoke the defence of art. 11(1)g PLD-2024.

²²¹⁹ This is unlike the alternative interpretation that these actors would be completely exempt from harmonised product liability, which would certainly be undesirable in terms of this dissertation's normative framework and the Directive's stated goals. See *supra* nr. 354.

²²²⁰ Precisely this difference provides the theoretical justification for the 'component defence' (art. 7(f) PLD-1985; art. 11(1)f PLD-2024), which these actors now ironically cannot invoke. See *supra* nr. 354.b.

arguments for invoking the posteriority defence. It is therefore truly a matter of traditional legal doctrinal arguments of theoretical coherence and persuasiveness.

c. Identification of defendants in the original distribution chain of a repaired or refurbished product

355. CHALLENGES IN IDENTIFYING ORIGINAL MANUFACTURERS AND DISTRIBUTORS OF REPAIRED OR REFURBISHED AND SUBSEQUENTLY REDISTRIBUTED PRODUCTS: SIGNIFICANCE OF TRACEABILITY INFORMATION AND FUTURE DIGITAL PRODUCT PASSPORTS – The preceding legal analysis made abstraction of the practical reality that it will often be challenging for injured consumers and even more so for injured third parties to still identify the aforementioned defendants in the original product's distribution chain. However, original packaging and product documentation are often no longer available for products after a repair or refurbishment, which risks making many consumer goods 'anonymous'.

When a product has been repaired or refurbished as a service, the same consumer is likely still able to identify at least the distributor who has supplied him the original product. In contrast, when the repairer or refurbisher has himself first obtained the product and has redistributed it afterwards, the same difficulties in identifying defendants in the original distribution arise as those discussed *supra* nrs. 280 et seq. with regards to second-hand goods. If the repaired or refurbished product has effectively become 'anonymous' with regards to potential defendants in the original distribution chain, then an injured consumer will be even more likely to try to claim against the redistributing repairer or refurbisher.²²²¹ Yet, even when the latter would be subject to primary liability based on art. 8(2) PLD-2024, he might potentially evade liability by proving the specific defence of art. 11(1)g PLD-2024 or turn out to be 'judgement-proof' (cf. *supra* nr. 140 and *infra* nr. 413). It thus remains important for a consumer injured by a repaired or refurbished product to be still able to identify defendants in the product's original distribution chain.

An injured third party is without assistance likely unable to identify any of the aforementioned defendants. This may make it necessary to threaten with or issue a horizontal claim against the product's consumer, if only to obtain the identity of a defendant in the original distribution chain or the product's repairer or refurbisher (see also *supra* nr. 250).

As a potential partial solution to these issues of defendant identification, recent product regulation imposes more stringent rules on product traceability (see *supra* nrs. 281-282). The General Product Safety Regulation 2023/988/EU now requires that every (quasi-)manufacturer or importer of a consumer good is identified, if possible, on the product itself rather than on its packaging or documentation.²²²² The same requirement theoretically extends as well to repairers, refurbishers or others who in a commercial activity substantially modify the

²²²¹ The possibilities for doing so specifically in relation to the repair or refurbishment, are discussed in the next Paragraph for claims based on the PLDI and further in this Chapter for claims based on national product liability theories. The possibilities for doing so specifically in relation to the redistribution, are discussed in the Chapters on retransfers and use- and result-oriented PSS.

²²²² See arts. 9(5)-(6), 11(1)-(3) and 13(1) General Product Safety Regulation 2023/988/EU. See also on traceability information for products distributed B2C via online platforms art. 30 Digital Services Act.

product.²²²³ Especially when this information is present on the product itself, there is a high likelihood that parties injured by a repaired or refurbished product, even when it has been subsequently redistributed, are able to claim against the aforementioned actors in the product's original distribution chain. Similarly, future digital product passports can help to identify the original (quasi-)manufacturer or importer of a repaired or refurbished product (see *supra* nr. 345.a).

Of course, even if such traceability information or a future digital product passport's QR-code is present on the product itself, wear and tear or the product accident itself might remove this critical identifying information or render it illegible (see also *supra* nrs. 281 and 346). While this risk is difficult to mitigate,²²²⁴ intervening repairs and refurbishments actually risk exacerbating it. This is because a repairer or refurbisher might have to replace the particular component on which the traceability information or QR-code is present or a refurbishment can remove certain information, such as by removing a worn sticker or even non-engraved printed information while cosmetically renewing a product's exterior. A prudent repairer or refurbisher should avoid this as much as possible. But, if this nevertheless occurs and this information is not reaffixed to the repaired or refurbished product, then an argument can be made that said repairer or refurbisher has substantially modified the product in terms of its product safety compliance or safety configuration (see *infra* nr. 445). This could lead either to direct primary liability of the repairer or refurbisher or to an expanded liability of the entire product distribution chain, depending on whether such substantial product modification would occur 'outside' or 'inside' the 'manufacturer's control'.²²²⁵

d. Extra: the faith of remanufacturing of products and industrial re-use of components

i. Harmonised product liability qualification of manufacturing and re-use

356. WHY REMANUFACTURING SHOULD BE CONSIDERED AS MANUFACTURING A NEW PRODUCT, IN CONTRAST TO REFURBISHING – Certain authors seem to agree that remanufacturing should indeed under the PLDI be interpreted literally as manufacturing a new product,²²²⁶ which leads to a separate new primary liability of the remanufacturer for placing on the market or putting into service a new product.²²²⁷ Nevertheless, they extend this interpretation also to refurbishments, contrary to this dissertation's view (see *supra* nr. 352). To understand why the

²²²³ Art. 13(2)-(3) General Product Safety Regulation 2023/988/EU. However, it can be doubted to what extent this requirement, especially in the context of smaller repairs and refurbishments, will be complied with in practice. See *supra* nr. 354.d.

²²²⁴ Sectoral product safety regulation relating to traceability, 'specific traceability requirements' pursuant to art. 18 General Product Safety Regulation 2023/988/EU or Ecodesign implementing regulations, are of course all opportunities to more stringently require actual engraving, indelible printing of information or affixing traceability information and/or QR-codes on different parts of a particular product type. See also *supra* nr. 346.

²²²⁵ Arts. 8(2) PLD-2024 and 11(2)d PLD-2024. See also *infra* nrs. 413 and 442 et seq.

²²²⁶ See authors cited *supra* footnote 2197.

²²²⁷ See arts. 1 and 3(1) PLD-1985; arts. 4(10) and 8(1) PLD-2024.

distinction needs to be drawn between remanufacturing, on the one hand, and refurbishments and repairs, on the other hand, it is necessary to once more return to the specialized literature and standards relating to these circular strategies, which have been summarised *supra* nrs. 89-90. A refurbishment is limited to “*repairing, replacing or refinishing all major components that are markedly damaged, have failed, or that are on the point of failure*”.²²²⁸ In contrast, the much more in-depth and methodical nature of remanufacturing consists in practice of inspecting and disassembling the core at the smallest component level, cleaning, reprocessing, testing and if necessary repairing or replacing every component with cannibalised parts from other cores, as well as reassembling and retesting the new, remanufactured product in its entirety, all according to regulatory and industry standards applicable to new product manufacturing.²²²⁹ Consequently, a refurbished product is only expected to have been brought back to a satisfactory working and cosmetic condition, which is not necessarily as good as a new product, while a remanufactured product has to meet all the requirements to be considered at least as good as, if not better, than the original product when it was newly manufactured (see also *supra* nr. 352.d).²²³⁰

Like repairs, refurbishments can be adequately dealt with in the context of harmonised product liability by the newly proposed arts. 8(2) and 11(2)d PLD-2024, which in my view means for original product manufacturers and distributors that their qualification as defendant does not radically change (see *supra* nrs. 353-354). In contrast, only a circular reproduction that meets all the technical requirements and level of depth of an actual remanufacturing, can be meaningfully equated with a new product manufacturing process. As IJOMAH AND CHIODO summarize “*remanufactured products lose their identity while [...] repaired and reconditioned products retain theirs.*”²²³¹

‘Remanufacturing’ is mentioned twice in the PLD-2024. First of all, it is mentioned in recital 39, together with refurbishment and repair in a long recital which subsequently discusses the

²²²⁸ M. den Hollander, C. Bakker and E. Hultink, ‘Product Design in a Circular Economy: Development of a Typology of Key Concepts and Terms’ (2017) 21 *Journal of Industrial Ecology* 517, 522-523.

²²²⁹ See W. Ijomah, *A model-based definition of the generic remanufacturing business process* (PhD, University of Plymouth 2002) 123-238; A. King et al., ‘Reducing waste: repair, recondition, remanufacture or recycle?’ (2006) 14 *Sustainable Development* 257, 261-262; Y. Chen and F. Chen, ‘On the Competition between Two Modes of Product Recovery: Remanufacturing and Refurbishing’ (2019) 28 *Production and Operations Management* 2983, 2985. See also citations *supra* footnotes 2200-2201.

²²³⁰ See A. King et al., ‘Reducing waste: repair, recondition, remanufacture or recycle?’ (2006) 14 *Sustainable Development* 257, 261; W. Ijomah and J. Chiodo, ‘Application of active disassembly to extend profitable remanufacturing in small electrical and electronic products’ (2010) 3 *International Journal of Sustainable Engineering* 246, 247; M. den Hollander, C. Bakker and E. Hultink, ‘Product Design in a Circular Economy: Development of a Typology of Key Concepts and Terms’ (2017) 21 *Journal of Industrial Ecology* 517, 522-523; Y. Chen and F. Chen, ‘On the Competition between Two Modes of Product Recovery: Remanufacturing and Refurbishing’ (2019) 28 *Production and Operations Management* 2983, 2985; F. Lüdeke-Freund, S. Gold and N. Bocken, ‘A Review and Typology of Circular Economy Business Model Patterns’ (2019) 23 *Journal of Industrial Ecology* 36, 49.

²²³¹ W. Ijomah and J. Chiodo, ‘Application of active disassembly to extend profitable remanufacturing in small electrical and electronic products’ (2010) 3 *International Journal of Sustainable Engineering* 246, 247.

rules of arts. 8(2) and 11(1)g PLD-2024.²²³² This might be interpreted as implying that the new Directive would disagree with the above interpretation and intends to subject remanufacturing to the same rules as refurbishments and repairs. However, the reference to remanufacturing is part of only a very general statement on broader EU policy on circular economy.²²³³ In the subsequent discussion on arts. 8(2) and 11(1)g PLD-2024, recital 39 only explicitly mentions repair again. It is thus doubtful that this recital actually suggests that remanufacturing cannot qualify as manufacturing a new product. Secondly and perhaps more problematically, recital 58 PLD-2024 explicitly mentions ‘remanufacturing’ as an example where the separate new extinction period of art. 17(1)b PLD-2024 should start.²²³⁴ The latter imposes a new extinction period in case of a ‘substantial modification’ of a product ‘outside the manufacturer’s control’ that leads to a separate new liability according to art. 8(2) PLD-2024, as discussed *infra* nr. 465.²²³⁵ It seems more likely that the EU legislator wants to refer in this recital 58 to what this dissertation actually understands as refurbishment and that the recital should be read in this way (cf. *supra* nrs. 352-354). Yet, it is in each case a bad example from a technical perspective because both remanufacturing and refurbishment do not necessarily ‘substantially modify’ a product compared, because these circular strategies strive in principle to restore a product as much as possible to the state in which it was placed on the market or put into service (see *infra* nrs. 444 et seq. and cf. *supra* nrs. 89-90).

Overall, it seems that not only recital 39 but also 58 PLD-2024 must be set aside when trying to interpret the rules applicable to actual remanufacturing, due to the aforementioned technical, circular economic characteristics of actual remanufacturing, which make it inherently different from repairs and refurbishments and very close to traditional manufacturing. Moreover, the defence of art. 11(1)g PLD-2024, which aims to delineate the liability of substantial product modifiers based on art. 8(2) PLD-2024 (see *infra* nrs. 454-456), cannot be meaningfully applied to remanufacturers, because these actors have affected the remanufactured product in its entirety. This defence makes clear that the rule of art. 8(2) PLD-2024 has been designed for situations where someone partially modifies a product, not where someone completely remanufactures a product in its entirety in an industrial setting. Furthermore, if remanufacturing would not be accepted as manufacturing a new product under harmonised

²²³² See regarding these rules *infra* nrs. 442-456.

²²³³ Recital 39 PLD-2024: “*In the transition from a linear to a circular economy, products are designed to be more durable, reusable, repairable and upgradable. The Union is also promoting innovative and sustainable ways of production and consumption that prolong the functionality of products and components, such as remanufacturing, refurbishment and repair. [...]*” These two cited sentences are followed by a reference in footnote to Commission, ‘A new Circular Economy Action Plan For a cleaner and more competitive Europe’ (Communication) COM(2020) 98 final.

²²³⁴ Recital 58 PLD-2024: “*Since substantially modified products are essentially new products, a new expiry period should start to run after a product has been substantially modified and has subsequently been made available on the market or put into service, for example as a result of remanufacturing.*”

²²³⁵ It is argued *infra* nr. 465 that this provision actually requires an amendment *de lege ferenda* to ensure that also a separate, new extinction period starts when the liability of defendants in the original distribution chain is extended based on arts. 7(2)e and 11(1)d PLD-2024 due to a substantial modification occurring ‘within the manufacturer’s control’.

product liability, significant uncertainty would also arise on how to interpret industrial re-use of products and components (see *infra* nr. 357).

In conclusion, would definitely be misguided to try to stretch the solution of art. 8(2) PLD-2024 to all these circular industrial strategies, which are situated more in a new product's manufacturing phase than an existing product's use phase (cf. *supra* nr. 74). Hence, the CJEU's case law where it affords only limited credence to recitals for purposes of EU legislative interpretation,²²³⁶ must be applied to recitals 39 and 58 PLD-2024 when trying to interpret the rules applicable to remanufacturing. Remanufacturing must simply be interpreted as manufacturing and placing on the market or putting into service a completely new product.

357. INDUSTRIAL 'RE-USE' OF COMPONENTS IS PART OF MANUFACTURING A NEW PRODUCT – When components of 'cannibalised' products are 're-used' in an industrial setting, these are integrated into a newly manufactured product that is subsequently placed on the market or put into service. This is different from merely using spare parts which have already been placed on the market or put into service, as a repairer or refurbisher, for which the grounds of potential liability under the PLDI of said repairer or refurbisher with regards to defects in the spare part, are discussed *infra* nr. 433. In industrial re-use, salvaged parts from discarded products are being used in creating something entirely new. This might coincide with remanufacturing, where a 'core' of an original product is being remanufactured by also re-using salvaged parts from different other, cannibalised products (cf. *supra* nrs. 90-91 and 93).

It becomes clear that the same reasoning applicable to 'remanufacturing', as discussed in the previous section, applies *a fortiori* to re-use of components. This is not a matter to be regulated by the liability of substantial product modifiers of art. 8(2) PLD-2024 but instead is part of a process where an entirely new product is placed on the market or put into service. This leads to a separate liability of the 're-user' as the manufacturer of a new, finished product, according to art. 3(1) PLD-1985 and art. 8(1)a PLD-2024.

358. A SUBSEQUENT REMANUFACTURING OF A PRODUCT OR RE-USE OF A COMPONENT TURNS THE DEFENDANTS SUBJECT TO PRIMARY LIABILITY FOR THE ORIGINAL PRODUCTS AND COMPONENTS INTO (QUASI-)MANUFACTURERS OR IMPORTERS OF ONE OR MORE COMPONENTS OF A NEWLY PRODUCED PRODUCT – As discussed *supra* nrs. 356-357, a person who remanufactures a product or re-uses a second-hand component, should simply be considered as a producer who puts a new product into circulation, according to the PLD-1985, or a manufacturer who places a new product on the market or puts it into service, according to the PLD-2024. The first major consequence is that the remanufacturer himself becomes fully subject to primary liability as the manufacturer of a new product.²²³⁷ The second major consequence, which interests us here, is that the

²²³⁶ See, e.g., CJEU 19 November 1998, C-162/97, *Gunnar Nilsson*, ECLI:EU:C:1998:554, nr. 54; CJEU 24 November 2005, C-136/04, *Deutsches MilchKontor*, ECLI:EU:C:2005:716, nr. 32; CJEU 28 June 2012, C-7/11, *Fabio Caronna*, ECLI:EU:C:2012:396, nr. 40. Presumably, the CJEU applies this interpretative principle because recitals merely reflect broader, often open-ended political considerations which were not material enough to be included in the operative part and which were not intensively negotiated. A complementary, legal realist explanation would be that the CJEU expands its own discretionary power by limiting the interpretative value of recitals.

²²³⁷ See arts. 1 and 3(1) PLD-1985; arts. 4(10) and 8(1) PLD-2024.

defendants who were subject to primary liability with regards to the now remanufactured product (the remanufactured ‘core’) or with regards to the now re-used component, lose their existing qualifications as potential harmonised product liability defendants, because the products for which they were potentially liable no longer exist and have been replaced by one or more new products placed on the market or put into service.

Crucially, however, these actors²²³⁸ in the original product’s distribution chain do not completely vanish from the personal scope of harmonised product liability. Rather, they become upstream (quasi-)manufacturers or importers of one or more of the remanufactured product’s components,²²³⁹ even though they may not have anticipated the later remanufacturing or re-use at all.²²⁴⁰

Consequently, these actors are not liable for the entire remanufactured product. As component (quasi-)manufacturers or importers, they can only be held liable if a defect in precisely those parts that originated from their product causes damage and, even then, they may still be able to invoke various defences and an already long-running extinction period, as discussed *infra* nrs. 360-365.

This ‘component interpretation’ of remanufacturing has recently also been proposed by ULFBECK.²²⁴¹ However, she only formulated this as a very general suggestion and she extended this approach to repaired and refurbished products, which runs contrary to this dissertation (see *supra* nr. 354). Moreover, for all three strategies, including remanufacturing, she required for this to happen that the requirements of current art. 8(2) PLD-2024 are first fulfilled, which also runs contrary to this dissertation which considers remanufacturing and component re-use simply as manufacturing an entirely new product regardless whether there are substantial derogations from the original product’s or component’s design (cf. *supra* nr. 356 and *infra* nr. 444).²²⁴²

²²³⁸ This also includes the new, related defendant categories introduced by the PLD-2024, i.e. the manufacturer’s authorised representative, the fulfilment service provider and the online platform (art. 4(11)(13)(16) PLD-2024). As indicated *supra* nr. 353, these additional potential defendants are not continuously mentioned for the sake of simplicity, but they retain the same relationship vis à vis the original product (and its remanufactured components) as the importer and distributor, respectively.

²²³⁹ See also Taschner and Frietsch, *Kommentar*, 320 (on the fact that so-called *Vorproduzenten* remain liable for their products when they are later used in completing another product, although they should now be qualified as component producers who can invoke the component defence).

²²⁴⁰ See also *ibid.*, 324 (on the so-called *Zwischenprodukt-Hersteller* who becomes liable like a traditional component producer, when the *Zwischenprodukt* is used in producing a more complex product); Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3605, 9 (on the frequency of cases where a component producer becomes liable, although he did not personally supply to the final product producer); Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nrs. 9.30-9.32 (considering that the PLDI imposes liability for components despite the Scottish Law Commission’s concern “that the ultimate destination and uses of components and sub-assemblies may be unforeseeable”).

²²⁴¹ V. Ulfbeck, ‘Circularity in Servitization: Managing the Need for Product Change in Contract and Product Liability Law’ in B. Keirsbilck and others (eds.), *Servitization and Circular Economy: Economic and Legal Challenges* (Intersentia 2023) 107. See also the sources cited *supra* footnotes 2239-2240.

²²⁴² *Ibid.*, 107.

359. SUBSEQUENT REMANUFACTURING OR RE-USE PUTS HARMONISED PRODUCT LIABILITY OF ORIGINAL DISTRIBUTOR OF PRODUCT OR COMPONENT IN DOUBT, ARGUMENT FOR AN ‘UPSTREAM EXTENSION’ OF SECONDARY LIABILITY IN RELATION TO COMPONENTS – The preceding section only discussed how defendants subject to primary liability of a product that is later used in remanufacturing a new product or of a component that is later re-used, become liable as manufacturers, importers or quasi-manufacturers of one or more components in the remanufactured product. Naturally, one other defendant in the product’s original distribution chain is missing: the ‘supplier’ in the PLD-1985 and ‘distributor’ in the PLD-2024, who are only subject to secondary liability.²²⁴³

The reason for separately discussing this actor’s position in the context of a subsequent product remanufacturing or component re-use, is because there also exists in the linear economic production setting general uncertainty on the question whether a traditional, upstream distributor of components, who has neither (quasi-manufactured) nor imported said components, is liable at all under the PLDI and, if so, based on primary or secondary liability. This is a theoretical question which the current literature barely touches upon, likely since it is in the linear economic setting very rare that an injured party can only claim against the distributor of a defective spare part.²²⁴⁴ Nevertheless, some general observations can be made that can lead to a rejection of both the options that this ‘component distributor’ would be subject to ‘no liability’ and that he would suddenly be subject to ‘primary liability’ under the PLDI.

On the one hand, the original PLD-1985 proposal’s explanatory memorandum remarks on the liability for defects in components that “[t]he protection of the consumer is increased if all those involved in the production process are liable.”²²⁴⁵ TASCHNER AND FRIETSCH emphasize how, in light of this legislative aim, the component producer’s liability must be broadly interpreted.²²⁴⁶ And WAGNER states that this rule subjects the entire manufacturing industry supply chain to strict harmonised product liability.²²⁴⁷ Furthermore, it would seem incoherent if this component-supplier would bear no harmonised product liability at all, in contrast to both his predecessor (the component’s (quasi-)manufacturer or importer) as well as his successor in

²²⁴³ Art. 3(3) PLD-1985; art. 8(3) PLD-2024.

²²⁴⁴ See only Howells, ‘strict liability’, nr. 4.100. Admittedly, it will generally be quite rare that a defendant can (only) identify the distributor of a component who is neither the component’s (quasi-)manufacturer nor its importer. However, this likelihood increases if the quasi-manufacturer qualification is not interpreted too extensively, as this dissertation advocates for in response to the CJEU *Fennia v. Philips* decision (see *supra* nr. 304-306). This would allow visible markings on a component disclaiming that a company is merely a distributor, to not result in a quasi-manufacturer qualification. Moreover, this scenario becomes more likely precisely when we talk about a distributor of a finished product that is subsequently used for components in remanufacturing and component re-use, as illustrated in this section. Finally, product safety traceability information and future digital product passports can make it easier to identify (quasi-)manufacturers and importers of components, which would effectively further reduce the likelihood of secondary liability for supplied components. See *supra* nrs. 281 and 355.

²²⁴⁵ PLD Explanatory Memorandum 1976, nr. 7. See also *supra* nr. 168 on this broader goal of the PLD, which should be called ‘protection of injured parties’ rather than ‘protection of consumers’.

²²⁴⁶ Taschner and Frietsch, *Kommentar*, 322-323.

²²⁴⁷ Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 4, 28.

the production supply chain (the finished product's manufacturer). One may conclude from this that actors who have merely distributed a component should be subject to at least some harmonised product liability.

On the other hand, when TASCHNER AND FRIETSCH explicitly confirm that importers and quasi-producers are also potentially liable if they import or self-brand components rather than finished products,²²⁴⁸ they tellingly do not state the same with regards to suppliers.²²⁴⁹ Furthermore, it would seem perhaps even more incoherent if a person who supplies upstream merely product components to a manufacturer, would be subject to primary liability for accidents occurring much later in the finished product's use phase, while a person who thereafter supplies the finished product directly to the consumer in downstream distribution, would remain subject to only secondary liability. This would of course be even more problematic in our particular situation of subsequent product remanufacturing. Said person who supplies a finished product would suddenly and unwittingly be subject to primary instead of secondary liability, only because the product happens to have later been used as a core or as cannibalised spare parts by another party who remanufactures a new product.

To solve this conundrum, this dissertation proposes for both cases of liability for distributing components an 'upstream extension' of secondary liability. The secondary liability mechanism (see *supra* nrs. 177, 178.d and 301) must be extended to persons who have distributed a component in a traditional industrial manufacturing context,²²⁵⁰ as well as to persons who have distributed a finished product that happens to be later used for one or more components in a remanufacturing or re-use strategy that results in the placing on the market or putting into service of an entirely new product (see also *supra* nrs. 356-357). Thus, a traditional upstream distributor of a component can be held liable if a defect in his component causes damage, but he can exonerate himself by timely informing the injured party of either the identity of the person who had supplied the component to him or the identity of the component's (quasi-)manufacturer or importer.²²⁵¹ Similarly, the distributor of a finished product that happens to later turn into one or more components of a new product in a subsequent remanufacturing or re-use process, can be held liable if a defect in the corresponding components in the new product would cause damage, but he can exonerate himself by timely

²²⁴⁸ Almost all existing literature talks generally about the 'component producer' or 'component supplier', while only finished products are mentioned in relation to the liability of importers and quasi-producers. Nevertheless, since components and materials are all included in the definitions of 'product' and 'producer' (arts. 2 and 3(1) PLD-1985), the Directive seems to imply that the liability of importers and quasi-producers is also extended to those who only import or self-brand product components and materials. See for a confirmation by the PLD-1985's principal author Taschner and Frietsch, *Kommentar*, 324, 328. To hold otherwise would seem contrary to the goal of protecting injured parties which underpins the extension of harmonised product liability to the component-level (see sources cited *supra* footnotes 2245-2246).

²²⁴⁹ Cf. Taschner and Frietsch, *Kommentar*, 324, 328, 332.

²²⁵⁰ See in apparent support of such interpretation, although applying it to the finished product manufacturer (who is subject to primary rather than secondary liability) Howells, 'strict liability', nr. 4.100.

²²⁵¹ See also Howells, 'strict liability', nr. 4.100.

informing the plaintiff of either the identity of the original product's (quasi-)manufacturer or importer or the identity of another person who had supplied the product to him.²²⁵²

This solution preserves the protection of injured parties by allowing them to call on component distributors to identify more viable defendants, like those who have (quasi-)manufactured or imported the component. And if they fail to do so within the time period which art. 8(3) PLD-2024 now fixes at one month, injured parties can hold such distributor directly liable for a defect in the component. As an illustration, a product remanufacturer might be entirely unidentifiable but has used, as a core or for cannibalised spare parts, components of a pre-existing product which only bear an identification of its retailer.²²⁵³ If precisely those components in the remanufactured product turn out to be defective and cause damage, an injured party should be able to turn to said retailer of the defective original product. And if the latter fails to timely identify either his own distributor or the original product's (quasi-)manufacturer or importer, he should be liable based on the PLDI for damage caused by the remanufactured product. At the same time, this solution also remains coherent with the traditional secondary liability of distributors of (not subsequently remanufactured) finished products.

This approach seems to align not only with the Directive's goals (see *supra* nr. 168) but also with this dissertation's normative criteria of efficient risk-allocation, efficient accident-prevention and corrective justice (see *supra* nrs. 106, 108, 127 and 128.c). After all, this approach ensures that injured parties are better protected against accidents caused by defects in those spare parts, whereas the upstream 'component distributor' remains generally less risk-averse than the injured party and the secondary liability helps to make sure that defendants subject to primary liability in relation to those spare parts receive the right incentives to take appropriate care. At the same time, distributors of defective components can be seen to some extent as abnormal risk-takers who must rectify resulting damage if nobody else can be held liable, but it is overall preferable that this remains a merely secondary liability due to the more limited control over product accident risks of distributors compared to manufacturers and other defendants subject to primary liability (see also *supra* nr. 322.b-c).

However, while this interpretation of an 'upstream secondary liability' of distributors of components or of finished products that are later entirely or partially 'remanufactured' or 're-used' in a new product that is placed on the market or put into service, is normatively convincing and seems to find strong support in the PLD-1985,²²⁵⁴ the same cannot be said of the

²²⁵² Art. 3(3) PLD-1985; art. 8(3) PLD-2024. See also *supra* nr. 301.a on the possibility to exonerate oneself from secondary liability by referring the injured party to one's own distributor even though the latter is not personally subject to harmonised product liability, for example because he is a prosumer. See also *supra* nr. 301.e on the impossibility to exonerate oneself from secondary liability by referring the injured party to a preceding distributor who is neither the (quasi-)producer nor the importer nor one's own direct supplier.

²²⁵³ Here, we assume that the quasi-manufacturer qualification is not interpreted too extensively, as this dissertation advocates for in response to the CJEU's *Fennia v. Philips* decision (see *supra* nrs. 304-306) and that this identification, for example, clearly disclaims 'distributed by'.

²²⁵⁴ Art. 2 PLD-1985's definition of 'product' encompasses also 'components', which is implicitly confirmed throughout the Directive, because the separate reference to a 'component part' is only present in arts. 3(1) and 7(f) *ibid.* See also the scholars cited *supra* footnotes 2246-2251.

PLD-2024. Although this is likely not a purposeful choice by the EU legislator to exclude any liability of upstream ‘component distributors’, art. 8(3) PLD-2024’s provision on secondary liability of distributors consistently refers only to ‘products’. This is in contrast to art. 8(1) PLD-2024 regulating the different grounds of primary liability, which consistently refers to both ‘products’ and ‘components’. *De lege lata*, this might be brushed over by simply considering that ‘components’, when these are not yet integrated into a product or are afterwards separated from it, themselves also constitute a ‘product’ according to arts. 4(1) and 8(3) PLD-2024.²²⁵⁵ *De lege ferenda*, this interpretation might be further strengthened by adding ‘component’ in art. 8(3) PLD-2024.

ii. The limited nature of the liability risk as ‘component suppliers’ of defendants in the original distribution chain of later remanufactured products or re-used components

360. IN GENERAL – At first sight, it may be a startling idea that a (quasi-)manufacturer, importer or distributor of a finished product may one day be held liable for damage caused by a defect in a new product that has been placed on the market or put into service but for which the manufacturing process used the original product as a remanufactured core or re-used one or more components of the original product (see *supra* nrs. 356-359). Nevertheless, this mostly theoretical possibility can be considered as justified on the basis of this dissertation’s criteria of efficient risk-allocation, efficient accident-prevention and corrective justice (see *supra* nrs. 106, 108, 127 and 128.c), since these defendants generally remain more risk-averse than injured parties and also continue to have some substantial control over accident risks, which can be seen as a form of abnormal risk-taking necessitating a form of ‘quasi-strict’ liability. Yet, this justification only becomes clear when understanding the multiple ways in which this liability will be limited.

On the one hand, injured parties will in practice very rarely try to claim against defendants in the original distribution chain of products and components which are in a ‘new life’ used in remanufacturing or industrial re-use. They will generally claim against those remanufacturers or re-users, who qualify as the manufacturer who placed the new product on the market or put it into service that injured them. Or they will claim against importers, quasi-manufacturers or distributors of this new product. Mainly, this is because these actors are easier to identify. During remanufacturing or re-use, the chances that a product or component becomes ‘anonymous’ vis à vis defendants in the distributionchain of the original underlying products, is extremely high (cf. *supra* nrs. 280 and 355). This is because these remanufacturers and re-users must comply with new product regulation ‘traceability’ requirements for placing on the market or putting into service a new product,²²⁵⁶ which must clearly identify them and not others. Additionally, they will risk violating intellectual property

²²⁵⁵ Cf. art. 4(1) PLD-2024 with art. 4(4) *ibid.* See also art. 2 PLD-1985 (the PLD-1985 consistently equates components with products). See also *infra* nr. 433 on the liability of repairers and refurbishers who use spare parts, which also constitute in themselves independent ‘products’.

²²⁵⁶ See art. 13(2) General Product Safety Regulation 2023/988/EU; Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 17-18.

rights or infringing on competition or unfair commercial practices rules, especially when not removing protected trademarks or unprotected company names.

On the other hand, this is because, even if injured parties would claim against for example the manufacturer or importer of a product that has later been used in remanufacturing or industrial re-use, this ‘quasi-strict’ liability remains quite restricted under the applicable rules of both the PLD-1985 and PLD-2024, as outlined in the following sections.

361. DEFECT REQUIREMENT: LIABILITY LIMITED TO DEFECT IN ‘CORE’ OR ‘COMPONENT’ – First of all, this liability of defendants in the distribution chain of the original product, remains limited to damage caused by defects completely situated in what remains of those original products, namely a remanufactured core or a re-used component.²²⁵⁷ Hence, if a defect is rather situated in other parts of the product or in the interaction of the relevant core or parts with other features of the new product (see also *infra* nr. 364), there is no harmonised product liability risk to begin with due to a lack of defectiveness in ‘components’ for which the defendants in the original product distribution chain might still be held liable.

362. DEFECT REQUIREMENT: DIFFERENTIATED DEFECT ASSESSMENT – Second, the defect assessment for the liability of defendants in the distribution chain of the original product must return back to the state of the original product and the public’s legitimate safety expectations existing at the time when the original product had been placed on the market, put into service or ‘left the control of the manufacturer’.²²⁵⁸ Therefore, this is another application of the ‘differentiated defect’ assessment, introduced *supra* nrs. 315-316.²²⁵⁹ This is because the liability of the remanufacturer or re-user who has become liable for the new product as a manufacturer as well as the liability of other defendants in the new product’s distribution chain, involves a defect assessment that is instead based on the more recent moment when the newly (through remanufacturing and/or re-use) produced product has been placed on the market or put into service.

This has important ramifications, since the product’s defectiveness must now be based on the state of the product and the reasonably foreseeable use at that time when the original product had been placed on the market or put into service. Subsequent changes to the product, which had not been reasonably foreseeable at that time (see Figure 9 *supra* nr. 239) and which do not fall under the postponement of the defect assessment pursuant to arts. 4(5) and 7(2)e PLD-2024, are not relevant to the liability of these defendants, in contrast to the liability of the new defendants after the remanufactured or re-used product has been placed on the

²²⁵⁷ This is intrinsic to the liability of ‘component suppliers’. See in particular art. 8(1)b PLD-2024.

²²⁵⁸ Art. 6(1)c PLD-1985; art. 7(2)e PLD-2024. See also *supra* nr. 184.

²²⁵⁹ For the rare situation of a distributor (or online platform) in the distribution chain of the original product who becomes subject to secondary liability for defects in components that are subsequently used in remanufacturing or industrial re-use (see *supra* nr. 359), this remains a ‘single defect’ assessment when comparing the moment when this distributor made the original product available with the earlier, for the defect assessment pertinent moment when the product had been placed on the market. However, this defect assessment relating to the original product now becomes ‘differentiated’ from the defect assessment for the liability of the remanufacturer/re-user and other defendants in the new product’s distribution chain

market or put into service. And if the applicable legitimate safety expectations of the public have changed between these two points in time, then these are likely to have only been less stringent further in the past (see also *supra* nr. 315).

363. POSTERIORITY DEFENCE – Third, defendants in the distribution chain of the original product can invoke the posteriority defence of art. 7(b) PLD-1985 and art. 11(1)c PLD-2024 for all defects that arose after they placed the product on the market, put it into service or – under the PLD-2024, *de lege lata* – made it available²²⁶⁰ and that had not yet been reasonably foreseeable at that time (see Figure 9 *supra* nr. 239). Of course, under the PLD-2024, these defendants remain subject to defects arising after that date as a result of events ‘within the manufacturer’s control’ that qualify under one of art. 11(2) PLD-2024’s exceptions to the posteriority defence. Yet, this can only still occur during the original product’s lifecycle and no longer from the moment the product is being remanufactured or some of its components are industrially re-used, since this constitutes the production of a new product to which the rules on the ‘manufacturer’s control’ and ‘(substantial) modifications’ of arts. 4(5), 7(2)e, 8(2) and 11(2) PLD-2024 do not apply (see *supra* nrs. 356-357).

Importantly, this means that defendants in the product’s original distribution chain can evade liability for all defects arising in their remanufactured core or re-used components that arose after these dates. It is in this regard worthwhile to emphasize the lower standard of probability with which these defendants will be able to successfully prove the posteriority defence.²²⁶¹

364. COMPONENT DEFENCE – Fourth, the fact that defendants in the distribution chain of the original product become subject to primary or secondary liability as ‘component suppliers’ of the remanufactured core or re-used components in the new product (see *supra* nrs. 356-359), means that these defendants are ideally suited to successfully invoke in certain cases the component defence of art. 7(f) PLD-1985 and art. 11(1)f PLD-2024. Among the two possible options offered by this defence (see *supra* nr. 201), the second one will be generally not relevant. This is because, in contrast to traditional upstream component suppliers in linear economic production based on virgin resources, actors in the distribution chain of original products that happen to be later remanufactured or re-used will ordinarily not have any contact with or let alone receive “instructions” from those remanufacturers or re-users who later integrate the core or parts of the product into a new product.²²⁶²

In contrast, the first option can be highly pertinent, since it exempts these defendants from liability for damage caused by any defects in the remanufactured core or re-used parts that are now components of the new product, if this “defect is attributable to the design of the product

²²⁶⁰ See *supra* nr. 322 on the discussion whether the posteriority defence must be interpreted in a personal or manufacturer-specific manner vis à vis the supplier/distributor. There, this dissertation argued to *de lege ferenda* amend art. 11(1)c PLD-2024 to ensure that defendants subject to secondary liability enjoy a manufacturer-specific interpretation, which matches with the ‘single defect’ concept of art. 7(2)e *ibid.* and which prevents this secondary liability from becoming more stringent than the liability of defendants subject to primary liability.

²²⁶¹ Art. 7(b) PLD-1985; art. 11(1)c PLD-2024. See also *supra* nr. 195.

²²⁶² Art. 7(f) PLD-1985; art. 11(1)f PLD-2024.

in which the component has been fitted".²²⁶³ This is especially relevant in the event separate components of a product are re-used in the manufacturing of a more complex, new product that is in terms of design no longer identical to the first product those components originate from. For example, the handlebars of an ordinary bike or the metal casing of a smartphone have been cannibalised to be used in making an electrically drive carbo bike or a different type of phone, respectively. Components are often precisely safe and not defective in how they interact with other aspects of their original product, which risks to only make them defective by trying to re-use them in a different product design.

365. EXTINCTION PERIOD – Finally and arguably most importantly, the extinction period applicable to the liability of defendants in the original product's distribution chain, has already been running since the original product was placed on the market, put into service or – under the PLD-2024 – was substantially modified.²²⁶⁴ This means that, by the time parts of the original product have been integrated in a new product through remanufacturing or industrial re-use, this new product has been placed on the market or put into service, it subsequently causes damage and an injured party initiates court proceedings, the applicable extinction period has likely already expired. After all, products are normally only used in remanufacturing or re-use when these have become obsolete due to the passing of time. This is only different when it became quickly clear after a product has been manufactured and placed on the market or put into service that this has been a mistake and that its components might still be useful in a remanufacturing or industrial re-use process.

The likelihood that the extinction period for the liability of defendants in the original product's distribution chain has already expired by the time the remanufactured product or product manufactured with re-used components causes damage, will likely even be higher when the current period of in principle ten years would *de lege ferenda* be changed as proposed in this dissertation (see *supra* nr. 247). After all, the ten-year period is still relatively long for certain durable products that more quickly become obsolete and that might be remanufactured or whose components might be re-used after only a few years. In contrast, the alternatively proposed extinction period based on the average expected lifetime of a product, when it is placed on the market or put into service, will by nature more easily have already expired or might still soon expire when a product is remanufactured or cannibalised for re-use of components.

§ 2. Damage

366. PRODUCT ACCIDENTS OCCURRING DURING REPAIR OR REFURBISHMENT PROCESSES: MATERIAL DAMAGE WITHIN SCOPE MORE LIKELY IN CASE OF COLLABORATIVE SELF- AND INDEPENDENT REPAIRS OR REFURBISHMENTS – (Quasi-)manufacturers, importers and distributors can potentially be held

²²⁶³ Art. 7(f) PLD-1985. See also the almost identical phrasing of art. 11(1)f PLD-2024.

²²⁶⁴ Art. 11 PLD-1985; art. 17 PLD-2024. *Infra* nr. 465, it is proposed to amend art. 17(1)b PLD-2024 to confirm *de lege ferenda* that also a new extinction period starts when a product has according to art. 11(2)d PLD-2024 been substantially modified 'within the manufacturer's control'.

liable not only for product accidents occurring after but also during intervening product repairs or refurbishments,²²⁶⁵ just like they can be held liable for damage occurring during retransfer (and other product (re)distribution) processes (cf. *supra* nr. 283). This is because harmonised product liability traditionally does not actually limit who can act as a plaintiff, although the PLD-2024 now requires that a plaintiff is in principle a natural person (see *supra* nr. 176). Furthermore, this is because harmonised product liability is not strictly limited to the use phase of products and therefore also potentially expands to later redistribution and reproduction phases (but see the next Chapter relating to remanufacturing, re-use and waste).

The only actual limitations that harmonised product liability imposes on claims (by natural persons in case of the PLD-2024) for product accidents occurring during subsequent repairs or refurbishments, are the heads of damage recognized by art. 9 PLD-1985 and art. 6 PLD-2024 (see in general *supra* nr. 190). For example, when a chemical reaction from a defective battery or cooling unit damages instruments and infrastructure in a professional refurbishment workshop, this damage cannot be claimed based on the PLDI. But when this occurs during a self-repair activity and the consumer's tools or even his entire garage gets damaged, all this damage can be claimed.²²⁶⁶ Since there are more and more independent or self-repair and -refurbishment activities by prosumers, it is worth reiterating that art. 6(1)b(iii) PLD-2024 now recognises all damage to 'mixed use' goods. For example, damage to instruments of a part-time repairer, who uses these from time to time also for his private needs, would thus be covered as well.

Finally, injured employees or pure bystanders who suffered damage during repair or refurbishment activities, might also try to claim on the basis of the PLDI (in addition to national law) against the repairers or refurbishers themselves, for which the possibilities are examined in the next Section. Nevertheless, these defendants will in this context be able to successfully invoke the not put into circulation defence, as long as the repaired or refurbished product had not yet been made available or put into service by them.²²⁶⁷

367. NO POSSIBILITY TO CLAIM DAMAGE TO OTHER PARTS OF PRODUCT CAUSED BY DEFECTIVE COMPONENT, SUCH AS A DEFECTIVE SPARE PART – A repairer of a precious wooden table may use a wooden spare part which turns out to be infected by larvae of woodworm which eventually damage the table as a whole. Or a smartphone refurbisher might use replacement batteries which turn out to be defective and cause a risk of an explosion or meltdown that damage the smartphones. Given that the original (quasi-)manufacturer or importer of these spare parts can generally be held liable for damage caused by their defective component, an argument can be made that it should additionally be possible to claim based on the PLDI against these defendants for the damage their defective component caused to other parts of the product.

²²⁶⁵ Howells, 'strict liability', nr. 4.170 (relating to damage caused during a repair process). See also V. Ulfbeck, 'From Linear to Circular Value Chains: A Role for Tort Liability in Recycling Practices?' (2022) 13 *European Journal of Risk Regulation* 603, 612 (relating to damage caused to employees during recycling processes).

²²⁶⁶ Art. 9(1)a PLD-1985; art. 6(1)b PLD-2024.

²²⁶⁷ Art. 7(a) PLD-1985; art. 11(1)a-b PLD-2024. See also *infra* nrs. 460 et seq.

This is what German authors have debated in the context of harmonised product liability,²²⁶⁸ among others by arguing that a component would also in itself be a ‘product’ according to art. 2 PLD-1985, which is distinguishable from the rest of the more complex product it is integrated in.²²⁶⁹ Occasionally, also Belgian and French scholars have advocated in favour of a possibility to claim damage to non-defective components of a harmful product.²²⁷⁰ Especially in Germany, this debate seems inspired by the fact that such claims are allowed on the basis of German extracontractual fault-based *Produzentenhaftung* based on § 823(1) BGB. Like harmonised product liability,²²⁷¹ this liability theory is traditionally restricted to extrinsic damage (*Integritätsinteresse*) and claims between contractual parties regarding intrinsic damage to a supplied product (*Äquivalenzinteresse*) is left to contractual liability.²²⁷² Nevertheless, German law has started accepting claims based on § 823(1) BGB relating to damage caused by a defective component to the rest of a product (a so-called *weiterfressender Mangel*), at least if some conditions are fulfilled.²²⁷³

The EUROPEAN LAW INSTITUTE proposed as part of its feedback to the PLD Proposal 2022 to generally allow such claims for damage caused by a defective component to the rest of a product.²²⁷⁴ Among others, the Institute argued that such claims reduce the need for recourse claims by persons held contractually liable for the intrinsic damage to the entire product (i.e. finished product distributors) against the (quasi-)manufacturers or importers the defective component,²²⁷⁵ since the latter could via this amended rule of harmonised product liability be

²²⁶⁸ See, e.g., Taschner and Frietsch, *Kommentar*, 122-123 (arguing against); Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 46, nrs. 7-9 (arguing in favour); Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3602, 4-6 (arguing mostly in favour, but concluding that a preliminary ruling by the CJEU is necessary); Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 1, nrs. 10-20a (arguing in favour); G. Wagner, ‘Produkthaftungsgesetz’ in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024), § 1, nrs. 9-11 (arguing against). These sources refer to a lot of other German scholarship on this question.

²²⁶⁹ See Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 46, nr. 7; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 1, nrs. 19-20.

²²⁷⁰ E.g., Markovits, *La Directive C.E.E. du 25 juillet 1985*, 243; Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 522-523.

²²⁷¹ Art. 9, 1st section (b) PLD-1985; art. 6(1)b(i) PLD-2024. See also *supra* nr. 190.b.

²²⁷² E.g., BGH 12 December 2000, VI ZR 242/99, BGHZ 146, 144. See in general on the distinction between *Äquivalenzinteresse* and *Integritätsinteresse* R. Schwarze, ‘§ 280 Schadensersatz wegen Pflichtverletzung’ in M. Löwisch (ed.), *Staudinger Kommentar BGB, Buch 2. §§ 255-304* (De Gruyter 2019) nrs. C24-C65; Stöhr, ‘Haftung aus § 823 Abs. 1 BGB’, § 1525, 8-9.

²²⁷³ The component must be functionally distinct from the rest of the product and the resulting damage to the overall product must be greater than the product’s original value when its defect at the time of transaction is considered. The latter is described as a lack of *Stoffgleichheit* between the *Äquivalenz-* and *Integritätsinteresse*. See BGH 24 November 1976, VIII ZR 137/75, BGHZ 67, 359; BGH 18 January 1983, VI ZR 310/79, BGHZ 86, 256; BGH 14 May 1985, VI ZR 168/83, NJW 1985, 2420; BGH 23 February 2021, VI ZR 21/20, NJW 2021, 1883, 1884. See also E. Van Gool, ‘Overview of German product liability law’ (2024) <<https://ssrn.com/abstract=4824956>> nr. 1.c.

²²⁷⁴ European Law Institute, *European Commission's Proposal for a Revised Product Liability Directive: Feedback of the European Law Institute* (2022) 13.

²²⁷⁵ See *supra* footnote 2211 on how art. 8(1)(3) PLD-2024 explicitly limits liability for defective ‘components’

held directly liable by the injured person for all damage to others parts of the product than the defective component.²²⁷⁶

In my opinion, this seems like copying a rule developed in German liability law as a result of the internal attractiveness of claims based on § 823(1) BGB,²²⁷⁷ into EU product liability harmonisation, without offering much added value and while complicating matters. The exclusion of all intrinsic damage to ‘the defective product itself’ goes at the theoretical heart of harmonised product liability law, especially considering its extracontractual nature and underlying goals (see *supra* nrs. 168 and 172). Upending this coherence by also starting to compensate intrinsic damage to the product, but only partially, is in my opinion ill-advised and seems bound to unnecessarily interfere into the domain of contract law (see also *supra* nrs. 5-6). Moreover, it is in practice far from easy to precisely determine in which component(s) of a defective product the defect is situated, if only because choices relating to alternative product design and information always have underlying reasons relating to various other components or relating to the functionality and safety of the product as a whole. Assessing the value of individual components is also often difficult, in particular for plaintiffs. All these considerations reveal how allowing claims for ‘the non-defective components of a defective product’ is difficult to implement in practice and may significantly increase the administrative costs of product liability proceedings, which is of course undesirable from an economic efficiency perspective (see *supra* nr. 111).

It therefore seems positive that art. 6(1)b(ii) PLD-2024 rejects this idea, by explicitly confirming that no material damage can be claimed consisting of “*product damaged by a defective component that is integrated into, or inter-connected with, that product by the manufacturer of that product or within that manufacturer’s control;*”. When a product is placed on the market or put into service, all damage intrinsic to the economic value of the entirety of said product, should in my opinion remain only a matter of national (most often contractual liability law) and remain excluded from harmonised strict product liability law. The argument by some of the aforementioned authors, according to which it should be possible under the PLD-1985 to claim damage to non-defective components,²²⁷⁸ should therefore also be rejected.

to the parties subject to primary liability in art. 8(1) *ibid.* and excludes any secondary liability for mere intermediary, upstream ‘distributors’ of components.

²²⁷⁶ The consumer would still not be able to claim based on the PLDI the intrinsic damage to the defective component itself, which can have a significant economic value compared to the rest of the product. It thus seems at best an imperfect solution for the issue of limiting recourse claims.

²²⁷⁷ See on its relative attractiveness and popularity compared to other German product liability theories S. Lenze, ‘German product liability law: between European Directives, American Restatements and common sense’ in D. Fairgrieve (ed.), *Product Liability in Comparative Perspective* (Cambridge UP 2005) 101-102, 107; G. Wagner, ‘The development of product liability in Germany’ in S. Whittaker (ed.), *The Development of Product Liability: Volume 1* (Cambridge UP 2010) 126; Kullmann, ‘Haftung aus § 823 Abs. 1 BGB’, § 1512, 1.

²²⁷⁸ See *supra* footnotes 2268-2270.

§ 3. Defect

a. In general

368. MAIN FOCUS ON DEFECTS BROADLY RELATING TO INTERVENING PRODUCT REPAIR OR REFURBISHMENT – Once a product has been repaired or refurbished, harmonised product liability claims against defendants in the product's original distribution chain will very often be based on defects that have potentially some connection with the fact that a repair or refurbishment intervened.²²⁷⁹ For example, a discovered, dangerous issue in a product may be particularly difficult to be successfully remediated or create a deceiving, incorrect impression that a repair has been successful.²²⁸⁰ Or a product's design might increase the risk that a self- or independent repairer will make an obvious repair choice which actually creates a new accident risk. Alternatively, a product accident can also occur during the repair or refurbishment process itself (see also *supra* nr. 366), perhaps as a result of risks in the design of the product, incorrect repair instructions or defective spare parts or repair tools.

Additionally, certain product defects may consist of the fact that particular wear and tear of components or damage resulting from improper use are so challenging to find, that they remain hidden and are not remediated in a refurbishment process, despite the fact that this strategy involves examining a product in its entirety (see *supra* nr. 89). The resulting remaining presence of particularly worn or damaged components can be especially problematic because users are less likely to expect this and take the necessary care when a product has been refurbished compared to a non-refurbished second-hand equivalent.²²⁸¹

Countless other types of manufacturing, design or information defects are of course possible, especially in repaired products.²²⁸² For example, a robot lawnmower might have a design defect consisting of the fact that its blades do not stop spinning quickly enough when it is tilted by a curious child or pet, which eventually leads to an accident. The lawnmower may have been repaired prior to the accident but for a totally unrelated issue, for example a defect in the recharging unit. Such defects are less of a priority for this Chapter's analysis, since their assessment is not related to the fact that a repair, refurbishment or remanufacturing took place prior to the product accident.²²⁸³ And there exists of course already an abundance of literature on harmonised product liability's defect assessment in general.

²²⁷⁹ See E. Van Gool, 'De nieuwe richtlijn productaansprakelijkheid en circulaire economie' (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 416.

²²⁸⁰ E.g., Antwerpen 28 October 2009, *TBBR* 2011, 381, 385, note D. Verhoeven (arguments raised by technical expert about how product was unsafely repairable, leading to finding of product defectiveness, but claim nevertheless rejected due to a lack of causation).

²²⁸¹ See also *supra* nrs. 232 and 234 on the reasonably foreseeable use and nature of a product as considerations for assessing defectiveness that consists of a lack of product durability.

²²⁸² Because an intervening repair is by nature limited to correcting only identified defects and does not cover a product in its entirety. See *supra* nr. 88.

²²⁸³ Importantly, this focus does not apply to the posteriority and contributory fault defences. The fact that a repair, refurbishment or remanufacturing intervened, is always at least indirectly relevant for these defences, regardless of the specific nature of the defect on which a claim is based.

369. **DISENTANGLING THE DEFECT ASSESSMENT FROM THE DEFENCES** – It has already been clarified *supra* nr. 239 how the posteriority defence should apply only to those circumstances that had not been reasonably foreseeable when a product was placed on the market or put into service, which avoids theoretical overlap with the defect assessment. And the latter must also be separated from the defendant's contributory fault, for the reasons discussed *supra* nr. 274. Additionally, it remains important to reiterate that the plaintiff bears the initial 'risk' of proving damage, defect and causation,²²⁸⁴ although art. 10 PLD-2024 introduces a number of refutable presumptions of defect and causation. Only when this is established, do the aforementioned defences, really come to the fore, for which the defendant bears the burden of proof (see *supra* nrs. 205-206 on the applicable rules of evidence). It thus remains important to discuss also in this Chapter the defect assessment of a repaired, refurbished or remanufactured product separately from these defences, even when these aspects are often discussed simultaneously in the scarce existing sources on harmonised product liability for accidents caused by repaired products.²²⁸⁵

370. **SEPARATE PROOF OF DEFECT REMAINS POSSIBLE IN THE EVENT OF REPURPOSING OR OTHER SERIOUS MISUSE OF A PRODUCT OR A COMPONENT, LIKE A SPARE PART** – At the origin of a defective product may lie the use by a repairer or refurbisher of a new or re-used component as a spare part for a different purpose than it was designed and placed on the market for. For example, a repairer or refurbisher might use an electric board or cable in the circuit of an electric stove although it cannot handle the high voltage. Or metal rods are cut to size and used instead of specialized bolts in repairing a bunk bed, although they do not perfectly fit or are not strong enough to bear the required weight. Such incorrect use or repurposing of spare parts, is more likely to occur in self- and independent repair and refurbishment activities by prosumers in the 'collaborative repair' context (see also *supra* nrs. 84.c and 86-87). In these cases, an injured party who claims based on the PLDI against defendants in the original distribution chain of such a component, might simply prove a defect by demonstrating that this component did not provide the safety the public was entitled to expect when it was placed on the market or put into service, but specifically with regards to the particular purpose it was used for at the time of the accident.²²⁸⁶ As discussed *supra* nr. 255.b, the original manufacturer or distributor is then in a relatively strong position to raise the posteriority defence, by arguing that this particular use of the component had not been reasonably foreseeable when it was placed on the market or put into service.²²⁸⁷

In most cases, however, such an 'easier proof' of a defect is unavailable and the injured party must prove more concretely how the product or component was defective for the original purpose it was effectively intended for, when it was placed on the market or put into service.

²²⁸⁴ Art. 4 PLD-1985; art. 10(1) PLD-2024.

²²⁸⁵ E.g., Antwerpen 28 October 2009, *TBBR* 2011, 381, note D. Verhoeven. Note that sources on harmonised product liability for accidents caused by refurbished products are even much more limited.

²²⁸⁶ Invoking the defect presumption for malfunctioning products (art. 10(2)c PLD-2024) might in rare cases still be possible when a component is repurposed as a spare part. See *supra* nr. 260.

²²⁸⁷ See also Figure 10 *supra* nr. 255.

371. ‘MIND THE GAP’: THE IMPORTANCE OF RETURNING TO THE TIME WHEN THE REPAIRED OR REFURBISHED PRODUCT WAS PLACED ON THE MARKET, PUT INTO SERVICE OR ‘LEFT THE MANUFACTURER’S CONTROL’ – For claims against actors in the original distribution chain of a later repaired or refurbished product, it is necessary to base the defect assessment on the legitimate safety expectations held by the public at the time when said product was originally placed on the market or put into service. This guiding principle is woven into the fabric of harmonised product liability as a whole, but is most clearly expressed in art. 6(1)c(2) PLD-1985 and now in particular art. 7(2)e(3) PLD-2024.

Only when and to the extent that “*the product left the control of the manufacturer*” afterwards, does art. 7(2)e PLD-2024 now explicitly require that the defect assessment returns to this later moment in time. Such an extension of the ‘manufacturer’s control’ and a corresponding postponement of the defect assessment can on the basis of the current version of art. 4(5)a(ii) PLD-2024 potentially consist of an original repair or refurbishment that happens to ‘modify’ the product in even a non-substantial manner.²²⁸⁸ *Infra* nrs. 402-404, these concepts are examined more in-depth in light of how original repair and refurbishment services, spare parts, tools or repair information provided after a main product has already been placed on the market or put into service, can on the basis of this rule still potentially influence the defect assessment for potential liability of defendants in the main product’s original distribution chain. It is argued there that the ‘manufacturer’s control’ definition in art. 4(5)a(ii) PLD-2024 must already *de lege lata* be interpreted in a more restrictive manner that matches with arts. 8(2)²²⁸⁹ and art. 11(2)d²²⁹⁰ PLD-2024 (see *infra* nr. 403).

Note, however, that this dissertation takes a step further and proposes *infra* nrs. 404-405 to amend this definition *de lege ferenda* by only still accepting ‘substantial’ product modifications as being relevant with regards to the ‘manufacturer’s control’. Such amendment would mean that the defect assessment is only postponed pursuant to art. 7(2)e PLD-2024’s when the manufacturer or his service network ‘substantially modifies’ a product. Certain original repair or refurbishment activities that intervene during the lifecycle of a product that is already placed on the market or put into service, could then of course potentially still result in a ‘substantial product modification’²²⁹¹ and, in doing so, postpone the relevant moment for the defect assessment.

372. ‘MIND THE GAP’: THE DISTINCTION BETWEEN A ‘DIFFERENTIATED’ AND ‘SINGLE’ DEFECT ASSESSMENT, WHICH MOSTLY CORRESPONDS WITH THE DISTINCTION BETWEEN PRIMARY AND SECONDARY LIABILITY – These key rules of art. 6(1)c(2) PLD-1985 and art. 7(2)e(3) PLD-2024 mean that the potential liability of actors in the original distribution chain of a later repaired or refurbished product, is also governed by the previously studied, fundamental distinction between a

²²⁸⁸ But note that repairs and refurbishments generally strive to bring a product to its original state (see *supra* nrs. 88-89). This means that (successful) repairs and refurbishments often do not ‘modify’ the product (broadly understood) in any way, let alone substantially modify it.

²²⁸⁹ This is the rule on the separate primary liability of independent substantial product modifiers. See *supra* nrs. 178.f, 262, 307 and *infra* nrs. 442 et seq.

²²⁹⁰ This is the exception to the posteriority defence for original substantial product modifications occurring ‘within the manufacturer’s control’. See *supra* nr. 196 and *infra* nrs. 413 et seq.

²²⁹¹ Art. 4(18) *ibid.* See also *infra* nrs. 442 et seq.

‘differentiated’ and ‘single’ defect assessment. According to the current rules,²²⁹² for all (quasi-)manufacturers, importers, authorised representatives and fulfilment service providers, the defect assessment can be based on the moment when they (helped to) place(d) the product on the market or put it into service (see *supra* nrs. 315-316). In contrast, for distributors, online platforms and, at least *de lege lata*, persons liable based on art. 8(2) PLD-2024 who made the substantially product ‘available on the market’, the defect assessment must travel back to the last moment prior to their involvement when the product was placed on the market or put into service (see *supra* nrs. 310-314).

Especially this ‘single defect’ assessment is mentally challenging for liability lawyers who are trained to focus on the defendant’s personal conduct.²²⁹³ For example, the fact that an independent distributor (re)sold a product without its original repair instructions, as a result of his lack of inspection or simply because he did not care that this information no longer accompanied the product, does not matter for the defect assessment. Based on art. 6(1)c PLD-1985 and art. 7(2)e PLD-2024, the product is only defective as a result of this absence of repair information if it had already been absent when the product was placed on the market. Only if this repair information had been removed after this moment in time by the manufacturer himself or with his consent by his service network, could it be argued that at least on the basis of art. 7(2)e PLD-2024, this becomes part of the applicable ‘single defect’ assessment, because its point of reference has now been postponed to “*the moment in time when the product left the control of the manufacturer*” (see *supra* nr. 371). Likewise, the fact that the product had been recalled at the time when the distributor made it available, perhaps because it provided insufficient safety in the context of subsequent repairs or refurbishments, is also strictly speaking irrelevant for the ‘single defect’ assessment applicable to the distributor’s liability. Obviously, all these aspects that more directly relate to the distributor’s (or online platform’s) own conduct and the circumstances existing when the product was made available, are particularly relevant to this actor’s potential liability based on non-harmonised national (extra)contractual liability law, but these should be disregarded when applying the PLDI (see also *supra* nr. 312).

Finally, it is worth reiterating that the independent substantial modifier of the product who subsequently ‘makes it available’ pursuant to art. 8(2) PLD-2024, is *de lege lata* also subject to this ‘single defect’ assessment. For example, if said independent (re)seller of the product had personally removed the repair instructions and this would qualify as a ‘substantial modification’,²²⁹⁴ then the defect assessment must still travel back to the previous moment when the product had been ‘placed on the market’ with this information. This removes the possibility that the product would be found defective based on this fact when it subsequently causes an accident, for example during or after a subsequent repair or refurbishment or an

²²⁹² Although this dissertation proposes to amend this, someone liable for independently modifying a product substantially in terms of product safety is *de lege lata* considered to only ‘make this product available’, which means that he is subject to both primary liability and a ‘single’ defect assessment (arts. 7(2)e and 8(2) PLD-2024). See *supra* nrs. 265 and 311.

²²⁹³ This is a more fundamental trait of specific ‘product liability’ rules, which impose liability on persons based on the state of a product. See also *supra* nr. 101.c.

²²⁹⁴ Art. 4(18) *ibid.* See also *infra* nrs. 442 et seq.

attempt thereto. *De lege ferenda*, this dissertation proposes to change this and to subject such substantial product modifier to a ‘differentiated defect’ assessment, by amending the reference to ‘making available’ in art. 8(2) PLD-2024 to ‘placing on the market’ (see *supra* nrs. 265 and 311).

b. Specific defect assessment criteria applied to product repairability and refurbishability

i. Reasonable foreseeability of subsequent repairs and refurbishments

373. GENERAL CONSIDERATIONS – The “*reasonably foreseeable use*” of a product is of course one of the key criteria to assess the defectiveness of a product with regards to safe repairability and refurbishability.²²⁹⁵ Moreover, the reasonable foreseeability of an intervening repair or refurbishment is also decisive in determining whether it can be successfully invoked by the defendant as part of a posteriority defence (see Figure 9 *supra* nr. 239 and *infra* nrs. 414 et seq.). It is therefore a central concept in the application of harmonised product liability to accidents caused by products during or after a repair or refurbishment, which is worthwhile to scrutinize in sufficient detail here and in the following sections.

In the current literature on reasonably foreseeable use as part of the product defect assessment, subsequent product repairs are rarely and refurbishment almost never mentioned. Nevertheless, as argued below and as agreed to by HOWELLS, FAIRGRIEVE AND GOLDBERG and LACROIX,²²⁹⁶ the general possibility that these circular strategies can occur, is in principle considered as reasonably foreseeable once a durable consumer good is placed on the market or put into service. An individual repair or refurbishment of a particular product might of course still have been not reasonably foreseeable, but this depends on concrete, factual circumstances for which the defendant bears the burden of proof in the context of the posteriority defence (see *infra* nrs. 413-419). Two main reasons can be offered to support the general possibility that possibly all kinds of future repairs and refurbishments in a durable consumer good’s lifecycle are reasonably foreseeable.

First of all, the literature does consider that cleaning and maintenance are reasonably foreseeable activities of users of durable consumer goods,²²⁹⁷ although also this does not necessarily extend to every way how such actions can be performed, as illustrated by two German cases.²²⁹⁸ To the extent that maintenance activities are reasonably foreseeable, it

²²⁹⁵ Art. 6(1)b PLD-1985; art. 7(2)b PLD-2024. See also *supra* nr. 183.

²²⁹⁶ Howells, ‘strict liability’, nr. 4.170; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nrs. 13.25-13.26; I. Lacroix, *Recht op herstellen: aansprakelijkheids- en verbintenissenrechtelijke implicaties van de circulaire economie* (die Keure 2022) 79.

²²⁹⁷ See Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 3, nr. 67; G. Wagner, ‘Produkthaftungsgesetz’ in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 3, nr. 24.

²²⁹⁸ Cf. OLG Koblenz 29 August 2005, 12 U 538/04, NJW-RR 2006, 169 (improper maintenance of kneading machine blocked by cold plastic; instead of opening blocked machine according to instructions, heating machine to unblock it and trying to manually open machine; pressurewave injuring employee); LG Stuttgart 10 April 2012, 26 O 466/10, NJW-RR 2012, 1169 (machine pulling in and crushing hand of

must be reminded that corrective maintenance overlaps with product repairs and to some extent even with refurbishments (see *supra* nr. 85). All these activities, which consumers and service providers have been doing since time immemorial (see also *supra* nrs. 57), can generally be expected when a durable consumer good is placed on the market.

Second, as confirmed in the Directives²²⁹⁹ and as generally recognized in the existing case law and literature,²³⁰⁰ a certain amount of product ‘misuse’, especially by consumers, remains reasonably foreseeable. It is even commonly accepted that (physical) modifications to products, sometimes described as ‘tampering’, can be reasonably foreseeable when products are placed on the market or put into service.²³⁰¹ Product repair and refurbishment activities can indeed sometimes ‘modify’ a product. And, when this occurs, it is thus not excluded that said repair, refurbishment or remanufacturing had still been reasonably foreseeable from the perspective of the original product’s defect assessment. However, it is worth emphasizing that both these circular activities actually tend to avoid product modifications as much possible and, for the most part, strive to restore products back to their original state (see *supra* nrs. 88-90). It can thus be argued that repairs and refurbishments, which try to limit changing a product as much as possible and merely aim to restore its original state and performance, can *a fortiori* be considered as reasonably foreseeable in principle.²³⁰²

Repair and refurbishment activities are of course historically anything but new (see *supra* nrs. 57 and 86-88). It can therefore also be said for most older durable consumer goods, that it was already reasonably foreseeable in general that it would one day be repaired and potentially even refurbished, when it was originally placed on the market or put into service. More generally, all three types of self-, independent and original repairs and refurbishments are widespread and for many products arguably reasonably foreseeable. Perhaps only for self-refurbishment of most consumer goods, this does not seem to be a general possibility. Yet, this always remains a case-specific assessment (see further *infra* nr. 374). Products that are technically very simple, robust and relatively valuable, like most indoor and outdoor furniture, are more likely to be self-refurbished and certainly self-repaired by prosumers who have little experience and very limited tools. By comparison, products that are still sufficiently durable and valuable but slightly more technologically complex or fragile, like a bike, camping or sports equipment or an ornamental piece, are on average more likely to be repaired and especially refurbished by original or independent professional actors.

Finally, the extent to which a specific repair or refurbishment is reasonably foreseeable in a particular product’s lifecycle, definitely evolves over time (see also *supra* nrs. 232 and 286).

cleaning employee; considered to have been reasonably foreseeable that machine would be cleaned; design defect that machine operated not at slower speed or would have other safety mechanisms during cleaning operation).

²²⁹⁹ See rectal 6 PLD-1985; art. 7(2)b PLD-2024.

²³⁰⁰ See sources cited *supra* footnotes 1095-1096. In Belgian liability law, this can be more broadly interpreted as part of the ‘*consideratieplicht*’ (see *supra* footnote 1690).

²³⁰¹ E.g., Howells, ‘strict liability’, nr. 4.187; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 143; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nrs. 11.57, 13.27.

²³⁰² See also, e.g., LE Europe et al., *Behavioural study on consumers' engagement in the circular economy* (EU Commission 2018) 111 (relatively high consumer percentages stating that it would be ‘rather’ or ‘very easy’ to repair different consumer goods, differences between product categories).

This is true for circular strategies in general and nowadays especially for repairs and refurbishments. Today, there is an increased popularity of certain refurbished products like electronic devices, furniture or toys, a rise in collaborative repair activities, repair cafés and fablabs as well as technologies like platforms, 3D-printers and online services that greatly facilitate self- and independent repair and refurbishment activities (see *supra* nrs. 2, 68.c, 65-66 and 87). Moreover, there exists today a regulatory push towards a more meaningful ‘right to repair’, which results in EU and national rules that are bound to make different kinds of repairs and refurbishments consumer goods more common in the near future, such as Ecodesign, repair service and consumer information requirements (see especially *infra* nrs. 393-394). All these converging elements, which also resonate in recital 39 PLD-2024,²³⁰³ create an ongoing evolution in the public’s legitimate safety expectations relating to whether or not a given consumer good is safely repairable or refurbishable.

For harmonised product liability²³⁰⁴ of actors in the product’s original distribution chain, only the evolutions in legitimate safety expectations that have already occurred when their products are placed on the market or put into service, should be considered as relevant (see *supra* nrs. 371-372). However, on the basis of arts. 4(5) and 7(2)e PLD-2024, this is postponed to “*the moment in time when the product left the control of the manufacturer*”, if a product is ‘modified’ or receives a new spare part ‘within the manufacturer’s control’ (see *infra* nr. 459). More recent developments after these moments in time will only be pertinent for the defect assessment of newer products that are subsequently placed on the market or put into service, as well as for the potential harmonised product liability of the later intervening repairers and refurbishers themselves who happen to place on the market or put into service the repaired or refurbished product or a spare part used in the repair or refurbishment (see *infra* nr. 458).

374. A COMPARATIVE CRITERION – The preceding discussion on the general foreseeability of these three circular strategies does of course not precisely indicate when a repair or refurbishment of a specific product conducted in a particular manner, had been reasonably foreseeable when said product was placed on the market or put into service. A criterion that is suggested by certain Belgian scholars but that should in my opinion be rejected for the reasons explained nrs. 256 and 274, is to determine the reasonable foreseeability of a post-marketing circumstance, like an intervening repair or refurbishment, based on whether the consumer’s conduct would qualify as a (contributory) fault (see also *infra* nr. 286).

A simple but useful rule of thumb can instead consist of a ‘comparative criterion’, which has already been discussed in the context of product repurposing (see *supra* nr. 257). As employed

²³⁰³ Recital 39 PLD-2024: “*In the transition from a linear to a circular economy, products are designed to be more durable, reusable, repairable and upgradable. The Union is also promoting innovative and sustainable ways of production and consumption that prolong the functionality of products and components, such as remanufacturing, refurbishment and repair. [...]*”

²³⁰⁴ With regards to products that are already placed on the market or put into service, these same evolutions in public expectations concerning safe repair- and refurbishability still remain relevant for purposes of post-marketing product safety obligations and corresponding non-harmonised liability law, in particular extracontractual liability for fault (see *supra* nrs. 10, 184 and 211-218). See Taschner and Frietsch, *Kommentar*, 278-279; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3604, 11.

in the German literature,²³⁰⁵ it simply consists of comparing ‘how far removed’ a concrete use of a product throughout its lifecycle is from the use that was originally envisaged when the product was placed on the market or put into service. Given the nature of harmonised product liability, the latter must not be the subjective understanding held by the individual (quasi-)manufacturer or importer but rather the use envisaged according to the general public’s legitimate safety expectations existing at that time.²³⁰⁶

In the context of circular ‘reproduction’ strategies which generally aim to restore a product back to an original working condition to an even at least as good as new condition (see *supra* nrs. 74 and 88-89), the comparison can consist of ‘how far removed’ the particular repaired or refurbished product or the attempt thereto remains from the ‘expected’ repaired or refurbished equivalent,²³⁰⁷ if said circular strategy would have been possible at all in the particular case. Especially in case of self- and independent repairs and refurbishment, the criterion should in my view be how different the concrete approach used in inspecting, dis- and reassembling and reprocessing or replacing a component has been from the hypothetical, still reasonably foreseeable repair or refurbishment equivalent. Likewise, the qualities of concretely used spare parts and repair tools should be compared with the hypothetical, still reasonably foreseeably used spare parts and tools. For example, a particularly careless repair attempt or a very creative use of repurposed components as spare parts (see *supra* nr. 84.c) is less reasonably foreseeable than a self-repairing prosumer who attempts to seek original or, if unavailable, qualitative repair instructions and spare parts and tries to carefully apply those. In some, relatively rare cases, for example when a product is broken beyond repair, no repair or refurbishment is possible and the proper hypothetical equivalent is therefore an option where the product is actually discarded.

It is readily apparent that either original or widely available independent repair instructions (visual or written protocols), spare parts and repair tools lend themselves to serve as relevant points of reference to apply this ‘comparative criterion’. The same can be said of either original or highly professionalised independent repair and refurbishment services that are available for a particular product. However, it would be incorrect to overly focus on in particular original repair services, information and tools. As examined *infra* nrs. 379-392, these are useful as instruments to facilitate safer repairs and refurbishments and can effectively serve as indicative points of reference for this ‘comparative criterion’. Yet, original repair- or refurbishment-related resources and services should never unilaterally set the standard of what constitutes a still reasonably foreseeable repair or refurbishment. After all, harmonised

²³⁰⁵ Taschner and Frietsch, *Kommentar*, 278; Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 48, nr. 55; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3604, 17; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 3, nr. 63; J. Taeger, ‘§ 3 ProdHaftG’ in P. Ehrling and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 42; G. Wagner, ‘Produkthaftungsgesetz’ in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 3, nr. 26.

²³⁰⁶ This is due to the objective nature of the PLD’s defect concept. See art. 6(1) PLD-1985; art. 7(1) PLD-2024. See also *supra* nr. 179.

²³⁰⁷ On the one hand, especially a repair but also most refurbishments do not completely restore a product to its original state when it was newly manufactured (see *supra* nrs. 88-89). It is thus not meaningful to compare with the original product, but instead necessary to look at how far it is removed from the ‘perfect’, proper repair or refurbishment.

product liability's defect standard of the public's legitimate safety expectations is objective in nature (see *supra* nr. 179). And the previous section has precisely established that many forms of independent and self-repairs and refurbishments by unprofessional prosumers can be considered for myriad consumer goods as generally reasonably foreseeable. This principle would be completely undermined if the actors who place products on the market or put them into service, who are the main harmonised product liability defendants in the product's original distribution chain, can effectively determine how a repair or refurbishment should be implemented to have still been reasonably foreseeable.

Instead, the 'comparative criterion' must be informed by all possibly relevant defect assessment criteria in a given case, for which the availability of original repair services, information, tools and the like is at best one relevant element. It is additionally necessary to look, among others,²³⁰⁸ at relevant binding and soft law rules, the nature of the specific product as well as other aspects of the product's presentation, which are further explored *infra* nrs. 378 et seq. All these aspects ultimately determine what 'by comparison' may have been a reasonably foreseeable repair or refurbishment alternative, according to the general, objective standard of the public's legitimate safety expectations.

375. SUCH COMPARATIVE CRITERION SHOULD NOT BE CONSIDERED AS THE COUNTERPART OF ART. 8(2) PLD-2024 – It may be tempting to interpret this 'comparative criterion' as the theoretical counterpart of the novel harmonised product liability rule of art. 8(2) PLD-2024. In other words, a self- or independent repair or refurbishment would be considered as not reasonably foreseeable and actors in the product's distribution chain would not be liable for an ensuing accident, once the repair or refurbishment in question qualifies as a substantial product modification. Such situation results of course in the repairer's or refurbisher's own primary liability if the substantially modified product is subsequently 'made available' or 'put into service', which presumes a commercial activity.²³⁰⁹ Although this would create seemingly neat complementary scopes of liability, this is nevertheless an incorrect interpretation of the comparative criterion presented above. Moreover, it would erroneously compartmentalise the possibilities for harmonised product liability of these different actors, while the liability of defendants in the product's original distribution chain can actually co-exist with liability of repairers and refurbishers based on art. 8(2) PLD-2024.²³¹⁰

The comparative criterion for determining to what extent an intervening repair or refurbishment had been reasonably foreseeable, looks at all types of differences between the (attempted) repair or refurbishment in question and the hypothetical, definitely acceptable and reasonably foreseeable equivalent (see *supra* nr. 374). In contrast, the assessment of whether a product modification is substantial according to arts. 4(18) and 8(2) PLD-2024 is restricted to modifications that affect a product in terms of compliance with product safety rules or in terms of an increase or change in accident risks (see *infra* nrs. 442 et seq.). In other

²³⁰⁸ Also the criteria explicitly listed in both arts. 6(1) PLD-1985 and 7(2) PLD-2024 are merely indicative and non-exhaustive. See *supra* nr. 181.

²³⁰⁹ Art. 4(7)(9) *juncto* 8(2) PLD-2024. See also *supra* nr. 198.

²³¹⁰ See E. Van Gool, 'De nieuwe richtlijn productaansprakelijkheid en circulaire economie' (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 416. See also arts. 12-13(1) PLD-2024.

words, there can be repairs or refurbishments that for example only change a small safety mechanism or remove a warning, which can definitely be ‘substantial modifications’ in terms of product safety but that were also already perfectly reasonably foreseeable when the product was placed on the market, for example due to the hindering nature of the mechanism or warning. As discussed *infra* nrs. 379, there is even an inverse correlation where the most problematic risks from a product safety perspective, which can definitely qualify as ‘substantial modifications’, should be on the top of mind for a (quasi-)manufacturer or importer when assessing which risks relating to later repairs or refurbishments must be addressed and are thus reasonably foreseeable.

376. ART. 10(2)c PLD-2024: REPAIRS AND REFURBISHMENTS CAN BE PART OF REASONABLY FORESEEABLE USE OR ORDINARY CIRCUMSTANCES, WHICH ALLOWS A REFUTABLE PRESUMPTION OF DEFECTIVENESS WHEN AN ACCIDENT IS CAUSED IN A SUBSEQUENT MALFUNCTION – Art. 10(2)c PLD-2024 introduces a refutable presumption that a product is defective when the plaintiff establishes that “*the damage was caused by an obvious malfunction of the product during reasonably foreseeable use or under ordinary circumstances.*” As discussed *supra* nrs. 373 et seq., some repairs but also some refurbishments of durable consumer goods as well as the subsequent use of those goods, can be considered as having been “*reasonably foreseeable*” when those goods were originally placed on the market or put into service.²³¹¹ Based on the same reasons, many repairs or refurbishments are also part of “*ordinary circumstances*”.²³¹² At the same time, many other concrete repairs and refurbishments that occur in practice, can be considered as neither reasonably foreseeable nor part of ordinary circumstances. The ‘comparative criterion’ (see *supra* nr. 374), can again potentially help in making this determination.

If not only an intervening repair or refurbishment are considered to have been reasonably foreseeable or part of ordinary circumstances, but this also applies to all other circumstances of the product’s use at the time of the accident and if the latter “*was caused by an obvious malfunction*”, then art. 10(2)c PLD-2024 offers the aforementioned, still refutable presumption of product defectiveness. This presumption is particularly helpful to a plaintiff who suffers damage during or after a repair or refurbishment, when it cannot be proven in a more concrete way that the product was defective due to a lack of safe repairability or refurbishability.

For example, an imported toddler’s dining chair is independently refurbished by using original spare parts and applying original repair instructions. During subsequent use of the chair, which has never been mishandled or roughly transported, one of its aluminium legs suddenly cracks while it seats a toddler who gets severely injured. If the plaintiff can prove in those circumstances that the chair was not only used under ordinary circumstances but also in a reasonably foreseeable manner and that also the intervening refurbishment occurred in a

²³¹¹ See *supra* nr. 233 regarding the limited, only illustrative value of recital 46 PLD-2024’s description of ‘reasonably foreseeable use’ for the purposes of interpreting art. 10(2)c *ibid*.

²³¹² Note that the original Commission proposal required a “*normal use*” instead of the less demanding, current “*reasonably foreseeable use*” (art. 9(2)c in Commission, ‘Proposal for a Directive of the European Parliament and of the Council on liability for defective products’ COM(2022) 495 final). However, many repairs and refurbishments can also be considered part of “*normal use*” if not part of “*ordinary circumstances*”.

reasonably foreseeable manner, then the defending importer is not only unable to invoke a posteriority defence vis à vis the refurbishment (see Figure 9 *supra* nr. 239 and *infra* nrs. 414 et seq.) but now also has to refute a defect presumption based on art. 10(2)c PLD-2024.

377. ART. 9 PLD-2024: DISCLOSURE OF EVIDENCE HELD BY EITHER THE DEFENDANT OR THE PLAINTIFF, BUT NOT BY A THIRD PARTY LIKE AN INDEPENDENT REPAIRER OR REFURBISHER – Finally, in the more technical context of defects relating to product repairs and refurbishments, it is useful to highlight the role that can be played by the novel rule on disclosure of evidence (see *supra* nr. 206.a).

On the one hand, art. 9(1) PLD-2024 allows plaintiffs, if they have already presented sufficient evidence to support the plausibility of their claim, to request that the defendant is ordered to disclose relevant evidence at his disposal. For example, this can relate to technical aspects or the presentation of the product when it was placed on the market or put into service, information about reasonably foreseeable self- and independent repair or refurbishment practices at that time or design proposals, communications and other evidence relating to the possibility of an alternative design.

On the other hand, as a result of an amendment late during the legislative process,²³¹³ art. 9(2) PLD-2024 allows also defendants who demonstrate a “*need for evidence for the purposes of countering a claim*”, to request that the plaintiff would be required, in accordance with national law, to disclose relevant evidence at his disposal. Unlike the plaintiff’s right based on art. 9(1) PLD-2024, no pre-existing plausibility of the defendant’s defence is required. The defendant can of course leverage this right to obtain information about precisely how a particular repair or refurbishment was performed, when it is alleged that a product was defective due to a lack of safe repair- or refurbishability. In case of a self-repair, this can for example consist of documents relating to the purchase of spare parts or a 3D-printing blueprint CAD-file used to self-manufacture such spare part, when this component and its use can no longer be properly evaluated as a result of the intervening accident. In case of an independent repair or refurbishment, this may simply consist of the service contract, product surveys before and after the repair or refurbishment or the rejection of a certificate by a third-party certifier. Alternatively, this can consist of the sales contract of an already repaired or refurbished product, which may clarify how soon the accident occurred thereafter or which may similarly include factual evidence about the product’s state and/or the repair or refurbishment process it underwent.

However, it is worth noting that art. 9 PLD-2024 only allows a defendant to request the disclosure of evidence by the plaintiff or *vice versa*, but it does not allow a defendant to request that a co-defendant or third party would be required to disclose relevant evidence which they might possess, as for example Belgian law allows.²³¹⁴ A defendant in the original distribution chain of a subsequently repaired or refurbished product will therefore be unable to request

²³¹³ Cf. art. 8 in Commission, ‘Proposal for a Directive of the European Parliament and of the Council on liability for defective products’ COM(2022) 495 final *with* art. 9(2) PLD-2024.

²³¹⁴ Arts. 878-882 Gerechtelijk Wetboek / Code Judiciaire. At first sight, the Directive’s maximum harmonisation (art. 3 PLD-2024) no longer seems to allow divergent national rules on harmonised rules of evidence. See also *supra* nr. 206.a.

that an independent repairer or refurbisher discloses evidence like data, contractual documents or communications related to an intervening repair or refurbishment process. He might still compel such independent repairer or refurbisher to join the proceedings by filing a recourse claim, but a strict reading of art. 9 PLD-2024 does not allow him to request a disclosure of relevant evidence held by this party.²³¹⁵

ii. The particular nature of a product or component, guidelines to avoid a defect qualification

378. THE VARYING EXPECTATIONS TO MAKE PRODUCTS MORE SAFELY (SELF- AND INDEPENDENTLY) REPAIRABLE AND REFURBISHABLE – On the one hand, certain product components can be generally considered as being too dangerous to be repaired or refurbished by anyone else than independent or original repair professionals. Examples are the connections, valves and hose of gas stoves, components relating to acceleration and braking of motor vehicles or the moving parts of heavy DIY or garden equipment. Likewise, for the electrical and electronic components present in so many of today's consumer goods, it can be generally expected that they are only handled by either professionals or at least prosumers who have at least some relevant experience, possess the necessary tools and know-how to ensure insulation, grounding and mitigating short-circuit risks. These are all illustrations of the general principle according to which a product or component cannot be considered defective just because repairing or refurbishing it, in particular by prosumers, entails significant but obvious and well-known safety risks (see also *supra* nr. 185).²³¹⁶ Nevertheless, such durable consumer goods must then still be safely repairable and refurbishable by at least original or independent repair or refurbishment professionals.

On the other hand, there are products which, by nature, need to be particularly easily and safely repairable and/or refurbishable.²³¹⁷ These are for example products with critical safety functions which cannot be easily replaced. Examples are building elevators and stair lifts, alarm systems and fire safety systems like automatic doors and sprinklers. Somewhat comparable are products that need to operate in a self-reliant environment with limited access to spare parts, such as survival or mountaineering equipment.²³¹⁸ Additionally, there is the very

²³¹⁵ Art. 9(1) PLD-2024 of course allows the plaintiff to request such a disclosure from the independent repairer or refurbisher, if the plaintiff claims against the latter on the basis of harmonised product liability (see *infra* nrs. 424 et seq.) and if the plaintiff has already presented sufficient evidence to support the plausibility of this claim.

²³¹⁶ See in general regarding the lack of defectiveness for obvious product risks Howells, 'strict liability', nrs. 4.181-4.185; M. Bacache-Gibeili, *La responsabilité civile extracontractuelle* (3rd edn., Economica 2016) 888-889; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3604, 19; I. Lutte and J.-L. Fagnart, 'Livre 33bis' in X. (ed.), *Responsabilités. Traité théorique et pratique* (Kluwer 2020 update) nrs. 78-79; G. Wagner, 'Produkthaftungsgesetz' in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 3, nr. 20.

²³¹⁷ See, e.g., LE Europe et al., *Behavioural study on consumers' engagement in the circular economy* (EU Commission 2018) 111 (depending on product types, different percentages of consumers estimating that a product would be easy to repair).

²³¹⁸ See also Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3604, 20 (referring i.a. to alarm

large category (see *supra* nr. 373) of durable consumer goods that are widely known to be frequently self- or independently repaired or refurbished by prosumers or by semi-professionals with only limited expertise in a particular model. Examples are bicycles and to a lesser extent motorcycles and cars, furniture, certain larger toys and sports equipment, as well as some more simple electrical devices, like vacuum cleaners, toasters, electric heaters or fans.²³¹⁹ For all the consumer goods in the aforementioned second group, it is particularly important that the appropriate strategies are implemented to ensure that the product is sufficiently safely repairable and refurbishable, as following sections further discuss. Such strategies range from facilitating repairs and refurbishments, even by prosumers, to strategically preventing particular repairs or refurbishments (attempted by prosumers) when they would involve too much risk.

Finally, more and more products of particular categories that are newly placed on the market, will in the future be subject to EU Ecodesign requirements that focus, among other criteria, on product repairability. This trend is expected to intensify in the near future and to also expand to aspects more specific to refurbishability (see *infra* nr. 393). The study and consultation process preceding the adoption of such requirements by the Commission,²³²⁰ focuses on the particular nature of these products as well as to some extent also on safety aspects involved in product design choices. This ensures that such future Ecodesign requirements will become useful as – now potentially binding²³²¹ – points of reference in the product defect assessment (see *supra* nr. 185, 187 and *infra* nr. 393).

379. GENERAL GUIDELINES, BALANCING BETWEEN FACILITATING VS. PREVENTING (SELF- AND INDEPENDENT) REPAIRS AND REFURBISHMENTS – While the preceding sections outlined the reasonable foreseeability of different repair, refurbishment or remanufacturing activities and how this is determined by each product’s particular nature, it is still a different matter to determine precisely when an individual product is sufficiently safely repairable or refurbishable. This is a deeply technical factual assessment, for which often product- and sector-specific experts will have to be consulted in disputed cases. Nevertheless, in addition to the considerations listed *supra* nrs. 373 and 378, a few general principles can be listed here to guide the product defect assessment.

- a. First and foremost, the more dangerous an attempted (self- or independent) repair, refurbishment or reproduction of a particular consumer good or component might be, the more precautions must be taken in terms of product design, product information

systems, sprinklers and life jackets as examples of products subject to higher safety expectations, including continued operability).

²³¹⁹ With regards to the last examples, it is possible that a prosumer who has not the aforementioned expertise in electrical and electronic repairs, wants to repair some of the major mechanical components of these devices. Often, these are also the first to break down through wear and tear or improper use.

²³²⁰ See art. 5-8 and Annex II Ecodesign for Sustainable Products Regulation 2024. See also on the comparable procedure under the current Ecodesign legislative framework A. Michel, *Premature Obsolescence: In Search of an Improved Legal Framework* (Intersentia 2023) 152-157.

²³²¹ Art. 7(1) PLD-2024. See *supra* nrs. 180 and 251.

and/or availability of supporting resources and services (see *infra* nrs. 379 et seq.).²³²² This risk management principle generally outweighs some of the preceding considerations on how likely a specific repair or refurbishment of a particular product might be. For example, even if it would be assessed that prosumers would almost never try to repair an electric blanket, the fact that a flawed reparation has a high risk of burning a user or of starting a fire, will likely still require a design that precludes repair attempts by prosumers of the most critical components and/or a permanent, clearly visible warning on the product itself (see also *infra* nrs. 380-382). In other words, if an accident risk relating to a potential repair or refurbishment is particularly grave, it can only be disregarded if it is extraordinarily more improbable to occur in practice.

- b. Second, an effective overall strategy for defendants in the original distribution chain to reduce potential liability in this context, is to simply make products and components more durable.²³²³ Increased durability helps to avoid repairs and refurbishment altogether and can help to make the remaining interventions less demanding and less prone to mistakes. This strategy is particularly useful for individual components that risk causing an accident during a not perfectly implemented repair or refurbishment, that are prone to be incorrectly repaired in a deceiving manner for subsequent users or that risk being worn out or damaged after past use in a manner that a refurbisher cannot easily perceive.
- c. Third, a major, overarching strategy to ensure that products are safely repairable and refurbishable, in particular with regards to self- or independent activities, is to proactively facilitate such subsequent circular strategies.²³²⁴ On the one hand, a key method to achieve this is through a repair-friendly design. This often requires that products have a modular design, products can be relatively easily disassembled without causing damage and processes of wear and tear or damage from past use are made easily observable, if necessary, through indicators.²³²⁵ On the other hand, this can be achieved through providing access to high-quality but comparatively affordable original repair information, diagnostic tools, necessary repair tools and original spare parts (see *infra*

²³²² See in general Verhoeven, *Productaansprakelijkheid en productveiligheid*, 187-188 (considering this as part of the core of the defect concept); Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3604, 21-22. See also *supra* nr. 185. Note that this provides an argument against an – at first sight seemingly attractive – coupling of the harmonised product liability of defendants in the original distribution chain of later repaired or refurbished products (reasonable foreseeability of repair or refurbishment) with the absence of liability of the intervening repairer or refurbisher based on art. 8(2) PLD-2024 (repair or refurbishment did not constitute a 'substantial modification'). See *supra* nr. 375 and *infra* nr. 418.

²³²³ This demonstrates why it makes sense to have first studied in a preceding Chapter 'reuse' and product defectiveness based on insufficient durability. See *supra* nrs. 231-237.

²³²⁴ See E. Van Gool, 'De nieuwe richtlijn productaansprakelijkheid en circulaire economie' (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 416-417. See also *supra* nrs. 88-89 on the different steps involved in repairs and refurbishments.

²³²⁵ Note that some of these same characteristics are also important to ensure that a product is not defective due to a lack of safe durability (reuse) or due to a lack of safety in the context of a resale (retransfer) or other form of redistribution. See *supra* nrs. 234 and 287.

nrs. 385-392).²³²⁶ Note that both a more repair-friendly design, repair information and the availability of repair-supporting resources are now also increasingly the object of product regulation and new consumer law rules (see *infra* nrs. 393-398).

- d. Fourth, a diametrically opposed way to ensure that products or components are sufficiently safe in this context, is to physically prevent or warn against certain repair attempts by prosumers or even by independent professionals. Making certain repairs impossible or warnings against them, generally also prevents refurbishments by the same actors, at least refurbishments that would also intervene in the same product components. This may seem a legally fraught strategy of manufacturers and others in original product distribution chains to advantage their own original repair and refurbishment services or the increase sales of replacement products. Such practices indeed risk to violate art. 102 TFEU's prohibition on abuse of a dominant market position,²³²⁷ art. 101 TFEU's prohibition on restrictive agreements if this is based on contractual provisions in the distribution chain,²³²⁸ the prohibition on unfair commercial practices in B2C relationships,²³²⁹ or comparable provisions of national law.

Note, however, that all these prohibitions provide some form of exception if a manufacturer can demonstrate that a practice restricting certain particularly dangerous self- or independent repair activities, is the only way to prevent harmful product accidents from occurring.²³³⁰ The main requirement of EU general product safety regulation to

²³²⁶ See on the significance of these factors for consumer engagement in self-repair or repair-services LE Europe et al., *Behavioural study on consumers' engagement in the circular economy* (EU Commission 2018) 177-181.

²³²⁷ See L. Van Acker, 'The repair economy: unexpected support from competition law?' *CCM Blog* (2022) <<https://law.kuleuven.be/ccm/blog/?p=306>>.

²³²⁸ Note the 'hardcore restriction' in the Vertical Block Exemption Regulation on agreements between suppliers and buyers to restrict the former's ability to sell spare parts to end-users or repairers (art. 4(f) Commission Regulation 2022/720/EU of 10 May 2022 on the application of Article 101(3) of the Treaty on the Functioning of the European Union to categories of vertical agreements and concerted practices [2022] OJ L134/4, 11). However, the more comprehensive, solid protection against restrictive agreements in the after-sale repair-service market afforded to independent repairers by the automotive sector block exemption Regulation, does not apply to other sectors, as confirmed in General Court 23 October 2017, T-712/14, *Confédération européenne des associations d'horlogers-réparateurs*, ECLI:EU:T:2017:74. See also M. Imarhiagbe, 'The Right to Repair in EU Competition Law' (2022) *Nordic Journal of European Law* 166, 169-172; L. Van Acker, 'The repair economy: unexpected support from competition law?' *CCM Blog* (2022) <<https://law.kuleuven.be/ccm/blog/?p=306>>.

²³²⁹ See arts. 5 and 6(1)e Parliament and Council Directive 2005/29/EC of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market and amending Council Directive 84/450/EEC, Directives 97/7/EC, 98/27/EC and 2002/65/EC of the European Parliament and of the Council and Regulation (EC) No 2006/2004 of the European Parliament and of the Council [2005] OJ L149/22, 27-28.

²³³⁰ E.g., art. 3(3) *ibid.*; art. L441-3, second section Code de la Consommation; the protection of public health can act as an objective justification of public interest vis à vis a potential EU competition law infringement. See also with regards to a potential violation of art. 102 TFEU through setting up a selective repair system General Court 23 October 2017, T-712/14, *Confédération européenne des associations d'horlogers-réparateurs*, ECLI:EU:T:2017:74, nr. 81: "The Commission therefore did not make a manifest

only place or make available safe products on the market,²³³¹ can effectively require in certain circumstances that for example very dangerous components are made inaccessible to at least prosumers and that access to certain, risk-prone spare parts is restricted to selective repair systems, which independent professional repairers and refurbishers could only join subject to certain conditions. However, the manufacturer's burden of proving this necessity will be quite heavy in the absence of binding safety rules or harmonised standards that support these practices (see also *infra* nr. 393), as illustrated by some older decisions in which the General Court rejected protection of public health as a justification for infringements of current art. 102 TFEU.²³³²

From a harmonised product liability perspective, it can likewise in very specific cases be necessary precisely to avoid a product defect qualification to preclude rather than facilitate particular repair and refurbishment actions.²³³³ Warnings against such repairs and refurbishments, in product and repair documentation or if necessary placed on the dangerous components themselves, are the least intrusive manner to achieve this. Given the 'safety hierarchy' (see also *infra* nr. 381), a more effective method to avoid a defect qualification, is to physically prevent repairs, by using techniques to seal dangerous components or by necessitating the use of specialised tools which for example prosumers do not possess.

Nevertheless, actors in the product's original distribution chain can definitely not apply this as a blanket excuse to systematically exclude self- and independent repair and refurbishment activities. Instead, given how such activities can for most consumer goods and components generally be considered as reasonably foreseeable (see *supra* nr. 373) and given the regulatory initiatives to establish a self- and independent 'right to repair' (see *infra* nrs. 393 et seq.), the predominant strategy should consist of facilitating safe self- and independent activities as much as possible and to only preclude them when it can be proven that this is absolutely necessary from an accident-prevention perspective. The limited available evidence suggests that such circumstances where actual safety concerns dictate steps to actively make certain products or components less easily repairable, remain relatively rare in the general consumer goods sector.²³³⁴

error of assessment in considering that it was possible that the selective repair systems established by the Swiss watch manufacturers could be justified by the objective of maintaining the quality of products, since those systems were based on qualitative selection criteria applied in a non-discriminatory manner and were proportionate."

²³³¹ Art. 5 General Product Safety Regulation 2023/988/EU. See in general *supra* nr. 10.

²³³² See General Court 12 December 1991, T-30/89, *Hilti AG*, ECLI:EU:T:1991:70, nrs. 115-119; General Court 6 October 1994, T-83/91, *Tetra Pak II*, ECLI:EU:T:1994:246, nrs. 83-84. But see T. van der Vijver, 'Objective Justification and Article 102 TFEU' (2012) 35 *World Competition* 55, 66: "I believe that dominant firms should not be a priori precluded from offering a higher level of health and safety standards than formally required by law, especially if it can show that the government's action in the area is not (sufficiently) effective."

²³³³ See E. Van Gool, 'De nieuwe richtlijn productaansprakelijkheid en circulaire economie' (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 417.

²³³⁴ See US Federal Trade Commission, *Nixing the Fix: An FTC Report to Congress on Repair Restrictions* (FTC 2021) 26-32.

Most of these risks which require restricting rather than facilitating, will concern self- or independent repairs or refurbishments by prosumers of particularly dangerous components and materials in certain products, such as warning sensors, blocking or other product safety mechanisms, hazardous substances, moving parts of heavy DIY- and garden tools, pressurized vessels or certain products intended for small children, the elderly or either physically or mentally impaired individuals.

Finally, it is important to note that the French prohibition on repair-restricting practices does not provide a general exemption for practices that are necessary for product safety reasons. It therefore violates in my opinion the General Product Safety Regulation 2023/988/EU (see *infra* nr. 397.a). The EU Parliament had proposed in the legislative process leading to the Promoting Repair Directive 2024 a similar, but now EU-wide prohibition on repair-restricting practices without such a product safety exception.²³³⁵ Such regulatory prohibitions can neither violate the PLD-1985 nor the PLD-2024, despite the maximum harmonisation character of these instruments.²³³⁶ Yet, they can lead to the unfortunate consequence that the injured party could no longer obtain compensation for damage caused by a defective product, because the defendant would be able to invoke the compliance defence based on this absolute regulatory prohibition on repair-restricting practices.²³³⁷ Fortunately, however, the final adopted version of the Promoting Repair Directive 2024 has introduced a clause that can still allow repair-restricting practices when “*justified by legitimate and objective factors including the protection of intellectual property rights under Union and national law*”.²³³⁸ If intellectual property concerns can constitute such justifications, then surely product safety concerns to protect product users, repairers and refurbishers against personal injuries and other damage can also qualify under this proposed exception.

²³³⁵ Art. 5(3b) amended draft Promoting Repair Proposal 2023 in EU Parliament, ‘Amendments adopted by the European Parliament on 21 November 2023 on the proposal for a directive of the European Parliament and of the Council on common rules promoting the repair of goods and amending Regulation (EU) 2017/2394, Directives (EU) 2019/771 and (EU) 2020/1828’, P9_TA(2023)0400, 28-29: “Producers shall not impede the repair by any contractual, hardware or software technique. Producers shall not impede the use of original or second-hand spare parts, compatible spare parts and spare parts issued from 3D-printing, by independent repairers when those spare parts are in conformity with requirements under national or Union law.” Less problematic is the other proposed prohibition on repair-restricting activities in art. 5(3c) *ibid.*: “Producers shall not refuse to service or repair a device that was bought or previously repaired outside of their authorised service or distribution networks.”

²³³⁶ See *supra* nrs. 10.d, 180 and 187 on the interaction between the PLD’s defect assessment and *ex ante* product regulation. See *supra* nr. 170 on the PLD’s maximum harmonisation.

²³³⁷ See art. 7(d) PLD-1985; art. 11(1)d PLD-2024. See also *supra* nr. 198 and *infra* nr. 397.a. In other words, restricting the manufacturer’s possibility to freely design a product for other policy reasons than product safety, may occasionally undermine the PLD-1985’s accident-prevention and compensation functions through the mechanism of the compliance defence.

²³³⁸ Art. 5(6) Promoting Repair Directive 2024.

iii. Product presentation: warnings

380. ORIGINAL WARNINGS AGAINST PARTICULAR REPAIR OR REFURBISHMENT ACTIONS: A POTENTIAL ROLE, IF ISSUED AT THE LATEST WHEN A PRODUCT IS PLACED ON THE MARKET OR PUT INTO SERVICE – Warnings against specific attempts at self- or independently repairing or refurbishing a particular product or component, including against the use of non-original spare parts of certain components, can sometimes avoid that a product would be considered defective due to accident risks it poses either during or after those circular reproduction activities. Both literature and case law indeed frequently refer to warnings in the more general context of avoiding that a product becomes defective due to risks of reasonably foreseeable misuse.²³³⁹ HOWELLS warns in particular that a “*product might be rendered dangerous by poor repairs or cause harm during the repair because of a failure to warn of potential dangers related to the repair.*”²³⁴⁰ Warnings originating from a product’s original distribution chain (‘original warnings’)²³⁴¹ are indeed a key part of the “*presentation of the product*”, which is pursuant to art. 6(1)a PLD-1985 and art. 7(2)a PLD-2024 part of the defect assessment.²³⁴² So-called ‘information defects’ often consist of a failure to warn.²³⁴³

However, this dissertation argues that original warnings can only play a relatively modest role in ensuring that a product is not defective with regards to accident risks during or after repairs or refurbishments intervening in its lifecycle. Conversely, it is also possible that a warning makes a product defective, by being factually incorrect and making a repair or refurbishment more unsafe. Such product defects because of rather than in spite of warnings, are examined *infra* nrs. 399 et seq.

Warnings can only be considered in a product’s defect assessment when they are communicated in a sufficiently accessible manner (see *infra* nr. 382) at the latest when the corresponding, individual product has been placed on the market or put into service.²³⁴⁴ As a

²³³⁹ See BELGIUM: Antwerpen 4 december 2002, *T.Verz.* 2003, 833, 836; Antwerpen 26 September 2006, *RW* 2008-09, 618; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 175. See also Liège 25 October 2011, *RGAR* 2012, nr. 148.56, *Bull.ass.* 2013, 100. GERMANY: OLG Düsseldorf 14 June 2002, 14 U 248/99, *RuS* 2004, 36, *Juris*; OLG Bamberg 26 October 2009, 4 U 250/08, *NJW-RR* 2010, 902, *Juris*; Taschner and Frietsch, *Kommentar*, 277-278; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3604, 10; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 3, nr. 24; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 3, nrs. 61, 69; J. Taeger, ‘§ 3 ProdHaftG’ in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nrs. 42-43. SEE ALSO: Howells, ‘strict liability’, nrs. 4.165, 4.169, 4.186; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 11.57.

²³⁴⁰ Howells, ‘strict liability’, nr. 4.170.

²³⁴¹ *Infra* nr. 383 it is argued that, when the defendant is a (quasi-)manufacturer, importer or more upstream distributor, this encompasses warnings issues by more downstream distributors as long as these have been issued with (tacit) knowledge and approval of the former and can be considered as being attributable to them.

²³⁴² Howells, ‘strict liability’, nr. 4.66; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 56. See also *supra* nr. 182 and *infra* nr. 389.

²³⁴³ See Borghetti, *La responsabilité du fait des produits*, 443-444, 455-456; Howells, ‘strict liability’, nr. 4.165; Fairgrieve et al., ‘Product Liability Directive’, 57-58. See *supra* nr. 174 regarding the fault-based overtones in the defect assessment for information defects (which are closely related to design defects).

²³⁴⁴ Art. 6(1)c PLD-1985; art. 7(2)e PLD-2024. See *supra* nrs. 371-372 regarding this fundamental principle

side note, art. 7(2)e PLD-2024 introduces an additional, later cut-off date when a product has at a later moment in time “*left the control of the manufacturer*”, but this dissertation argues *infra* nrs. 403-404 against considering original, post-marketing warnings as constituting a potential application of such extended ‘manufacturer’s control’ (see *infra* nrs. 402-403).

Original warnings issued after a particular product has been placed on the market or put into service (‘post-marketing’), often as a result of product safety requirements,²³⁴⁵ can of course be effective in preventing the occurrence of product accidents during or shortly after a repair or refurbishment, which can remove the need for any product liability altogether. However, if a product is defective at the time when it is placed on the market or put into service, for example due to a lack of safe repairability, and if this defect causes an accident despite a subsequent post-marketing warning issued precisely to address this risk, then there is irrevocably still a harmonised product liability risk for defendants in the product’s original distribution chain. After all, the PLDI remains a ‘quasi-strict’ liability tied to the act of placing a defective product on the market or putting it into service and is thus also assessed at that time (see *supra* nrs. 184 and 371-372). Moreover, warnings are often ineffective in actually reaching and changing the behaviour of self- and independent repairers or -refurbishers (see also *infra* nr. 381), which further supports rejecting post-marketing warnings as being relevant to a product’s defect assessment.

381. ORIGINAL WARNINGS AGAINST PARTICULAR REPAIR OR REFURBISHMENT ACTIONS: A LIMITED ROLE IN AVOIDING A PRODUCT DEFECT QUALIFICATION – Warnings against particular repair or refurbishment actions, which are communicated in a sufficiently conspicuous manner (see *infra* nr. 382) at the latest when the repaired or refurbished product was placed on the market or put into service, can thus have some impact on the assessment whether the product is defective due to a lack of safe repairability or refurbishability (see *supra* nr. 380). However, as recital 31 PLD-2024 now confirms,²³⁴⁶ this potential impact on avoiding a defect qualification should remain limited. Three underlying reasons can be given for these inherent limitations.

First of all, all kinds of self- and independent repair and refurbishment actions are now reasonably foreseeable in general, supported by various social, technological and regulatory developments (see *supra* nr. 373). Hence, warnings against particular repair or refurbishment actions should in principle only be relied upon in cases where it would no longer be

and the resulting distinction between a ‘differentiated’ and ‘single’ defect assessment. See also Howells, ‘strict liability’, nr. 4. 163 who mentions that a defendant can invoke the posteriority defence if he is held liable for a product which is only rendered defective as a result of marketing taking place after he himself ‘supplied’ the product (the UK PLDI’s version of ‘putting into circulation’). Note, however, that the posteriority defence is strictly speaking not at stake if there is no proof of defect to begin with.

²³⁴⁵ E.g., arts. 9(8)b, 11(8)c and 35 General Product Safety Regulation 2023/988/EU. See *supra* nrs. 10 and 151.

²³⁴⁶ Recital 31 PLD-2024: “The assessment of defectiveness should take into account the presentation of the product. However, warnings or other information provided with a product cannot be considered sufficient to make an otherwise defective product safe, since defectiveness should be determined by reference to the safety that the public at large is entitled to expect. [...]”

legitimate²³⁴⁷ to expect that these risks could have been prevented instead by an alternative, more safely repairable product design and/or by providing repair instructions, spare parts and other support for safer self- or independent repair (see *supra* nr. 379.c-d). For example, an electric bicycle's disk brake can be considered too dangerous to be self- or independently repaired by prosumers, which might justify a warning against such repairs. But warning against self-repairs of every single component of the same bicycle, is unlikely sufficient to avoid a defect qualification when a prosumer nevertheless attempts to repair it and an accident ensues. As another illustration, the nuts and bolts to fixate a child seat at the back of said bicycle can be considered defective if they can in a repair seemingly be fastened by using ordinary DIY-tools while they actually require proprietary instruments and, as a result, create a misleading impression of a successful repair while the seat is actually insufficiently fastened and prone to come loose while riding. In such scenario, a blanket warning in a manual against self-repair of many or all of the bike's components, including these more inconspicuous nuts and bolts, is unlikely to overcome their defectiveness due to a misleading lack of safe repairability.

Second and most importantly from the perspective of accident-prevention, overreliance on warnings is problematic due to the behavioural insights that have already been sketched *supra* nr. see *supra* nr. 182. The cognitive capacity of consumers is bounded,²³⁴⁸ which imposes general limitations on the chance that they effectively perceive, process and act upon warnings relating to whether and how to repair a particular product or component. Such warnings are thus often inefficient in steering consumer behaviour in general and unnecessarily 'over-warning' for certain risks can degrade the effectiveness of other warnings which still remain necessary. Instead, as advocated in recent years by more and more scholars and courts,²³⁴⁹ a 'safety hierarchy' should be applied, according to which accident risks should wherever possible be mitigated through product design rather than through providing information to consumers (see *supra* nrs. 182 and 379.d). Qualitative repair information, spare parts and supporting services might also be provided as an alternative to warnings for mitigating accident

²³⁴⁷ This refers to general defect criterion of the safety expectations that the public "*is entitled to expect*" (recital 6 and art. 6(1) PLD-1985; art. 7(1) PLD-2024). See also *supra* nrs. 174 and 179 on how this allows to some extent to use risk-utility considerations as a limitation to the consumer expectation test.

²³⁴⁸ This basic insight is often conceptualized according to 'dual-process theory', a long-running theoretical approach in cognitive psychology of which the most popularly known version is how KAHNEMAN distinguishes between the more intuitive, fast, subconscious and/or emotional 'system 1' and the more demanding, slow, conscious and language- and rule-driven 'system 2' (see, e.g., for popular sources by authors who have prominently applied these behavioural insights to economics and public policy design D. Kahneman, 'Maps of Bounded Rationality: Psychology for Behavioral Economics' (2003) 93 *The American Economic Review* 1449, 1450-1452; D. Kahneman, *Ons feilbare denken: Thinking, fast and slow* (Business Contact 2011) 38-114; R. Thaler and C. Sunstein, *Nudge: Improving Decisions about Health, Wealth, and Happiness* (Yale University Press 2008) 19-22). See more generally on the current state in the underlying fields of psychological science J. Evans and K. Stanovich, 'Dual-Process Theories of Higher Cognition: Advancing the Debate' (2013) 8 *Perspectives on Psychological Science* 223; G. Pennycook, 'A perspective on the theoretical foundation of dual-process models' in W. De Neys (ed.), *Dual Process Theory 2.0* (Routledge 2018) 5-27. See also *supra* footnotes 636-637 and 865 on some of the heuristics and biases at play, which further facilitate but also skew daily human behaviour.

²³⁴⁹ See sources cited *supra* footnotes 1083-1087.

risks relating self- or independent repairs, as discussed in following sections. It is indeed reasonably foreseeable that a warning or disclaimer somewhere in dense product documentation is overlooked by many self- or independently repairing prosumers, they may consult independently drafted repair instructions instead, such as those shared on collaborative repair websites like iFixit²³⁵⁰ and, overall, a significant part of the ‘right to repair’ movement tends to be sceptical of overly protective warnings by original manufacturers against self- and independent repairs.²³⁵¹

Third, (quasi-)manufacturers and importers sometimes try to dissuade consumers from self- or independently repairing their products by means of a warning, often affixed to a seal, stating “*Warranty void if seal is broken*” or a similar message to the same effect. Besides the aforementioned harmonised product liability limitations to warnings against self- and independent repair activities, such warnings can potentially also violate EU consumer sales, unfair contract terms and unfair commercial practice law (see *supra* nr. 379.d). This is especially true if they would create an impression that a consumer loses his consumer sales legal guarantee or other statutory rights once an independent or self-repairer would peel off the seal.²³⁵²

382. ORIGINAL WARNINGS AGAINST PARTICULAR REPAIR OR REFURBISHMENT ACTIVITIES: METHOD – Warnings against self- or independent repairs or refurbishments can thus in particular, relatively narrow circumstances still ensure that a product is not defective, especially warnings which focus on inexperienced prosumers and are limited to particularly risk-prone components for which an alternative, more safely repairable design was not feasible. Nevertheless, to avoid a defect qualification, it remains also in these cases crucial that the warning is sufficiently effective in actually reaching and steering the behaviour of its intended audience. For some rare warnings required by regulation, for example those required in product safety requirements,²³⁵³ or in industry standards, it might be specified how they should be communicated. But in most cases, this is entirely up to the manufacturer. In her dissertation, PAPE sets out four requirements for adequate warnings: salience, legibility, sufficient comprehensibility and memorability, and persuasiveness.²³⁵⁴ While each requirement is crucial,

²³⁵⁰ E.g., ‘Repair Guides’ <www.ifixit.com/Guide>; ‘Guides de réparation: pros & gratuits’ <www.sosav.be/guides>; ‘Suivez notre outil de diagnostic de panne’ <www.spareka.fr/comment-reparer>; ‘Finde hier die passende Anleitung für dein Gerät’ <www.kaputt.de/optionen/anleitungen>.

²³⁵¹ See also *supra* nr. 87 on the different currents in the ‘right to repair’ movement.

²³⁵² Arts. 10, 17(2) and 21(1) Consumer Sales Directive 2019/771; art. 3 Unfair Contract Terms Directive; art. 6(1)g Unfair Commercial Practices Directive. See also E. Terry, ‘A Right to Repair? Towards Sustainable Remedies in Consumer Law’ (2019) *European Review of Private Law* 851, 862-863; E. Van Gool and A. Michel, ‘The New Consumer Sales Directive 2019/771 and Sustainable Consumption: a Critical Analysis’ (2021) 10 *Journal of European Consumer and Market Law* 136, 147.

²³⁵³ See *infra* nrs. 393 et seq. See also A. Michel, *Premature Obsolescence: In Search of an Improved Legal Framework* (Intersentia 2023) 187.

²³⁵⁴ S. Pape, *Warnings and product liability: Lessons learned from cognitive psychology and ergonomics* (PhD, Erasmus Universiteit Rotterdam 2011) 381-388. See also, e.g., from the underlying safety research literature M. Wogalter, M. Kalsher and B. Racicot, ‘The Influence of Location and Pictorials on Behavioral Compliance to Warnings’ (1992) 36 *Proceedings of the Human Factors Society Annual Meeting* 1029; W.

in a more circular economic context, it becomes especially important to think about the precise spot or medium on which a warning is placed and how durable this is, which is all part of PAPE's criterion of 'salience'.

From a product liability perspective, it must be kept in mind that a warning that is too inconspicuous is simply no longer part of the defect assessment criterion of "*the presentation of the product*".²³⁵⁵ What constitutes a sufficient warning technique is obviously a factual appreciation, depending on the nature of a product, its target audience, the risks involved and other circumstances. From a potential defendant's perspective, it is better to err on the safe side, for which some general guidelines can be identified.

In general, it is recommended to visibly and indelibly affix the warning to the product itself, preferably, on the individual components, wherever possible. Warnings that are only present in product documentation or on the product's packaging are easily overlooked and, moreover, risk to no longer be available at the time of a repair or refurbishment. This last risk is particularly acute when a repair or refurbishment is not provided as a service to the original consumer, but coincides with or occurs after a retransfer (see *supra* nr. 288).

Additionally, it is generally advisable that original manufacturers and importers make such warnings, whether they are part of general product information or specific repair instructions (see also *infra* nr. 389), both physically available as well as online.²³⁵⁶ A prospective self- or independent repairer may seek out such information, for example on the (quasi-)manufacturer's website, if it is otherwise not readily available. Digital product passports can in the future potentially be implemented in a comprehensive manner that would include such warnings as well as other repair-related information (see *supra* nrs. 344 and 345.b).²³⁵⁷

383. INDEPENDENT WARNINGS AGAINST PARTICULAR REPAIR OR REFURBISHMENT ACTIVITIES: IRRELEVANT TO AVOID A DEFECT QUALIFICATION, IN CONTRAST TO WARNINGS BY ACTORS IN THE ORIGINAL DISTRIBUTION CHAIN AND SERVICE NETWORK THAT ARE OBJECTIVELY ATTRIBUTABLE TO THE PLACING ON THE MARKET OR PUTTING INTO SERVICE OF THE INDIVIDUAL HARMFUL PRODUCT – The preceding sections discussed 'original' warnings, in particular those affixed to components or printed in product documentation, offered by the (quasi-)manufacturer or importer when placing a product on the market or putting it into service. However, in a more circular economy where more self- and independent repairs and refurbishments occur, certain warnings relating to repair and refurbishment risks can be issued by independent actors, like networks of

Rogers, N. Lamson and G. Rousseau, 'Warning Research: An Integrative Perspective' (2000) 42 *Human Factors* 102; M. Wogalter, C. Mayhorn and K. Laughery, 'Warnings and hazard communications' in G. Salvendy and W. Karwowski (eds.), *Handbook of Human Factors and Ergonomics* (5th edn., Wiley 2021) <<https://doi.org/10.1002/9781119636113.ch24>> accessed 2024/01/26.

²³⁵⁵ Art. 6(1)a PLD-1985; art. 7(1)a PLD-2024.

²³⁵⁶ However, only relying on online information is arguably not desirable, especially for important warnings. See also C. Hodges, *European Regulation of Consumer Product Safety* (Oxford University Press 2005) 126-127.

²³⁵⁷ See Viegand Maagøe, Oeko-Institut and Van Holsteijn & Kemna, *Preparatory study for the Ecodesign and Energy Labelling Working Plan 2020-2024: Task 3. Preliminary analysis of product groups and horizontal initiatives. Final* (2021) 605; A. Michel, *Premature Obsolescence: In Search of an Improved Legal Framework* (Intersentia 2023) 198.

repairing prosumers and small repair businesses. iFixIt publishes for example numerous repair guides which naturally pay attention to safety risks and include various forms of warnings.²³⁵⁸ Moreover, downstream distributors, potentially even online platforms, can as intermediaries also offer and publicize warnings when they (help to) make products available. Can defendants in the original distribution chain of a subsequently repaired or refurbished product argue that a product was not defective given the presence of appropriate warnings, originating from downstream distributors or completely independent third parties, when this could help to make a product safely repairable or refurbishable?

The extent to which communications by downstream distributors and third parties can be considered as part of “*the presentation of the product*” pursuant to art. 6(1)a PLD-1985 and art. 7(1)a PLD-2024 is a challenging question. Even if one pursues a very ‘strict’ interpretation of harmonised product liability,²³⁵⁹ a solution must be balanced based on grounds of both corrective justice and efficiency in accident-prevention, which imply that liability should only be imposed for one’s self-generated (abnormal) risks over which a person has control and which he therefore can reduce by taking care and considering his activity levels (see in particular *supra* nrs. 108-109, 127 and 128.c). Defendants have in principle no control over the conduct of completely independent third parties. Moreover, it must be noted that product information can equally contribute to rather than help to avoid a defect qualification, which makes this appreciation a double-edged sword (cf. *infra* nrs. 406-407).

- a. An approach that is in my opinion satisfactory and balanced, has been presented by GRAF VON WESTPHALEN and subsequently affirmed by several German authors. They hold that the product defect assessment must consider communications that are objectively ‘attributable’ to the product’s producer, which I reinterpret according to the PLD-2024’s terminology as being ‘attributable’ to the placement on the market or putting into service of a product. This might consist of sufficiently conspicuous (see *supra* nr. 382) warnings by a downstream distributor of the same product, if these have been tacitly accepted and potentially even encouraged by the more upstream actor in the distribution chain (see *infra* nr. 383.b) who placed the product on the market.²³⁶⁰ Likewise, warnings and other information provided by original maintenance, repair or even refurbishment service providers might potentially also be attributable to a product’s placement on the market or putting into service.²³⁶¹ OECHSLER is correct to emphasize two crucial remarks. First of all, not the knowledge of the primarily liable defendant is

²³⁵⁸ ‘Repair Guides’ <www.ifixit.com/Guide>.

²³⁵⁹ Note that the PLD combines features of strict liability with more fault-based overtones, especially regarding information and design defects. See *supra* nrs. 173-174.

²³⁶⁰ See Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 48, nr. 48; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3604, 13-14; G. Wagner, ‘Produkthaftungsgesetz’ in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 3, nr. 23. See also Howells, ‘strict liability’, nr. 4.162 (referring to advertisements by trade associations as attributable to defendants in a product’s distribution chain). *Contra* Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 3, nr. 43a (adopting a stricter liability view which seemingly considers any communications by third parties as potentially part of a product’s presentation).

²³⁶¹ See the references to *Werkstätten* (workshops) in Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 48, nr. 48; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3604, 13-14.

actually decisive, given the product defect assessment's objective nature, but rather whether the information provided by downstream distributors or original service providers is sufficiently public, prominent and not corrected, that this can be reasonably considered by the public as a part of the product's presentation or reasonably foreseeable use.²³⁶² Second, such information provided by downstream distributors or original service providers can only be considered as part of a product's presentation or reasonably foreseeable use, if these are already issued at the latest when the individual, harmful product was placed on the market or put into service (see also *supra* nrs. 371-372 and 380).²³⁶³ It therefore remains limited to widely available, warnings and other information relating to a particular product type, which are already present at the time when the individual, eventually harmful product was placed on the market or put into service.

- b. Note that some downstream actors in a distribution chain actually place the product (again) on the market or put it into service, like a quasi-manufacturer or (*de lege ferenda*) certain independent substantial modifiers.²³⁶⁴ In contrast to distributors and others who merely make products available, these actors can more directly shape the 'presentation' of the concrete, individual product they place on the market or put into service (but see *supra* nr. 382). Hence, the warnings or other product information they provide, automatically have direct relevance for the defect assessment of this individual product.
- c. Warnings and other information provided by completely independent third parties, who are not part of the product's original distribution chain or service network, are a different matter. *Infra* nrs. 407-408, it is argued that flawed repair information as well as combinations with defective ancillary products and services originating from third parties, can in quite exceptional cases render a main product defective, if such information and ancillary products and services from third parties pose accident risks that were already reasonably foreseeable when the main product was placed on the market or put into service. Inversely, however, I do not in a similar manner consider the availability of non-defective, sound warnings or other ancillary products and services that originate from independent third parties as relevant to dispute a product's potential defect qualification (see also *infra* nrs. 388 and 392). The existing literature, which actually only discusses cases where information provided by third parties is defective rather than potentially helpful in avoiding a defect qualification,²³⁶⁵ seems to implicitly support this

²³⁶² Oechsler, Staudinger, 'Produkthaftungsgesetz', § 3, nr. 43a.

²³⁶³ *Ibid.*, nr. 43a. See art. 6(1)c PLD-1985; art. 7(2)e PLD-2024.

²³⁶⁴ Independent substantial product modifiers liable based on art. 8(2) PLD-2024 *de lege lata* either 'put a product into service' or 'make it available on the market'. The former hypothesis leads to a differentiated defect assessment while the latter to a single defect assessment, which makes him similar to the downstream distributor discussed earlier in this section. See regarding this and the amendment this dissertation proposes *supra* nrs. 265, 311 and 315.

²³⁶⁵ See, e.g., Oechsler, Staudinger, 'Produkthaftungsgesetz', § 3, nr. 43a. OECHSLER seems to be comparatively most in favour of attributing actions by third parties to the objective presentation of a product pursuant to art. 6(1)a PLD-1985. However, even this author only discusses this with regards to defective

distinction. Moreover, it aligns with the Directive's goal of protecting injured parties as well as with this dissertation's normative criteria of efficient risk-allocation and accident-prevention (see *supra* nrs. 106, 108 and 168). Hence, defendants who place a product on the market or put it into service, must themselves ensure that at that time the necessary information and other ancillary services and products are available to ensure that their product is not defective.

Art. 7(2)d PLD-2024's new explicit defect assessment criterion relating to "*the reasonably foreseeable effect on the product of other products that can be expected to be used together*" should therefore be interpreted as potentially contributing to a defect qualification (see *infra* nrs. 407-408). But it should not be used as a potential excuse for defendants who have placed a product on the market or put it into service that happens to only provide the required safety through information or other ancillary services and products which have accidentally been offered by independent third parties.

In conclusion, a defendant cannot argue that a product, which caused an accident during or after a repair or refurbishment, had been not defective due to warnings addressing the particular accident risk that occurred, if these have been issued by completely independent third parties, even if such warnings are publicly available like the widely used, online iFixIt resources. Yet, warnings issued by downstream distributors or original service providers relating to safe repairability for the same product type can be considered in the defect assessment, but only when these were already present, widely available and tacitly accepted or even encouraged at the time when the individual harmful product was placed on the market or put into service.

iv. Product presentation: repairability advertisement

384. PRODUCT REPAIRABILITY ADVERTISEMENT – As a consequence of the perceived economic, social and environmental benefits of circular strategies to extend product lifetimes and the 'right to repair' movement (see *supra* nrs. 61-64 and 87), more consumers are (again) interested in the repairability²³⁶⁶ of durable consumer goods they consider buying. More B2C companies are consequently advertising the repairability of their products, like bikes and other vehicles, sports items ranging from skis to surfboards as well as outdoor and camping equipment. In addition to purely market-driven incentives, regulatory instruments like the Promoting Repair Directive 2024, the Empowering Consumers for the Green Transition Directive 2024/825 and, most comprehensively, the French *indice de réparabilité*, require now both manufacturers and distributors to explicitly communicate to consumers about product repairability, including on the availability of spare parts, repair instructions and original repair services (see *infra* nrs. 394-397).

information provided by third parties that can render a product defective (see *infra* nr. 407). See also, e.g., other sources cited *supra* footnote 2360.

²³⁶⁶ By nature, repairability also encompasses a technical potential for subsequent refurbishment of the same products as well as potentially even its remanufacturing or re-use of components. Cf. *supra* nrs. 88-91.

If such B2C provided product repairability information would be incorrect or misleading, it could violate existing unfair commercial practices regulation,²³⁶⁷ in addition to possible repercussions under national contract law. The likelihood of such a finding will likely increase with the adoption of the Empowering Consumers for the Green Transition Directive 2024/825. This is due to its explicit confirmation that “*repairability*” is a product characteristic about which consumers should not be deceived.²³⁶⁸ But this is even more so as a result of the new inclusion in the ‘blacklist’ of automatically prohibited practices of the following provision: “[p]resenting a good as allowing repair when it does not.”²³⁶⁹ Additionally, this same new Directive together with the still not yet adopted Green Claims Proposal 2023 require B2C traders of products to be able to substantiate explicit claims relating to the repairability of products.²³⁷⁰

However, advertisement and other forms of communication emphasizing a product’s repairability could also be consequential from the perspective of harmonised product liability. Presenting a product that is being placed on the market or put into service as easily and safely repairable and possibly promising the availability of original spare parts, repair information and other support services (see also *infra* nrs. 385 and 389), ultimately increases the public’s safety expectations pursuant to art. 6(1)a PLD-1985 and art. 7(2)a PLD-2024.²³⁷¹ When this product subsequently injures a person or damages other goods either during or after a repair or refurbishment, such presentation can be pertinent to establish a product defect in causal relationship to the damage.

Nevertheless, when such advertisement originates from a downstream distributor or original service network member, this advertisement must be sufficiently public and prominent that it can be objectively attributed to the product’s objective presentation. This excludes claims made by a completely independent third party or occasional and inconspicuous claims made by a downstream retailer which could not be seen as having been tacitly accepted by a defending (quasi-)manufacturer, importer or more upstream distributor (see *supra* nr.

²³⁶⁷ See arts. 6(1)b and 7 Unfair Commercial Practices Directive.

²³⁶⁸ Art. 1(2)a Empowering Consumers for the Green Transition Directive 2024/825. This is actually a mostly symbolic confirmation, since consumers should already based on current arts. 6(1)b and 7(4) Unfair Commercial Practices Directive not be misled through an action or omission on the repairability of offered products. See Commission Notice ‘Guidance on the interpretation and application of Directive 2005/29/EC of the European Parliament and of the Council concerning unfair business-to-consumer commercial practices in the internal market’ [2021] OJ C526/1, 75-86.

²³⁶⁹ Annex I, nr. 4 Presenting a good as allowing repair when it does not.

²³⁷⁰ See art. 1(2)b and Annex I, nr. 2 Empowering Consumers for the Green Transition Directive 2024/825; arts. 3-6 and 14-17 Green Claims Proposal 2023. See also on the interplay between private and public enforcement as well as the supporting role of *soft law* in the broader context of ‘greenwashing’ E. Terryn, ‘Lutter contre l’écoblanchiment est nécessaire mais ne suffit pas pour atteindre une consommation responsable’ (2022) 47 *Revue Juridique de l’Environnement* 73; E. Van Gool, “Climate-washing’: B2C communicatie in de klimaatcrisis beoordeeld in het licht van oneerlijke handelspraktijken, soft law en nieuwe wetgeving’ (2023) *Droit de la Consommation / Consumentenrecht* 3, 37-58.

²³⁷¹ See Taschner and Frietsch, *Kommentar*, 298; Howells, ‘strict liability’, nr. 4.162; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 10.71; Staudinger, ‘Produkthaftungsgesetz’, § 3, nrs. 44-45; G. Wagner, ‘Produkthaftungsgesetz’ in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 3, nr. 18. See also *supra* nr. 236.

383).²³⁷² Moreover, such advertisement must be already present when the particular product was placed on the market or put into service.²³⁷³ Later advertisement can be pertinent from the perspective of national (in particular contractual) liability law. But it must be disregarded from harmonised product liability's 'single defect assessment' perspective, which applies among others to mere distributors in the original distribution chain (see also *supra* nrs. 310 and 372).

v. Product presentation and reasonably foreseeable use: the availability of repair and refurbishment services

385. ORIGINAL REPAIR OR REFURBISHMENT SERVICES AVAILABILITY: A VERY LIMITED ROLE IN AVOIDING A PRODUCT DEFECT QUALIFICATION – Manufacturers and other actors in the distribution chains of durable consumer goods decide primarily on the basis of commercial reasons whether to offer original repair and refurbishment services.²³⁷⁴ However, offering such services can also be relevant for them in defence against a claim holding that their product was defective due to a lack of safety during or after a self- or independent repair or refurbishment. Through such available 'original'²³⁷⁵ services, the consumer would have had a presumably safe alternative to a potentially unsafe self- or independent repair or refurbishment.²³⁷⁶

Such services can indeed to a limited extent be taken into consideration in the product defect assessment, because they are effectively a (minor) part of the overall "*presentation of the product*" and because they can also marginally influence "*the use to which it could reasonably be expected that the product would be put*" (see also *infra* nr. 389).²³⁷⁷ Note how the Promoting Repair Directive 2024 provides support for this mechanism through two new rules that will make original product repairs much more pervasive in the future. First of all, it proposes to make repair a more attractive remedy in EU consumer sales, by extending the legal guarantee period with 12 months after a good has been brought back into contractual conformity through

²³⁷² See Howells, 'strict liability', nr. 4.162; Graf von Westphalen, '3. Produkthaftungsgesetz', § 48, nr. 48; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3604, 13-14; G. Wagner, 'Produkthaftungsgesetz' in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 3, nr. 23.

²³⁷³ Art. 6(1)c PLD-1985; art. 7(2)e PLD-2024. See also *supra* nrs. 184 and 371.

²³⁷⁴ See also *supra* nrs. 58-61 on the potential economic gains of such circular business models for individual economic actors and *supra* nr. 379.d on competition and unfair commercial restrictions on practices that would unfairly advantage original repair and refurbishment services for one's own products compared to repair and refurbishment alternatives.

²³⁷⁵ See *infra* nr. 388 on precisely when services offered by other parties than a defendant in the product's original distribution chain are no longer 'original repairs or refurbishments' that are attributable to the product's placing on the market or putting into service.

²³⁷⁶ See also art. 8(2) PLD-1985; art. 13(2) PLD-2024 on a potential contributory fault defence, if a product defect that caused the accident would nevertheless be established by the plaintiff.

²³⁷⁷ Art. 6(1)a-b PLD-1985; art. 7(1)a-b PLD-2024. See also *supra* nrs. 182-183 on these criteria in general and *supra* nrs. 373-374 on the reasonable foreseeability of consumer good repairs and refurbishments. See also on how the availability of original repair services, especially when practically accessible and clearly communicated, can change consumer behaviour LE Europe et al., *Behavioural study on consumers' engagement in the circular economy* (EU Commission 2018) 180-181.

a repair.²³⁷⁸ Second, it would require manufacturers, either by themselves or through subcontractors and either for free or against a consideration, to provide original repair services for certain products they have placed on the market or put into service, unless the product repair would be impossible.²³⁷⁹

However, notwithstanding this potential relevance and expected further increase in original repair and refurbishment activities, the impact on the defect assessment must in my opinion remain limited, due to the same fundamental reasons that were already mentioned *supra* nr. 380 in relation to warnings. For many products and components, self- and independent repairs and refurbishments are in principle reasonably foreseeable (see *supra* nr. 373). And the behavioural insights underpinning the ‘safety hierarchy’ (see *supra* nr. 182) also apply to consumer conduct in relation to product repairs and refurbishments. Hence, the availability of original repair and refurbishments services can only be considered in the defect assessment, to the extent that it would no longer be legitimate²³⁸⁰ for the public to expect instead that the product should have been more safely self- and independently repairable or refurbishable.

Returning to two examples discussed *supra* nr. 380, a lack of safe self-repairability of the electric bicycle’s disk brake might be overcome with a clear warning that also emphasizes the availability of original repair services.²³⁸¹ Yet, the availability of such services is likely insufficient to avoid a defect qualification for the child seat connection, since this seems to be a dangerously misleading lack of safe repairability for which a more safely repairable alternative design could have been legitimately expected. ‘Right to repair’ regulation (see *supra* nr.

²³⁷⁸ Art. 16 Promoting Repair Directive 2024 (proposing to amend art. 10 Consumer Sales Directive 2019/771). Admittedly, this would only increase ‘original’ repair services when new products are sold through a product’s original distribution chain, not if the B2C seller would happen to be an independent reseller of second-hand goods. Note that the Commission had, much more ambitiously, proposed instead to prioritise repair as the sole primary remedy over replacement, unless the latter would be cheaper for the trader (art. 13 in Commission, ‘Proposal for a Directive of the European Parliament and of the Council on common rules promoting the repair of goods and amending Regulation (EU) 2017/2394, Directives (EU) 2019/771 and (EU) 2020/1828’ COM(2023) 155 final) See arguing in favour of the same approach in the recent past E. Maitre-Ekern and C. Dalhammar, ‘Towards a hierarchy of consumption behaviour in the circular economy’ (2019) 26 *Maastricht Journal of European and Comparative Law* 394, 419-420; E. Van Gool and A. Michel, ‘The New Consumer Sales Directive 2019/771 and Sustainable Consumption: a Critical Analysis’ (2021) 10 *Journal of European Consumer and Market Law* 136, 145; F. Zoll et al., ‘Academic proposal for amending the Directive (EU) 2019/771 of the European Parliament and of the Council of 20 May 2019 on certain aspects concerning contracts for the sale of goods’ (2022) *Transformacje Prawa Prywatnego* 109, 139-144.

²³⁷⁹ Art. 5 Promoting Repair Directive 2024. When a product has been imported into the EU, this obligation becomes first incumbent on the manufacturer’s authorised representative. Only if the latter is unavailable, the importer becomes responsible. And if no importer is available, the original repair service obligation is subsequently borne by the product’s distributor (art. 5(2) *ibid.*). Importantly, this will only apply to products that are listed in an annex to the proposal and “to the extent that” Ecodesign repairability requirements have been established for these products (art. 5(1) *ibid.*). This seems to imply that it would not extend to repairs of components and functions of those products that are not affected by those Ecodesign requirements. See also *infra* nr. 393.

²³⁸⁰ See art. 6(1) PLD-1985; art. 7(1) PLD-2024. See also *supra* nrs. 174 and 179.

²³⁸¹ In such cases, a combination of a warning against self-repair with advertisement of original repair or refurbishment services is arguably much stronger than only applying one of these two strategies.

87 and *infra* nrs. 393 et seq.) will play a growing role in this factual assessment. The more it supports and normalizes self- and independent repairs and refurbishments, the less relevant the availability of original repair and refurbishment services becomes for a product defect assessment and *vice versa*.

386. ORIGINAL REPAIR OR REFURBISHMENT SERVICES: ‘FIXATING’ THE TIMING OF A CONTINUOUS FEATURE AS PART OF THE PRODUCT’S DEFECT ASSESSMENT – The availability of original repair or refurbishment services can only fulfil the aforementioned, limited role in the defect assessment if they are already available at the time when an individual product is placed on the market or put into service.²³⁸² Note that, as discussed elsewhere, art. 7(2)e PLD-2024 now allows to postpone this relevant moment if the product would at a later moment ‘leave the manufacturer’s control’.²³⁸³

However, the mere ‘availability of original repair and refurbishment services’ is a tricky element to consider in the defect assessment, since it is a continuous activity (cf. *infra* nr. 390 on the availability of spare parts and repair tools), unlike for example issuing a warning when a product is placed on the market. The existing literature and case law do not seem to (explicitly) discuss how such a continuous activity must be considered as a part of the product’s presentation and its reasonably foreseeable use in the product defect assessment.²³⁸⁴

This dissertation argues for a functional interpretation: it only makes sense to consider an original repair or refurbishment service offering in the defect assessment, if such offering is also available when a repair or refurbishment is eventually sought. As a more general principle, which now also finds support in the update-component of the ‘digital exception to the posteriority defence’,²³⁸⁵ this would mean that a continuous feature can only play a role in a defect assessment when it is not only present when the product is placed on the market or put into service but also throughout the product’s lifecycle when it is necessary to make the product safe. Suppose for example that a manufacturer offers original repair services when placing technically difficult to repair quad bikes on the market but no longer does so when a consumer’s quad breaks down and the consumer subsequently obtains an independent repair service that fails to completely remediate the issue that caused the quad’s malfunctioning. If thereafter, as a result of this issue a harmful accident eventually occurs, then the manufacturer should no longer be able to invoke the original repair service as an element to refute that the quad would have been defective due to a lack of safe repairability.

This interpretation might feel intuitive from the perspective of non-harmonised, national liability law. But it admittedly creates some theoretical friction with the ‘static’ nature of EU

²³⁸² Art. 6(1)c PLD-1985; art. 7(2)e PLD-2024. Repair or refurbishment services offered at a later date, can be effective in preventing accidents and, in doing so, avoid a product liability risk. However, if an accident nevertheless occurs, then such ‘post-marketing’ repair or refurbishments services cannot be considered as part of the defect assessment. See also *supra* nrs. 184 and 371.

²³⁸³ Based on art. 4(5)a(ii) PLD-2024, such extension of the ‘manufacturer’s control’ can potentially also consist of precisely an original repair or refurbishment service that would be effectively called upon and that would subsequently ‘modify’ the product. See *supra* nr. 371 and *infra* nrs. 403-404.

²³⁸⁴ Art. 6(1)a-b PLD-1985; art. 7(2)a-b PLD-2024. See *supra* nr. 385.

²³⁸⁵ Art. 11(2)c PLD-2024. See *supra* nrs. 196, 242 and 248 on this important new rule.

product liability reveals,²³⁸⁶ which expresses itself in the aforementioned ‘single’ and ‘differentiated’ defect assessments’ that clearly fixate on one moment in time (see also *supra* nrs. 371-372). Nevertheless, it seems the only way to appreciate how continuous services and other features of a product that are based on long-term availability can play a meaningful role in the product defect assessment, especially a role that is aligned with the Directive’s goals and this dissertation’s main normative criteria (see *supra* nrs. 130 and 168).

In conclusion, the original repair or refurbishment service offering must be present both when the product is placed on the market or put into service and when a repair or refurbishment is eventually sought, in order to potentially contribute to avoiding a product defect qualification.²³⁸⁷

387. ORIGINAL REPAIR OR REFURBISHMENT SERVICES: METHOD – Also such offering of original repair and refurbishment services, can only have the aforementioned, limited impact on the defect assessment, if they are in practice sufficiently visible and accessible for consumers (see *mutatis mutandis supra* nr. 382).

On the one hand, in terms of ‘salience’, the original repair or refurbishment service must be prominently advertised, for example on the product’s packaging, next to warnings in the product documentation against self-repairing a specifically dangerous component (see *supra* nr. 380) and/or on an easily retrievable website with a search function to find the nearest original service provider. Note in this regard that the Promoting Repair Directive 2024, where it requires manufacturers to provide original repair services, also demands that consumers are informed on this repair possibility “*in an easily accessible, clear and comprehensible manner, for example through the online platform referred to in Article 7*”.²³⁸⁸

On the other hand, in terms of ‘persuasiveness’,²³⁸⁹ the original repair or refurbishment service must, in comparison with (independent) alternatives, not be prohibitively expensive and offer to consumers sufficient practical convenience. For example, this may imply that the availability of original repair services with unreasonably long service durations, without on-site repairs or without practical pickup and return options,²³⁹⁰ is no longer relevant in the assessment whether a product is sufficiently safely repairable or refurbishable.

²³⁸⁶ Art. 6(1)c PLD-1985; art. 7(2)e PLD-2024. See *supra* nrs. 184 and 310 et seq.

²³⁸⁷ In contrast, this dissertation argues *infra* nr. 401 that when an original repair or refurbishment service or ancillary product is itself defective, it suffices that it is only defective when the product is placed on the market or put into service, to constitute a product defect. No continuous availability of the defective ancillary product or service is required, but the plaintiff must of course also prove the causal connection between such defect and the damage.

²³⁸⁸ Art. 6 Promoting Repair Directive 2024. The “online platform” has to be set up by each Member State and should become an information source where consumers can find both original and independent repair services as well refurbished products (art. 7 *ibid.*).

²³⁸⁹ Under the ‘persuasiveness’ heading, PAPE refers among others to “costs of compliance; [...] time stress; [...]” (S. Pape, *Warnings and product liability: Lessons learned from cognitive psychology and ergonomics* (PhD, Erasmus Universiteit Rotterdam 2011) 388). See also D. DeJoy, ‘A Revised Model of the Warnings Process Derived from Value-Expectancy Theory’ (1991) 35 *Proceedings of the Human Factors Society Annual Meeting* 1043.

²³⁹⁰ See on the impact of these price and convenience factors on the number of consumers choosing such

388. INDEPENDENT REPAIR OR REFURBISHMENT SERVICES: IRRELEVANT TO AVOID A DEFECT QUALIFICATION, IN CONTRAST TO ‘ORIGINAL’ SERVICES BY OTHER ACTORS IN THE DISTRIBUTION OR SERVICE NETWORK THAN THE MANUFACTURER – The fact that high-quality repair or refurbishment services were continuously offered by independent third parties cannot be relevant in the assessment whether a product had been safely repairable or refurbishable. A defendant in the product’s original distribution chain can for example try to raise this as a factual argument when prosumers or others get injured either during an unsuccessful self-repair or when they use a self-repaired product like a cargo-bike or DIY-tool shortly afterwards.

Only original repair or refurbishment services that are already available when the individual harmful product was placed on the market or put into service but also when the flawed intervention occurred, can play the aforementioned, limited role in determining to what extent a durable consumer good provided sufficient in the repair and refurbishment context (see *supra* nrs. 385-386). In addition to the (quasi-)manufacturer or importer who placed the product on the market or put it into service, such ‘original’ services might also be offered by downstream distributors in the original distribution chain or actors in the authorised service network.

The reasons for rejecting service offerings by completely independent third parties that are not ‘attributable’ to the original marketing of the product, have already been discussed *supra* nr. 383.²³⁹¹

vi. Product presentation and reasonably foreseeable use: availability of repair information, tools and spare parts as ancillary resources to the main product

389. AVAILABILITY OF ORIGINAL REPAIR INFORMATION, SPARE PARTS AND TOOLS: A SUBSTANTIAL ROLE IN AVOIDING A PRODUCT DEFECT QUALIFICATION – A more crucial strategy for defendants in a product’s original distribution chain to avoid a product defect qualification relating to insufficient safety during or after independent and self-repairs or refurbishments, is to facilitate the safety and success of such activities by providing original, first-rate information and resources to conduct safe and effective independent and self-repairs and refurbishments (see *supra* nr. 379.c).²³⁹² This can consist of how-to manuals and videos, exploded product or connection diagrams, original spare parts and, if necessary specialized tools. As HOWELLS confirms: “a product might be defective because of the lack of proper instructions on how the product can be repaired.”²³⁹³

repair services TNS Political & Social, *Flash Eurobarometer 367 – Attitudes of Europeans towards building the single market for green products* (EU Commission 2013) 112-114; LE Europe et al., *Behavioural study on consumers' engagement in the circular economy* (EU Commission 2018) 180-181.

²³⁹¹ Relevant German scholarship is cited *supra* footnotes 2360-2362, but note that these sources remain limited to warnings, advertisement and product information offered by other actors than ‘the producer’ and do not explicitly discuss features like repair and refurbishment service offerings.

²³⁹² I. Lacroix, *Recht op herstellen: aansprakelijkheids- en verbintenissenrechtelijke implicaties van de circulaire economie* (die Keure 2022) 81.

²³⁹³ Howells, ‘strict liability’, nr. 4.170. See also A. Fortunato, ‘Le service à distance d’aide à la réparation de

On the one hand, original repair information can be considered to be part of “*the presentation of the product*”.²³⁹⁴ It is ancillary to a product, just like warnings, installation and use instructions.²³⁹⁵ Hence, it should not be considered as a separately provided information service that would fall entirely outside the scope of the PLD.²³⁹⁶ Similarly, also the availability of original spare parts and repair tools can be considered as part of a product’s overall presentation, since these are relevant product accessories that can help to extend the lifespan of a product, similar to an offering of original repair or refurbishment services (cf. *supra* nr. 385).

Furthermore, original repair information, spare parts or repair tools marginally make a supported self- or independent repair or refurbishment more reasonably foreseeable during a product’s lifecycle (see *supra* nr. 373),²³⁹⁷ which is another key criterion in the same product defect assessment.²³⁹⁸ And the potential role played by these repair- and refurbishment-enabling, ancillary resources, is further strengthened to the extent that ‘right to repair’ regulation actually requires manufacturers and others to make such resources like repair information and spare parts available,²³⁹⁹ which is now increasingly happening in Europe (see *infra* nrs. 393-397).

However, despite their importance, also original repair-enabling resources are definitely not a ‘silver bullet’ which can avoid any potential defect relating to repairs and refurbishments throughout a product’s lifecycle, even if they would hypothetically meet the highest quality standards imaginable and even there would be no obstacles for accessing and using them. First of all, this is because there effectively remain specific risks for which facilitating self- or independent repairs and refurbishments or remanufacturing is not an option and for which one or more of these activities must instead be prevented through warnings or, when feasible, preferably, through choices for a more safely repairable or refurbishable product design (see *supra* nrs. 379.d and 380).²⁴⁰⁰ Second, this is because consumers and even more professional independent repairers and refurbishers have clear behavioural limitations to the extent to which they can be expected to find, process and implement complex repair instructions as well as to timely obtain and use original spare parts and repair tools (see also *supra* nr. 182).

produits’ (2022) 47 *Revue Juridique de l'Environnement* 91 nr. 15; I. Lacroix, *Recht op herstellen: aansprakelijkheids- en verbintenissenrechtelijke implicaties van de circulaire economie* (die Keure 2022) 81.

²³⁹⁴ Art. 6(1)a PLD-1985; art. 7(2)a PLD-2024. See *supra* nr. 182.

²³⁹⁵ Art. 7(2)a PLD-2024: “[...] *the instructions for installation, use and maintenance*,”. See also on different forms of product information as part of a particular product’s defect assessment *supra* nrs. 236, 288 and 380.

²³⁹⁶ See CJEU 10 June 2021, C-65/20, VI v. KRONE, ECLI:EU:C:2021:471, nr. 36. See also *supra* nr. 347 and *infra* nrs. 399 and 410 on how ancillary product information falls within but pure information services outside the scope of EU product liability harmonisation.

²³⁹⁷ See also LE Europe et al., *Behavioural study on consumers' engagement in the circular economy* (EU Commission 2018) 110 (the availability of spare parts is one of two properties that consumers associate most with a ‘repairable’ product).

²³⁹⁸ Art. 6(1)b PLD-1985; art. 7(2)b PLD-2024. See also *supra* nrs. 183 and 373.

²³⁹⁹ Art. 7(1)(2)f-g PLD-2024. See also *supra* nrs. 10.d, 180 and 187 on the impact in general of product regulation on the PLD’s defect assessment.

²⁴⁰⁰ See also E. Van Gool, ‘De nieuwe richtlijn productaansprakelijkheid en circulaire economie’ (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 417.

Consequently, there are circumstances where certain products or components are by their nature too complicated and especially too dangerous for particular self- or independent repairs or refurbishments.²⁴⁰¹ Those products can actually become defective by facilitating and potentially encouraging such activities through disseminating original repair information, providing original spare parts and repair tools, even if those resources themselves are not defective (cf. *infra* nr. 379.c-d).

Finally, it is worth noting that original spare parts or repair tools can themselves still be defective and original repair instructions may still be flawed. The resulting product defects because of rather than in spite of these provided ancillary, repair-enabling resources, are discussed *infra* nrs. 399 et seq.

390. AVAILABILITY OF ORIGINAL REPAIR INFORMATION, SPARE PARTS AND TOOLS: TIMING – Also repair-enabling resources can only play a role in the defect assessment if they are already available when the product was placed on the market or put into service pursuant to art. 6(1)c PLD-1985 and art. 7(2)e PLD-2024 (see *supra* nrs. 184 and 371). It is for example irrelevant that a distributor of furniture for kids' bedrooms provides consumers access to original spare parts, repair information or tools when he makes such furniture available on the market. Again, these resources can still be effective in actually preventing accidents from occurring during or after subsequent repairs of those (bunk)beds, wardrobes or chairs for children. And this is definitely relevant to the application of national (extra)contractual liability, in particular to the distributor, but it cannot be considered as part of 'quasi-strict' harmonised product liability's 'single defect' assessment applicable to defendants who only make products available on the market (see *supra* nrs. 310-311 and 372).

Note that the provision of original repair information, spare parts or repair tools that are subsequently used and 'modify' the product, can theoretically be read as postponing pursuant to art. 4(5)a(ii) and 7(2)e PLD-2024 the moment "*when the product left the control of the manufacturer*". This could then mean that any original repair-enabling resources made available before this moment but after the main product's placing on the market or putting into service, still becomes part of its defect assessment (see *supra* nr. 402). Nevertheless, this dissertation argues *infra* nr. 403 that these new provisions should *de lege lata* be interpreted more restrictively as only allowing direct 'modifications' by the manufacturer or his original distribution and service network to qualify for such a postponement, which would reject applying this rule to merely making repair information, spare parts or tools available that are subsequently used by others.²⁴⁰² *De lege ferenda* it is even proposed *infra* nr. 404 to only still allow 'substantial modifications' under the manufacturer's control, to have this same effect.

Original repair information, like textual or audiovisual instructions and diagrams that are either enclosed in product documentation or retrievable online, must be provided only

²⁴⁰¹ See *supra* nr. 185 on the difference between dangerousness and defectiveness of products and *supra* nrs. 378-379 on how the particular nature of products and components can determine the public's legitimate safety expectations regarding their repairability and refurbishability.

²⁴⁰² Of course, if those other persons (self- or independent repairers and refurbishers) use those original repair-enabling resources in a manner that substantially modifies the product, a separate primary liability based on art. 8(2) PLD-2024 can arise. See *infra* nrs. 442 et seq.

once.²⁴⁰³ In contrast, providing access to original spare parts and repair tools is only meaningful as a continuous activity, which means that the same ‘functional interpretation’ of a continued availability applies as previously argued for *supra* nr. 386 with regards to original repair or refurbishment services. In order to be potentially relevant to the defect assessment, original spare parts and repair tools must therefore not only be available when for example an individual piece of kids’ bedroom furniture is placed on the market but also when a consumer subsequently seeks to conduct a self- or independent repair or refurbishment, which might benefit in terms of effectiveness and safety from these supporting resources.

391. AVAILABILITY OF ORIGINAL REPAIR INFORMATION, SPARE PARTS AND TOOLS: METHOD – Once again, the potential impact on the defect assessment for a specific repaired or refurbished product remains dependent on how accessible and practical such information, spare parts or tools actually are in practice for the intended audience of either professionals or prosumers for which they should facilitate safer self- and independent repairs and refurbishments. Any binding consumer information rules must of course be complied with as a minimum (see also *infra* nrs. 393 et seq.). At a more general level, PAPE’s aforementioned guidelines for adequate warnings²⁴⁰⁴ can also be applied *mutatis mutandis* to repair- and refurbishment-enabling resources.

In terms of ‘salience’ (see *supra* nr. 382), it can nowadays arguably be expected that repair information is not just included in a printed manual enclosed in the product’s original packaging, since this information is easily lost, especially when a product has become second-hand at the time of repair or refurbishment (cf. *supra* nr. 288). It should also be easily retrievable online, for example through the (quasi-)manufacturer’s original website, where the original spare parts and tools can be directly ordered as well.²⁴⁰⁵ And future digital product passports, accessible through a QR-code on the product, might be implemented in a comprehensive manner that also includes key information on repairs in combination with links to

²⁴⁰³ To the extent that original repair information is only available online, the relevant webpage must remain online, especially if these resources are not subsequently disseminated in public repair information databases and platforms or video platforms or simply stored in a third-party repository. In the future, Ecodesign repairability regulation might potentially require the continued online availability of certain repair information, which might be retrieved through digital product passports (see also *supra* nrs. 344 and 345). The ‘functional interpretation’ that requires continued availability to be relevant in the defect assessment (see *supra* nr. 386) therefore also applies to these situations. Note, however, that also for repair information that can simply be provided only once in documentation accompanying a product which is placed on the market, (continuous) online availability can be important to ensure that it is sufficiently ‘salient’ to play a role in the defect assessment (see *infra* nr. 391).

²⁴⁰⁴ S. Pape, *Warnings and product liability: Lessons learned from cognitive psychology and ergonomics* (PhD, Erasmus Universiteit Rotterdam 2011) 388. See *supra* nr. 382.

²⁴⁰⁵ Art. 5(4) Promoting Repair Directive 2024 additionally requires manufacturers to offer to (undefined) ‘independent repairers’ “*spare parts and tools at a reasonable price that does not deter repair.*” It will be the concrete Ecodesign repairability requirements for specific product categories (see *infra* nr. 393) that will determine which parts, information and tools must be provided to which independent repairers. The discussion in this section concerns of course mostly the much broader provision of such supporting resources on a purely voluntary, commercial basis.

relevant webpages containing repair instructions or portals for ordering spare parts and tools (see also *supra* nrs. 344 and 345.b).²⁴⁰⁶

In terms of ‘persuasiveness’, it is detrimental to place original repair information behind a paywall, to charge disproportionately steep prices for original spare parts and tools or to make it very cumbersome to obtain them compared to alternatives.²⁴⁰⁷ Given the significance of price and convenience for consumer decisions whether to engage in different kinds of repair or refurbishment practices,²⁴⁰⁸ such obstacles risk to further undermine the potential relevance for the defect assessment of making original repair information, spare parts and repair tools available.

392. INDEPENDENT REPAIR INFORMATION, SPARE PARTS AND TOOLS: IRRELEVANT TO AVOID A DEFECT QUALIFICATION – For many products, there exist spare parts, repair information and repair tools that originate neither from the manufacturer nor his original distribution and service network. A good illustration of such independent repair information, tools and spare parts can be found on the platform of iFixIt, the Western world’s biggest repair community, but this also overlaps with the ‘makers economy’ and ‘hackers movement’ that will help you to self-create or order online spare parts made through 3D-printing and CNC-machines (see also *supra* nrs. 68.c-d and 86-87).²⁴⁰⁹

Nevertheless, these independent repair-enabling resources cannot be considered as part of the assessment whether a product was safely repairable or refurbishable, even if they were already very widely available and publicized at the time when the individual product was placed on the market or put into service, which eventually causes an accident after or during a subsequent self- or independent repair or refurbishment that used these resources (cf. *supra* nr. 383.c).

In contrast, the assessment whether a product is defective due to a lack of safe repairability or refurbishability can consider repair information, repair tools and spare parts that have not been provided by the manufacturer but by persons in the product’s original distribution and

²⁴⁰⁶ See Viegand Maagøe, Oeko-Institut and Van Holsteijn & Kemna, *Preparatory study for the Ecodesign and Energy Labelling Working Plan 2020-2024: Task 3. Preliminary analysis of product groups and horizontal initiatives. Final* (2021) 605; A. Michel, *Premature Obsolescence: In Search of an Improved Legal Framework* (Intersentia 2023) 198.

²⁴⁰⁷ This is not the same as intentionally limiting access, for example through a screening process, to professional independent repairers, refurbishers and remanufacturers, if the assessment would be that particular repairs or refurbishments by prosumers would be too unsafe and should be prevented rather than facilitated, as discussed in this section and *supra* nr. 379.c-d.

²⁴⁰⁸ See TNS Political & Social, *Flash Eurobarometer 367 – Attitudes of Europeans towards building the single market for green products* (EU Commission 2013) 112-114; LE Europe et al., *Behavioural study on consumers' engagement in the circular economy* (EU Commission 2018) 180-181; I. Güsser-Fachbach et al., ‘Repair service convenience in a circular economy: The perspective of customers and repair companies’ (2023) 415 *Journal of Cleaner Production* 137763; I. Güsser-Fachbach, G. Lechner and M. Reimann, ‘The impact of convenience attributes on the willingness-to-pay for repair services’ (2023) 198 *Resources, Conservation and Recycling* 107163.

²⁴⁰⁹ See ‘Quality ensured replacement parts for DIY repair’ <<https://eustore.ifixit.com/collections/parts>>; ‘Precision tools for the best repair possible’ <<https://eustore.ifixit.com/collections/tools>>; ‘Repair Guides’ <www.ifixit.com/Guide>.

service network (cf. *supra* nr. 383.a).²⁴¹⁰ Yet, as discussed in preceding sections, it is required that these ‘original’ resources were sufficiently widely available at the time when the individual, eventually harmful product was placed on the market or put into service and that these continuously remained available until the moment a repair or refurbishment for the product was eventually sought.²⁴¹¹

vii. EU and national regulation and standards

393. PRODUCT SAFETY AND ECODESIGN REQUIREMENTS ON THE AVAILABILITY OF REPAIR INFORMATION, SPARE PARTS, TOOLS AND MORE REPAIR-FRIENDLY PRODUCT DESIGN – Product regulation and standards can provide of course particularly pertinent points of reference for assessing product defectiveness in relation to accidents occurring during or after product repairs and refurbishments. While it is generally accepted that rules and relevant soft law standards have an indicative effect to prove a product defect or the lack thereof (see *supra* nr. 187), the final adopted version of art. 7(1) PLD-2024 now seems to automatically consider a product as defective when it “*does not provide the safety [...] that is required under Union or national law*” (see *supra* nr. 180). This last new rule might be invoked by plaintiffs when products violate applicable product rules that require a certain level of safe repairability or refurbishability, as discussed below. Additionally, art. 10(2)b PLD-2024 imposes a refutable presumption when products violate a binding safety requirement intended to protect against the risk of the product accident which occurred (see *supra* nr. 206.b). Conversely, both Directives also provide a compliance defence that can be invoked in narrow circumstances where an accident is the direct consequence of regulatory compliance.²⁴¹² A manufacturer may for example try to invoke this defence by arguing that binding rules required him to facilitate risky self-repairs of a product component in a particular manner that created accident risks he could neither have avoided nor sufficiently mitigated without violating the regulatory framework.

The main body of existing norms that are relevant to the repair and refurbishment context, consists of sectoral and general product safety regulation.²⁴¹³ As an illustration, a German court found a machine to have been defective due to a lack of safety during maintenance

²⁴¹⁰ For the sake of theoretical accuracy, note that the new concept of the (extended) ‘manufacturer’s control’ pursuant to arts. 4(5) and 7(2)e PLD-2024 does not apply here. This simply concerns the extent to which elements that can be objectively attributed to a product’s ‘presentation’ and ‘reasonably foreseeable use’ at the time the product was ‘placed on the market’ or ‘put into service’. See *supra* nr. 383 where this is discussed more extensively regarding warnings.

²⁴¹¹ See also Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 48, nr. 48; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3604, 13-14; G. Wagner, ‘Produkthaftungsgesetz’ in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 3, nr. 23. These authors only discuss the potential attribution of communications, which can encompass repair information, by third parties and by downstream distributors of the product. Nevertheless, arts. 6(1)a-b PLD-1985 and 7(2)a-b PLD-2024 must be more broadly interpreted, as i.a. also potentially encompassing the availability of spare parts and repair tools (see *supra* nr. 389).

²⁴¹² Art. 7(d) PLD-1985; art. 11(1)d PLD-2024. See also *supra* nr. 198 relating to this defence.

²⁴¹³ See also V. Ulfbeck, ‘Circularity in Servitization: Managing the Need for Product Change in Contract and Product Liability Law’ in B. Keirsbilck and others (eds.), *Servitization and Circular Economy: Economic and Legal Challenges* (Intersentia 2023) 105.

processes on the basis that its design violated a harmonised product safety standard relating to safety mechanisms that could have prevented the eventual accident.²⁴¹⁴ Only consumer goods placed on the market or made available that are clearly marked as still requiring a repair or refurbishment prior to use, are excluded from the scope of the General Product Safety Regulation 2023/988/EU.²⁴¹⁵

Nowadays, a rapidly expanding role is played by Ecodesign requirements (see also *supra* nr. 251) in the regulation of product repair strategies, which by nature also correlates with the refurbishability of those same products (cf. *supra* nrs. 88-90). Repairability Ecodesign requirements already exist today for household washing machines and dryers,²⁴¹⁶ dishwashers,²⁴¹⁷ refrigerators,²⁴¹⁸ light sources,²⁴¹⁹ electronic displays,²⁴²⁰ welding equipment,²⁴²¹ servers and

²⁴¹⁴ LG Stuttgart 10 April 2012, 26 O 466/10, NJW-RR 2012, 1169, *Juris*.

²⁴¹⁵ Art. 2(3) General Product Safety Regulation 2023/988/EU. See also *supra* nr. 351. Consequently, general product safety rules (and their harmonised implementing standards providing a presumption of compliance) cannot be invoked for product liability claims concerning accidents occurring either during such subsequent (self- or independent) repairs or refurbishments or occurring during subsequent use afterwards, if the latter claims would argue that compliance with the violated general product safety rules would have prevented the unsuccessful repair or refurbishment leading to the accident afterwards during subsequent use.

²⁴¹⁶ Commission Regulation 2019/2023/EU of 1 October 2019 laying down ecodesign requirements for household washing machines and household washer-dryers pursuant to Directive 2009/125/EC of the European Parliament and of the Council, amending Commission Regulation (EC) No 1275/2008 and repealing Commission Regulation (EU) No 1015/2010 [2019] OJ L315/285.

²⁴¹⁷ Commission Regulation 2019/2022/EU of 1 October 2019 laying down ecodesign requirements for household dishwashers pursuant to Directive 2009/125/EC of the European Parliament and of the Council amending Commission Regulation (EC) No 1275/2008 and repealing Commission Regulation (EU) No 1016/2010 [2019] OJ L315/267.

²⁴¹⁸ Commission Regulation 2019/2019/EU of 1 October 2019 laying down ecodesign requirements for refrigerating appliances pursuant to Directive 2009/125/EC of the European Parliament and of the Council and repealing Commission Regulation (EC) No 643/2009 [2019] OJ L315/187; Commission Regulation 2019/2024/EU of 1 October 2019 laying down ecodesign requirements for refrigerating appliances with a direct sales function pursuant to Directive 2009/125/EC of the European Parliament and of the Council [2019] OJ L315/313.

²⁴¹⁹ Commission Regulation 2019/2020/EU of 1 October 2019 laying down ecodesign requirements for light sources and separate control gears pursuant to Directive 2009/125/EC of the European Parliament and of the Council and repealing Commission Regulations (EC) No 244/2009, (EC) No 245/2009 and (EU) No 1194/2012 [2019] OJ L315/209.

²⁴²⁰ Commission Regulation 2019/2021/EU of 1 October 2019 laying down ecodesign requirements for electronic displays pursuant to Directive 2009/125/EC of the European Parliament and of the Council, amending Commission Regulation (EC) No 1275/2008 and repealing Commission Regulation (EC) No 642/2009 [2019] OJ L315/241.

²⁴²¹ Commission Regulation 2019/1784/EU of 1 October 2019 laying down ecodesign requirements for welding equipment pursuant to Directive 2009/125/EC of the European Parliament and of the Council [2019] OJ L272/121.

data storage products²⁴²² and, most recently, mobile phones and tablets.²⁴²³ Those existing rules predominantly require manufacturers and importers to make spare parts and repair information available to professional independent repairers.²⁴²⁴ But some of them also enable self- and independent repairs by prosumers, by requiring manufacturers to make certain spare parts and repair information available to consumers, to inform consumers about such support (see also *infra* nr. 394) and, most importantly, by imposing requirements for a more repair-friendly product design. Illustrations of the latter are restrictions on joining and sealing techniques (like gluing and welding), which prevent the disassembly of certain components in servers, data storage products or electronic displays,²⁴²⁵ or obligations to ensure that certain components in refrigerators, washing machines, dryers and light sources are replaceable with spare parts while using commonly available tools and without causing damage to the product.²⁴²⁶ Comparable design requirements now also exist for new mobile phones placed on the EU market.²⁴²⁷

The Ecodesign for Sustainable Products Regulation 2024, a new framework that drastically expands Ecodesign regulation as a cornerstone of EU circular economy policy (see also *supra*

²⁴²² Commission Regulation 2019/424/EU of 15 March 2019 laying down ecodesign requirements for servers and data storage products pursuant to Directive 2009/125/EC of the European Parliament and of the Council and amending Commission Regulation (EU) No 617/2013 [2019] OJ L74/46.

²⁴²³ Commission Regulation 2023/1670/EU of 16 June 2023 laying down ecodesign requirements for smartphones, mobile phones other than smartphones, cordless phones and slate tablets pursuant to Directive 2009/125/EC of the European Parliament and of the Council and amending Commission Regulation (EU) 2023/826 [2023] OJ L214/47.

²⁴²⁴ See also art. 5(4) Promoting Repair Directive 2024: “Manufacturers that make spare parts and tools available for goods covered by Union legal acts listed in Annex II shall offer these spare parts and tools at a reasonable price that does not deter repair.”

²⁴²⁵ Annex II, nr. 1.2.1 Commission Regulation 2019/424/EU of 15 March 2019 laying down ecodesign requirements for servers and data storage products pursuant to Directive 2009/125/EC of the European Parliament and of the Council and amending Commission Regulation (EU) No 617/2013 [2019] OJ L74/46, 56; Annex II, nr. D.1 Commission Regulation 2019/2021/EU of 1 October 2019 laying down ecodesign requirements for electronic displays pursuant to Directive 2009/125/EC of the European Parliament and of the Council, amending Commission Regulation (EC) No 1275/2008 and repealing Commission Regulation (EC) No 642/2009 [2019] OJ L315/241.

²⁴²⁶ Annex II, nr. 3.a.3 Commission Regulation 2019/2019/EU of 1 October 2019 laying down ecodesign requirements for refrigerating appliances pursuant to Directive 2009/125/EC of the European Parliament and of the Council and repealing Commission Regulation (EC) No 643/2009 [2019] OJ L315/187, 198; art. 4(1) Commission Regulation 2019/2020/EU of 1 October 2019 laying down ecodesign requirements for light sources and separate control gears pursuant to Directive 2009/125/EC of the European Parliament and of the Council and repealing Commission Regulations (EC) No 244/2009, (EC) No 245/2009 and (EU) No 1194/2012 [2019] OJ L315/209, 214; Annex II, nr. 5.1.c Commission Regulation 2019/2022/EU of 1 October 2019 laying down ecodesign requirements for household dishwashers pursuant to Directive 2009/125/EC of the European Parliament and of the Council amending Commission Regulation (EC) No 1275/2008 and repealing Commission Regulation (EU) No 1016/2010 [2019] OJ L315/267, 276.

²⁴²⁷ Annex II, nr. A.1.1.5 Commission Regulation 2023/1670/EU of 16 June 2023 laying down ecodesign requirements for smartphones, mobile phones other than smartphones, cordless phones and slate tablets pursuant to Directive 2009/125/EC of the European Parliament and of the Council and amending Commission Regulation (EU) 2023/826 [2023] OJ L214/47, 62.

nrs. 65 and 251), now explicitly tasks the Commission to adopt implementing requirements relating to product “*reparability*”, “*maintenance and refurbishment*”.²⁴²⁸ It is generally expected that this will result in the following years in more comprehensive requirements concerning repairability and refurbishability for many more consumer good categories.²⁴²⁹ Naturally, it generally remains to be seen how comprehensive and stringent those future requirements will be, how soon they will arrive and whether they will mostly prioritize a ‘right to repair’ offered by the professional (independent and original) repair industry or also significantly enable self- and independent repairs and refurbishments by prosumers (cf. *supra* nr. 87).

Product design requirements facilitating circular reproduction activities can occasionally be found in other, more horizontal EU instruments. An example is the recent Batteries Regulation, which requires that portable and ‘light means of transport’ batteries are in principle “*readily removable and replaceable by the end-user at any time during the lifetime of the product.*”²⁴³⁰ This is seen as a major win by the European ‘right to repair’ movement, since it facilitates self-repairs of various portable electronic devices, e-steps or e-bikes when battery-related issues are encountered.²⁴³¹

This dissertation has already argued *supra* nr. 251 in favour of a more functional interpretation of the new defect presumption of art. 10(2)b PLD-2024 and, more importantly, the direct connection between safety regulation and product defectiveness in art. 7(1) PLD-2024, which

²⁴²⁸ Art. 5(1)e-f Ecodesign for Sustainable Products Regulation 2024. See *supra* nr. 251 regarding the pre-existing Ecodesign Directive’s focus on energy-efficiency. See also Annex I, (b)(c)(e) *ibid.*: “*The following parameters may, as appropriate, and where necessary supplemented by others, be used as a basis for improving the product aspects: [...] (b) ease of repair and maintenance, as expressed through characteristics, availability, delivery time and affordability of spare parts, modularity, compatibility with commonly available tools and spare parts, availability of repair and maintenance instructions, number of materials and components used, use of standard components, use of component and material coding standards for the identification of components and materials, number and complexity of processes and whether specialised tools are needed, ease of non-destructive disassembly and re-assembly, conditions for access to product data, conditions for access to or use of hardware and software needed; (c) ease of upgrading, reuse, remanufacturing and refurbishment as expressed through number of materials and components used, use of standard components, use of component and material coding standards for the identification of components and materials, number and complexity of processes and tools needed, ease of non-destructive disassembly and re-assembly, conditions for access to product data, conditions for access to or use of hardware and software needed, conditions of access to test protocols or not commonly available testing equipment, availability of guarantees specific to remanufactured or refurbished products, conditions for access to or use of technologies protected by intellectual property rights, modularity; [...] (e) avoidance of technical solutions detrimental to reuse, upgrading, repair, maintenance, refurbishment, remanufacturing and recycling of products and components; [...].*”

²⁴²⁹ See also Commission, ‘A new Circular Economy Action Plan For a cleaner and more competitive Europe’ (Communication) COM(2020) 98 final, nr. 2.1; F. Keimeyer et al., *Weiterentwicklung von Strategien gegen Obsoleszenz einschließlich rechtlicher Instrumente* (Umwelt Bundesamt 2020) 39-40.

²⁴³⁰ Art. 11 Parliament and Council Regulation 2023/1542/EU of 12 July 2023 concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020 and repealing Directive 2006/66/EC [2023] OJ L191/1, 36.

²⁴³¹ This so often risks making these products prematurely obsolete. See, e.g., Right to Repair, ‘Big win for right to repair with new EU rules for batteries – but legislators must get the implementation right’ (2023) <<https://repair.eu/news/big-win-for-right-to-repair-with-new-eu-rules-for-batteries-but-legislators-must-get-the-implementation-right>>.

should not remain unduly restricted to ‘product safety rules’ in the traditional sense. If for example one of the aforementioned current or future Ecodesign repairability requirements not only contributes to economic and environmental policy goals of increased repairability but also considered the safety of repairability in a growing repair economy, then its violation can arguably be invoked by a plaintiff trying to prove a defect pursuant to art. 7(1) PLD-2024.²⁴³²

Finally, it is important to emphasize that harmonised product liability does not apply to post-marketing defects, with the exception to art. 11(2) PLD-2024’s new, limited exceptions to the posteriority defence (see *supra* nrs. 184 and 196). Some Ecodesign requirements, such as those relating to the continued availability of spare parts and repair tools, might be complied with when the product was placed on the market or put into service but nevertheless be violated at a later point in time, which then leads to a product accident occurring during or after a subsequent repair or refurbishment. Just like post-marketing product safety requirements to take preventive and corrective measures, violations of repair-related post-marketing requirements like providing continued access to safe, original spare parts, cannot lead to harmonised product liability.²⁴³³ Yet, such violations tend to lead to potential fault-based extracontractual liability (see also *supra* nrs. 10.d, 184 and 213.d).

394. **SOFT LAW’ ON PRODUCT REPAIRABILITY AND REFURBISHABILITY** – While the compliance defence or arts. 7(1) and 11(1)d PLD-2024 is limited to binding rules of law, privately developed ‘soft law’ rules and standards can still provide pertinent points of reference to assess product defectiveness or the lack thereof (see *supra* nr. 187).²⁴³⁴ This is especially true for industry standards and best practices relating to repairable design of specific product categories, the quality and availability of spare parts, repair instructions and repair tools or other relevant industry standards and non-binding rules.

Countless sector-specific examples exist in the vast field of consumer goods of soft law that concern product repairability and refurbishability, such as relating to bicycles, electronics and sports equipment. Perhaps the most visible are the voluntary self-regulation measures which the Commission has accepted as alternatives to binding Ecodesign regulation and for which it must monitor compliance and continued fitness.²⁴³⁵ As an illustration, the sector

²⁴³² See also specifically relating to Ecodesign how both existing and future requirements must consider, among others, safety and the health of persons (art. 15(5)b Parliament and Council Directive 2009/125/EC of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products [2009] OJ L285/10, 20; art. 5(11)b Ecodesign for Sustainable Products Regulation 2024).

²⁴³³ Arts. 6(1)c and 7(b) PLD-1985; arts. 7(2)e and 11(1)c PLD-2024. See also *supra* nr. 371.

²⁴³⁴ For reasons of authority and legitimacy, soft law standards, especially when having a private origin, are admittedly less persuasive than binding product regulation in general. But this is not necessarily always the case and a sharp difference between both sets of rules remains limited to art. 7(d) PLD-1985 or arts. 7(1), 10(2)b and 11(1)d PLD-2024.

²⁴³⁵ See recital 18 Parliament and Council Directive 2009/125/EC of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products [2009] OJ L285/10, 12; art. 21 Ecodesign for Sustainable Products Regulation 2024. See also on self-regulation as an alternative to Ecodesign requirements A. Michel, *Premature Obsolescence: In Search of an Improved Legal Framework*

federation for digital TV and streaming devices has agreed on minimum rules on using common fasteners, avoiding inseparable connections and ensuring that components can be disassembled with commonly available tools.²⁴³⁶ In another example, the game console industry has agreed to make spare parts and technical information available to certain professional refurbishers and repairers and to ensure that refurbishment becomes possible through non-destructive disassembly.²⁴³⁷ Such rules may facilitate a safer self- or independent repair of these products and their violation can for example be invoked as indicative proof of product defectiveness when one of these devices, after a failed repair, would have caused a fire or electric shock.

395. ECONOMIC INCENTIVES FOR INCREASED (SAFER) REPAIRABILITY AND REFURBISHABILITY OF PRODUCTS THROUGH ORIGINAL REPAIR OBLIGATIONS IN THE PROMOTING REPAIR DIRECTIVE 2024 – The very recently adopted Promoting Repair Directive 2024 increases the frequency of original repair activities in a twofold manner. On the one hand, it makes repair more attractive as a remedy under the B2C consumer sales guarantee by extending the legal guarantee after a good has been brought back into conformity through a repair. On the other hand, it requires manufacturers or importers to provide commercial repair services to consumers for designated products for which Ecodesign repairability requirements have been adopted.²⁴³⁸ While the fact that original repair services are more available can have minor relevance for the defect assessment relating to a product's safe repairability (see *supra* nr. 385), it can indirectly have a more significant, economically-driven impact on product accident risks relating to repairs and refurbishments. Namely, it will now become on average more economically attractive for manufacturers to design products that are more easily repairable. Admittedly, this may to a considerable extent consist of design practices that disproportionately advantage original repairs and refurbishments, to the exclusion of self- and independent activities. Yet, unfair commercial practices and competition rules impose limitations on such restrictive practices (see *supra* nr. 379.d). Therefore, it can be expected that this regulatory boost for original repair activities will simultaneously also lead to a decrease in the underlying accident risks for self- and independent repairs and refurbishments.²⁴³⁹ Over time, this may make repairs and refurbishments for these products, including self- and independent variants, more reasonably foreseeable, which increases the public's legitimate safety expectations relating to safe repairability and refurbishability (see *supra* nr. 373).

This illustrates how, while the Promoting Repair Directive 2024 can be criticized for mainly catering to industry interests by prioritizing original repairs, it may nevertheless in also a

(Intersentia 2023) 149-152.

²⁴³⁶ Industry group set-top boxes, *Voluntary Industry Agreement to improve the energy consumption of Complex Set Top Boxes within the EU, Proposal version 6.3* (2019) 27.

²⁴³⁷ Sony, Microsoft and Nintendo, *Self-Regulatory Initiative to further improve the energy efficiency of Games Consoles* (2015) 11.

²⁴³⁸ Arts. 5 and 16 Promoting Repair Directive 2024.

²⁴³⁹ To the extent that products will be designed in a more easily repairable manner, underlying accident risks will decrease. However, this is not the same as a decrease in accidents occurring in absolute numbers, simply because the underlying reason simultaneously increases the overall number of repair activities.

more indirect manner support a broader ‘right to repair’ that encompasses self- and independent repairs and refurbishments as well (cf. *supra* nr. 87). This then also leads to the repercussions under harmonised product liability described above.

396. ECONOMIC INCENTIVES FOR INCREASED (SAFER) REPAIRABILITY AND REFURBISHABILITY OF PRODUCTS THROUGH EU CONSUMER INFORMATION REQUIREMENTS – Another category of ‘right to repair’ regulation that can deliver comparable, indirect economic incentives, are rules on market transparency with regards to the repairability of products. This is actually supporting the ‘market mechanism’, which serves as a general alternative to product liability and product safety law for the accident-prevention and price-signalling functions (see Figure 8 *supra* nr. 150 and *supra* nrs. 9, 108.b and 110.a). When consumers have as a result of these rules better information on how easily and safely repairable a particular product is, they may value this utility in their transactional decision-making. For manufacturers, this can make it on average more attractive to invest in the safety and convenience of product repairability, since this now provides a marginal benefit in persuading consumers to choose their products.²⁴⁴⁰ In this manner, clear and reliable information for consumers on product repairability can help to reduce accident risks during or after subsequent repairs or refurbishments. Simultaneously, these same activities become generally more reasonably foreseeable, which implies a shift in the public’s legitimate safety expectations that determines the PLDI’s defect assessment (see *supra* nr. 373). Due to the ‘bounded’ cognitive capabilities of consumers to effectively act on such information relating to product safety,²⁴⁴¹ there are clear limitations to trying to strengthen the ‘market mechanism’ in this manner. Nevertheless, the same insights from behavioural science also offer possibilities for making mandatorily provided consumer

²⁴⁴⁰ For this ‘market mechanism’ to work perfectly and make product liability rules theoretically redundant, perfect competition, perfect consumer information and perfectly rational consumer conduct would be required (see *supra* nrs. 9, 108.b and 110.a). Such conditions are of course never fully present and this is even less so in a more circular economic context with more ‘heterogeneity’, which is precisely a consequence of more product repairs and refurbishments (see *supra* nr. 158). Nevertheless, these market forces exist and operate to some extent and can be further strengthened by rules on mandatory consumer information and market transparency. See also M. Polinsky and S. Shavell, ‘The Uneasy Case for Product Liability’ (2010) 123 *Harvard Law Review* 1437, 1443-1449.

²⁴⁴¹ See with regards to consumer information in general G. Howells, ‘The Potential and Limits of Consumer Empowerment by Information’ (2005) 32 *Journal of Law and Society* 349, 356, 358-362; Y. Bakos, F. Marotta-Wurgler and D. Trossen, ‘Does Anyone Read the Fine Print? Consumer Attention to Standard-Form Contracts’ (2014) 43 *Journal of Legal Studies* 1; O. Ben-Shahar and C. Schneider, *More Than You Wanted to Know: The Failure of Mandated Disclosure* (Princeton University Press 2014). See also on information’s role in the context of harmonised product liability *supra* nr. 182.

information more effective,²⁴⁴² which can for example consist of requiring the use of well-designed labels with product repairability scores.²⁴⁴³

Given the political attractiveness of B2C information requirements as a policy instrument that still preserves consumer autonomy,²⁴⁴⁴ the EU legislator is now using them as another piece in the jigsaw of establishing a European ‘right to repair’ (see also *supra* nr. 87 and *infra* nr. 397).

- a. First of all, the on 28 February 2024 adopted Empowering Consumers for the Green Transition Directive 2024/825 requires traders to inform consumers, before they are bound by a B2C contract, either on a product’s repairability score, if such a score exists for the product in question (see *infra* nr. 397.c on French and Belgian legislation), or, in the absence thereof, on information provided by the product’s manufacturer about the availability of spare parts and a repair manual.²⁴⁴⁵
- b. Second, the on 13 June 2024 adopted Promoting Repair Directive 2024 requires manufacturers and in their absence importers to inform consumers on the availability of the aforementioned, mandatory offer to provide original repair services (see *supra* nr. 385)²⁴⁴⁶ It would additionally require both original and independent professional repairers to comprehensively inform consumers – before they are bound by a repair service contract but only upon their request – by means of a ‘European Repair Information Form’ about several aspects of the proposed service, ranging from key modalities about the repair up to ancillary services like temporary replacement goods, transportation

²⁴⁴² See, e.g., I. Ayres and A. Schwartz, ‘The No-Reading Problem in Consumer Contract Law’ (2014) 66 *Stanford Law Review* 545; C. Sunstein and R. Lucia, ‘Automatically Green: Behavioral Economics and Environmental Protection’ (2014) 38 *Harvard Environmental Law Review* 127; O. Bar-Gill, ‘Defending (Smart) Disclosure: A Comment on More Than You Wanted to Know’ (2015) 11 *Jerusalem Review of Legal Studies* 75; A.-L. Sibony and G. Helleringer, ‘EU Consumer Protection and Behavioural Sciences: Revolution or Reform?’ in A. Alemanno and A.-L. Sibony (eds.), *Nudge and the Law: A European Perspective* (Hart 2015) 219-226.

²⁴⁴³ See E. Bracquene et al., ‘Repairability evaluation for energy related products’ (2019) 80 *Procedia CIRP* 536; M. Cordella, F. Alfieri and J. Sanfelix, *Analysis and development of a scoring system for repair and upgrade of products: Final report* (EU Commission JRC 2019); Direction Interministérielle de la Transformation Publique, *Appliquer les sciences comportementales pour accompagner la mise en place d’un indice de réparabilité des ordinateurs portables* (République Française, 2020). See also *infra* nr. 397.c on the French *indice de réparabilité* and the brand-new Belgian legislation introducing a similar product repairability score labelling system.

²⁴⁴⁴ G. Straetmans, ‘Misleading practices, the consumer information model and consumer protection’ (2016) *Journal of European Consumer and Market Law* 199, 200 (discussing how this is part of the traditional ‘information paradigm’ of EU consumer regulation); V. Mak and E. Terry, ‘Circular Economy and Consumer Protection: The Consumer as a Citizen and the Limits of Empowerment Through Consumer Law’ (2020) 43 *Journal of Consumer Policy* 227, 230-233 (specifically relating to EU sustainable consumption policy).

²⁴⁴⁵ Art. 2(2)c,(3)d Empowering Consumers for the Green Transition Directive 2024/825 (amending arts. 5 and 6 Parliament and Council Directive 2011/83/EU of 25 October 2011 on consumer rights [2011] OJ L304/64, 74-76).

²⁴⁴⁶ Art. 6 Promoting Repair Directive 2024.

and installation.²⁴⁴⁷ Furthermore, Member States will have to create an online platform where consumers can find professional (independent and original) repair service providers, sellers of refurbished consumer goods as well as purchasers (likely P2B) of defective goods requiring refurbishment.²⁴⁴⁸ Besides increasing access to original repair services that may have a limited impact on an individual harmful product's defect assessment (see *supra* nr. 387), these rules have the potential to increase the frequency and quality of original and independent professional repairs and refurbishments, which can further shape the public's legitimate safety expectations (see *supra* nr. 373).

- c. Third, some existing Ecodesign implementing regulations impose product-specific requirements to inform consumers on certain aspects of repairability, although most existing requirements focus on product design and providing access to repair information, spare parts and tools to professional repairers, as discussed *supra* nr. 393. As an example, from 20 June 2025 onwards, consumers should be able to find on free-access websites of mobile phone and tablet manufacturers or importers the necessary instructions to repair the battery, display, back cover, charger and SIM or memory card trays of these electronic consumer goods.²⁴⁴⁹ The Ecodesign regulations for washing machines and dryers, refrigerators, electronic displays and dishwashers require manufacturers and importers to inform consumers, among others, via their free-access websites on the publicly available spare parts and on the procedures for ordering them.²⁴⁵⁰ These consumer information obligations will likely also expand in future

²⁴⁴⁷ Art. 4 *ibid.*

²⁴⁴⁸ Art. 7 *ibid.*

²⁴⁴⁹ Annex II, nrs. A.1.1.2.b, B.1.1.2.second section, D.1.1.2.second section Commission Regulation 2023/1670/EU of 16 June 2023 laying down ecodesign requirements for smartphones, mobile phones other than smartphones, cordless phones and slate tablets pursuant to Directive 2009/125/EC of the European Parliament and of the Council and amending Commission Regulation (EU) 2023/826 [2023] OJ L214/47, 60-79.

²⁴⁵⁰ Annex II, nr. 8.1.d-e Commission Regulation 2019/2023/EU of 1 October 2019 laying down ecodesign requirements for household washing machines and household washer-dryers pursuant to Directive 2009/125/EC of the European Parliament and of the Council, amending Commission Regulation (EC) No 1275/2008 and repealing Commission Regulation (EU) No 1015/2010 [2019] OJ L315/285, 299; Annex II, nr. 2.4.j-l Commission Regulation 2019/2019/EU of 1 October 2019 laying down ecodesign requirements for refrigerating appliances pursuant to Directive 2009/125/EC of the European Parliament and of the Council and repealing Commission Regulation (EC) No 643/2009 [2019] OJ L315/187, 200; Annex II, nr. D.5.a.4-5 Commission Regulation 2019/2021/EU of 1 October 2019 laying down ecodesign requirements for electronic displays pursuant to Directive 2009/125/EC of the European Parliament and of the Council, amending Commission Regulation (EC) No 1275/2008 and repealing Commission Regulation (EC) No 642/2009 [2019] OJ L315/241, 259; Annex II, nr. 5.1.d-e Commission Regulation 2019/2022/EU of 1 October 2019 laying down ecodesign requirements for household dishwashers pursuant to Directive 2009/125/EC of the European Parliament and of the Council amending Commission Regulation (EC) No 1275/2008 and repealing Commission Regulation (EU) No 1016/2010 [2019] OJ L315/267, 277.

Ecodesign implementing requirements adopted under the Ecodesign for Sustainable Products Regulation 2024 (see also *supra* nr. 393).²⁴⁵¹

- d. Additionally, digital product passports, which will become partially accessible to consumers,²⁴⁵² can become of course a perfect vehicle to link consumers through a QR-code to any of the aforementioned forms of original information relating to product reparability. To what extent this potential will be used, depends on future Ecodesign implementing regulations (see *supra* nrs. 344 and 345.b).²⁴⁵³
- e. Finally, as already mentioned, unfair commercial practices regulation and rules of private law, among which the PLDI (see *supra* nr. 384), can penalize incorrect or misleading statements relating to the repair-, refurbish- or remanufacturability of products, both when they are provided based on one of the aforementioned mandatory grounds or voluntarily advertised for commercial reasons. The Empowering Consumers for the Green Transition Directive 2024/825, potentially supported in the near future by the *ex ante* requirements on substantiation, further strengthens this protective framework against forms of ‘greenwashing’ in relation to safe product reparability (see *supra* nr. 384).²⁴⁵⁴

397. NATIONAL REGULATION OF PRODUCT REPAIRABILITY: A LOOK AT FRENCH INNOVATIONS AND THEIR EU LAW LIMITATIONS – At the national level, France is the most active and ambitious Member State in enacting ‘right to repair’ supporting regulation (see also *supra* nr. 252 on national initiatives relating to product durability). A summary is provided below of some of the most noteworthy rules, which can definitely be pertinent for the defect assessment, especially based on the rephrased art. 7(1) PLD-2024,²⁴⁵⁵ when accidents occur during or after a repair or refurbishment. However, questions also arise about how some of these rules relate to existing EU harmonisation. The new Belgian product repairability index is also included in the discussion below.

²⁴⁵¹ See also for suggestions *de lege ferenda* A. Michel, *Premature Obsolescence: In Search of an Improved Legal Framework* (Intersentia 2023) 197-198.

²⁴⁵² Arts. 9(2)f(3)a, 10(b) and 11(b) Ecodesign for Sustainable Products Regulation 2024. Note that the already implemented ‘batteries passport’ would make information relating to spare parts as well as dismantling information only accessible for ‘persons with a legitimate interest’, which are to be identified in an implementing act to be adopted by the Commission (art. 77(2)(9) and Annex XIII, nr. 2 Parliament and Council Regulation 2023/1542/EU of 12 July 2023 concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020 and repealing Directive 2006/66/EC [2023] OJ L191/1, 38, 72-73, 109). See also *supra* nrs. 344 et seq.

²⁴⁵³ See Viegand Maagøe, Oeko-Institut and Van Holsteijn & Kemna, *Preparatory study for the Ecodesign and Energy Labelling Working Plan 2020-2024: Task 3. Preliminary analysis of product groups and horizontal initiatives. Final* (2021) 605; A. Michel, *Premature Obsolescence: In Search of an Improved Legal Framework* (Intersentia 2023) 198.

²⁴⁵⁴ See in particular arts. 1(2)a-b and Annex I, nr. 4 Empowering Consumers for the Green Transition Directive 2024/825; arts. 3 et seq. Green Claims Proposal 2023.

²⁴⁵⁵ If these are binding rules of national law that require a product to provide a certain level of safety, then a violation of such national rule leads to an automatic defect qualification on the basis of a literal interpretation of art. 7(1) PLD-2024. See *supra* nr. 180.

- a. First of all, French consumer law prohibits any technique, including the use of software, that makes repairing or refurbishing a product impossible or limits the possibilities for independently restoring all of a product's functionalities, with the exception of those cases for which a government decision would consider an exemption justified, notably due to safety or health reasons.²⁴⁵⁶ Additionally, agreements or practices that restrict the access of a repair, refurbishment or re-use professional to spare parts, repair information or repair tools, are also prohibited.²⁴⁵⁷

In my opinion, both provisions potentially violate EU Ecodesign harmonisation²⁴⁵⁸ as well as maybe art. 34 TFEU, as discussed below. More importantly for this dissertation, due to the absence of clear exceptions, these provisions seem to be difficult to reconcile with the maximum harmonisation of the General Product Safety Regulation 2023/988/EU or, if applicable instead, of many sectoral product safety instruments (see *supra* nr. 379.d). Although this is rare, it can sometimes be necessary for compliance with product safety requirements²⁴⁵⁹ to actively prevent rather than facilitate repairs of particular products or components by prosumers or exceptionally even by independent professionals (see *supra* nr. 379.d). Mere warnings are often insufficient due to behavioural limitations and more complex circular product lifecycles (cf. *supra* nr. 380), which only leaves as options for product safety compliance some of the repair-precluding techniques that French law now rather categorically prohibits.

Defendants of a product that is found to be defective due to the absence of a repair-restricting design choice, could try to invoke the compliance defence of arts. 7(d) PLD-1985 and 11(1)d PLD-2024 with regards to this French prohibition of these practices (see *supra* nr. 379.d).²⁴⁶⁰ This would ultimately mean that it is the injured party who bears the full risk of circular economy legislation that restricts the freedom of manufacturers to design sufficiently safe products.²⁴⁶¹ Nevertheless, if this French prohibition effectively

²⁴⁵⁶ Art. L441-3, first and second sections Code de la Consommation.

²⁴⁵⁷ Art. L441-4 Code de la Consommation. Both prohibitions on repair-restricting actions of arts. L441-3-L441-4 *ibid.* can be seen as ancillary to the prohibition on 'planned obsolescence' of art. L441-2 *ibid.* (see *supra* nr. 237). See also C. Dubois and M. Leroux-Campello, 'L'obsolescence programmée a des petits frères!' (2020) *Recueil Dalloz* 1412, nrs. I-II (critically on the added value in practice of these new provisions).

²⁴⁵⁸ Art. 6(1) Parliament and Council Directive 2009/125/EC of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products [2009] OJ L285/10, 17; art. 3(2)(4) Ecodesign for Sustainable Products Regulation 2024. See also E. Maitre-Ekern and C. Dalhammar, 'Regulating Planned Obsolescence: A Review of Legal Approaches to Increase Product Durability and Reparability in Europe' (2016) 25 *Review of European, Comparative & International Environmental Law* 378, 392.

²⁴⁵⁹ In particular the general product safety requirement of art. 5 General Product Safety Regulation 2023/988/EU.

²⁴⁶⁰ Art. 7(d) PLD-1985; art. 11(1)d PLD-2024.

²⁴⁶¹ This relates to the fundamental 'enforcement costs advantage' of product liability which further increases in a more circular economic context. As examined *supra* nrs. 152-154, the *ex post* product liability defect assessment is more efficient in accident-prevention than *ex ante* regulation to the extent that products, accident risks and involved actors become more heterogeneous, which is definitely a consequence of increased product repair and refurbishment activities

violates as described above EU product safety harmonisation to the extent where it does not provide safety exceptions, then it must strictly speaking be cast aside and can it arguably no longer provide a ground for a successful compliance defence (see also *supra* nr. 198).

It is worth noting that the European Parliament proposed to introduce in the Promoting Repair Directive 2024 a similar prohibition on repair-restricting practices without an exemption for product safety reasons.²⁴⁶² Fortunately, the on 13 June 2024 final adopted text, does include some language that still allows objectively justified repair-restrictions (see *supra* nr. 379.d, *in fine*).

- b. Second, French law now imposes various obligations regarding the availability of spare parts.²⁴⁶³ The availability of first-rate original spare parts can to some extent help to make a product more safely repairable (see *supra* nr. 389), but defective original spare parts can of course also support harmonised product liability claims (see *infra* nrs. 399 et seq.).

Manufacturers and distributors of products on the French market must inform professional traders, who must pass this information on to consumers before they are bound by a contract, whether or not spare parts that are indispensable for using a movable product, are available and, if so, for how long after these have been placed on the market.²⁴⁶⁴ If they have confirmed such availability, which can contribute to higher scores on the *indice de réparabilité* discussed below, the manufacturer or importer must supply these spare parts within 15 working days to requesting professional traders as well as requesting repairers and refurbishers.²⁴⁶⁵ Additionally, for certain products for which spare parts are no longer available, the manufacturer or importer must provide a 3D-printing blueprint or the technical information necessary for creating it to a professional trader, repairer or refurbisher who requests this.²⁴⁶⁶

As pointed out by MICHEL as well as MAITRE-EKERN AND DALHAMMAR,²⁴⁶⁷ these French requirements relating to spare parts, like many other national initiatives in this domain,

²⁴⁶² Art. 5(3b) amended draft Promoting Repair Proposal 2023 in EU Parliament, 'Amendments adopted by the European Parliament on 21 November 2023 on the proposal for a directive of the European Parliament and of the Council on common rules promoting the repair of goods and amending Regulation (EU) 2017/2394, Directives (EU) 2019/771 and (EU) 2020/1828', P9_TA(2023)0400, 28-29.

²⁴⁶³ See for overviews N. Dupont, 'Quelles perspectives en matière de durabilité et de réparabilité des produits de consommation?' (2019) 50/1553 *La Semaine Juridique: Entreprises et Affaires* 33, 36-37; A. Michel, *Premature Obsolescence: In Search of an Improved Legal Framework* (Intersentia 2023) 329-333. This is in addition to the obligation, codified in art. L224-109 Code de la Consommation, for repair service providers of certain products to re-use some components as spare parts.

²⁴⁶⁴ Art. L111-4, first section Code de la Consommation. See also art. D111-4 *ibid*. Additional obligations apply with regards to various electric and electronic products and furniture, among which a presumption that no spare parts are available if the manufacturer or importer fails to inform the professional trader (art. L111-4, first section *ibid*.).

²⁴⁶⁵ Art. L111-4, second section *ibid*. See also arts. R111-4-1-R111-4-6 *ibid*.

²⁴⁶⁶ Art. L111-4, third section *ibid*.

²⁴⁶⁷ E. Maitre-Ekern and C. Dalhammar, 'Regulating Planned Obsolescence: A Review of Legal Approaches

run the risk of violating art. 34 TFEU's free movement of goods prohibition against 'measures having equivalent effect'. Indeed, these rules qualify under the original, very broad test of *Dassonville*, targeting "all trading rules [...] which are capable of hindering, directly or indirectly, actually or potentially, intra-Community trade".²⁴⁶⁸ The evolving, more recent case law of the CJEU has developed additional tests, like the 'non-discrimination' and 'market access' requirements if these rules would be considered a 'selling arrangement'.²⁴⁶⁹ These tests can arguably lead both to findings of a violation and of the absence thereof, depending on a factual assessment of how much these French rules impede market access to non-French EU traders.²⁴⁷⁰ If art. 34 TFEU would be violated, a justification of these French rules based on art. 36 TFEU is in my opinion improbable, since the latter does not refer to the general environmental or economic policy goals which underpin this French 'right to repair' regulation.

- c. Third, larger manufacturing and importing companies of 'waste-generating products' are required to inform consumers on the environmental qualities of those products, among which, regarding their 'repairability' (see also *supra* nr. 252 regarding durability).²⁴⁷¹ For electric and electronic products, this is fulfilled²⁴⁷² through the more comprehensive '*indice de réparabilité*', a repair score label using colours and a score on a scale of ten that manufacturers, importers and distributors must provide together with their product and make available online and that professional traders must communicate to consumers at the time of sale.²⁴⁷³

to Increase Product Durability and Reparability in Europe' (2016) 25 *Review of European, Comparative & International Environmental Law* 378, 392-393; A. Michel, *Premature Obsolescence: In Search of an Improved Legal Framework* (Intersentia 2023) 191-192. See also N. Dupont, 'Quelles perspectives en matière de durabilité et de réparabilité des produits de consommation?' (2019) 50/1553 *La Semaine Juridique: Entreprises et Affaires* 33, nr. 14.

²⁴⁶⁸ CJEU 11 July 1974, C 8-74, *Procureur du Roi v. Benoît and Gustave Dassonville*, ECLI:EU:C:1974:82, nr. 5.

²⁴⁶⁹ See CJEU 24 November 1993, C-267/91 and C-268/91, *Keck and Mithouard*, ECLI:EU:C:1993:905, nrs. 16-17; CJEU 10 February 2009, C-110/05, *Commission v. Italy*, ECLI:EU:C:2009:66, nrs. 36-37; CJEU 21 September 2016, C-221/15, *Etablissements Fr. Colruyt*, ECLI:EU:C:2016:704; nrs. 35-45; CJEU 15 July 2021, C-190/20, *DocMorris*, ECLI:EU:C:2021:609, nrs. 35-45. See also CJEU 8 March 2001, C-405/98, *Gourmet International Products*, ECLI:EU:C:2001:135, nr. 19: "[...] it cannot be excluded that an outright prohibition, applying in one Member State, of a type of promotion for a product which is lawfully sold there might have a greater impact on products from other Member States."

²⁴⁷⁰ Given their apparent non-discriminatory nature, the crux is likely the 'market access' test. The obligation to supply within 15 working days can potentially be considered a substantial obstacle to market access, but it can be evaded by stating that no spare parts are available. See in general relating to art. 34 TFEU and the CJEU's case law R. Schütze, 'Of types and tests: towards a unitary doctrinal framework for article 34 TFEU?' (2016) 41 *European Law Review* 826; L. Vogel, *Law of the Internal Market* (2nd edn., Bruylant 2020) 38-48.

²⁴⁷¹ Arts. L541-9-1 and R541-220-R541-222 Code de l'Environnement. An annual turnover of more than 10.000.000 EUR or a placing on the market of at least 10.000 units of the particular product is required (art. R541-220 *ibid.*).

²⁴⁷² See art. R541-221(I) *ibid.*

²⁴⁷³ Arts. L541-9-2(I) and R541-210-R541-214 *ibid.* See also N. Dupont, 'Vers une information renforcée des consommateurs sur la réparabilité et la durabilité des produits' (2020) *Contrats Concurrence*

Given how the intuitive ‘*indice de durabilité*’ is more likely to impact consumer behaviour, it can be expected to drastically shape the public’s safety expectations concerning a product’s safe repairability pursuant to art. 6(1)a PLD-1985 and art. 7(2)a PLD-2024 (see *supra* nrs. 373 and 384). At the same time, it can be expected to provide economic incentives to marginally improve the repairability and thus also the refurbishability of products (see *supra* nr. 396), which over time determines the public’s safety expectations as well. Unsurprisingly perhaps, also other Member States pursue similar initiatives in the absence of positive EU harmonisation. Belgium has for example very recently adopted a new federal law focused on creating a ‘product repairability index’, which is in design very similar to the French ‘*indice de réparabilité*’, but which still requires implementing regulations before it can actually enter into force.²⁴⁷⁴

Nevertheless, also these national information requirements may potentially be questioned in light of EU harmonisation. For distribution through B2C distance and off-premises contracts, additional national requirements imposed on traders may violate the ‘targeted maximum harmonisation’ of the Consumer Rights Directive²⁴⁷⁵ or even EU energy labelling harmonisation.²⁴⁷⁶ More generally, concerns might also be raised based on art. 34 TFEU, since these national rules can be seen as barriers to market access, as discussed *supra* nr. 397.b.

398. THE FRENCH ‘COMPLIANCE DEFENCE’ FOR ACCIDENTS DURING SELF-REPAIRS ESTABLISHED BY ART. L441-5 CODE DE LA CONSOMMATION – Likely to assuage French industry concerns faced by the aforementioned repair-enabling initiatives, the French legislator included in the 2020 circular economy legislation that introduced most of these new rules,²⁴⁷⁷ the following art. L441-5 Code de la Consommation: “*If he has designed his product to anticipate cases of self-repair and if he has given adequate safety instructions so that a user can carry out self-repair, the manufacturer cannot be held responsible for damage occurring during self-repair to the extent that this damage is linked to clumsiness on the part of the user or non-compliance by the latter with the product repair*

Consommation Alerte 1, Lexis, 1-2.

²⁴⁷⁴ Art. 4 Wet van 17 maart 2024 ter bevordering van de herstelbaarheid en de levensduur van goederen, BS 2 mei 2024, 48922. The Belgian ‘product repairability index’ can also be replaced, like the French example, by a more comprehensive ‘product lifetime index’ (see *supra* nr. 252).

²⁴⁷⁵ Arts. 4, 5(4) and 6 Parliament and Council Directive 2011/83/EU of 25 October 2011 on consumer rights [2011] OJ L304/64, 74-76. See also N. Dupont, ‘Quelles perspectives en matière de durabilité et de réparabilité des produits de consommation?’ (2019) 50/1553 *La Semaine Juridique: Entreprises et Affaires* 33, nr. 14.

²⁴⁷⁶ Cf. recital 23 Parliament and Council Regulation of 4 July 2017 setting a framework for energy labelling and repealing Directive 2010/30/EU [2017] OJ L198/1, 4). See also E. Maitre-Ekern and C. Dalhammar, ‘Regulating Planned Obsolescence: A Review of Legal Approaches to Increase Product Durability and Repairability in Europe’ (2016) 25 *Review of European, Comparative & International Environmental Law* 378, 392-393; A. Michel, *Premature Obsolescence: In Search of an Improved Legal Framework* (Intersentia 2023) 334, 365-366, 390-391.

²⁴⁷⁷ Loi nr. 2020-105 du 10 février 2020 relative à la lutte contre le gaspillage et à l’économie circulaire, JORF 11 février 2020, nr. 35.

instructions.²⁴⁷⁸ The underlying reasoning of course gets to heart of the liability risk of original manufacturers and distributors of products that are later repaired or refurbished, as examined in this Paragraph. Preventing accident risks involving the riskiest self-repairs by means of product design choices and providing adequate repair information and warnings, is crucial to avoid a finding of product defectiveness which could lead to at least harmonised product liability (cf. *supra* nrs. 379, 380 and 389).

However, although French literature curiously does not seem to raise this concern,²⁴⁷⁹ this provision violates in my opinion the maximum harmonisation of the PLD-1985 and PLD-2024 when it would be applied to harmonised product liability claims by injured parties.²⁴⁸⁰ Admittedly, the underlying factual circumstances may still lead on the basis of current harmonised product liability rules to a finding of a lack of product defectiveness or potentially a lack of causation. Yet, an additional, national defence in addition to those recognized by the Directive cannot be accepted (see also *supra* nr. 193). Hence, the exoneration of art. L441-5 Code de la Consommation should only apply outside the scope of EU product liability harmonisation, such as potential fault-based extracontractual or contractual liability claims against such manufacturers.²⁴⁸¹ As French observers have noted, this provision will likely have a limited impact on more fault-based liability rules, since its factual requirements already seem to presume an absence of fault on the part of the manufacturer.²⁴⁸²

c. Product defects resulting from repair information, spare parts, tools and repair or refurbishment services

i. Defective original repair information, spare parts, tools and repair or refurbishment services: influence on a main product's defect assessment

(1) *Potential role*

399. PART OF A MAIN PRODUCT'S 'PRESENTATION' AND SOMETIMES ITS 'REASONABLY FORESEEABLE USE' – Above, it has been discussed how a product defect relating to a lack of safe repairability or refurbishability may be potentially avoided through warnings, offering original repair or

²⁴⁷⁸ My own translation of art. L441-5 Code de la Consommation: “S’il a conçu son appareil en prévoyant les cas d’autoréparation et s’il a donné les consignes de sécurité adéquates pour qu’un utilisateur puisse réaliser une autoréparation, le fabricant ne peut être tenu responsable d’un dommage survenu lors d’une autoréparation dans la mesure où ce dommage est lié à une maladresse de l’utilisateur ou au non-respect par ce dernier des consignes de réparation du produit.”

²⁴⁷⁹ E.g., C. Dubois and M. Leroux-Campello, ‘L’obsolescence programmée a des petits frères!’ (2020) *Recueil Dalloz* 1412, nr. III; A. Fortunato, ‘Le service à distance d’aide à la réparation de produits’ (2022) 47 *Revue Juridique de l’Environnement* 91 nr. 15.

²⁴⁸⁰ See art. 3 PLD-2024; CJEU 25 April 2002, C-52/00, *Commission v. France*, ECLI:EU:C:2002:252, nr. 16; CJEU 25 April 2002, C-154/00, *Commission v. Greece*, ECLI:EU:C:2002:254, nr. 12; CJEU 25 April 2002, C-183/00, *González Sánchez v. Medicina Asturiana*, ECLI:EU:C:2002:255, nr. 25; CJEU 7 July 2022, C-264/21, *Fennia v. Philips*, ECLI:EU:C:2022:536, nr. 28. See also *supra* nr. 170.

²⁴⁸¹ Art. 13 PLD-1985; art. 2(4)b PLD-2024. See also *supra* nrs. 171 and 208 et seq.

²⁴⁸² C. Dubois and M. Leroux-Campello, ‘L’obsolescence programmée a des petits frères!’ (2020) *Recueil Dalloz* 1412, nr. III.

refurbishment services or providing access to original repair-enabling resources, like spare parts, repair information and repair tools (see *supra* nrs. 380-391). Conversely, if any such original ancillary resources are themselves flawed, they may also render a product defective rather than help to achieve the opposite. This is because these factors can be considered in the defect assessment of a main product that caused an accident during or after a repair or refurbishment that used such original repair information, spare parts, repair tools or repair and refurbishment services.

Original repair information, like warnings and repair or refurbishment instructions, provided with a product when it is placed on the market or put into service, is undeniably part of the product's presentation, which is a key component of the defect assessment (see *supra* nr. 182).²⁴⁸³ If it is factually incorrect in a way that creates accident risks, it can contribute to a finding that the corresponding product does not provide the safety that the public is entitled to expect.²⁴⁸⁴ For example, a warning placed on a component of a cargo bike to first remove another component in a disassembly process, may have been misplaced, making a repairer damage a connection, which ultimately breaks when the cargo bike hits a bump at high speed. Or repair instructions might incorrectly advise to use a particular technique or tool, which may either create an immediate accident risk during the repair or create the misleading impression of a successful repair while the product remains flawed and dangerous during subsequent use.

As already mentioned *supra* nrs. 385 and 389, the availability of original spare parts, repair tools, post-marketing retrievable repair information and even an offer of original repair or refurbishment services can all be considered to be also a part of a product's presentation,²⁴⁸⁵ while they at the same time marginally determine a product's reasonably foreseeable use.²⁴⁸⁶ Hence, while defects in those ancillary products and services can result in separate liability claims based on either national liability law or on harmonised product liability (see *infra* nrs. 409-411), they are equally capable of contributing to a finding that a corresponding main product was defective due to a lack of safe repairability or refurbishability.

To make this concrete, if we accept that for example the continuous availability of an original repair or refurbishment service can to a limited extent help to make a product that has been placed on the market safely repairable (see *supra* nrs. 385-386), then this advantage disappears and the balance may tip to a finding of product defectiveness due to a lack of safe repairability, when said service itself is found to be flawed and contributes to an accident. For

²⁴⁸³ Art. 6(1)a PLD-1985; art. 7(2)a PLD-2024. See also *supra* nrs. 380 and 389.

²⁴⁸⁴ See in general the case law cited *supra* footnote 1078. The literature focuses mostly on a lack of information, unclear information or situations where information is insufficient to remediate a product defect, but only seems to imply defectiveness resulting from factual errors included in provided information. See, e.g., G. Howells, 'Information and Product Liability - A Game of Russian Roulette?' in G. Howells, A. Janssen and R. Schulze (eds.), *Information Rights and Obligations: A Challenge for Party Autonomy and Transactional Fairness* (Aldershot 2005) 155-169; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 3, nrs. 46-50; T. Verheyen, *Eenzijdige beheersing van het aansprakelijkheidsrisico: Over waarschuwingen, instructies, disclaimers en andere technieken tot eenzijdige exoneration* (Intersentia 2021) 547-662.

²⁴⁸⁵ Art. 6(1)a PLD-1985; art. 7(2)a PLD-2024.

²⁴⁸⁶ Art. 6(1)b PLD-1985; art. 7(2)b PLD-2024.

example, a distributor of bunk beds for kids has been offering for a long time original repair services that are well-known and at least tacitly accepted by the importer who places those beds on the market (see *supra* nr. 388). Yet, these services turn out to be inadequate to such an extent that a child is severely injured when falling through the bed after jumping on it after a failed repair. In addition to a claim based on national contractual liability or potentially even art. 8(2) PLD-2024 against the repair service provider,²⁴⁸⁷ a harmonised product liability claim against the importer is also possible by arguing that the bunk bed was already defective when it was placed on the market due to the level of difficulty in safely repairing it, which is further demonstrated by the fact that even an original repair service failed.²⁴⁸⁸ The flawed original repair service therefore strengthens the case for the bunk bed's defectiveness when it was placed on the market, rather than achieve the opposite (cf. *supra* nr. 385).

In case of defects in original spare parts, repair information and tools, there is even more potential for such a harmonised product liability claim against actors in the original distribution chain based on a lack of safe repairability of the product they have placed on the market or put into service.

(2) *Principle: the time when the product was placed on the market or put into service*

400. DEFECTS IN ORIGINAL REPAIR INFORMATION, SPARE PARTS, REPAIR TOOLS AND REPAIR OR REFURBISHMENT SERVICES ARE ONLY PERTINENT TO A MAIN PRODUCT'S DEFECT ASSESSMENT WHEN PLACED ON THE MARKET OR PUT INTO SERVICE AT THE LATEST WHEN THE MAIN PRODUCT ITSELF WAS PLACED ON THE MARKET OR PUT INTO SERVICE – The crucial point in time for harmonised product liability's defect assessment is the moment when a product is placed on the market or put into service.²⁴⁸⁹ This key principle, which expresses itself most clearly in the 'single defect' assessment applicable to actors who merely make products available on the market (see *supra* nr. 372), equally applies when a main product is defective due to flawed original repair information, spare parts, tools or repair or refurbishment services (see also *supra* nrs. 380, 386 and 390). Note that art. 7(2)e PLD-2024's novel exception relating to an extended 'manufacturer's control' is examined separately *infra* nrs. 402-405, since it gives rise to some interpretative issues.

Consequently, if a piece of camping equipment is already placed on the market,²⁴⁹⁰ when its distributor offers dangerously flawed repair services, incorrect repair information or defective spare parts to be used with said equipment,²⁴⁹¹ then this is irrelevant from the perspective of the camping equipment's harmonised product liability defect assessment. The same holds true if for example the manufacturer or importer only for the first time offers such ancillary

²⁴⁸⁷ See *infra* nrs. 442 et seq.

²⁴⁸⁸ The injured party may try to claim directly on the basis of harmonised product liability against the importer, for strategic or practical reasons. But it is equally possible that the original repair service-provider attempts to claim in recourse against the importer, who might indeed still be liable on a primary basis for such a product accident.

²⁴⁸⁹ Art. 6(1)c PLD-1985; art. 7(2)e PLD-2024. See *supra* nrs. 184 and 371.

²⁴⁹⁰ See *supra* nr. 194 and *infra* nr. 412.a on when a product is precisely 'placed on the market'.

²⁴⁹¹ See *supra* nrs. 388 and 392 on attribution to defendants in the distribution chain of actions by others which determine a product's presentation or reasonably foreseeable use.

products or services on the market when the camping equipment is already in distribution or is already being used. OECHSLER points out that a plaintiff will in practice generally allege or simply imply that such ancillary products or services, which shape a main product's presentation or reasonably foreseeable use and which turn out to be defective, were indeed already placed on the market or put into service at the latest together with the main product.²⁴⁹² If the plaintiff's claim meets the required standard of proof, then the defendant might still try to prove a posteriority defence, by proving according to a standard of probability that these ancillary products or services have a 'post-marketing' nature.²⁴⁹³

Naturally, it remains for defective 'post-marketing' spare parts, repair information, tools or repair or refurbishment services, to claim separately based on non-harmonised national liability law or even based on the PLDI if these qualify as separate products (see *infra* nrs. 409-410). To the extent that these ancillary products and services occur outside 'the manufacturer's control' (see *infra* nrs. 402-404) and to the extent that they substantially modify the main product, they may additionally lead to a separate liability for an accident caused by the main product on the basis of art. 8(2) PLD-2024 (see *infra* nrs. 442 et seq.).

401. DEFECTS IN ORIGINAL SPARE PARTS, REPAIR TOOLS AND REPAIR OR REFURBISHMENT SERVICES: NO NEED FOR A CONTINUOUS AVAILABILITY TO BE RELEVANT TO THE MAIN PRODUCT'S DEFECT ASSESSMENT, NOTWITHSTANDING THE CAUSATION REQUIREMENT – *Supra* nrs. 386 and 390, it has been argued that original repair or refurbishment services, spare parts and repair tools must be continuously available from the time when the main product was placed on the market or put into service to the time when a repair or refurbishment is effectively sought, in order for ancillary resources to be potentially relevant²⁴⁹⁴ to argue that the main product was not defective due to a lack of safe repairability or refurbishability. In contrast, this dissertation does not extend this requirement of extended availability to the opposite situation where original repair or refurbishment services, spare parts or repair tools are themselves defective and may contribute to a finding that the main product was defective when it was placed on the market or put into service.

The main reasons for this differentiated approach are the Directives' goals of protecting injured parties and this dissertation's normative criteria of efficient risk-allocation and accident-prevention (see *supra* nrs. 130 and 168). A second, more factual reason, is the reality that even a temporary availability of defective original spare parts, repair tools or even flawed original repair or refurbishment services can already suffice in practice to render a main product defective. A defective spare part or repair tools, once it has been placed on the market or put into service, is 'put into circulation' according to the PLD-1985 and may always still be used. If the spare part or tool is itself defective, this then can result in a flawed repair of the

²⁴⁹² Oechsler, Staudinger, 'Produkthaftungsgesetz', § 3, nr. 52.

²⁴⁹³ Art. 7(b) PLD-1985; art. 11(1)c PLD-2024. See also *supra* nrs. 195 and 239 and *infra* nrs. 413 et seq. See also Oechsler, Staudinger, 'Produkthaftungsgesetz', § 3, nr. 52.

²⁴⁹⁴ As discussed *supra* nrs. 385 and 389, the role of especially original repair and refurbishment in avoiding a product defect qualification is very limited, while the availability of original spare parts and repair tools can more significantly contribute to a finding that a product is not defective due to a lack of safe repairability or refurbishability.

main product which causes an accident during the repair or during use afterwards. The same can occur when an original repair or refurbishment service is itself flawed. In this regard, this is comparable to the dissemination of defective original repair information, for which it can also no longer be controlled, once it is out there and happens to be factually incorrect, that someone uses this information and that this results in a product accident. Once these defects in these ancillary products and services were present when a main product was placed on the market or put into service,²⁴⁹⁵ however temporary thereafter, this suffices to potentially make this main product defective, as discussed *supra* nrs. 399-400. For example, a defendant cannot argue that a gas BBQ was not defective because flawed original connection valve pieces that were placed on the market as spare parts when the individual, eventually harmful product was placed on the market, were no longer being offered at the time when one of these pieces was used in an independent repair and then caused a gas leak and dangerous combustion when the gas BBQ was stored after its first subsequent use.²⁴⁹⁶

However, this does not diminish the core requirement that a successful harmonised product liability claim must always prove that a particular defect in the product caused the eventual damage.²⁴⁹⁷ In other words, the fact that defective original spare parts, repair tools or repair or refurbishment services were only present when the main product was placed on the market but were remediated or recalled shortly thereafter, will make it quite challenging²⁴⁹⁸ for the plaintiff to nevertheless prove that this particular defect effectively caused an ensuing product accident during or after a subsequent repair or refurbishment of the main product. For a claim to still succeed in those cases, the defective original spare part or repair tool must in some way have not been properly recalled or the main product must have been subject to the repair or refurbishment service during the short time when it was still provided in a defective manner after the main product was placed on the market or put into service.

²⁴⁹⁵ Defective original spare parts, repair tools or repair or refurbishment services that only become available after the main product was placed on the market or put into service, are irrelevant to liability for the main product under the PLDI (see *supra* nr. 400) but can of course be particularly pertinent for post-marketing liability based on national extracontractual liability for fault. For original repair or refurbishment services making a product defective on a post-marketing basis, art. 7(2)e PLD-2024 exceptionally allows a postponed defect assessment which still remains subject to the posteriority defence of art. 10(1)c *ibid.* (see *infra* nrs. 403-404).

²⁴⁹⁶ In contrast, a continuous availability is required *supra* nrs. 386 and 390 to consider the presence of (non-defective) original spare parts, repair tools or repair or refurbishment services to argue that a product was nevertheless safely repairable or refurbishable. These ancillary products and services can only be assessed in light of their continued availability as a characteristic present when the product was placed on the market or put into service that can help to avoid a product defect qualification, while a defect in those ancillary products and services when the product is placed on the market or put into service can already suffice as a one-off to render the main product defective.

²⁴⁹⁷ Art. 4 PLD-1985; art. 10(1) PLD-2024. See *supra* nrs. 191 and 205.

²⁴⁹⁸ Note, however, the presumptions of causation that art. 10(3)-(4) PLD-2024 now also provides to plaintiffs in certain circumstances. See also *supra* nr. 206.b.

(3) *The exception: postponing the defect assessment based on art. 7(2)e PLD-2024's extended manufacturer's control*

402. ART. 7(2)E PLD-2024: A POTENTIALLY VERY BROAD POSSIBILITY TO POSTPONE A MAIN PRODUCT'S DEFECT ASSESSMENT, WHICH IS TEXTUALLY MOST CONVINCING FOR 'POST-MARKETING' ORIGINAL SPARE PARTS AND ORIGINAL REPAIR OR REFURBISHMENT SERVICES AND LESS CONVINCING FOR ORIGINAL REPAIR INFORMATION AND REPAIR TOOLS – As the preceding discussion has already alluded to, art. 7(2)e PLD-2024 itself provides now an important new exception to the ('single' defect assessment) principle according to which the defect assessment must be based on the moment when a product was placed on the market or put into service. In cases where the “*manufacturer retains control over the product after that moment*”, the defect assessment (in its entirety)²⁴⁹⁹ must be postponed instead to the later “*moment in time when the product left the control of the manufacturer*” (see also *supra* nr. 371).

It seems logical that the new Directive has introduced this rule to match art. 11(2) PLD-2024's new exceptions to the posteriority defence and art. 8(2) PLD-2024's new primary liability of independent 'substantial product modifiers'. And this dissertation will also argue that it must *de lege lata* be interpreted as much as possible in this sense and *de lege ferenda* even amended to achieve full theoretical coherence (see *infra* nrs. 403-404). Nevertheless, art. 4(5) PLD-2024 defines the pivotal underlying concept of the 'manufacturer's control' in a surprisingly broad manner.²⁵⁰⁰ And our focus on original repair-enabling products and services that can render a main product defective, provides the ideal testing ground to examine how broad this concept and the corresponding postponement of the defect assessment really are.

- a. First of all, arts. 4(5) and 7(2)e PLD-2024 seem at first sight (but see *infra* nr. 403) to definitely encompass original spare parts that are placed on the market or put into service after the product for which they are used to repair or refurbish, was placed on the market or put into service. After all, with these original spare parts, the manufacturer “*with regard to actions of a third party, authorises or consents to [...] the integration [...] of a component*” into the product pursuant to art. 4(5)a(i) PLD-2024.
- b. Second, original repair or refurbishment services that entail a “*modification of the product*”, can also be interpreted as still occurring within art. 4(5)a(ii) PLD-2024's concept of the 'manufacturer's control'. Admittedly, repairs and refurbishments technically strive

²⁴⁹⁹ An alternative interpretation of art. 7(2)e *ibid.* is possible, which would only postpone the defect assessment for the specific aspects that qualify under art. 4(5) *ibid.*'s definition of 'manufacturer's control'. However, this dissertation does not follow this 'split defect assessment' alternative, as explained at the end of this section.

²⁵⁰⁰ Art. 4(5) *ibid.*: “‘*manufacturer's control*’ means that:

- (a) *the manufacturer of a product performs or, with respect to actions of a third party, authorises or consents to:*
 - (i) *the integration, inter-connection or supply of a component, including software updates or upgrades; or*
 - (ii) *the modification of the product, including substantial modifications;*
- (b) *the manufacturer of a product has the ability to supply software updates or upgrades itself or via a third party.*”

to modify a product as little as possible (cf. *supra* nrs. 88-89). Nevertheless, sometimes a modification compared to the product's initial design is unavoidable in order to bring a product back to a satisfactory condition. And, given that art. 4(5)a(ii) PLD-2024 accepts *de lege lata* any modification, even non-substantial ones (but see *infra* nr. 404), it can be argued that something minute like a replaced part or even a tightened screw or scratch could already suffice. The question is of course whether a modification that is more an accidental result of a repair or refurbishment than a pursued goal in itself, can be considered as a situation where “*the manufacturer [...] performs [...] authorises or consents to [...] the modification of the product*”.²⁵⁰¹ Given how requirements of intent are difficult to reconcile with harmonised product liability's nature (see also *supra* nr. 179), it can seem fair to also accept that the manufacturer must only consent to or authorise an action, like a repair service, that merely has the potential to result in some form or change to the product's initial design, like a different setting, a replaced spare part, etc.

- c. Third, a less persuasive textual argument can be made for original repair information that is provided on a post-marketing basis, including warnings, as well as for original repair tools. Indeed, such repair information and tools are intended to be eventually used in self- or independent repair or refurbishment processes that sometimes – although in a more accidental manner, as discussed above – result in “*the modification of the product*”.²⁵⁰² Nevertheless, this requires a more significant intermediate step: unlike with the original repair or refurbishment service, it is no longer someone the manufacturer knows and whom he directly authorises or consents to, who will use such repair information and tools. Moreover, whether most repair information truly modifies a product compared to its initial design can be doubted, as mentioned above. Hence, it would remain limited to cases where the repair information actually requires to modify the product rather than restore its original state. And also repair tools can still be used in various ways that do not necessarily modify a product.

The resulting argument would then be that, first of all, the placement on the market or putting into service by the manufacturer or with his authorisation or consent of spare parts, which may be later integrated into a product during a self-, independent or original repair or refurbishment, postpones the defect assessment to that moment in time, pursuant to arts. 4(5)a(i) and 7(2)e PLD-2024. Hence, not only defects in those spare parts, but also the product's state and changes in the public's legitimate safety expectations at that time then become part of the assessment whether the now repaired or refurbished product is defective if it would happen to cause an accident. Second, also all occurring original repair or refurbishment services would then postpone the product's defect assessment, because these reflect the manufacturer's authorisation or consent to an action that can potentially modify the product in some manner pursuant to art. 4(5)a(ii) PLD-2024. Third, in a very broad interpretation of this last provision, the same argument could additionally be expanded to the moment when original repair information and original repair tools are used, since these can also potentially modify the product. Yet, this third category seems to stretch the concept of an extended

²⁵⁰¹ Art. 4(5)a(ii) *ibid.*

²⁵⁰² Art. 4(5)a(ii) *ibid.*

‘manufacturer’s control’ even further and should in my opinion definitely be rejected (see also *infra* nr. 403).

Finally, note that, in an alternative interpretation of art. 7(2)e PLD-2024, it could be argued that not the entire defect assessment for a product must be postponed. Instead, “*where the manufacturer retains control over the product*” after a product has been already placed on the market or put into service,²⁵⁰³ might with a textual stretch be interpreted as implying a split in the defect assessment. Namely, only for the aspects that qualify under art. 4(5) PLD-2024’s definition of ‘manufacturer’s control’ would then defectiveness be assessed at “*the moment in time when the product left the control of the manufacturer*”, but for all other circumstances like changes in regulatory standards and in the public’s safety expectations would the defect assessment remain fixated at the previous “*the moment in time when the product was placed on the market or put into service*”.²⁵⁰⁴ This alternative interpretation is not further examined in this dissertation. Mainly, this is because it does not seem apparent on the basis of a literal reading of art. 7(2)e PLD-2024.²⁵⁰⁵ And a single moment in time to fixate the defect assessment seems theoretically more coherent and easier to implement in practice. Assessing the defectiveness of a single product at two different moments, would seem challenging and opens up various questions. This is particularly true because the concept of the manufacturer’s control that would govern this split in defect assessment, is open to a lot of interpretation, as demonstrated in this and the next section. Instead, this dissertation interprets art. 7(2)e PLD-2024 as potentially postponing the entire defect assessment of a product. Rather than trying to restrictively interpret art. 7(2)e PLD-2024’s postponement of the defect assessment, this dissertation argues in the following two sections to restrictively interpret the underlying concept of ‘manufacturer’s control’, which is defined in art. 4(5) PLD-2024. While taking the text of art. 7(2)e PLD-2024 literally, this can achieve a broader coherence within the entire new Directive, by letting this provision and art. 4(5) PLD-2024 converge more with the equally new provisions of arts. 8(2) and 11(2) PLD-2024.

403. ART. 7(2)E PLD-2024’S: A MORE CONSISTENT INTERPRETATION *DE LEGE LATA* IN LIGHT OF ARTS. 8(2) AND 11(2) PLD-2024, WHICH ONLY LEAVES ROOM FOR ORIGINAL REPAIRS OR REFURBISHMENTS THAT EITHER EFFECTIVELY INTEGRATE A SPARE PART OR EFFECTIVELY MODIFY THE PRODUCT – Contrary to the broader possible interpretation explored in the previous section, this dissertation argues that the novel concept of the ‘manufacturer’s control’ must already *de lege lata* (cf. *infra* nr. 404) be more restrictively interpreted. Only direct actions by the manufacturer or by actors in his original distribution or service network, to which he has consented and that directly consist of effective performance of the elements mentioned in art. 4(5) PLD-2024, would then still be able to postpone the defect assessment pursuant to art. 7(2)e PLD-2024. In this reading, merely providing original repair information and original repair tools should definitely not qualify as an action ‘within the manufacturer’s control’ pursuant to arts. 4(5)

²⁵⁰³ Art. 7(2)e *ibid.*

²⁵⁰⁴ Art. 7(2)e *ibid.*

²⁵⁰⁵ Admittedly, “*where*” is an ambivalent concept. There would have been more textual support for this interpretation if art. 7(2)e *ibid.* had stated “*to the extent that the manufacturer retains control over the product*”.

and 7(2)e PLD-2024. Yet, the same is then also the case for the mere placement on the market or putting into service of spare parts by the manufacturer or with his consent or authorisation, merely because these later may be ‘integrated’ into the product in a self- or independent repair or refurbishment. Moreover, it is then also necessary to reject the performance by the manufacturer or his authorisation to or consent with original repair or refurbishment services that might have had the possibility to but do not necessarily ‘modify’ the product.

Consequently, only original repair and refurbishment activities can still lead to a postponement of the defect assessment, but only if they either effectively integrate spare parts in the product or effectively entail some modification of the product compared to its initial design. And the moment to which the defect assessment is postponed pursuant to art. 7(2)e PLD-2024 is then the moment when such spare part is effectively integrated or such modification to the product is effectively performed by the manufacturer or occurs with his direct authorisation or consent.

This choice to more narrowly interpret art. 4(5) PLD-2024’s concept of the ‘manufacturer’s control’, is motivated by two main reasons.

- a. On the one hand, this is because the EU legislator seems to have only wanted to operationalize with the concept of ‘manufacturer’s control’ the specific new rules of arts. 8(2) and 11(2) PLD-2024, without intending to create a broader harmonised product liability for post-marketing defects. This is illustrated by the recitals in the initial proposal presented by the Commission in 2022 and the final text adopted in 2024, which both despite their lengthy nature refer only in passing to the new concept of the ‘manufacturer’s control’ and only do so when specifically discussing either art. 8(2) PLD-2024’s new liability for substantial product modifiers or art. 11(2) PLD-2024’s new exceptions to the posteriority defence.²⁵⁰⁶ And, indeed, these two provisions explain the need for inserting in art. 7(2)e PLD-2024 a reference to the concept of the ‘manufacturer’s control’, which both aforementioned new rules also use.

First of all, art. 8(2) imposes a separate primary liability only on persons who substantially and independently modify a product that has already been placed on the market or put into service (see *infra* nrs. 442 et seq.). It would thus be unfair that manufacturers or actors under their control could substantially modify a product without incurring any potential liability based on the PLDI, as the final version of recital 39 argues explicitly.²⁵⁰⁷ Hence, an exception to the posteriority defence was ultimately adopted in art. 11(2)d for substantial product modifications that occur ‘within the manufacturer’s control’, such as certain product modifying repairs provided by the original service network (see also *infra* nr. 413). This led the EU legislator to also postpone in art. 7(2)e the defect

²⁵⁰⁶ Cf. recitals 23, 29, 37-39 PLD Proposal 2022; recitals 17, 32, 39, 50-52 PLD-2024. See in particular recitals 32 and 39 PLD-2024 cited in the following footnotes.

²⁵⁰⁷ See recital 39 PLD-2024: “[...] Where the modification is made outside the control of the original manufacturer, it should be possible to hold the person that made the substantial modification liable [...] Where a substantial modification is carried out by the original manufacturer, or within its control, and where such a substantial modification makes the product defective, that manufacturer should not be able to avoid liability by arguing that the defectiveness came into being after it placed the product on the market or put it into service. [...]”

assessment to the “*time when the product left the control of the manufacturer*”, in order to avoid a difference in the relevant moment for the defect assessment and the last moment when the product was ‘substantially modified’ in terms of product safety by the manufacturer or his service network for which defendants will not be able the posteriority defence anyway.

Second, the same extension was needed due to art. 11(2)a-c’s ‘digital exception to the posteriority defence’ for defects resulting either from digital services or software supplied within the manufacturer’s control or from a lack of such supply of software updates or upgrades that would have been necessary to maintain product safety (see *supra* nr. 242). Once again, the EU legislator seems to have felt that, if the posteriority defence is no longer available, the defect assessment must also be postponed to that moment in time in order to make it a coherent part of the defendant’s harmonised product liability risk.²⁵⁰⁸

In conclusion, arts. 8(2) and 11(2) seem to be the only actual reasons that underpin the reference to the ‘manufacturer’s control’ in art. 7(2)e and it seems just unfortunate that art. 4(5) defines this concept in such a broad, imprecise manner.

- b. On the other hand, a more restrictive interpretation of the ‘manufacturer’s control’ limited to arts. 8(2) and 11(2) PLD-2024 can ensure that harmonised product liability does not expand into the domain of post-marketing liability in an ill-defined, unclear manner. Not only would this give rise to various theoretical questions, as the previous section limited to the repair context already demonstrated. This would also alter harmonised product liability’s nature in a much more fundamental manner than what is now already achieved by art. 11(2)a-c PLD-2024’s, still relatively narrow digital exception to the posteriority defence (see *supra* nr. 196). Instead, national contractual and extracontractual liability law already cover post-marketing liability, in a more flexible and arguably also in an adequate manner. At the same time, it continues to be possible to claim separately on the basis of the PLDI for defects in post-marketing spare parts and in repair tools when these are considered separate, defective ‘products’ (see *infra* nr. 406). Moreover, a more restrictive interpretation of the ‘manufacturer’s control’ also means that there continues to be sufficient room for liability based on art. 8(2) PLD-2024 of independent persons who substantially modify a main product by using original (and potentially post-marketing) spare parts, repair tools or repair information.²⁵⁰⁹

²⁵⁰⁸ See recital 32 *ibid.*: “[...] In order to reflect that in the digital age many products remain within the manufacturer’s control beyond the moment at which they are placed on the market, the moment in time at which a product leaves the manufacturer’s control should also be taken into account in the assessment of a product’s safety. A product can also be found to be defective on account of its cybersecurity vulnerability, for example where the product does not fulfil safety-relevant cybersecurity requirements.”

²⁵⁰⁹ E.g., if art. 4(5) *ibid.* would be interpreted in the more expansive manner first discussed *supra* nr. 402, then the mere use by an independent repairer or refurbisher of original spare parts may potentially already exclude his liability based on art. 8(2) *ibid.*, if he would happen to substantially modify the product. After all, if this is part of the ‘manufacturer’s control’, then the independent repairer or refurbisher no longer acts “*outside*” of it, as required by art. 8(2) *ibid.*

- c. In conclusion, it seems recommended to interpret already *de lege lata* the ‘manufacturer’s control’ in arts. 4(5) and 7(2)e PLD-2024 more restrictively than the broad view presented in the previous section, in order to better align it with the substance of arts. 8(2) and 11(2) PLD-2024 and to avoid as much as possible an open-ended expansion into post-marketing harmonised product liability. First of all, it remains limited by actions performed either by the manufacturer himself or by actors in his distribution and service network if they act with his consent or authorisation. Second, an element described in art. 4(5) PLD-2024 must be effectively fulfilled, not a mere possibility thereto. Only for original repairs and refurbishments, it can according to this more narrow interpretation of arts. 4(5) and 7(2)e PLD-2024, be accepted that they directly extend the manufacturer’s control over the product. Yet, this is only the case if these original repairs or refurbishments either effectively integrate a spare part in the main product or if these happen to effectively change the product compared to its initial design. As a result, only when the manufacturer or another actor in his service network or in the product’s original distribution chain with the manufacturer’s consent or authorisation perform such a repair or refurbishment, is the moment of the product’s entire (see *supra* nr. 402, *in fine*) defect assessment postponed to this later moment in time.

404. ART. 7(2)E PLD-2024: AN EVEN MORE CONSISTENT INTERPRETATION *DE LEGE FERENDA* IN LIGHT OF ARTS. 8(2) AND 11(2) PLD-2024, WHICH WOULD ONLY ACCEPT ‘SUBSTANTIAL MODIFICATIONS’ TO POSTPONE A MAIN PRODUCT’S DEFECT ASSESSMENT – Admittedly, even the previous section’s more restrictive interpretation *de lege lata* of arts. 4(5) and 7(2)e PLD-2024, does not fully align with arts. 8(2) and 11(2) PLD-2024 and thus leaves theoretical gaps. This Chapter focuses only on the aforementioned components of art. 4(5)a(i)-(ii) according to which a repair or refurbishment may occur ‘within the manufacturer’s control’, so the following discussion will neither pay attention to other aspects of art. 4(5)a(i)b PLD-2024 nor to art. 11(2)a-c PLD-2024’s ‘digital exception to the posteriority defence’. With that in mind, it is first of all clear that art. 4(5)a(ii) confirms very explicitly that a “*modification of the product*” performed or consented to by the manufacturer can also be a non-substantial modification. Second, art. 4(5)a(i) allows simple ‘integrations’ in the product of ‘components’ like spare parts automatically qualify, even when these do not ‘substantially modify’ the product. In contrast, both the primary liability of independent product modifiers of art. 8(2) and the exception to the posteriority defence of art. 11(2)d remain explicitly limited to ‘substantial product modifications’, which is a concept defined separately in art. 4(18) (see *infra* nrs. 442 et seq.).

Why would it be useful to extend the product defect assessment based on art. 7(2)e to all post-marketing moments when the manufacturer or third parties acting under his authorisation or consent simply ‘modify’ the product, when this does not correspond with an exception to the posteriority defence? It can of course be considered overall favourable to plaintiffs to make the grounds for postponing the defect assessment as broad as possible, because the legitimate safety expectations of the public tend to become more stringent over time (cf. *supra* nr. 315). Such argument would then find support in the Directive’s goals and possibly even in this dissertation’s normative criteria of efficient risk-allocation and accident-prevention (see *supra* nrs. 130 and 168). However, this is just an argument in favour of post-marketing liability

more generally, which has traditionally not been harmonised and is left to national law (see also *supra* nr. 403.b). Art. 11(2)'s exception to the posteriority defence now provides limited exceptions to this principle (see *supra* nr. 196), but these still do not encompass 'non-substantial product modifications' that would still occur within the manufacturer's control.

Theoretically, it seems to make little sense to create such a dichotomy between the moment of the defect assessment and the exception to the posteriority defence.²⁵¹⁰ Moreover, the fact that the current version of art. 4(5)a(i)(ii) incorporates 'non-substantial product modifications' within the definition of 'manufacturer's control' which determines art. 7(2)e's postponement of the defect assessment, results in complicated and undesirable effects when we also consider the current version of art. 11(1)c's posteriority defence. This last issue is discussed separately in the next section.

Based on these reasons, this dissertation proposes *de lege ferenda* to amend art. 4(5)a(ii) by replacing "*the modification of the product, including substantial modifications;*" with simply "*the substantial modification of the product;*". Furthermore, also art. 4(5)a(i) should be amended by actually removing this separate ground for an extension of the 'manufacturer's control' based on integrating a component, because it should in light of arts. 8(2) and 1(2)d only be relevant when the integrated spare part results in another 'substantial modification' of the product. Moreover, it seems at first sight also that (the rest of) art. 4(5)a(i) and art. 4(5)b should be amended more generally to remain restricted to the same underlying facts as art. 11(2)a-c PLD-2024's 'digital exception to the posteriority defence'. Nevertheless, this last part has not been really scrutinized in this Chapter focused on repairs and refurbishments, which is why it is merely suggested but not included in the list of formally proposed amendments at the end of this dissertation.

For original repair and refurbishment services, this would concretely only postpone the moment of the product defect assessment when they would 'substantially modify' the product. As defined in art. 4(18), such 'substantial modification' requires a change in the product's safety configuration or in its compliance with product safety regulation (see in particular *infra* nrs. 442 et seq.). The simple fact that an original refurbishment service would cosmetically change a product or would replace a damaged component with an identical one, in a secure and flawless manner, would thus no longer suffice. In comparison, the defect assessment would be effectively postponed pursuant to art. 7(2)e when an original repair would for example permanently disable a safety mechanism or replace a component with a not well fitting, defective spare part that would increase the product's risk profile. Such an amendment *de lege ferenda* would ensure that art. 7(2)e's postponement of the defect assessment to "*the moment in time when the product left the control of the manufacturer*", perfectly aligns with the same actions that either bar a defendant in the product's original distribution chain from

²⁵¹⁰ The only reason might have been some concern to ensure that liability for 'independent substantial modifications' based on art. 8(2) PLD-2024 are not unduly attributed to a person, when the modification was still, although not to the full 'substantial' extent, influenced by the manufacturer or his service network. Nevertheless, this does not justify including all 'non-substantial product modifications' in art. 4(5) *ibid.* and thus also art. 7(2)e *ibid.* It can already suffice that art. 8(2) *ibid.* requires the person to 'substantially modify' the product 'outside the manufacturer's control' and that art. 4(5) *ibid.* would define 'within the manufacturer's control as, among others, any 'substantial modification' performed, authorised or consented to by the manufacturer.

invoking the posteriority defence based on art. 11(2)d or impose a separate liability on an independent substantial product modifier based on art. 8(2).

405. ART. 7(2)E PLD-2024; DUE TO ART. 11(1)C PLD-2024'S POSTERIORITY DEFENCE, IMPACT *DE LEGE LATA* MOSTLY LIMITED TO CASES OF NON-SUBSTANTIAL PRODUCT MODIFICATIONS AND SOME CASES OF SECONDARY LIABILITY – As another sign of what seems to be flawed drafting,²⁵¹¹ the new posteriority defence of art. 11(1)c PLD-2024 forgets to refer to “*the moment in time when the product left the control of the manufacturer*”, despite the fact that this is now another moment in time when defects may arise for which liability can be imposed pursuant to art. 7(2)e PLD-2024, as discussed in the preceding sections. The remarkable consequence is that in quite a few cases where the plaintiff can prove liability based on this postponed defect assessment, the defendant can now, at least in theory, simply avoid this liability by invoking art. 11(1)c PLD-2024's posteriority defence. For this, he must only prove that the post-marketing circumstance that extended the manufacturer's control pursuant to arts. 4(5) and 7(2)e PLD-2024 had not been reasonably foreseeable (see also Figure 9 *supra* nr. 239) when he placed the product on the market, put it into service or made it available. This requirement may very well be fulfilled in many cases, for example in case of an eventual post-marketing original repair service that effectively ‘modified’ the product or ‘integrated’ a spare part in the product.

The reason why the defendant liable based on an extended manufacturer's control pursuant to arts. 4(5) and 7(2)e PLD-2024 cannot always successfully invoke the posteriority defence of art. 11(1)c PLD-2024, is because said defence is now also – *de lege lata* – personally interpreted vis à vis distributors and other defendants who merely make products available on the market (see also *supra* nr. 322) and because art. 11(2) PLD-2024 provides exceptions to the posteriority defence (see also *supra* nr. 196), for our purposes most notably art 11(2)d PLD-2024's case of ‘substantial modifications’ to the product occurring within the manufacturer's control. In terms of outcomes, the following three categories can be distinguished.

- a. First of all, there is the large group of all cases where the defendant is a (quasi-)manufacturer, importer or equivalent defendant,²⁵¹² who has placed the product on the market or put it into service, and where a post-marketing circumstance after this moment in time is nevertheless invoked to prove the product's defectiveness based on arts. 4(5) and 7(2)e PLD-2024. If this circumstance has neither modified the product in a substantial manner nor fulfilled any other of art. 11(2) PLD-2024's exceptions to the posteriority defence, then these defendants can simply invoke said defence and, in doing so, effectively counter any alleged liability based on arts. 4(5) and 7(2)e PLD-2024

²⁵¹¹ This indeed seems to be a drafting omission resulting from the legislative process, since it would have been arguably more logical and coherent that no cases of art. 6(1)e *ibid.*'s postponed defect assessment could be so easily neutralised by the posteriority defence. An alternative possible drafting error might be that art. 4(5) *ibid.* refers to any product ‘modification’ rather than only ‘substantial modification’ for which art. 11(2)d *ibid.* provides an exception to the posteriority defence when such substantial modifications occur within the ‘manufacturer's control’. This dissertation precisely proposes amendments *de lege ferenda* for both instances, as reiterated further in this section.

²⁵¹² *E.g.*, the fulfilment service provider (art. 4(14) *ibid.*) or authorised representative (art. 4(12) *ibid.*). See *supra* nr. 178.

(cf. *supra* nrs. 402-404 on the various possible interpretations of these provisions *de lege lata* and *de lege ferenda*).

For example, when a repair service offered by the manufacturer of a piece of camping equipment only after it has already been placed on the market, makes the product defective but also either ‘modifies’ the product or integrates a spare part,²⁵¹³ then theoretically an injured party can claim for damage caused by this defect on the basis of arts. 4(5)a(ii) and 7(2)e PLD-2024. However, because art. 11(1)c PLD-2024 does not refer to this later moment in time, the aforementioned defendants can simply argue that this defect origin did not exist when they placed this piece of camping equipment on the market or put it into service. This would completely negate arts. 4(5) and 7(2)e PLD-2024’s postponed defect assessment, but it is of course incumbent on these defendants to still invoke and prove this posteriority defence.

- b. Second, for all cases where the defendant is a distributor (or online platform) subject to secondary liability,²⁵¹⁴ this distributor can due to the personal interpretation only invoke art. 11(1)c PLD-2024’s posteriority defence in a similarly successful manner, if the postponed defect assessment at the time “*when the product left the control of the manufacturer*”²⁵¹⁵ only occurs after he has personally made the product available on the market. In contrast, the distributor can no longer invoke this defence when the end of this extended ‘manufacturer’s control’ occurs after the product was placed on the market but still before he has personally made it available.

For example, if a B2C reseller of the aforementioned piece of camping equipment is held liable on a secondary basis for a defect in the equipment that resulted from an original repair service, which modified the product in a non-substantial manner or integrated a spare part and which occurred before the resale,²⁵¹⁶ then he will be unable to invoke the posteriority defence and he will effectively be liable for a defect resulting from this post-marketing repair service.

This is of course grossly unfair to defendants who find themselves effectively liable on a secondary basis, which is in a context of product redistribution, repairs and refurbishments exactly a growing category (see *supra* nrs. 280 and 355). The aforementioned first

²⁵¹³ As discussed *supra* nr. 403, these circumstances can even according to a narrow interpretation *de lege lata* of arts. 4(5)a(ii) and 7(2)e PLD-2024 still be considered as being part of the ‘manufacturer’s control’.

²⁵¹⁴ The current text of the posteriority defence of art. 11(1)c *ibid.* completely forgets the independent ‘substantial product modifier who makes the product available on the market’ ([...] or, in the case of a distributor, made available on the market, [...]). This is another reason why this dissertation proposes *de lege ferenda* to amend art. 8(2) *ibid.* by making clear that such actor ‘places a product on the market’ (see *supra* nr. 266.b and *infra* nrs. 450-453). If adopted, such actor would clearly be subject to the first category mentioned above and not the second.

²⁵¹⁵ Art. 7(2)e *ibid.*

²⁵¹⁶ Admittedly, this situation will be relatively rare, because if the plaintiff can prove that an original repair service took place prior to the resale, then the product is arguably no longer anonymous and secondary liability will likely not apply (art. 8(3) *ibid.*). However, it might be that the reseller or other type of distributor is for various reasons unwilling or still incapable to timely identify his own distributor or a primary liable defendant to exonerate himself from secondary liability (see *supra* nr. 301).

group of defendants in the product's original distribution chain, who are all subject to primary liability, would simply be able to shrug off the postponed defect assessment with art. 11(1)c PLD-2024's posteriority defence, while distributors and online platforms would in many cases be unable to do so due to this defence's personal interpretation vis à vis these actors. This difference in treatment seems unjustified based on corrective justice, since defendants subject to primary liability are definitely more significant abnormal 'risk-takers' (see *supra* nrs. 127 and 128.c) and also unwarranted based on efficient accident-prevention since these last actors tend to have more rather than less control over accident risks (see *supra* nr. 108).

Nevertheless, this entire issue could be avoided by removing *de lege ferenda* the reference to "or, in the case of a distributor, made available on the market" in art. 11(1)c PLD-2024, which would result in a producer-specific interpretation of the posteriority defence vis à vis distributors and online platforms. *Supra* nr. 322.c, this dissertation has already advocated for such an amendment based on more general reasons, which are further strengthened by this complex interplay between the current versions of art. 11(1)c and 7(2)e PLD-2024.

- c. And third, in all cases where the product is substantially modified, no posteriority defence can be invoked as a consequence of art. 11(2)d PLD-2024 (see also *infra* nrs. 413 et seq.). The same holds true when the 'digital exception to the posteriority defence' of art. 11(2)a-c PLD-2024 would apply (see also *supra* nrs. 242 and 248). For example, an original repair service is only offered after the aforementioned piece of camping equipment has already been placed on the market and it disables a safety mechanism or otherwise modifies the product 'substantially'.²⁵¹⁷ In such cases, the postponed defect assessment pursuant to arts. 4(5)a(ii) and 7(2)e PLD-2024 can still have full effect, since neither a defendant subject to primary nor a defendant subject to secondary liability can invoke the posteriority defence.

As just argued *supra* nr. 404, this dissertation actually proposes *de lege ferenda* to amend art. 4(5)a(ii) PLD-2024 by ensuring that only 'substantial modifications' to the product would qualify under the concept of 'within the manufacturer's control'. The result would be that only such substantial, original product modifications would still postpone the defect assessment based on art. 7(2)e PLD-2024 and, consequently, the entire unfair and rather illogical convolution with art. 11(1)c PLD-2024's posteriority examined in this section, would be avoided. Notice how such an amendment of art. 4(5)a(ii) PLD-2024 would already provide a solution even when the previously discussed amendment to art. 11(1)c PLD-2024 with regards to distributors would not be accepted. Finally, this dissertation focused on circular economy has in this context paid no separate attention to the different ways how 'digital' post-marketing actions can extend the manufacturer's control pursuant to arts. 4(5)a(i)(b) and 7(2)e PLD-2024. But also, here, any interferences by the posteriority defence would be solved if the scope of application of art. 4(5) PLD-2024's concept of the manufacturer's control would be limited to the same factual

²⁵¹⁷ See *infra* nr. 445. It is assumed that 'substantial modification' in art. 11(2)d *ibid.* must be interpreted akin to 'substantial modification' in art. 8(2) *ibid.*

situations as covered by art. 11(2)a-c PLD-2024's 'digital exception to the posteriority defence'.

- d. Finally, the most straightforward manner to solve *de lege ferenda* the convoluted issue discussed in this section, is to simply amend art. 11(1)c PLD-2024 by inserting “, or, if applicable, the moment in time when the product left the control of the manufacturer”. This would ensure *de lege ferenda* that the posteriority defence no longer interferes with the postponed defect assessment based on arts. 4(5) and 7(2)e PLD-2024.

ii. Defective independent spare parts, repair information, tools and repair or refurbishment services: influence on a main product's defect assessment

406. **ATTRIBUTION TO THE PLACEMENT ON THE MARKET OR PUTTING INTO SERVICE OF THE MAIN PRODUCT IN PRINCIPLE REQUIRED TO INFLUENCE ITS DEFECT ASSESSMENT** – The preceding sections focused on original repair information, original spare parts, repair tools and repair or refurbishment services, because only these can in principle be considered as part of the presentation of a main product or marginally determine its reasonably foreseeable use according to art. 6(1)a-b PLD-1985 and art. 7(2)a-b PLD-2024. As discussed *supra* nrs. 383, 388 and 392, an ancillary, repair-enabling product or service must be objectively attributable to the placement on the market or putting into service of the main product in order to be possibly considered in the latter's defect assessment. Hence, this encompasses mostly ancillary products, like spare parts and repair tools, or ancillary services, like the provision of repair and refurbishment services or the provision of repair instructions and warnings, that are personally offered by the defendant who placed the main product on the market or put it into service. Alternatively, these are ancillary products and services offered by other actors in the distribution chain, which are already publicly available, sufficiently established and public in nature to have been objectively attributable to the placement on the market or putting into service of the individual, eventual harmful product.²⁵¹⁸

Note that, unlike the situation where the defendant invokes the continuous availability of these ancillary products and services as evidence that the main product had not been defective (cf. *supra* nrs. 386 and 390), such continuous availability is not required when the ancillary product or service is itself flawed and is precisely raised by the plaintiff as an argument to prove the main product's defectiveness (see *supra* nr. 401). For example, it suffices that an importer placed defective spare parts on the market on the moment when an individual, large camping stove, matching with those original spare parts, was by a quasi-manufacturer last placed on the market, even when the importer and others later stopped supplying those defective spare parts and even attempted to recall as many as possible. In such instance, if one of these defective spare parts has nevertheless been used in an attempted repair of this

²⁵¹⁸ This attribution is accepted by mostly German authors, although they do not always consistently apply in this context the 'single defect assessment' principle (see *supra* nrs. 310 and 372). See Graf von Westphalen, '3. Produkthaftungsgesetz', § 48, nr. 48; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3604, 13-14; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 3, nrs. 43a, 54; G. Wagner, 'Produkthaftungsgesetz' in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 3, nr. 23. See also Howells, 'strict liability', nrs. 4.162-4.165.

individual camping stove, which ultimately results in an accident during subsequent use, then it will be possible to consider the presence on the market of defective, original spare parts when the individual stove had been placed on the market, as an element that can help to prove said stove's defectiveness due to a lack of safe repairability.²⁵¹⁹

407. REASONABLY FORESEEABLE ACCIDENT RISKS RESULTING FROM INDEPENDENT ANCILLARY PRODUCTS AND SERVICES, LIKE INDEPENDENT SPARE PARTS, REPAIR INFORMATION, TOOLS OR INDEPENDENT REPAIR OR REFURBISHMENT SERVICES CAN BE RELEVANT TO A MAIN PRODUCT'S DEFECT ASSESSMENT – *Supra* nrs. 383, 388 and 392, it has been argued that independent repair information, available spare parts or repair tools as well as independent repair or refurbishment services cannot be invoked by a defendant to refute that a main product would have been defective due to a lack of safe repairability or refurbishability.²⁵²⁰ This rejection of reliance on independent ancillary products and services to remove a product defect qualification, is in my opinion not changed by art. 7(2)d PLD-2024, which now adds as another illustrative²⁵²¹ product defect assessment criterion “*the reasonably foreseeable effect on the product of other products that can be expected to be used together with the product, [...]*”.

In contrast, this dissertation views this art. 7(2)d PLD-2024 as only explicitly confirming that ancillary products, even if they have an independent origin – like spare parts and repair tools or other product combinations offered by completely independent (cf. *supra* nr. 406) third parties – can in certain circumstances still render a main product defective.²⁵²² Moreover, this is in my opinion a part of a broader principle, which already existed under the PLD-1985 and which also encompasses potential defects resulting from independent product-related information and other ancillary services, like repair information or repair or refurbishment services offered by completely independent third parties. This is because accident risks which come from the combination of a main product with such ancillary but independent products and services can effectively co-determine art. 6(1)b PLD-1985's “*use to which it could be reasonably be expected that the product would be put*” and art. 7(2)b PLD-2024's equivalent.²⁵²³

Therefore, as already suggested by HOWELLS,²⁵²⁴ the criterion to determine whether accident risks from the combination with independent ancillary products and services can make a

²⁵¹⁹ Of course, if we limit ourselves to harmonised product liability claims, the same situation might allow the plaintiff to simultaneously also claim against the importer who placed the defective spare part on the market (see *infra* nr. 409) and potentially also against the repairer who may have substantially modified the product and, in doing so, is either liable based on art. 8(2) PLD-2024 or based on art. 11(2)d *ibid*.

²⁵²⁰ This applies even if such independent, ancillary products and services are already offered in a very public manner and are widely used when the main product was placed on the market or put into service and even if they continuously remain available afterwards (cf. *supra* nrs. 386 and 390).

²⁵²¹ See art. 7(2) PLD-2024 (“*all circumstances shall be taken into account, including: [...]*”). See also art. 6(1) PLD-1985.

²⁵²² In other words, a defendant who places a main product on the market or puts it into service, cannot rely on the combination of his product with completely independent ancillary products to make it non-defective, but he must to some extent anticipate and prevent the accident risks that can at the same time result from such combinations to avoid a product defect qualification.

²⁵²³ See also generally regarding this defect assessment criterion *supra* nrs. 183 and 373 et seq.

²⁵²⁴ Howells, ‘strict liability’, nr. 4.165.

main product defective, is their reasonable foreseeability at the time when the main product was placed on the market or put into service. Above all, this is based on the explicit references to ‘reasonable foreseeability’ in the aforementioned art. 6(1)b PLD-1985 and art. 7(2)b,d PLD-2024. Furthermore, this fits well within the broader defect assessment (see for example *supra* nrs. 183, 232, 256 et seq., 286 and 373 et seq.) and this is theoretically in a neat manner complementary with how this dissertation interprets the posteriority defence (see Figure 9 *supra* nr. 239).

408. THE EXCEPTIONAL NATURE OF REASONABLY FORESEEABLE ACCIDENT RISKS RESULTING FROM INDEPENDENT SPARE PARTS, REPAIR INFORMATION, TOOLS AND REPAIR OR REFURBISHMENT SERVICES (OR OTHER INDEPENDENT ANCILLARY PRODUCTS AND SERVICES) – The potentially broad principle discussed *supra* nr. 407, should not detract from the fact that accident risks resulting from the combination of a main product with ancillary products and services form a completely third-party, independent origin, do not easily rise to the level of ‘reasonable foreseeability’ required to influence the main product’s defect assessment based on art. 6(1)b PLD-1985 and art. 7(2)b,d PLD-2024. Overall, two requirements must be met.

First of all, the ancillary product or service originating from a third party must be so very widely known and available, so frequently used together with the particular main product or have another extremely apparent and close connection with the main product, that the public is objectively entitled to expect a level of safety when combining said main product with such independent ancillary product or service. Instructive is an influential German *Produzentenhaftung* decision by the *Bundesgerichtshof*, which ruled that a manufacturer can be liable for extracontractual fault (§ 823(1) BGB) when hazards result from the combination of his main product with accessories from third parties: (i) if those accessories are necessary to use the main product; (ii) if the main product’s presentation or design encourages the particular accessory’s use; or (iii) if using the particular accessory in connection with the main product can be expected on a customary basis.²⁵²⁵ HOWELLS and WAGNER extend this case law *mutatis*

²⁵²⁵ BGH 9 December 1986, VI ZR 65/86, BGHZ 99, 167, NJW 1987, 1009, 1011 (‘Honda-case’; post-marketing fault-based liability for risks resulting from use of a motorcycle together with a dangerous handlebar cover): “Der Hersteller eines Motorrades (oder eines anderen maschinell betriebenen Gerätes) hat, wie auch die Bekl. in diesem Rechtsstreit eingeräumt haben, eine Sicherungspflicht bezüglich allen notwendigen Zubehörs, das erforderlich ist, um das Fahrzeug erst funktionstüchtig zu machen. Dasselbe gilt für solches Zubehör, dessen Verwendung er durch Anbringung von Bohrlöchern, Ösen, Halterungen, Aufhängevorrichtungen usw. ermöglicht hat. In diesen Fällen ist der Motorradhersteller auch ohne konkreten Anlaß verpflichtet, den Zubehörmarkt zu überprüfen und gegebenenfalls nur bestimmte, von ihm getestete und für sicher beurteilte Zubehörteile den Benutzern seiner Motorräder zu empfehlen oder in der Gebrauchsanleitung bzw. durch Aufkleber auf dem Motorrad die Verwendung derartiger Vorrichtungen einzuschränken oder vor einer mißbräuchlichen Verwendung dieser Vorrichtungen zu warnen. Außerdem besteht aber, wie bereits der VIII. Zivilsenat in seinem vorerwähnten Urteil angedeutet hat, auch ohne konkreten Anlaß jedenfalls eine Produktbeobachtungspflicht hinsichtlich derjenigen Zubehör- und Kombinationsprodukte, die so allgemein gebräuchlich sind, daß bei einer etwaigen Unverträglichkeit ein risikoloser Einsatz des eigenen Produkts schon wegen dieser Verbrauchergewohnheit ausgeschlossen wird. Diese Produktbeobachtungspflicht kann sich zu einer Pflicht zur eigenen Überprüfung der fremden Zubehörteile steigern, wenn konkreter Anlaß zu der Befürchtung besteht, daß das Zubehör seiner Art nach in Verbindung mit dem eigenen Produkt dem Benutzer

mutandis to the harmonised product liability context, while sticking to risks coming from combinations with accessory products.²⁵²⁶ The latter of course encompasses, among others, spare parts²⁵²⁷ and repair tools. Yet, this dissertation considers that also independent ancillary services, like independent repair information or established independent repair or refurbishment services, are in exceptional cases similarly capable to make a main product defective.

Second, the independent ancillary product or service must have already had this very close, objective connection with the individual main product at the time when the latter was placed on the market, put into service or the later date when the product left the ‘manufacturer’s control’ pursuant to art. 7(2)e PLD-2024. This important requirement intrinsic to harmonised product liability (see also *supra* nr. 400),²⁵²⁸ is absent in the aforementioned *Produzentenhaftung* case law which concerned a case of post-marketing liability.²⁵²⁹ However, mass production means that when ancillary products and services only become sufficiently prominent or otherwise connected to a product when many items have already been placed on the market or put into service, individual items of the same product type that are subsequently (quasi-)manufactured or imported can still become defective as a result of the already existing and widely used independent ancillary products and services.

To make this more concrete, both requirements can for example be considered as fulfilled when the aforementioned camping stove is placed on the market and it does not provide sufficient safety during or after (self- and independent) repairs and refurbishments, when an independently manufactured but already widely available and for this product type commonly used spare part is used, which seemingly fits the stove but actually creates a substantial risk of gas leakage. Alternatively, a recreational quadcopter drone is placed on the market which, in order to thwart a very popular independent repair service that separately repairs on a mail-delivery basis the most fragile component of this type of drone, makes it through design purposefully more challenging to securely dis- and reassemble the specific repaired component,²⁵³⁰ which in some cases subsequently results in the heavy battery module coming

gefährlich werden kann.” This potential *Produzentenhaftung* for accident risks resulting from combinations with other products, is not easily accepted. See also BGH 11 January 1994, VI ZR 41/93, NJW 1994, 932, 933; OLG Köln 17 September 1982, 3 U 9/82, VersR 1983, 862.

²⁵²⁶ Howells, ‘strict liability’, nr. 4.165; G. Wagner, ‘Haftungsregeln für das digitale Zeitalter’ in M. Baumgärtel and G. Kiparski (eds.), *DGRI Jahrbuch 2021/2022* (Verlag Dr. Otto Schmidt 2023) nr. 25, footnote 41. The German literature, usually quite comprehensive, seems to not really discuss this issue of ‘product combination’ in the context of the PLDI, because the in practice more dominant *Produzentenhaftung* is much more developed in this regard and also encompasses post-marketing liability. See, e.g., Foerste, ‘2. Deliktische Haftung’, § 25, nrs. 178-222.

²⁵²⁷ See, e.g., on applying the aforementioned *Produzentenhaftung* case law to ‘spare parts’, T. Wieckhorst, ‘Vom Produzentenfehler zum Produktfehler des § 3 ProdHaftG’ (1995) *Versicherungsrecht* 1005, nr. I.2.d.

²⁵²⁸ Art. 6(1)c PLD-1985; art. 7(2)e PLD-2024. Note that there is here even for the repair or refurbishment service no possibility to postpone the defect assessment based on art. 6(1)e *ibid.*, because the service is offered by completely independent third parties who fall outside the scope of even the broadest possible interpretation of art. 4(5) *ibid.*’s ‘manufacturer’s control’ (cf. *supra* nrs. 402-403).

²⁵²⁹ See *supra* footnote 2525.

²⁵³⁰ See *supra* nr. 379.d on how safely preventing particular self- and independent repair or refurbishment actions is a legally fraught strategy, which nevertheless can in rare cases be required to make a product

loose and dangerously crashing down in mid-flight. Or an electric heater is placed on the market, which creates a serious risk of disablement of the fail-safe mechanism to prevent extreme, potentially fire-inducing overheating, when the most common and since many years widely implemented independent repair guidance for these types of heaters is followed.

These examples illustrate that cases where the two requirements are fulfilled, tend to be quite exceptional. At the same time, they also illustrate that there exists for many consumer goods a relatively broad category of ancillary products and services that might potentially pose such risks and make in this manner the main product defective. This is especially the case in the repair and refurbishment context, since collaborative guidance, third-party spare parts and tools and independent repair and refurbishment services are becoming omnipresent and are seen by many as key building blocks of an actual ‘right to repair’ and a more complete repair economy (see *supra* nrs. 68.c and 86-89).

Finally, when an actor who plans to place (new individual copies of) a product on the market or put it into service, observes potential accident risks emanating from the combination of his product with independent ancillary products or services that are sufficiently prominent and closely related to give rise to legitimate safety expectations among the public, there are several possible remedies to still avoid a defect qualification. Designing out the potential risk or precluding that a particular ancillary product can physically be used at all in combination with a product, remains the most secure method (cf. *supra* nr. 379.d). Nevertheless, comparatively more than when addressing ordinary accident risks (cf. *supra* nrs. 182 and 381), it frequently suffices for addressing risks resulting from combinations with ancillary products and services offered by third parties to explicitly and in a sufficiently conspicuous manner warn against these risks or to provide clear original use instructions which adequately address and mitigate these risks.²⁵³¹ Which countermeasure is necessary, is of course a factual assessment, depending among others on the nature of the particular product and risk as well as potential existing, pertinent regulation and soft law (cf. *supra* nrs. 378-379 and 393-394).

iii. Separate harmonised product liability claims: only for defects in ancillary products, not services

409. SPARE PARTS AND REPAIR TOOLS ARE PRODUCTS THAT ALLOW A SEPARATE HARMONISED PRODUCT LIABILITY CLAIM – As ancillary products, all spare parts and repair tools of physical, movable consumer goods (see *supra* nr. 32) are undeniably themselves ‘products’ according to art. 2 PLD-1985 and art. 4(1) PLD-2024.²⁵³² It is therefore always possible, if those spare parts or

safely repair- or refurbishable. Yet, the factual conditions for this exception are definitely not met in this particular example.

²⁵³¹ Art. 6(1)a PLD-1985; art. 7(2)a PLD-2024. HOWELLS argues, for example, that particular warnings or use instructions can be necessary to ensure that a product does not become defective as a consequence of independent “accessories that might reasonably be expected to be used with [those] products.” (Howells, ‘strict liability’, nr. 4.165). See also in general *supra* nr. 182 on the ‘safety hierarchy’ and the more limited role of consumer information to make products sufficiently safe.

²⁵³² See Howells, ‘strict liability’, nr. 4.41; Fairgrieve et al., ‘Product Liability Directive’, 40-43; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 2, nrs. 7-11. See also *supra* nr. 175.

repair tools happen to be defective and cause damage,²⁵³³ to claim based on the PLDI against their manufacturers, importers or other harmonised product liability defendants (see *supra* nrs. 176-178).

This applies regardless whether the spare part or repair tool is simultaneously considered in the assessment whether a corresponding, main product which was repaired or refurbished by using this spare part or tool, had been defective due to a lack of safe repairability or refurbishability (see *supra* nr. 399). Moreover, this possibility to claim separately based on the PLDI exists regardless whether these spare parts or repair tools have an original origin or whether they have been manufactured by independent, third parties.²⁵³⁴ In all these situations, the spare parts and repair tools are simply also separate products, which may trigger separate harmonised product liability claims.

410. REPAIR AND REFURBISHMENT SERVICES BUT ALSO REPAIR INFORMATION, INCLUDING WARNINGS, CONSTITUTE SERVICES THAT DO NOT ALLOW A SEPARATE HARMONISED PRODUCT LIABILITY CLAIM – By themselves, repairs and refurbishments constitute services (see *infra* nr. 424), which fall beyond the material scope of harmonised product liability and which can only lead to claims based on national (extra)contractual liability (see *supra* nr. 175). Defective products used in the performance of these repair and refurbishment services, like the aforementioned repair tools and spare parts, still allow separate claims based on the PLDI.²⁵³⁵

Likewise, repair information, including warnings, do not constitute a separate product either.²⁵³⁶ WAGNER gives the example of flawed oral advice by an expert on how to repair the brakes of a car, for which no harmonised product liability claim is possible.²⁵³⁷ This was until very recently disputed in the literature, which often but not always made a distinction based on whether the information was incorporated in a physical medium.²⁵³⁸ But the CJEU ruled in 2021 in the *VI v. Krone* decision (see also *supra* nr. 347) that health advice in a physical newspaper is completely excluded from the PLD-1985's material scope. The Court decided that

²⁵³³ Arts. 1 and 4 PLD-1985; art. 5(1) PLD-2024.

²⁵³⁴ Traditionally, these are most often professional manufacturers of generic spare parts which can be used for repairing products from different manufacturers. Now, also prosumers regularly manufacture their own spare parts, in particular through 3D-printing (see also *supra* nrs. 68 and 87). These cases of course risk raising intellectual property concerns, which are beyond the scope of this research project.

²⁵³⁵ CJEU 10 May 2001, C-203/99, *Henning Veedfald*, ECLI:EU:C:2001:258, nrs. 11-12; CJEU 21 December 2011, C-495/10, *Thomas Dutrueux*, ECLI:EU:C:2011:869, nrs. 18-39; CJEU 10 June 2021, C-65/20, *VI v. KRONE*, ECLI:EU:C:2021:471, nrs. 36-38.

²⁵³⁶ See affirming, already prior to *VI v. Krone*, the exclusion of information in general from the PLD-1985's scope Taschner and Frietsch, *Kommentar*, 304-305; U. Foerste, 'Die Produkthaftung für Druckwerke' (1990) *Neue Juristische Wochenschrift* 1433, 1438; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3603, 8. *Contra* i.a. Graf von Westphalen, '3. Produkthaftungsgesetz', § 47, nr. 16; Fairgrieve et al., 'Product Liability Directive', 48-50; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 57-58.

²⁵³⁷ G. Wagner, 'Produkthaftungsgesetz' in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 2, nr. 18.

²⁵³⁸ Cf. the following overviews Howells, 'strict liability', nrs. 4.58-4.65; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 56-58; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 2, nrs. 77-82. See also *supra* footnote 2536.

such information constitutes a service rather than a product and that the newspaper, which is itself indeed a product, only served as the medium for providing this information-related service.²⁵³⁹ Even if the CJEU would have intended to only specifically categorize concrete ‘advice’ as a service and would nevertheless consider other information as potentially constituting a product, which would seem illogical and unlikely,²⁵⁴⁰ it must be considered that repair instructions and repair-related warnings are by nature still a form of advice akin to the health advice in *VI v. Krone*.

Furthermore, recital 13 PLD-2024 now also explicitly excludes “information” from the material scope of harmonised product liability.²⁵⁴¹ And this is in my opinion not refuted by the inclusion of software and digital manufacturing files in the ‘product’ definition of art. 4(1) PLD-2024. Software forms an operational entity that can in itself fulfil a particular function.²⁵⁴² The latter is distinct from merely conveying intellectual information, which always requires that a person subsequently acts on it, before actual damage can eventually occur.²⁵⁴³

²⁵³⁹ CJEU 10 June 2021, C-65/20, *VI v. KRONE*, ECLI:EU:C:2021:471. See in particular the crucial considerations in *ibid.*, nrs. 32 and 36: “It is apparent from the foregoing considerations that services do not come within the scope of Directive 85/374. Nonetheless, in order to respond to the referring court’s queries, it should be examined whether health advice which, by its nature, constitutes a service, can, when incorporated into a physical item – in this case, a printed newspaper – result, on account of the fact that it proved to be inaccurate, in the newspaper itself being defective in nature. [...] In the present case, it must be observed that the service in question, namely the provision of inaccurate advice, is unrelated to the printed newspaper, which constitutes its medium. More specifically, that service does not concern either the presentation or the use of the latter. Therefore, that service is not part of the inherent characteristics of the printed newspaper which alone permit an assessment as to whether the product is defective.”

²⁵⁴⁰ E. Van Gool, ‘Case C-65/20 Krone: Offering (some) clarity relating to product liability, information and software’ (2022) <<https://europeanlawblog.eu/2022/01/19/case-c-65-20-krone-offering-some-clarity-relating-to-product-liability-information-and-software>>, 680; E. Van Gool, ‘Case C-65/20 Krone: Offering (some) clarity relating to product liability, information and software’ (2022) <<https://europeanlawblog.eu/2022/01/19/case-c-65-20-krone-offering-some-clarity-relating-to-product-liability-information-and-software>>. But see Howells, ‘strict liability’, nrs. 4.64-4.65.

²⁵⁴¹ Recital 13 PLD-2024: “[...] Information is not, however, to be considered a product, and product liability rules should therefore not apply to the content of digital files, such as media files or e-books or the source code of software. [...]”

²⁵⁴² See Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 2, nr. 76; C. Twigg-Flesner, ‘The Tale of the Grating Horseradish: Case Note on *VI v KRONE-Verlag*’ (2021) *Journal of European Consumer and Market Law* 262, 265; E. Van Gool, ‘Over de verhouding van informatie tot het toepassingsgebied van de productaansprakelijkheidsrichtlijn’ (2021) *SEW: Tijdschrift voor Europees en Economisch Recht* 677, 680; E. Van Gool, ‘Case C-65/20 Krone: Offering (some) clarity relating to product liability, information and software’ (2022) <<https://europeanlawblog.eu/2022/01/19/case-c-65-20-krone-offering-some-clarity-relating-to-product-liability-information-and-software>>. See also recital 16 PLD-2024: “Whereas digital files as such are not products within the scope of this Directive, digital manufacturing files, which contain the functional information necessary to produce a tangible item by enabling the automated control of machinery or tools, such as drills, lathes, mills and 3D printers, should be considered to be products, [...]” See also Borghetti, *La responsabilité du fait des produits*, 478.

²⁵⁴³ See Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 2, nr. 77; C. Twigg-Flesner, ‘The Tale of the Grating Horseradish: Case Note on *VI v KRONE-Verlag*’ (2021) *Journal of European Consumer and Market Law* 262, 265.

Therefore, it is not possible to claim separately based on the PLDI for damage that is caused by a defect that is purely situated in a repair or refurbishment service, like an electric bike crashing because a repair workshop improperly reconnected the braking mechanism. Likewise, one cannot claim separately based on the PLDI for damage resulting from defective repair information, like errors in written or audiovisual repair instructions which cause an accident when said electric bike is used after a self-repair attempt implementing those instructions. Such harmonised product liability claims are only possible when the claim is based on a defect in an actual product. But, as discussed *supra* nrs. 399-408, original and sometimes even independent repair information or even in rare cases repair or refurbishment services can sometimes be relevant in a corresponding, eventually harmful product's defect assessment, as part of its presentation or its reasonably foreseeable use at the time when it was placed on the market or put into service (see *supra* nrs. 399-408).²⁵⁴⁴

411. QUASI-EXCEPTIONS: SUBSTANTIAL PRODUCT MODIFICATIONS PURSUANT TO ART. 8(2) PLD-2024 AND EXTENDED 'MANUFACTURER'S CONTROL' PURSUANT TO ART. 7(2)E PLD-2024 – Two apparent exceptions to the previously discussed principle exist, which seem to still allow separate harmonised product liability claims for defective services, including for the provision of defective (repair) information.

First of all, when a self- or independent repair or refurbishment service outside the manufacturer's control substantially modifies a product from a product safety perspective, this repair or refurbishment service provider becomes subject to primary liability based on art. 8(2) PLD-2024. The same applies when, possibly acting upon specific repair information, a person substantially modifies a product in this manner. This ground of harmonised product liability is examined further *infra* nrs. 442 et seq.

Second, an original repair or refurbishment service that 'modifies' a product, qualifies as an extended control of the manufacturer.²⁵⁴⁵ Pursuant to art. 7(2)e PLD-2024, this exceptionally postpones the product's defect assessment to the moment when this repair or refurbishment finishes and the product subsequently leaves the manufacturer's control.²⁵⁴⁶ The unclear scope of this provision and its limited relevance in light of the posteriority defence, have been discussed in more detail *supra* nrs. 402-404.

However, these two provisions are not true exceptions to the exclusion of services from harmonised product liability's material scope of application. Instead, these two provisions allow a claim based on the PLDI for damage caused by a substantially modified product or by a product that only left its manufacturer's control after it was already placed on the market or put into service. Liability based on the PLDI therefore remains fixated on defective products, although the underlying actions that may make persons subject to 'quasi-strict' liability with

²⁵⁴⁴ Art. 6(1)a-b PLD-1985; art. 7(2)a-b PLD-2024. See also in general *supra* nrs. 182-183.

²⁵⁴⁵ Art. 4(5)a(ii) PLD-2024.

²⁵⁴⁶ It is theoretically possible to interpret 7(2)e *ibid.* (and the underlying art. 4(5) *ibid.*) in a much broader manner. However, accepting that for example also original repair information similarly extend the manufacturer's control, seems less persuasive textually and can be considered as undesirable from a policy perspective. See the analysis *supra* nrs. 402-403.

regards to those defective products can factually consist of providing a service that involves said product (see also *supra* nr. 175).

§ 4. Defences

a. Not put into circulation defence

412. SIMPLY NOT YET PUT INTO CIRCULATION? DEMARCATING THE PRODUCTION AND (RE)DISTRIBUTION PHASES FROM ACTUAL REPAIRS AND REFURBISHMENTS – As observed by GRAF VON WESTPHALEN,²⁵⁴⁷ a manufacturer of a product which causes damage during what seems to be a subsequent repair, may try to invoke the not put into circulation defence of art. 7(a) PLD-1985 and art. 11(1)a-b PLD-2024 (see *supra* nr. 194). Moreover, product distributors can also raise this defence, when an accident occurs during a repair or refurbishment that takes place before they make the repaired or refurbished product available on the market.²⁵⁴⁸ Alternatively, an already repaired or refurbished product may have been placed on the market, made available or put into service without the defendant's consent, which may additionally give rise to this same defence. A twofold distinction must therefore be made based on the defendant who invokes the not put into circulation defence.

- a. On the one hand, this defence can be invoked by the product's alleged (quasi-)manufacturer, importer or another defendant who places (partially) new products on the market or puts them into service.

For example, a product might have been stolen from a quasi-manufacturing repairer or a refurbisher and be subsequently placed on the market or put into service by a third party, without the aforementioned defendant's consent. Alternatively, a product which causes personal injuries²⁵⁴⁹ or other damage during what seems to be a repair or refurbishment process,²⁵⁵⁰ might actually have not yet been placed on the market and simply have been still in a final stage of an extended production process. For example, a product fails a final quality control and, before it can be placed on the market, is sent by the manufacturer to the facility of a contractor for remediation of the observed deficiencies, where it causes an accident.

In all these scenarios, the defendant can try to invoke the not put into circulation defence, to exempt himself from liability based on the PLDI for an accident caused by a product which had not yet been placed on the market or put into service.

²⁵⁴⁷ Graf von Westphalen, '3. Produkthaftungsgesetz', § 46, nr. 23.

²⁵⁴⁸ Art. 10(1)b PLD-2024. See *supra* nr. 322 with regards to the majority in the literature proposing a personal interpretation of the defence art. 7(a) PLD-1985 vis à vis suppliers.

²⁵⁴⁹ Injuries suffered by employees are in practice almost exclusively dealt with by national workers' compensation laws, which still makes harmonised product liability relevant for potential recourse claims. See also *supra* nr. 11.a.

²⁵⁵⁰ Cf. the examination *supra* nrs. 88-89 of the 'repair' and 'refurbishment' concepts, which imply a type of pre-existing obsolescence of a product and which are according to this dissertation's typology categorized as 'reproduction' strategies rather than being part of traditional (linear) 'production'.

To assess the not put into circulation defence in these cases, one must identify the precise moment when a product is actually placed on the market, put into service or, pursuant to the PLD-1985's terminology, put into circulation. According to the CJEU in *Declan O'Byrne*, this depends on whether the product has been “*taken out of the manufacturing process*” and “*enter[ed] a marketing process in the form in which it is offered to the public in order to be used or consumed.*”²⁵⁵¹ At the same time, a product can also transit ‘directly’ from its production to its use phase, without an intervening distribution,²⁵⁵² which for example occurs when products are used in the provision of a service. Whether a product has exited the production phase, is ultimately a factual assessment that must be interpreted in light of the concrete circumstances of each case. The fact that a product has left the defendant's facility (‘factory gate principle’) is for example not necessarily indicative that it has been placed on the market, since a finished product, ready for distribution but still in the defendant's own premises, can already have been placed on the market.²⁵⁵³ Conversely, a product not yet placed on the market might be transported to another facility for an additional production step, such as precisely in the scenario mentioned above where a contractor has to correct discovered flaws.²⁵⁵⁴ Decisive is therefore the defendant's intention²⁵⁵⁵ as well as whether parties to whom he sends the (not yet finished) product are under his control and are expected to further produce rather than distribute the product (see also *supra* nr. 194).

Nevertheless, once a product has effectively been placed on the market or put into service, according to the manufacturer's or other defendant's intention, he loses the possibility to invoke the not put into circulation defence. This remains true when the product would immediately thereafter, before it is ever used, already be subject to a

²⁵⁵¹ CJEU 9 February 2006, C-127/04, *Declan O'Byrne*, ECLI:EU:C:2006:93, nr. 32. Note that the CJEU here actually interpreted the ‘putting into circulation’ concept in art. 11 PLD-1985 rather than in art. 7(a) PLD, which is a potential difference it took care to emphasize (CJEU 9 February 2006, C-127/04, *Declan O'Byrne*, ECLI:EU:C:2006:93, nrs. 23-26). See *supra* nrs. 323 and 332.

²⁵⁵² See CJEU 10 May 2001, C-203/99, *Henning Veedfald*, ECLI:EU:C:2001:258, nr. 17 (transplanted kidney flushed with perfusion fluid produced locally in hospital, rejection of not put into circulation defence); G. Wagner, ‘Produkthaftungsgesetz’ in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 1, nr. 30. See also the concept of ‘putting into service’ in arts. 2(1), 4(9) and 11(1)a PLD-2024.

²⁵⁵³ See G. Wagner, ‘Produkthaftungsgesetz’ in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 1, nr. 28. See also *supra* footnote 2552; Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 20-21. But see Mons 7 February 2013, DCCR 2013, 76, note D. Verhoeven (product stored at producer's facility considered to have not yet been ‘put into circulation’, but confirming that this depends on whether product is considered finished according to the producer's intention).

²⁵⁵⁴ Cf. rejecting the application of harmonised product liability to situations where products are still tested or certified A-G. Geelhoed, opinion C-127/04, 2 June 2005, ECLI:EU:C:2005:349, nr. 36; Vanswevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 536-537.

²⁵⁵⁵ See Markovits, *La Directive C.E.E. du 25 juillet 1985*, 215-216; Howells, ‘strict liability’, nrs. 4.257-4.259; P. Le Tourneau, *Responsabilité des vendeurs et fabricants* (5th edn., Dalloz 2015) nrs. 22.131-132; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 256; G. Wagner, ‘Produkthaftungsgesetz’ in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 1, nr. 28.

repair or refurbishment,²⁵⁵⁶ for example by a distributor who observed deficiencies in a newly manufactured or imported product.

In this context, it must be reiterated that the exception of art. 2(3) General Product Safety Regulation 2023/988/EU does not exist in harmonised product liability (see *supra* nr. 351). Hence, it is not possible for a manufacturer or importer to exempt himself from liability based on the PLDI by clearly marking a product as “*to be repaired or reconditioned prior to being used*” and subsequently placing it on the market.²⁵⁵⁷ Either an initially unsuccessful production phase is not yet finished and a product still has to undergo a repair prior to being placed on the market, which is covered by the not put into circulation defence, or the product has been effectively placed on the market or put into service, irrespective of its state, which means that harmonised product liability applies.

- b. On the other hand, the not put into circulation defence can also be invoked by a (re)distributor²⁵⁵⁸ who first repairs or refurbishes products before making them available. Again, this might consist of theft or a prematurely making available of the product by a third party contrary to the (re)distributor’s intention. Alternatively, an accident that seems to occur during a subsequent repair or refurbishment by a third party, might actually occur before the product was made available on the market. For example, an accident during what seems to be the repair of an already resold BBQ, might in fact be an accident during a repair by the reseller’s contractor before the latter will actually make the BBQ available on the market. (Re)distributors are not liable on the basis of the PLDI for accidents occurring before they make a product available on the market, if the not put into circulation defence is personally applied to them (see *supra* nr. 323).²⁵⁵⁹ And such personal interpretation of art. 7(a) PLD-1985 is the majority position among authors who are explicit on this matter and is now unequivocally confirmed by art. 11(1)b PLD-2024 (see *supra* nrs. 319-322).

The pivotal concept for applying art. 11(1)b PLD-2024’s version of the not put into circulation defence to (re)distributors is thus “*making the product available on the market*”. As discussed *supra* nr. 323, this will likely be interpreted akin to how the Commission interprets the same concept in a quite expansive manner in EU product regulation. This would mean that a product is already made available when it is offered for distribution

²⁵⁵⁶ See G. Wagner, ‘Produkthaftungsgesetz’ in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 1, nr. 29: “Eine vorübergehende Überlassung der Sache an Dritte zur Prüfung, Reparatur oder Veredelung ist dann ein Inverkehrbringen, wenn der bestimmungsgemäße Herstellungsprozess bereits beendet ist, nicht aber, wenn die von dem Dritten zu erbringende Leistung die (letzte) Stufe eines arbeitsteiligen Herstellungsprozesses darstellt.” See also Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 46, nr. 23.

²⁵⁵⁷ Art. 2(3) General Product Safety Regulation 2023/988/EU.

²⁵⁵⁸ In most cases where a distributor first repairs or refurbishes a product, this product already has a second-hand nature, which makes him a redistributor according to this dissertation’s typology. However, it is possible that a product which has never been used is already repaired or refurbished due to damage caused during the initial distribution process.

²⁵⁵⁹ The opposite, a manufacturer-specific interpretation, would lead to the slightly absurd outcome that such (re)distributor could only invoke the defence when the manufacturer himself could have invoked it, for example because the product was originally stolen from the manufacturer. See also *supra* nr. 323.

in a physical or online store or when it is transported to a recipient.²⁵⁶⁰ Consequently, a (re)distributor cannot invoke the defence when an accident occurring during a repair or refurbishment, even one performed by himself, would occur after this moment in time. Finally, also at the level of redistribution, no equivalent of art. 2(3) General Product Safety Regulation 2023/988/EU exists in harmonised product liability law.²⁵⁶¹

b. Posteriority defence

i. In general

413. GENERAL ASPECTS OF INVOKING THE POSTERIORITY DEFENCE WITH REGARDS TO AN INTERVENING REPAIR OR REFURBISHMENT – A defendant in the original distribution chain of a product which is found to be defective and to have caused an accident during or after a repair or refurbishment and who is held liable based on the PLDI, is quite likely to try to invoke the posteriority defence of art. 7(b) PLD-1985 and art. 11(1)c PLD-2024. After all, such circular reproduction activities are typical circumstances occurring after a product has been placed on the market, put into service or made available, which can render it defective.²⁵⁶² This is also reflected in the available case law and literature on accidents involving repaired products.²⁵⁶³ However, it is an entirely different matter whether this defence will succeed, as examined in the following sections.

For the sake of simplicity, it is assumed in the following sections that the posteriority defence is personally applicable vis à vis all defendants in the product's original distribution chain, since this is the approach taken by current art. 11(1)c PLD-2024 and the majority position in the literature that explicitly interprets art. 7(b) PLD-1985 in light of this question (see *supra* nrs. 319-322). This means that repairs or refurbishments occurring before a product is for example quasi-manufactured or (re)distributed, cannot be invoked as part of a posteriority defence by the corresponding quasi-manufacturer, substantial modifier or distributor. Nevertheless, it is worth noting that this has been contested under art. 7(b) PLD-1985,²⁵⁶⁴ and that this dissertation advocates to *de lege ferenda* amend art. 11(1)c PLD-2024 by ensuring that defendants subject to secondary liability enjoy the benefit of a producer-specific interpretation of the defence instead (see *supra* nr. 322.b-c). Moreover, art. 11(1)c PLD-2024 seemingly also forgets defendants who are liable based on art. 8(2) PLD-2024 and who make their

²⁵⁶⁰ Commission Notice 'The 'Blue Guide' on the implementation of EU product rules 2022' [2022] OJ C247/1, 19. See also T. Klindt, *Produktsicherheitsgesetz: Kommentar* (3rd edn., Beck 2021) § 2, nr. 30a.

²⁵⁶¹ Art. 2(3) General Product Safety Regulation 2023/988/EU allows not only a manufacturer or importer but also a distributor to exempt himself from product safety requirements if he marks a product as "*to be repaired or reconditioned prior to being used*" and subsequently makes it available on the market. See *supra* nr. 351.

²⁵⁶² E.g., Vansweevelt and Weyts, *Handboek aansprakelijkheidsrecht*, 542-543; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3602, 19-20; P. Ehring, '§ 1 ProdHaftG' in P. Ehring and J. Taege (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 71.

²⁵⁶³ See sources cited in the following footnotes.

²⁵⁶⁴ See in particular Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3605, 30-31; Wagner, *MüKo BGB*, 'Produkthaftungsgesetz', § 4, nr. 64; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 4, nrs. 122-124.

independently substantially modified product ‘available on the market’, an issue for which this dissertation also proposes an amendment (see *supra* nrs. 266.b and 319).

Defendants in the product’s original distribution chain are most likely to invoke the posteriority defence when the intervening repair or refurbishment, which according to them made the product defective, was a self- or independent repair or refurbishment activity. Nevertheless, note that they can theoretically also invoke this defence in relation to an intervening original repair or refurbishment, even one performed by themselves, although they are for strategic reasons especially unlikely to do the latter.²⁵⁶⁵ Only if the intervening original repair or refurbishment, would have occurred ‘within the manufacturer’s control’²⁵⁶⁶ and would have ‘substantially modified’ the product,²⁵⁶⁷ does art. 11(2)d PLD-2024 now explicitly prohibit to apply the posteriority defence (see also *supra* nr. 196).

Finally, note that art. 11(1)c PLD-2024 forgets to refer to “*the moment in time when the product left the control of the manufacturer*”, despite the fact that this is now the moment of a postponed defect assessment based on art. 7(2)e PLD-2024. The somewhat bizarre consequences *de lege lata* have been examined *supra* nr. 405,²⁵⁶⁸ where it was proposed to amend art. 11(1)c PLD-2024 by simply inserting in this provision a reference to also this moment in time, as another cut-off date for assessing the posterior nature of a defect.

414. A POSTERIOR REPAIR OR REFURBISHMENT MUST HAVE GIVEN RISE TO THE DEFECT THAT CAUSED THE DAMAGE AND MUST NOT HAVE BEEN REASONABLY FORESEEABLE – Since negative evidence on the absence of an anterior defect is by itself normally seen as insufficient (see *supra* nr. 195), a successful posteriority defence is predominantly proven through positive evidence, such as an intervening repair or refurbishment that may have caused the accident. Such positive evidence, on which the following sections focus, consists of two components (see *supra* nr. 239).

- a. On the one hand, the defendant must prove, according to the defence’s standard of mere probability,²⁵⁶⁹ that the intervening repair or refurbishment gave rise to the defect that caused the damage, as claimed by the plaintiff.²⁵⁷⁰

Some attempted posteriority defences in the repair context already fail on this particular point. A Belgian court for example rejected the defence because it was not proven according to the defence’s standard of probability that a moped’s defectiveness had

²⁵⁶⁵ After all, this would only put a spotlight on their own potential liability as a repair or refurbishment service provider based on national liability theories or, potentially, based on either art. 11(2)d PLD-2024 or art. 8(2) PLD-2024, depending on whether they acted ‘within the manufacturer’s control’.

²⁵⁶⁶ This concept, which is also used in art. 7(2)e PLD-2024 and defined in art. 4(5) *ibid.*, has been discussed more in-depth *supra* nr. 402-403.

²⁵⁶⁷ The concept of ‘substantial modification’, which is also used in art. 8(2) PLD-2024 and defined in art. 4(18) *ibid.*, is discussed more in-depth *infra* nrs. 442 et seq.

²⁵⁶⁸ The posteriority defence can still be applied to evade liability based on art. 7(2)e PLD-2024 for all defect origins still ‘within the manufacturer’s control’ that do not qualify under the exceptions of art. 11(2) PLD-2024 and that do not occur before someone subject to secondary liability has made the product available.

²⁵⁶⁹ Art. 7(b) PLD-1985; art. 11(1)c PLD-2024. See *supra* nr. 195.

²⁵⁷⁰ See art. 7(b) PLD-1985; art. 11(1)c PLD-2024: “[...] *that the defectiveness that caused the damage [...] came into being after [...].*” See also *supra* nr. 239.

been caused by a repair which had effectively intervened.²⁵⁷¹ As a bare minimum, a defendant must of course prove that a repair or refurbishment effectively occurred, in addition to the probability that it caused the damage. This is illustrated by a French court decision where the occurrence of a prior repair was alleged but never substantiated.²⁵⁷²

The causal connection between an intervening repair or refurbishment and the product defect that caused the eventual damage is mostly proven through circumstantial evidence, such as proof that a particular repair or refurbishment did occur that logically may have affected the specific product component that did malfunction at the time of the accident. This can for example be proven by means of a recognition by the consumer, a recording of a specific repair service in a product logbook or in a future, dynamically implemented product passport (see *supra* nr. 345.b). But it might also simply consist of evidence deduced from the product's technical state, the type of product defect as well as characteristics surrounding the accident. This is further examined *infra* nrs. 415-416.

- b. On the other hand, the defendant must prove according to the same standard of probability that the intervening repair or refurbishment that gave rise to the product defect that caused the damage, also had not been reasonably foreseeable when he placed the product on the market, put it into service or made it available (see Figure 9 *supra* nr. 239). This is the flipside of the reasonably foreseeable use criterion in the defect assessment, for which the plaintiff bears the burden of proof. Many of the considerations that have been extensively examined *supra* nrs. 373 et seq. on whether or not a particular repair or refurbishment had been reasonably foreseeable, are therefore equally pertinent for assessing this defence. This aspect is examined in more detail *infra* nrs. 417-419.

Note, however, that it is precisely this requirement of a lack of reasonable foreseeability at the time when the product was placed on the market or put into service, which risks being overlooked by lawyers who apply the posteriority defence in the context of circular strategies like repairs and refurbishments. For example, WASSINK AND LOOS, when they argued for a need for a separate rule in the PLD Proposal 2022 for refurbishers (cf. *infra* nr. 443), stated in my opinion all too quickly that the manufacturer of a later refurbished product will probably be successful in proving the posteriority defence when a defect manifested itself in a product and caused an accident after an intervening

²⁵⁷¹ Liège 18 October 2004, *JLMB* 2005, 212, 213-214 (moped had previous accident followed by repair, 'serious, precise and matching presumptions' indicated that eventual accident and damage were result of anterior manufacturing defect, most importantly a warning issued by the importer to distributors). See also Cass. BE 4 June 2007, *RW* 2007-08, 1283, note D. Wuyts (defendant does not prove posteriority defence by merely raising doubt about cause of accident).

²⁵⁷² CA Dijon (1^{re} Ch.) 24 Octobre 2017, nr. 15/01194, *Lexis360* (defending car manufacturer unsuccessfully alleges that harmful car battery has been replaced or at least modified prior to accident, which could no longer be proven after fire and which could not be deduced from simple fact that car had been almost 5 years old and had 125.000 kilometers of mileage).

refurbishment.²⁵⁷³ It is possible that the underlying origin of the defect was already present when the product was placed on the market, like a lack of safe refurbishability or forms of wear and tear or damage in the product resulting from past use, for which it had been reasonably foreseeable that a refurbisher might not be able to identify and adequately remediate it.

- c. Additionally, note that art. 9(2) PLD-2024 allows defendants to request the disclosure of evidence held by the plaintiff, without any requirements to first establish that a possible defence may be plausible (see *supra* nr. 206.a). This can of course in some cases be particularly helpful for defendants in the product's original distribution chain, who want to prove that the product only became defective as result of an intervening, flawed repair or refurbishment.

- ii. The intervening repair or refurbishment must have given rise to the product defect that caused the damage

415. THE MERE FACT THAT A REPAIR OR REFURBISHMENT INTERVENED CAN PROVIDE ONLY LIMITED, INDIRECT PROOF OF DEFECT POSTERIORITY – If a defendant can establish that a product has been repaired or refurbished prior to or even at the time of the accident,²⁵⁷⁴ this can provide a very limited, factual presumption that it effectively was this repair or refurbishment that effectively gave rise to the product defect that caused the damage. In light of the posteriority defence's standard of mere probability (see *supra* nr. 195), it is definitely relevant if the defendant can prove that a repair or refurbishment has intervened after the product was placed on the market, put into service or made available.²⁵⁷⁵ Nevertheless, even if this mere fact is established, the limited presumption it offers relating to the posteriority defence can be easily refuted by any circumstances that may indicate that this repair or refurbishment nevertheless did not causally contribute to the eventual accident. Moreover, even if this would nevertheless be accepted, a complete proof for the posteriority defence still requires to additionally demonstrate that this risk had not been reasonably foreseeable (see *supra* nr. 414).

Consequently, the mere fact that a repair or refurbishment intervened, has a limited evidentiary value, comparable to the fact that at the time of the accident a significant amount of time had passed since the harmful product was placed on the market, put into service or made available, the fact that a product has been used intensively and perhaps abusively in the past

²⁵⁷³ J. Wassink and M. Loos, 'Productaansprakelijkheid in het digitale tijdperk: De Richtlijn productaansprakelijkheid bij de tijd gebracht' (2023) *Nederlands Tijdschrift voor Europees Recht* 22, 25.

²⁵⁷⁴ In practice, defendants often have to first establish a post-marketing circumstance like this that can constitute a posterior origin of a proven defect in the harmful product, since plaintiffs may fail to mention that the product has been repaired or refurbished. This is mostly due to strategic reasons. Yet, it may also happen inadvertently because a plaintiff might be truly unaware of the fact that a repair or refurbishment intervened, because either he is an injured third party or a consumer who received the already repaired or refurbished product after a subsequent redistribution.

²⁵⁷⁵ See *supra* nr. 413 for a summary of how art. 11(1)c PLD-2024 can be applied vis à vis distributors and parties liable based on art. 8(2) *ibid.* who subsequently make the product 'available', as well as when a defect would be based on art. 7(2)e *ibid.*'s postponement to "the moment in time when the product left the control of the manufacturer".

or the fact that the product had been redistributed (especially retransferred) once or multiple times prior to the accident, as discussed *supra* nrs. 240 and 292. Of course, in a more circular product lifecycle where a product has both been reused, redistributed and repaired or refurbished prior to an accident, these limited factual presumptions can accumulate, although even then they remain refutable by concrete circumstances indicating that it is nevertheless more probable that the defect causing the accident had an anterior origin.

416. THE SPECIFIC NATURE OF THE ACCIDENT AND THE PRODUCT DEFECT TYPOLOGY CAN PROVIDE LIMITED PROOF ON HOW AN INTERVENING REPAIR OR REFURBISHMENT GAVE RISE TO THE DEFECT THAT CAUSED THE DAMAGE – In addition to the mere fact that a repair or refurbishment occurred, there can be other elements to help a defendant prove that this post-marketing circumstance effectively gave rise to the product defect that caused the damage, which is the first step he will have to take to successfully prove a posteriority defence on this basis (see *supra* nr. 414).

Particular circumstances that surround the product accident can be particularly significant in this regard. For example, the components that malfunctioned at the time of an accident might precisely have been the component(s) for which a repair attempt had recently been undertaken, like the folding arms of a baby travel cot that collapsed on a sleeping baby or the blocking mechanism of an automatic garage door that did not function while a person was stuck under the door. Or precisely the malfunctioning component might have been cleaned, reprocessed or replaced in the intervening refurbishment process, like the battery in a refurbished smartphone or the brakes in a refurbished vintage racing bike. Alternatively, it is possible that the malfunctioning component(s) are suspect of having been indirectly affected by a particular repair or refurbishment, like exterior components and fasteners which may have been disassembled to get to another component that required fixing. For example, the metal casing around an electric fan, which had to be removed to repair the fan's blade but which might have been unsafely reassembled without the previously present kids-proof lock, could be subsequently removed by a small child who is subsequently injured by the moving blades.

Furthermore, the technical state of the observed defect in a harmful product may also support a conclusion that it has been created by an intervening repair or refurbishment. For example, the defective component seems to be a third-party spare part or a product defect seems to be the consequence of an incorrect assembly of the product in a particular manner that is indicative of an improper manual repair rather than a fluke in a largely automated industrial manufacturing process. This is something for which in particular a defending manufacturer is well-placed to provide detailed technical evidence.

The latter brings us to the general distinction made mostly in the German literature,²⁵⁷⁶ which considers that defects with a posterior origin mostly manifest themselves as apparent manufacturing defects, while design and information defects generally have an anterior origin. As already discussed *supra* nrs. 241 and 293, this distinction must be heavily nuanced in especially a more circular economy and this is particularly true with regards to intervening repairs and refurbishments.

²⁵⁷⁶ See sources cited *supra* footnote 1574.

On the one hand, a product's design can change as result of a repairs or refurbishments, as illustrated by the possibility for certain repairers and refurbishers to be held liable based on art. 8(2) PLD-2024 for 'substantial modifications' (see *infra* nrs. 442 et seq.). Such changes can be intentional, because it may have seemed necessary to change a product's configuration in order to remediate a deficiency or because no appropriate spare part had been available. Alternatively, this can also occur accidentally, for example as a result of an error in reassembling a product. Furthermore, also product information might change after a product is placed on the market or put into service, for example when a repair or refurbishment combined with a retransfer leads to a loss of product documentation (see also *supra* nr. 288) or a component bearing warnings is replaced by a spare part without them.

On the other hand, many apparent manufacturing defects are effectively original manufacturing defects and not the result of a repair or refurbishment that has intervened. For example, it was accepted in the aforementioned Belgian moped case that loose screws between the base and stems of the saddle constituted an anterior manufacturing defect and were not caused by the repair that had intervened, because the product's importer had informed distributors in writing about this particular manufacturing defect.²⁵⁷⁷ Indeed, evidence from product safety enforcement action can be very effective to refute a posteriority defence when an accident has been caused by a product that has been previously repaired or refurbished. Another piece of evidence that can help the plaintiff to refute a posteriority defence based on an intervening repair or refurbishment of the individual, harmful product, is proof that the same defect has also been found in other products of the same manufacturing batch or product type.

iii. Reasonable foreseeability of a repair or refurbishment as part of the posteriority defence

417. THE ROLE OF THE POSTERIORITY DEFENCE COMPARED WITH THE DEFECT ASSESSMENT IN THE CONTEXT OF ACCIDENTS CAUSED BY REPAIRED OR REFURBISHED PRODUCTS – Once a defendant has established that an intervening repair or refurbishment caused the damage claimed by the plaintiff, a successful posteriority defence thus centres around the question whether this had been reasonably foreseeable when the product was placed on the market, put into service or made available (see *supra* nrs. 239 and 414.b). However, as previously discussed *supra* nrs. 373 et seq. in the context of the defect assessment, the fact itself that a durable consumer good is eventually repaired or refurbished, can be considered as reasonably foreseeable in general for many products. Of course, far from every individual repair or refurbishment is reasonably when a product is placed on the market or put into service. This depends, among others, on the nature of the specific product or repaired parts, whether it is a self-, independent or original endeavour, the availability of supporting resources, applicable regulation and of course the manner in which it is actually performed (see in detail *supra* nrs. 374-397).

²⁵⁷⁷ Liège 18 October 2004, *JLMB* 2005, 212, 213.

This brings us to a key point on the allocation of the burden of proof between plaintiff and defendant (see also *supra* nrs. 239, *in fine* and 291). It is first of all, at least in principle,²⁵⁷⁸ incumbent on the plaintiff to prove that a harmful product was defective.²⁵⁷⁹ In a substantial group of claims against defendants in the original distribution chain of subsequently repaired or refurbished products, this proof of defect therefore requires the plaintiff to already demonstrate that the repair or refurbishment in question had effectively been reasonably foreseeable. This is especially true for claims concerning accidents that have occurred during a repair or refurbishment. But also when accidents occur afterwards, the plaintiff's proof of a concrete defect may still consist of an alleged lack of safe repairability or refurbishability, which eventually led to the damage (see *supra* nrs. 368-379). Hence, in these cases of directly repair- or refurbishment-related product accidents, the reasonable foreseeability of said intervening repair or refurbishment will already have been settled as part of the defect assessment, which makes a corresponding posteriority defence theoretically redundant.

This is different in the admittedly larger group of cases where the plaintiff proves a manufacturing, design or information defect that seems to be at least at first sight unrelated to the fact that a repair or refurbishment has intervened. It is here that the posteriority defence plays a central role.²⁵⁸⁰ The following two sections aim to provide some guidelines on how such posteriority defences based on an intervening repair or refurbishment can be assessed.

418. NO LINK WITH A (CONTRIBUTORY) FAULT NOR WITH A SUBSTANTIAL MODIFICATION PURSUANT TO ART. 8(2) PLD-2024 – At first sight, it may seem logical to equate not reasonably foreseeable repairs and refurbishments, required for a successful posteriority defence, with a (contributory) fault, potentially even a 'severe fault' (*culpa lata*), on the part of the repairer or refurbisher.²⁵⁸¹ LACROIX suggests such an interpretation specifically with regards to liability based on the PLDI for repaired products.²⁵⁸² However, as this dissertation has already argued *supra* nrs. 256 and 274 in the context of product repurposing and reuse, only an imperfect correlation and not a theoretical bond exists between reasonable foreseeability when the product is placed on the market, put into service or made available, on the one hand, and the (contributory) fault of the product user, on the other hand. After all, certain particularly

²⁵⁷⁸ Instead, the defendant bears the burden of refuting the product's defectiveness if one of the defect presumptions of art. 10(2)(4) PLD-2024 apply. For defendants this makes of course a major difference and the arguments they might raise in order to refute the presumption can be closely related to what would have otherwise been a posteriority defence based on a posterior repair or refurbishment. However, even in those cases, the posteriority defence remains technically not applicable, since the debate remains concentrated on the defect assessment, for which only the burden of proof has shifted.

²⁵⁷⁹ See arts. 4 and 7(b) PLD-1985; arts. 10(1) and 11(1)c PLD-2024. See also *supra* nr. 205.

²⁵⁸⁰ In many of such cases, the plaintiff does not mention the fact that the product has been repaired or refurbished before or even at the time of the accident, often intentionally but sometimes also inadvertently. See *supra* footnote 2574.

²⁵⁸¹ See *supra* footnote 1690 Belgian scholarship that advocates in favour of equating a severe fault with not reasonably foreseeable misuse as part of the defect assessment.

²⁵⁸² I. Lacroix, *Recht op herstellen: aansprakelijkheids- en verbintenissenrechtelijke implicaties van de circulaire economie* (die Keure 2022) 80-81. LACROIX draws inspiration from Antwerpen 28 October 2009, *TBBR* 2011, 381, note D. Verhoeven (decision in which court grants posteriority defence based on intervening, inadequate repair of car).

dangerous or even reckless acts of self- or independent repair or refurbishment of a particular product or component, can still be considered as reasonably foreseeable and must be mitigated through a safer design, repair-enabling resources or warnings (see *supra* nrs. 373 et seq.). This is even more true given that some amount of product misuse by consumers is generally considered to be reasonably foreseeable²⁵⁸³ and given the present sociocultural impetus for more self- and independent repairs as part of the right to repair movement.²⁵⁸⁴

Likewise, it may seem attractive at first sight to link not reasonably foreseeable repairs and refurbishments that can grant a posteriority defence with repairs and refurbishments that qualify as substantial product modifications and may lead to harmonised product liability based on arts. 8(2) and 11(2)d PLD-2024. WASSINK AND LOOS appear to adopt such a view.²⁵⁸⁵ However, as already argued *supra* nr. 375, this would be misguided. Even the opposite might to some extent be true, since future modifications that have a substantial impact on product safety, are by nature accident risks that must feature more prominently in a pre-marketing safety assessment. Hence, these are more easily reasonably foreseeable compared to other product modifications with a lesser impact in terms of product safety (see *supra* nr. 379.a).²⁵⁸⁶ For example, a particular (attempted) repair or refurbishment in an independent repair workshop which removes a safety mechanism in an electric heater or reduces the stability of a wall-mounted screen, can perfectly result in a separate liability based on art. 8(2) PLD-2024, while it remains an intervention that had been reasonably foreseeable when the product was placed on the market, put into service or made available and that perhaps should have been prevented through an alternative design, the facilitation of safer repairs and/or warnings.²⁵⁸⁷ Harmonised product liability of original producers and distributors for unsafely repairable or refurbishable products can therefore perfectly co-exist with liability of those same repairers and refurbishers based on art. 8(2) PLD-2024 (see also *supra* nr. 353).

419. A COMPARATIVE CRITERION: THE REASONABLE FORESEEABILITY OF A REPAIR THAT IS ADEQUATE COMPARED TO ITS EXPECTED EQUIVALENT – A guideline that can be used instead to identify which intervening repairs and refurbishments had not been reasonably foreseeable, is the more general ‘comparative’ criterion presented *supra* nr. 374 in the context of the defect assessment. Hence, one should look at how far removed the particular repair or refurbishment was from the equivalent that would have been ‘expected’ according to the public’s legitimate safety expectations. The latter is determined by the product’s nature, applicable regulation and standards, as well as the product’s presentation, including the availability of original

²⁵⁸³ See case law and literature cited *supra* footnotes 1095-1096. See also recital 31 and art. 7(2)b PLD-2024.

²⁵⁸⁴ See *supra* nrs. 2, 68.c and 87.

²⁵⁸⁵ J. Wassink and M. Loos, ‘Productaansprakelijkheid in het digitale tijdperk: De Richtlijn productaansprakelijkheid bij de tijd gebracht’ (2023) *Nederlands Tijdschrift voor Europees Recht* 22, 24. These authors assume more generally that, when a product happens to have been substantially modified pursuant to art. 8(2) PLD-2024, actors in the original distribution chain can no longer be held liable in general. This dissertation disputes this view, as discussed *supra* nrs. 353-354.

²⁵⁸⁶ See also Verhoeven, *Productaansprakelijkheid en productveiligheid*, 187-188; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3604, 21-22. See also from the perspective of product safety rules arts. 5-6(1)a General Product Safety Regulation 2023/988/EU.

²⁵⁸⁷ See *supra* nrs. 379 et seq.

repair-enabling resources, as examined earlier in this Chapter. As an example, original spare parts to repair a particular washing machine might be hard to come by and the repair instructions might be confusing. The prosumer who in such circumstances self-repairs this washing machine, which is by nature a device that is frequently self- or independently repaired, but who uses a independent third-party spare part²⁵⁸⁸ that offers a deceiving impression of compatibility or who makes an understandable error in reassembly, has in light of the circumstances arguably acted in a manner that is still close enough to what would have been an ‘expected’ self- or independent repair. Hence, such a repair could qualify as an intervention that remained reasonably foreseeable, to which the posteriority defence ultimately cannot be applied. Alternatively, a prosumer could attempt to repair at a sub-component level a mountainbike’s disk brake despite a clear warning to seek a professional repairer for this component, which is generally considered as technically demanding and accident-prone, in a manner that flagrantly violates industry practices as well as publicly available repair instructions directed at professionals. Such a self-repair is arguably sufficiently far removed from the ‘expected’ equivalent, consisting of a professional repair service pursuant to these instructions and standards, that it can be considered as no longer reasonably foreseeable. Hence, such a repair would be apt for an application of the posteriority defence.

A Belgian court decision from 2009 applies a similar reason, when it granted to a manufacturer a posteriority defence based on an intervening, independent repair of a car component, which according to a judicial expertise failed to meet expected standards. Concretely, the previously damaged components had been only partially repaired, a structurally supporting component was no longer present in the product after the repair and non-original screws of varying age, quality and length had been used as spare parts.²⁵⁸⁹ Likewise, the aforementioned German court decision from 2005 relating to an accident during the self-repair of an industrial machine, emphasizes in its motivation why the machine had not been defective when it was placed on the market, that the repairer failed to heed clear repair instructions and warnings.²⁵⁹⁰

LACROIX, similarly distinguishes between ‘good’ versus ‘bad’ repairs to determine whether they create a posterior defect origin. She furthermore emphasizes the significance of original repair-enabling resources, like repair instructions, spare parts and repair tools: a defect is anterior when these have been adequately applied by the self- or independent repairer, while a defect has a posterior origin when these have been inadequately applied.²⁵⁹¹ While this largely corresponds with the comparative criterion presented above, some remarks must be raised. The availability of repair-enabling resources is only one of many criteria that determine the reasonable foreseeability of a particular repair or refurbishment (see *supra* nrs. 373-

²⁵⁸⁸ See also *supra* nrs. 407-408 on how defective, independent spare parts and other repair-enabling resources from third parties, if already available when a main product is placed on the market or put into service, can in exceptional circumstances also be pertinent for proving the main product’s defectiveness.

²⁵⁸⁹ Antwerpen 28 October 2009, *TBBR* 2011, 381, 385, note D. Verhoeven.

²⁵⁹⁰ OLG Koblenz 29 August 2005, 12 U 538/04, *NJW-RR* 2006, 170, 170-171.

²⁵⁹¹ I. Lacroix, *Recht op herstellen: aansprakelijkheids- en verbintenissenrechtelijke implicaties van de circulaire economie* (die Keure 2022) 81-83.

397).²⁵⁹² Moreover, especially in the consumer goods sector, there are significant behavioural limitations to the potential effectiveness of such repair instructions, spare parts and tools. These make it generally preferable to pursue a more safely and easily repairable product design, when this is feasible, or to preclude through design self- and independent repairs of particular components, where this is necessary in rare cases (see *supra* nrs. 379 and 389).

iv. Reasonable foreseeability of a lack of a repair or refurbishment?

420. A LACK OF REPAIR OR REFURBISHMENT AS A NOT REASONABLY FORESEEABLE CIRCUMSTANCE? – The preceding sections have focused on situations where the posteriority defence is invoked with regards to a repair or refurbishment that is by the defendant alleged to have effectively intervened in the product’s lifecycle and provided a posterior origin of the product’s defectiveness. However, a posterior defect origin can instead also consist of an absence of repair.²⁵⁹³ FAIRGRIEVE AND GOLDBERG mention a “*lack of repair or servicing*”,²⁵⁹⁴ which might be particularly relevant to provide a basis for a posteriority defence regarding products that are known to require periodic inspections and maintenance. VERHOEVEN discusses the need for a repair to occur “*after an accident*” in a way which “*restores the safety configuration of a product in its original state*”.²⁵⁹⁵

This topic fits actually as much in the preceding Chapter on product reuse than in this one, since the safety that a product can be legitimately expected to provide in the absence of repairs, is more readily a part of a product’s durability than its repairability. As discussed *supra* nr. 239, the key test for positive evidence on defect posteriority is whether a circumstance that gave rise to the product defect that caused the accident, had not been reasonably foreseeable when the product was placed on the market, put into service or made available.

For example, although experienced mountainbikers tend to frequently clean, inspect and if necessary repair their mountainbike pursuant to a practice of ‘preventive maintenance’,²⁵⁹⁶ it arguably remains reasonably foreseeable that numerous recreational mountainbikers are less diligent in this regard. This would mean that a standard, entry-level mountainbike requiring very intensive, periodic maintenance and repairs to remain safely usable and to prevent the unexpected, dangerous breakdown of brakes, pedals or a saddle, would be defective. Such product fails to provide the safety legitimately expected by the public in reasonably foreseeable conditions of use.²⁵⁹⁷ In contrast, it is well known that gas boilers need periodic

²⁵⁹² See also on the various ways how a manufacturer can avoid that a product would be considered defective and that he could not invoke the posteriority defence in the context of, among others, product tampering and maintenance Howells, ‘strict liability’, nrs. 4.186-4.188.

²⁵⁹³ See, e.g., CA Dijon (1^{re} Ch.) 24 October 2017, nr. 15/01194, *Lexis360* (defending car manufacturer unsuccessfully alleges, among multiple potential posterior defect causes, that car and its harmful battery have become defective through a lack of maintenance).

²⁵⁹⁴ Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 13.25.

²⁵⁹⁵ Verhoeven, *Productaansprakelijkheid en productveiligheid*, 145. VERHOEVEN refers in this regard to Antwerpen 28 October 2009, *TBBR* 2011, 381, note D. Verhoeven. Nevertheless, it should be noted that in this case a repair did take place after an initial accident, although an imperfect one.

²⁵⁹⁶ See *supra* footnotes 482-483 on this concept and how it partially overlaps with repair activities.

²⁵⁹⁷ See also Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 13.25.

maintenance, as even required by regulation and emphasized in use instructions and warnings, among others to reduce the risk of carbon monoxide poisoning. Considering this background, it is arguably no longer reasonably foreseeable that a particular gas boiler is not inspected, maintained, let alone repaired during more than a decade. This would mean that a manufacturer or other defendant could successfully invoke a posteriority defence in such case based on the lack of maintenance or inspection.²⁵⁹⁸

c. Neither for-profit nor professional defence

421. ART. 7(c) PLD-1985 AND THE ‘COMMERCIAL ACTIVITY’ REQUIREMENT IN THE PLD-2024 – In a circular and more collaborative economy, it can occur that an original distributor or even an original producer of a product that is later repaired or refurbished, is not a professional business. Such defendants can only exempt themselves from harmonised product liability if they prove the neither for-profit nor professional defence, which is quite challenging. Given its nature, art. 7(c) PLD-1985 must likely be personally interpreted vis à vis all possible defendants (see also *supra* nrs. 317 et seq.). The PLD-2024 has removed this defence and requires instead that a defendant has acted in the course of a commercial activity.²⁵⁹⁹ The application of art. 7(c) PLD-1985 and its replacement under the PLD-2024 to prosumers specifically, has been examined *supra* nrs. 197-198.

§ 5. Ten-year extinction period

422. THE CONSIDERABLE IMPACT OF THE EXTINCTION PERIOD ON THE LIABILITY OF ORIGINAL PRODUCERS AND DISTRIBUTORS OF SUBSEQUENTLY REPAIRED OR REFURBISHED PRODUCTS – Repairs and refurbishments are key circular strategies to extend the useful lifetime of products.²⁶⁰⁰ Consequently, the ten-year extinction period of art. 11 PLD-1985 and art. 17 PLD-2024²⁶⁰¹ has a considerable impact on harmonised product liability for subsequently repaired or refurbished products. In a more circular economy with a substantial ‘right to repair’,²⁶⁰² there are simply more durable consumer goods in use for which this rigid extinction period has already expired or for which it will expire before an injured party manages to initiate court proceedings. This impact is less significant compared to the circular strategy of product reuse (see

²⁵⁹⁸ Note that in this example, the previously by the plaintiff established defect in the boiler must have been something else than the allegation that the product was defective due to a lack of durability, otherwise this debate about the reasonable foreseeability would have already been settled in the context of the defect assessment rather than the subsequent posteriority defence (see *supra* nrs. 239 and 417). For example, the plaintiff might have proven concretely that a filter or ventilation function might have been defective.

²⁵⁹⁹ Arts. 1, 2(1), 4(7)-(16) and 78 PLD-2024.

²⁶⁰⁰ See in general *supra* nrs. 58-59 and 88-89.

²⁶⁰¹ In case of latent defects which prevent an injured person to initiate court proceedings within 10 years, art. 17(2) PLD-2024 extends the period to 25 years. Furthermore, it is expected that for defects in digital services and software subject to the ‘digital exception to the posteriority defence’ of art. 11(2)a-c PLD-2024, the corresponding extinction period’s starting point is also postponed, as discussed *supra* nr. 248

²⁶⁰² See *supra* nrs. 87 and 393-397.

supra nrs. 244-246), since certain repaired or refurbished products have only been in use, (re)distribution and repair or refurbishment processes during a few years or sometimes even a few months prior to an eventual accident. Nevertheless, a large number of repaired and refurbished products are effectively relatively old, due to the inherent durability of many consumer goods and the potential of repair and refurbishment strategies to extend product lifetimes. It is thus quite prevalent that for example repaired bikes and DIY-tools or refurbished furniture and sports equipment are still in use a decade after they were initially placed on the market or put into service.

In this regard, it is worth emphasizing that the extinction period not only continues to elapse during a product's use phase, original distribution and redistribution processes, including when it is meanwhile in storage (see *supra* nrs. 244 and 296). It equally continues to elapse during the entirety of a repair or refurbishment process, regardless how long this might take and regardless whether these are original repairs or refurbishments offered by for example the manufacturer or other types. Only the initiation of court proceedings halts this extinction period.²⁶⁰³ And the potentially flagrant and/or obviously anterior nature of a product defect is also completely irrelevant.

For these reasons, this dissertation has already *supra* nr. 246 criticised the current extinction period as difficult to reconcile with a more circular consumer goods economy. *Supra* nr. 247, it has been proposed to *de lege ferenda* replace it with a flexible period consisting of each product's average expected lifespan, in light of among others the possibilities of circular strategies when the product is placed on the market or put into service, extended by an additional safety margin for still reasonably foreseeable reuse and to facilitate that claims can still be brought when accidents would occur towards the end of said expected lifespan.²⁶⁰⁴

423. PRACTICAL APPLICATION OF THE EXTINCTION PERIOD IN THE CONTEXT OF SUBSEQUENTLY REPAIRED OR REFURBISHED PRODUCTS – The preceding Chapter has discussed the diverging 'producer-specific' and 'personal' interpretations of art. 11 PLD-1985 (see *supra* nrs. 331-332). Art. 17(1) PLD-2024 now implies that only distributors (and online platforms) of subsequently repaired or refurbished products benefit from such an earlier starting date, while all other defendants subject to primary liability in the original distribution chain, are subject to an extinction period that starts when they themselves placed the product on the market or put it into service (see *supra* nr. 333).

The fact that a product has in the meantime been repaired or refurbished can sometimes make it more difficult for an original producer or distributor to prove the extinction period's starting date, as required to successfully invoke it. For example, general product safety traceability information which can help to make this determination, like the "*type, batch or serial number or other element enabling the identification of the product*",²⁶⁰⁵ can be lost due to a spare

²⁶⁰³ Art. 11 PLD-1985; art. 17 PLD-2024. See *supra* nr. 203.

²⁶⁰⁴ An extension pursuant to art. 17(2) PLD-2024 for cases of latent damage would still be possible. See *supra* nr. 247.e.

²⁶⁰⁵ Arts. 9(5), 11(1) and 13(1)(2) General Product Safety Regulation 2023/988/EU. This information must in principle be placed on the product itself. Instead, placement on packaging or in product

part replacement or a cleaning or reprocessing action.²⁶⁰⁶ Likewise, a repair or refurbishment might result in a loss of a functional QR-code or other data carrier linking to a product passport, which might in the future record the exact date when a product was placed on the market or put into service (see *supra* nrs. 345-346). Nevertheless, the biggest risk that can result in a loss of such information, is still the (partial) destruction of the product in the eventual product accident. And this risk is present irrespective of how linear or circular a product's preceding lifecycle might have been.

Section C. Liability of repairers and refurbishers

§ 1. Scope of application

a. Overview of possible defendant qualifications

424. THE DEFAULT RULE: REPAIRS AND REFURBISHMENTS FALL OUTSIDE THE SCOPE OF HARMONISED PRODUCT LIABILITY – Repaired and refurbished products are still ‘products’ that remain part of harmonised product liability’s material scope, as discussed *supra* nr. 351. This makes it possible to claim based on the PLDI against defendants subject to primary or secondary liability in the original distribution chain of said product, which has been studied in the preceding Paragraph. Yet, this also begs the question whether the repairer or refurbisher himself could be held liable based on the PLDI.

documentation is only allowed if “*the size or nature of the product does not allow*” that the product would bear this information (art. 9(5) *ibid.*).

²⁶⁰⁶ Note that that repairers or refurbishers who remove product safety traceability information or perhaps in the future even product passport data carriers, can arguably be held liable themselves on the basis of art. 8(2) PLD-2024 or lead to an extension of liability of existing defendants based on art. 11(2)d PLD-2024’s exception to the posteriority defence, depending on whether these actors ‘substantially modify’ the product within or outside the ‘manufacturer’s control’. See also *infra* nr. 445.

The default answer is negative. The literature²⁶⁰⁷ as well as occasionally a published court decision²⁶⁰⁸ confirm that repairing, comparable forms of maintaining a product (see *supra* nr. 85) or what this dissertation's typology calls refurbishments (see *supra* nr. 89) do not constitute the production of a (new) product within the meaning of art. 3(1) PLD-1985, which has now become art. 8(1)a-b PLD-2024. Instead, repairs and refurbishments by themselves constitute in principle a service provision,²⁶⁰⁹ which falls outside the scope of harmonised product liability.²⁶¹⁰ Likewise, when a person repairs or refurbishes his own product, this constitutes in principle neither the 'putting into service' of a product if it would be subsequently used in a commercial activity nor the 'placing on the market' of a product if it would be subsequently distributed in a commercial activity.²⁶¹¹ This is simply because these products have already been placed on the market or put into service, which cannot simply be changed by an intervening repair or refurbishment.

There is only one true exception, at least under the PLD-2024, for repairs and refurbishments that substantially modify a product, as we will see *infra* nrs. 437 et seq. Consequently, as recital 39 PLD-2024 now summarises, "[e]conomic operators that carry out repairs or other operations that do not involve substantial modifications should not be subject to liability under this Directive."

This interpretation is now also confirmed by general product safety regulation. As discussed *supra* nr. 352 *in fine*, the General Product Safety Regulation 2023/988/EU no longer refers to 'reconditioning' or 'refurbishment' in its definition of 'manufacturer', unlike the preceding

²⁶⁰⁷ See Taschner and Frietsch, *Kommentar*, 239, 314; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 83; Graf von Westphalen, '3. Produkthaftungsgesetz', § 49, nrs. 24, 26; Artigot-Golobardes, 'Beyond European Product Liability', 72; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3605, 3-4; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 2, nr. 8, § 4, nr. 24; P. Ehring, '§ 4 ProdHaftG' in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 11; G. Wagner, 'Produkthaftungsgesetz' in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 4, nr. 25. See also D. Fairgrieve and R. Goldberg, *Product Liability* (3rd edn., Oxford University Press 2020) nr. 15.23; P. Verbruggen and J. van Vliet, 'Duurzaamheid in het buitencontractueel aansprakelijkheidsrecht: De belofte van drie Europese wetgevingsvoorstellen' (2023) 7407 *Weekblad voor Privaatrecht, Notariaat en Registratie* 276, 286.

²⁶⁰⁸ E.g., GERMANY: KG 3 April 2014, 20 U 253/12, *MedR* 2014, 825, *GesR* 2014, 427, *Juris*, nrs. 65-78 (doctor who repaired implanted hip prosthesis by replacing some components by different spare parts, did not produce a new hip prosthesis pursuant to German PLDI). See also, e.g., BELGIUM: the absence of a claim based on the PLDI against the repairer in Liège 18 October 2004, *JLMB* 2005, 212; Antwerpen 28 October 2009, *TBBR* 2011, 381, note D. Verhoeven.

²⁶⁰⁹ See with regards to repairs Graf von Westphalen, '3. Produkthaftungsgesetz', § 49, nr. 26; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3605, 3-4; G. Wagner, 'Produkthaftungsgesetz' in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 4, nr. 25. See also V. Ulfbeck, 'Circularity in Servitization: Managing the Need for Product Change in Contract and Product Liability Law' in B. Keirsbilck and others (eds.), *Servitization and Circular Economy: Economic and Legal Challenges* (Intersentia 2023) 106, footnote 62.

²⁶¹⁰ See CJEU 10 May 2001, C-203/99, *Henning Veedfald*, ECLI:EU:C:2001:258, nrs. 11-12; CJEU 21 December 2011, C-495/10, *Thomas Dutruieux*, ECLI:EU:C:2011:869, nrs. 27, 39; CJEU 10 June 2021, C-65/20, *VI v. KRONE*, ECLI:EU:C:2021:471, nrs. 36-38. See also *supra* nrs. 35 and 410.

²⁶¹¹ Cf. art. 4(8)-(9) PLD-2024.

General Product Safety Directive 2001/95/EC.²⁶¹² And the same Regulation, on which the PLD-2024 is undeniably at least partially modelled (see *supra* nr. 25.c), also codifies the exception for substantial product modifications.²⁶¹³

Finally, liability claims against repairers and refurbishers remain of course possible on the basis of national contractual or extracontractual liability law (see *supra* nrs. 171 and 208 et seq.). Moreover, if a repair or refurbishment does not result in the aforementioned substantial product modification, the national liability theory applicable to claims for defects in those services, can even have the same strict theoretical basis as the PLD without violating the Directive's maximum harmonisation, as argued *supra* nr. 213.a.

425. THE QUASI-EXCEPTIONS BASED ON THE PLD-1985 AND PLD-2024: REPAIRS OR REFURBISHMENTS THAT ACTUALLY CONSTITUTE (QUASI-)MANUFACTURING, THAT COINCIDE WITH DISTRIBUTING THE PRODUCT OR THAT LEAD TO SEPARATE LIABILITIES RELATING TO THE USE OF DEFECTIVE SPARE PARTS – The aforementioned default rule must first of all be contrasted with a set of cases that are not really exceptions but where there is nevertheless a risk of harmonised product liability that surrounds and can coincide with a repair or refurbishment service. Significantly, especially in light of the long-term continued application of the PLD-1985,²⁶¹⁴ these possibilities exist under both Directives.

First, what might seem as a product repair or refurbishment, might sometimes actually constitute a (final) step in a product manufacturing process. These instances, which result in primary liability as a manufacturer but are strictly speaking unrelated to actual circular repair or refurbishment strategies, are briefly discussed *infra* nr. 429.

Second, many repairs and refurbishments precede a subsequent redistribution of the repaired or refurbished product. The resulting secondary liability as a distributor, is discussed *infra* nrs. 430-431.

Third, repairers or refurbishers sometimes place an identifying feature on the product they repaired or refurbished. The resulting risk of primary liability as a quasi-manufacturer is discussed *infra* nr. 432.

Fourth, the use of spare parts will always make a repairer or refurbisher liable as a distributor for any defect in the spare part that causes damage. Yet, in some instances, the repairer or refurbisher might even be liable as a manufacturer, importer or quasi-manufacturer with regards to the spare part. This is discussed *infra* nr. 433.

426. FIRST EXCEPTION BASED ON THE PLD-2024: REPAIRS OR REFURBISHMENTS 'WITHIN THE MANUFACTURER'S CONTROL' THAT EXTEND THE LIABILITY OF THE PRODUCT'S EXISTING HARMONISED PRODUCT LIABILITY DEFENDANTS – The harmonised product liability under the PLD-2024 of a

²⁶¹² Cf. art. 3(8) General Product Safety Regulation 2023/988/EU; art. 2(e)i General Product Safety Directive 2001/95/EC 2001/95.

²⁶¹³ Art. 13(2)-(3) General Product Safety Regulation 2023/988/EU. This principle of imposing the EU product regulation obligations of a manufacturer on someone who independently modifies a product substantially from a product safety perspective, was first developed by the Commission in earlier Blue Guide guidance documents. See *infra* nr. 439.

²⁶¹⁴ Art. 21 PLD-2024.

defendant in the original distribution chain of a product he has placed on the market, put into service or made available, can expand to the same product after it has subsequently been repaired or refurbished ‘within the manufacturer’s control’ pursuant to art. 4(5) PLD-2024. Two significantly different situations must *de lege lata* be distinguished here on the basis of art. 7(2)e and 11(2)d PLD-2024, depending on whether the repair or refurbishment ‘substantially modifies’ the product or not. These two situations create a to varying degrees ‘extended’ liability of existing harmonised product liability defendants for a product that has after its placement on the market or putting into service been repaired or refurbished, either by himself or another person, at least if it occurs ‘within the manufacturer’s control’. These two situations are examined further *infra* nrs. 435-436.

427. SECOND EXCEPTION BASED ON THE PLD-2024: REPAIRS OR REFURBISHMENTS ‘OUTSIDE THE MANUFACTURER’S CONTROL’ THAT SUBSTANTIALLY MODIFY A PRODUCT – If a repairer or refurbisher substantially modifies a product, this does not occur within the ‘manufacturer’s control’ defined in art. 4(5) PLD-2024 and the substantially modified product is subsequently either ‘made available on the market’ or ‘put into service’, then this person incurs a separate primary liability for defects in the product based on art. 8(2) PLD-2024. This important new provision is studied *infra* nrs. 442 et seq. Importantly, the defence of art. 11(1)g PLD-2024 limits in those cases this potential liability to the parts of the product affected by the modification (see *infra* nr. 454). Although never clearly accepted, a similar rule might theoretically already exist under the PLD-1985 (see *infra* nrs. 437-441).

428. THE NEITHER FOR-PROFIT NOR PROFESSIONAL DEFENCE OR THE REQUIREMENT OF A COMMERCIAL ACTIVITY – Self- and independent repairs and refurbishments of consumer goods are in practice often performed by prosumers or by non-profit associations. This corresponds with a broader understanding of the ‘right to repair’ and a view on product repair and refurbishment strategies that overlaps with the collaborative economy (see *supra* nrs. 68.c and 86-87). It is of course that the aforementioned grounds of harmonised product liability for repair and refurbishment activities are limited in this regard. A defendant under the PLD-1985 can always try to invoke the neither for-profit nor professional defence of art. 7(c) PLD-1985, although its requirements are quite stringent. Any of the aforementioned grounds of liability under the PLD-2024 requires that the activity has been performed in the course of a ‘commercial activity’. *Supra* nrs. 197-198, these considerations in terms of scope have already been discussed in general.

b. Distinction with manufacturing

429. DEMARCATING THE PRODUCTION PHASE FROM ACTUAL REPAIRS AND REFURBISHMENTS – What is in reality a final step in an extended production process, can sometimes present itself as a repair or refurbishment of a product that has already been placed on the market or put into service. Such situations risk to become more numerous in an increasingly circular economy, where defective production batches are no longer simply discarded and where remanufacturing becomes more prevalent.

First of all, this can occur because a product like a caravan fails (final) manufacturing quality controls and is subsequently sold to an independent manufacturer who attempts to correct the existing issues before placing the caravan on the market, where it subsequently causes an accident, such as a complete or partial disconnection while being towed or a fire hazard in the caravan's kitchenette. Second, this can also occur when an already remanufactured core (see also the following Chapter) is assembled in its final configuration by a final product manufacturer.²⁶¹⁵ For example, a remanufacturer orders a contractor to source and remanufacture caravans of a specific type. Subsequently, he only renews some furniture and the upholstery, before placing the remanufactured caravan on the market.

In these situations, there is a crucial distinction between an incorrect qualification of these final actors as repairers or refurbishers, who are only subject to harmonised product liability in the relatively narrow set of circumstances discussed in the following sections,²⁶¹⁶ and a correct qualification of them as manufacturers, who are by nature subject to primary liability.²⁶¹⁷ From a harmonised product liability perspective, it can therefore be attractive for a manufacturer to believe or pretend that he merely acted as a repairer or refurbisher of a product which was already placed on the market or put into service by someone else. Admittedly, in both of the aforementioned factual constellation, if we assume that this belief is correct and that he only repaired or refurbished and not manufactured a product, he has according to this view still made the product subsequently available on the market, which would result in a (fake) secondary liability (see *infra* nr. 430). Nevertheless, this secondary liability might make little difference in practice.²⁶¹⁸ And it is of course also possible that a more professionally oriented product, for example a trailer, is actually put into service by our defendant rather than being placed on the market or made available, which then even excludes this secondary liability

²⁶¹⁵ A final assembler of prefabricated parts qualifies in principle as a manufacturer subject to the PLDI, in particular when these originate from different sources. This must be distinguished from installers or construction workers who do not 'substantially modify' a movable product (cf. arts. 4(18) and 8(2) PLD-2024) or consumers who self-assemble a flat-packaged, finished product, like IKEA furniture. This view is supported by more detailed analyses in the literature. See Graf von Westphalen, '3. Produkthaftungsgesetz', § 49, nrs. 17-23; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 4, nrs. 20-23; P. Ehring, '§ 4 ProdHaftG' in P. Ehring and J. Taeger (eds.), *Produkthaftungs- und Produktsicherheitsrecht* (Nomos 2022) nr. 7; G. Wagner, 'Produkthaftungsgesetz' in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 4, nr. 14. See also OLG Dresden 23 May 1996, 7 U 1317/95, VersR 1998, 59, *Juris*.

²⁶¹⁶ See the overview *supra* nrs. 424-427.

²⁶¹⁷ Art. 3(1) PLD-1985; art. 8(1)a PLD-2024. See also *supra* nr. 176.

²⁶¹⁸ To exempt himself from this fake secondary liability, the defendant will have to timely identify the original or subcontracting manufacturer (art. 3(3) PLD-1985; art. 8(3) PLD-2024). The latter may challenge that our first defendant is merely a distributing repairer or refurbisher and try to prove that he is in fact the product's final manufacturer. Nevertheless, it is possible that also this preceding actor in the production chain misinterprets the situation. Moreover, this defendant is anyhow subject to primary liability as a (component) manufacturer (3(1) PLD-1985; art. 8(1)b PLD-2024), which means that proving that the first defendant is also subject to primary rather than secondary liability is at best relevant for a potential recourse claim (art. 8(1) PLD-1985; art. 12(1) PLD-2024) against a close commercial partner.

risk if the actor has effectively merely repaired or refurbished the product and not acted as its manufacturer.

As already discussed in more detail *supra* nr. 412.a, the decisive criterion to distinguish between actual production and repairs or refurbishments is the time when the product is truly ‘placed on the market’ or ‘put into service’. If this has occurred before the alleged repair or refurbishment, then this is effectively a repair or refurbishment without a primary liability risk (see *supra* nr. 424). If the product is only placed on the market or put into service afterwards, then the defendant is liable on a primary basis as a manufacturer. Pursuant to the applicable CJEU case law and literature, this moment occurs when the production process is at some stage considered to have been finished and the product becomes earmarked for distribution or direct use (see in more detail *supra* nr. 412.a).²⁶¹⁹

In theory, it is the plaintiff who has to prove that a defendant is liable as the manufacturer of a product and that he is therefore not merely a repairer or refurbisher.²⁶²⁰ Nevertheless, a beginning of proof will mostly suffice in practice, since this is an aspect which a plaintiff can normally prove only through indicative circumstances and for which a defendant is better placed to prove the contrary.²⁶²¹ If necessary, a plaintiff might even request a disclosure of evidence held by the suspected manufacturer, such as conformity assessments or other documents relating to the placing on the market of a product in the EU, based on the new art. 9(1) PLD-2024 (see *supra* nr. 206.a). It will thus in reality largely be incumbent on the defendant to refute that he qualifies as a manufacturer and that he was actually only a repairer or refurbisher of a product that had already been placed on the market or put into service.

c. Distributor of a repaired or refurbished product

430. DISTRIBUTOR OF A REPAIRED OR REFURBISHED PRODUCT: CONCEPT – In all situations where a repaired or refurbished product is subsequently ‘supplied’ according to the PLD-1985 or ‘made available on the market’ according to the new Directive, the ‘supplier’ or ‘distributor’ incurs secondary liability based on art. 3(3) PLD-1985 or art. 8(3) PLD-2024, respectively.²⁶²² In

²⁶¹⁹ See in particular CJEU 10 May 2001, C-203/99, *Henning Veedfald*, ECLI:EU:C:2001:258, nr. 17; CJEU 9 February 2006, C-127/04, *Declan O’Byrne*, ECLI:EU:C:2006:93, nr. 32. See also other case law and literature cited *supra* footnotes 1176-1179 and 2549-2556.

²⁶²⁰ Cf. art. 4 PLD-1985; art. 10(1) PLD-2024. These provisions only explicitly require that the plaintiff proves damage, defect and causation. Nevertheless, applicable national rules of civil evidence (see *supra* nr. 205) generally require a plaintiff to demonstrate why a defendant is subject to the liability theory’s personal scope of application (art. 3 PLD-1985; art. 8 PLD-2024), pursuant to the maxim *actori incumbit probatio*.

²⁶²¹ Proving that the defendant definitely acted as a manufacturer, according to an ordinary standard of judicial certainty, can create for a consumer or third party injured in a product accident a situation of so-called ‘evidentiary deficit’ (*‘bewijsnood’*, *‘Beweisnot’* or *‘nécessités de la preuve’*). See, e.g., W. Vandenbussche, *Bewijs en onrechtmatige daad* (Intersentia 2017) 206; H.-J. Ahrens, *Der Beweis im Zivilprozess* (Otto Schmidt Verlag 2015) 208; N. Hoffschir, *La charge de la preuve en droit civil* (Dalloz 2016) 412-413.

²⁶²² Taschner and Frietsch, *Kommentar*, 239, 314; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 8.09; E. Van Gool, ‘De nieuwe richtlijn productaansprakelijkheid en circulaire economie’ (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 418.

practice, this is very often done by an original or independent repairer or refurbisher who owns or holds second-hand products but not for purposes of personal use after the repair or refurbishment. Typical examples are vendors of refurbished consumer electronics, repaired furniture or other household items sold in a store with its own workshop or the leasing of repaired or refurbished bicycles, skis or other sports equipment.

The PLD-1985 does not define ‘supply’, but it has been described as involvement in a product’s marketing or distribution chain.²⁶²³ Art. 4(14) PLD-2024 now defines ‘distributor’ as “*any [...] person in the supply chain, other than the manufacturer or the importer, who makes a product available on the market*”, while the latter concept refers to “*any supply of a product for distribution, consumption or use on the Union market in the course of a commercial activity, whether in return for payment or free of charge*”.²⁶²⁴ It therefore encompasses sales, bartering, leases and potentially even borrowing and donating repaired and refurbished products. A commercial activity is nevertheless *a priori* required under the new Directive, while a defendant under the PLD-1985 may try to invoke the neither for-profit nor professional defence (see *supra* nrs. 197-198 and 428).

Only using a product while providing a service, without any form of ‘supply’ or ‘making the product available’, cannot lead to secondary liability.²⁶²⁵ Hence, a gardener who uses a repaired lawnmower or a hairdresser who uses a refurbished hood dryer, do not incur secondary liability based on the PLDI.

431. DISTRIBUTOR OF A REPAIRED OR REFURBISHED PRODUCT: LIABILITY RISK – Rules of harmonised product liability applicable to distributors of repaired or refurbished products, are discussed in more detail in the preceding Chapter on retransfers. Here, it is worth highlighting three principles which determine the scope of this secondary liability risk.

First of all, the distributor of a product that he has first repaired or refurbished, can exonerate himself by timely referring the plaintiff to any primary liable defendant who precedes him in the product’s original distribution chain as well as his own distributor. Based on art. 3(3) PLD-1985, such distributor (‘supplier’) can still exonerate himself even when the previous supplier or primary liable defendant to whom he refers the injured party can successfully invoke the neither for-profit defence (see *supra* nr. 301.b-c). This is quite problematic in this context, because B2C resellers and other B2C distributors who first repair and refurbish consumer goods tend to source these goods on a P2B basis, from prosumers who sometimes not even sell for profit but donate those second-hand products which ostensibly require a repair or refurbishment prior to being used again. And our reseller can simply refer the injured party to such a prosumer, who may be able to invoke the neither for-profit nor professional defence, in order to exonerate himself from liability under the PLD-1985. In contrast, this is no longer possible based on art. 8(3) PLD-2024, which explicitly requires for exoneration from

²⁶²³ A-G. Mengotti, opinion C-495/10, 27 October 2011, ECLI:EU:C:2011:706, nrs. 29-30. See also the descriptions in the literature cited *supra* footnote 1879.

²⁶²⁴ Art. 4(7) PLD-2024.

²⁶²⁵ See A-G. Mengotti, opinion C-495/10, 27 October 2011, ECLI:EU:C:2011:706, nr. 31; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 72.

secondary liability that the injured party is referred to an ‘economic actor’ (see *supra* nr. 301.b-c).

Second, if a distributor of a product that he has first repaired or refurbished, fails to exonerate himself and is held liable on a secondary basis, he is less likely to successfully claim in recourse against other possible defendants, like the product’s original manufacturer or importer. After all, when he is liable on a secondary basis, the repaired or refurbished product is apparently anonymous and he was already unsuccessful in timely referring the injured party to such a preceding defendant (see *supra* nr. 299).

Third, the possibility of secondary liability risks to drastically decrease in the near future as a result of increasingly stringent requirements on product safety traceability as well as future product passports, since these regulatory instruments can help to avoid that products are still anonymous (see *supra* nrs. 303 and 345.a). This can help repairing or refurbishing distributors to timely identify the primarily liable defendant who has placed the original product on the market. Consequently, the risk of harmonised product liability of repairers and refurbishers who neither quasi-manufacture nor substantially modify but who still distribute their repaired or refurbished product, may decrease substantially as a result of product safety and future Ecodesign regulation. This decrease in anonymous repaired or refurbished products means at the same time that the spotlight fixates more than ever on (quasi-)manufacturers and importers of the original pre-repaired or pre-refurbished product, which has been studied in-depth in the previous Paragraph.

d. Quasi-manufacturer of a repaired or refurbished product

432. THE QUASI-MANUFACTURER LIABILITY RISK OF REPAIRERS AND REFURBISHERS: SEEMINGLY A SUBSTANTIAL INCREASE AFTER *FENNIA/PHILIPS* – Resellers and other distributors of products they have first repaired or refurbished, regularly put distinguishing features on those product, like a name, logo or trademark on a permanent label, engraving or mere sticker on the product itself or, depending on the product, only on packaging or accompanying product documentation. Professional actors who repair and especially those who refurbish consumer goods purely as a service, may occasionally do the same.

As discussed *supra* nr. 304, each of these actions can potentially already suffice for the broadly interpreted objective component of the quasi-manufacturer qualification. Until recently, case law and literature held that a separate subjective component is additionally required, consisting of the fact that the quasi-manufacturer also created the impression vis à vis the general public that he is the product’s actual manufacturer or that he has at least assumed responsibility for it.²⁶²⁶ However, as examined *supra* nr. 305, the CJEU has now ostensibly precluded such separate subjective requirement by ruling in *Fennia/Philips* that the quasi-manufacturer concept in art. 3(1) PLD-1985 “does not require that the person who has put his name, trade mark or other distinguishing feature on the product, or who has authorised those particulars to be put on the product, also present himself as the producer of that product in some

²⁶²⁶ Creating the former impression is accepted in most existing case law and literature (see sources cited *supra* footnotes 1919-1920), while the latter interpretation is adhered to in Germany (see sources cited *supra* footnote 1924).

other way.”²⁶²⁷ And, as discussed *supra* nr. 306, art. 4(10)b PLD-2024 can now be seen as confirming this case law by merely reaffirming the existing definition of art. 3(1) PLD-1985.

Although the exact extent of both the *Fennia/Philips* decision and the new art. 4(10)b PLD-2024 remain open for debate, this decision and the lack of a clear rebuke in the new Directive undeniably increase the risk of being held liable on a primary basis as a quasi-manufacturer. And, given how easily and casually they meet the objective component of the quasi-manufacturer qualification, this risk is particularly pronounced for repairers and refurbishers.²⁶²⁸

For example, a company that independently refurbishes and resells winter sports equipment like skis and snowboards, is likely to affix a label or some other, perhaps limited branding on these products. The same holds true for the growing industries of refurbishers of consumer electronics and various other product categories. Traditionally, this normally does not suffice to be held liable as a quasi-manufacturer since the manufacturer of these products is often easily identifiable and it is in most cases known that this sticker or other branding merely refers to the capacity of a refurbisher and reseller. Such company would thus at best have been subject to secondary liability as a distributor (see *supra* nr. 430) and, in the event of an independent substantial modification, now also separately liable based on art. 8(2) PLD-2024 (see *infra* nrs. 442 et seq.). However, based on a reading at face value of *Fennia/Philips*, the same company might today be held liable on a primary basis as a quasi-manufacturer, for example when the winter sports equipment turns out to be defective and causes an accident. And the same risk of liability as a quasi-manufacturer equally applies if a repair or refurbishment is only provided as a service, at least when the objective component is fulfilled by means of the affixing of some distinguishing feature. A winter sports workshop might for example put a sticker on skis which it has repaired or even simply maintained.²⁶²⁹

Finally, it is true that many injured consumers might not automatically think about claiming against a repairer or especially a repairer, especially when there would have clearly no liability on the basis of the old understanding of the quasi-manufacturer qualification and when the occurring product accident has ostensibly not been caused by the refurbishment or repair itself.²⁶³⁰ Nevertheless, this is what ‘quasi-strict’ harmonised product liability now seems to allow based on *Fennia/Philips*, when said refurbisher or repairer has left a distinguishing feature on the product. And perhaps a legal counsel or professional actor subrogated in the injured party’s rights, like an insurer, are more likely to exploit this possibility. Furthermore, injured third parties might have fewer reservations relating to claiming against any actor who can be linked to a harmful product and they have of course less insight than an injured consumer into the potentially very limited role of an alleged quasi-manufacturer.

²⁶²⁷ CJEU 7 July 2022, C-264/21, *Fennia v. Philips NV*, ECLI:EU:C:2022:536, nrs. 38, 40.

²⁶²⁸ See regarding repairers and refurbishers E. Van Gool, ‘Case Fennia v. Koninklijke Philips NV (C-264/21): Towards a broader interpretation of the ‘apparent producer’, ‘quasi-producer’ or ‘self-brander’ subject to EU product liability’ (2022) *Revue Européenne de Droit de la Consommation / Journal of European Consumer Law* 279, 280.

²⁶²⁹ See *supra* nrs. 85 and 88 on the gradual distinction between ‘maintenance’ and ‘repair’.

²⁶³⁰ This is somewhat different if the repair or refurbishment has substantially modified the product and leads to liability either on the basis of arts. 7(2) and 11(2)d PLD-2024 or on the basis of ar. 8(2) PLD-2024. See *infra* nrs. 435 et seq.

Note that the potential liability of a repairer or refurbisher as quasi-manufacturer applies regardless whether or not said repair or refurbishment has substantially modified the product. If the latter is the case, it simultaneously leads either to an extension of the liable of existing harmonised product liability defendants based on arts. 7(2)e and potentially also 11(2)d PLD-2024 or to a separate²⁶³¹ primary liability of the repairer or refurbisher based on art. 8(2) PLD-2024, depending on whether the substantial modification occurred within or outside the ‘manufacturer’s control’ (see *infra* nrs. 435 et seq.).

e. Liability for defects in spare parts

433. LIABILITY IN MOST CASES AS A DISTRIBUTOR AND, IN SOME CASES, AS A (QUASI-)MANUFACTURER, IMPORTER OR SUBSTANTIAL MODIFICATOR OF SPARE PARTS USED IN A REPAIR OR REFURBISHMENT – By nature, many repairs and refurbishments involve the use of spare parts (see *supra* nrs. 88-89). Spare parts are separate ‘products’ or at least ‘components’,²⁶³² which – as discussed below – either have already been placed on the market or which are for the first time as a result of the repair or refurbishment being placed on the market or put into service. Consequently, as already discussed *supra* nr. 409, persons incurring defendant qualifications with regards to spare parts, can be held liable on the basis of the PLDI for damage caused by defects in those spare parts. Importantly, these grounds of liability remain limited to defects in the spare parts themselves and do not extend to the broader product into which these are integrated, akin to how an upstream supplier of components is only subject to primary or secondary²⁶³³ liability for defects in those component they have upstream supplied to the final product manufacturer.²⁶³⁴

²⁶³¹ Note that the repairer’s or refurbisher’s liability based on art. 8(2) *ibid.* remains limited based on art. 11(1)g *ibid.* to the affected parts of the product, which ensures that his liability as a quasi-manufacturer or any other defendant qualification for the product in its entirety remains at least relevant for the unaffected parts. See *infra* nr. 454.

²⁶³² See regarding the ‘product’ and ‘component’ concepts arts. 2, 3(1) and 7(f) PLD-1985; arts. 4(1)(4), 8(1) and 11(1)f PLD-2024. See also *supra* nr. 359.

²⁶³³ See *supra* nr. 359 on why the upstream supplier/distributor who merely acted as an intermediary of a defective component should remain subject to secondary liability, from which he can exempt himself by timely referring the injured party to his own supplier/distributor or a defendant subject to primary liability in relation to the component. This is despite the current text of art. 8(3) PLD-2024, which can be more flexibly interpreted *de lege lata* and can be improved *de lege ferenda* by inserting a reference to ‘component’. While in a linear economic production context claims against upstream mere ‘distributors’ of components will be very rare, this changes in the context of remanufacturing and re-use, where the downstream distributors of the final versions of the original products, may after the new product manufacturing process involving remanufacturing or re-use of (parts of) the original product, become subject to liability as a new upstream component distributor (see *supra* nrs. 356-357 and 360).

²⁶³⁴ An important difference with the liability of repairers and refurbishers for the downstream use of spare parts, which is discussed in this section, is the fact that liability for upstream supply of a component in the manufacturing process only starts from the moment when the final product in which these components are later integrated is placed on the market or put into service (art. 7(a) PLD-1985; art. 11(1)a PLD-2024). In contrast, the spare part used in repair or refurbishment has either already been placed on the market or is placed on the market or put into service as a result of the repair or refurbishment, as the possibilities discussed in this section demonstrate.

In general, repairers or refurbishers will almost always be at least subject to secondary liability for the spare parts they use, while only in specific circumstances do they incur different forms of primary liability for such spare parts.

- a. First of all, repairers and refurbishers always qualify at least as distributors of the spare part(s) they integrate in a product, at least if they provide the repair or refurbishment purely as a service or if they subsequently distribute the repaired or refurbished product.²⁶³⁵ After all, these repairers and refurbishers ‘supply’ the spare part or ‘make it available on the market’ to the user of the repaired or refurbished product, pursuant to art. 3(3) PLD-1985 and arts. 4(7)(14) and 8(3) PLD-2024.²⁶³⁶ This is intrinsically highly similar to how a constructor is liable based on the PLDI as the distributor of building materials,²⁶³⁷ and can be compared with any other service provider who is subject to secondary liability for distributing products in the course of his service provision.²⁶³⁸ However, when a person would repair or refurbish a product and subsequently personally uses the product without ever making it available to another person, then he will not become subject to secondary liability as a distributor of any spare parts he might have integrated in the product.²⁶³⁹ For example, a bar that repairs its own tap installation by replacing a connection piece to which barrels are attached, does not ‘make available’ this part. It would of course be different if a professional repairer conducts the repair and integrates the connection piece in the bar’s tap installation. In the consumer goods context, most of such self-repairs or self-refurbishments using spare parts that are already been placed on the market and that do not involve a subsequent distribution of the repaired or refurbished product, are of course performed by prosumers. Among the myriad examples are prosumers replacing the light-bulb in their fridge, replacing the break pads on their bike or replacing the knob on their radiator. The question of liability of those prosumers according to art. 7(c) PLD-1985 or the requirement of a ‘commercial activity’ under the PLD-2024 (see *supra* nrs. 197-198) is then strictly speaking not relevant for defects in those spare parts that may cause damage to third parties, since no

²⁶³⁵ E. Van Gool, ‘De nieuwe richtlijn productaansprakelijkheid en circulaire economie’ (2023) *Nederlands Tijdschrift voor Burgerlijk Recht* 410, 418.

²⁶³⁶ See regarding the scope of secondary liability of distributors *supra* nrs. 177, 178.d, 300 and 301.

²⁶³⁷ Movable goods later incorporated in immovable goods remain ‘products’ according to harmonised product liability law (art. 2 PLD-1985; art. 4(1) PLD-2024). See also *supra* nr. 175.

²⁶³⁸ See regarding the secondary liability of service providers who not just use (and keep with themselves) their own capital goods but actually distribute goods (products) to the recipients of their service, like a hospital distributing a pacemaker or a tour operator distributing a meal Taschner and Frietsch, *Kommentar*, 335; Borghetti, *La responsabilité du fait des produits*, 484; Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 49, nrs. 77-79; Delforge, ‘Le défaut de sécurité au sens de la loi du 25 février 1991’, 345-346; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 72; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 8.32; Wagner, MüKo BGB, ‘Produkthaftungsgesetz’, § 4, nr. 51.

²⁶³⁹ Note that in this situation of a self-repair or refurbishment that does not fall under any of the other categories discussed in this section, like the situation where the spare part is self-manufactured, the spare part in question has already been placed on the market, which means that a plaintiff can claim against a defendant subject to primary liability for damage caused by defects intrinsic to the spare part.

defendant qualification under the PLDI exists anyhow for the integration by the prosumer of those spare part in his own self-repaired or self-refurbished product which he continues to use.

- b. Second, a repairer or refurbisher who self-manufactures a spare part, for example with a 3D-printer, CNC-machine or by crafting a new product in another manner, can become liable as the manufacturer of a spare part that he has placed on the market.²⁶⁴⁰ This is the case when he integrates said spare part in the product he repairs or refurbishes, either a product which he himself owns and subsequently makes available on the market or someone else's product which he repairs or refurbishes purely as a service. Alternatively, the person has repaired or refurbished with a self-manufactured spare part his own product which he uses in a commercial activity. The latter means that he puts into service the self-manufactured spare part,²⁶⁴¹ for which he is at least under the PLD-2024 liable as a manufacturer.²⁶⁴²
- c. Third, a repairer or refurbisher who affixes a distinguishing feature, potentially just a label or engraved initials,²⁶⁴³ on the spare part he uses, may become liable for defects in the spare part as its quasi-manufacturer.²⁶⁴⁴ It is in this regard important to refer again to the expansive interpretation without a separate subjective requirement which the CJEU now seems to give in the *Fennia/Philips* decision to the quasi-manufacturer qualification (see *supra* nrs. 304-306).

Moreover, we have already discussed how the repairer or refurbisher can also become liable as the quasi-manufacturer for the repaired or refurbished product in its entirety (see *supra* nr. 432). It is of course possible that quasi-manufacturing a spare part results in also quasi-manufacturing the repaired or refurbished product in its entirety. A spare part on which the repairer or refurbisher has affixed a distinguishing feature at the frontside might for example replace a very visible, external component of the product. This possibility for a repairer or refurbisher to become liable, merely by using a spare part, as the quasi-manufacturer of the repaired or refurbished product in its entirety,

²⁶⁴⁰ See art. 3(1) PLD-1985; arts. 4(10) and 8(1)a-b PLD-2024. See also *supra* nrs. 176.a-178.b.

²⁶⁴¹ See on the difference between 'placing on the market' and 'putting into service' art. 4(7)-(9) PLD-2024; Commission Notice 'The 'Blue Guide' on the implementation of EU product rules 2022' [2022] OJ C247/1, 19-24.

²⁶⁴² Arts. 8(1)a-b and 11(1)a PLD-2024. Note that it is unclear whether 'putting a product into service' leads to harmonised product liability under the PLD-1985, which depends on how the concept of 'putting into circulation' (art. 7(a) PLD-1985) is interpreted (see also *supra* nr. 318). The latter concept has mostly been interpreted akin to the current concept of 'placing on the market', which might among others be explained by the fact that general product safety regulation has in parallel always remained limited to products 'placed on the market' and the 'putting into service' concept has developed in – for harmonised product liability scholars, less prominent – sectoral product regulation. See art. 1(1) General Product Safety Directive 2001/95/EC 2001/95; arts. 2(1) and 3(6)-(7) General Product Safety Regulation 2023/988/EU; Commission Notice 'The 'Blue Guide' on the implementation of EU product rules 2022' [2022] OJ C247/1, 23-24.

²⁶⁴³ See the case law and literature cited *supra* footnotes 1917-1918 on how the objective element of the quasi-manufacturer qualification has traditionally always been interpreted very broadly.

²⁶⁴⁴ Art. 3(1) PLD-1985; art. 4(10)b PLD-2024. See also *supra* nrs. 304-306.

may have seemed extremely remote a few years ago. Yet, it becomes much more realistic when, as the CJEU now seems to imply,²⁶⁴⁵ a subjective requirement of creating the impression of being the product's actual manufacturer would be no longer required (cf. *supra* nrs. 304-306).

- d. Fourth, a repairer or refurbisher may of course also happen to have imported into the EU the spare part he uses in repairing or refurbishing a product. In doing so, he places on the market this spare part in the same manner he would have placed it on the market if he had self-manufactured the spare part, as discussed above.²⁶⁴⁶
- e. And fifth, a repairer or refurbisher might 'outside the manufacturer's control'²⁶⁴⁷ 'substantially modify'²⁶⁴⁸ a spare part, which has already been placed on the market or put into service and which he uses in repairing the product. By doing the latter, he will indirectly also 'make this substantially modified spare part available on the market' or 'put it into service',²⁶⁴⁹ as discussed above with regards to the liability for self-manufacturing a spare part. When all these conditions are met, the repairer or refurbisher becomes on the basis of art. 8(2) PLD-2024 subject to a separate primary liability for defects in the spare part, which by means of the defence of art. 11(1)g PLD-2024 will be further limited to only the parts of the spare part affected by his modifications (see *infra* nr. 454).
As an illustration, a spare part might not have the appropriate features for a necessary repair and an independent refurbisher therefore manipulates it substantially, in order to let it function in the main product. But this manipulation increases the accident risks of the spare part, which qualifies as a substantial modification pursuant to art. 4(18)b PLD-2024 (see *infra* nr. 445). When the refurbisher then sells this refurbished product, he becomes liable on the basis of art. 8(2) PLD-2024 for any damage caused by defects in the spare part, in addition to other potential liabilities based on the PLDI he may have regarding the product in its entirety.²⁶⁵⁰
Importantly, however, by substantially modifying a spare part pursuant to art. 4(18) PLD-2024 and by subsequently integrating this in a main product, the repairer or refurbisher will often, although not always,²⁶⁵¹ also substantially modify this now repaired or

²⁶⁴⁵ CJEU 7 July 2022, C-264/21, *Fennia v. Philips NV*, ECLI:EU:C:2022:536, nrs. 38-40. See also the literature cited *supra* footnote 1932.

²⁶⁴⁶ Art. 3(2) PLD-1985; arts. 4(12) and 8(1)c(i) PLD-2024. See also *supra* nrs. 176.c and 178.c.

²⁶⁴⁷ Art. 4(5) PLD-2024. See also *supra* nrs. 402-404 and *infra* nr. 442.

²⁶⁴⁸ Art. 4(18) PLD-2024. See also *infra* nr. 445.

²⁶⁴⁹ Art. 8(2) PLD-2024. See also *supra* nr. 265 and *infra* nrs. 442 et seq. on how this dissertation *de lege ferenda* proposes to change the reference in art. 8(2) *ibid.* from "makes it available on the market" to "places it on the market", in order to avoid a 'single defect' assessment that theoretically does not fit well with this primary liability.

²⁶⁵⁰ In this situation, the refurbisher will at least also be subject to secondary liability as a distributor of the refurbished product. See *supra* nr. 430.

²⁶⁵¹ This can still be different if, for example, the spare part is of an independent origin and is not immediately suitable for repairing the main product. The repairer might then modify the spare part in a manner that qualifies as a 'substantial modification', according to applicable product safety regulation or by changing the spare part's accident risk profile (art. 4(18) *ibid.*). However, if the modifications to

refurbished product in its entirety. Such liability of a repairer or refurbisher on the basis of art. 8(2) PLD-2024 for the repaired or refurbished product itself, is discussed in more detail *infra* nrs. 442 et seq.

- f. Furthermore, note that if the repairer or refurbisher ‘modifies’ the spare part or integrates a sub-component in it and this occurs ‘within the manufacturer’s control’ pursuant to art. 4(5) PLD-2024, with the understanding that said ‘manufacturer’ is the individual spare part’s manufacturer, then the use of a spare part by a repairer or refurbisher still has other consequences in terms of harmonised product liability. Namely, as discussed in the following sections, this will extend the already existing harmonised product liability of defendants in the spare part’s distribution chain. Depending on whether or not this change to the spare part ‘within the manufacturer’s control’ constitutes a substantial modification, the resulting extension of liability of existing defendants is either based on both arts. 7(2)e and 11(2)d PLD-2024 (see *infra* nr. 436) or based on only art. 7(2)e PLD-2024 (see *infra* nr. 435).
- g. Finally, all the aforementioned grounds of harmonised product liability in relation to spare parts, are strictly speaking no longer separately significant if the repairer or refurbishers would become subject to primary liability for the entire repaired or refurbished product, namely as a quasi-manufacturer (see *supra* nr. 432). If the repairer or refurbisher would incur secondary liability for distributing the repaired or refurbished product (see *supra* nr. 430), then the aforementioned secondary liability in relation to only the spare part is no longer separately relevant, but the aforementioned grounds of potential primary liability in relation to the spare parts remain nevertheless pertinent. After all, an injured party may no longer claim against the repairer or refurbisher if he can exonerate himself from secondary liability for the product in its entirety.²⁶⁵² But the injured party might still claim against him if a defect in the spare part caused the accident, which would be particularly interesting if defendants subject to primary liability for the entire product are protected by a defence or would be insolvent.

In contrast, if the repairer or refurbisher becomes liable for independently substantially modifying the entire product on the basis of art. 8(2) PLD-2024, then all the aforementioned grounds of secondary and primary liability limited to a used spare part remain pertinent. This is because liability based on art. 8(2) PLD-2024 extends only to the parts of the product affected by the modification, although it is the defendant who must prove that the defect was situated in another part of the product.²⁶⁵³ This means that in the event of a defect in the spare part that caused the damage, it still remains

the spare part are precisely those that are necessary to let it replace sufficiently adequately the failed original component in the main product, then the main product itself is likely not substantially modified when this spare part is used in the repair process. After all, although spare part itself is substantially modified pursuant to arts. 4(18) and 8(2) *ibid.*, there is little change in the main product precisely due to the effort to mimic as much as possible the product’s original component.

²⁶⁵² Art. 3(3) PLD-1985; art. 8(3) PLD-2024. See *supra* nrs. 177 and 301.

²⁶⁵³ Art. 11(1)g PLD-2024. See *supra* nr. 267 and *infra* nr. 454

potentially attractive for a plaintiff to claim separately against the repairer or refurbisher as a distributor, (quasi-)manufacturer, importer or substantial modifier of the spare part specifically.

434. NO APPLICATION OF COMPONENT DEFENCE – Any of the aforementioned repairers or refurbishers subject to secondary or primary liability with regards to a spare part they used, may want to try to invoke the component defence of art. 7(f) PLD-1985 and art. 11(1)f PLD-2024. However, as already explained in the context of the correct interpretation of art. 8(2) PLD-2024 with regards to prior defendants in the product's distribution chain (see *supra* nr. 354.b), this defence has clearly been drafted by the EU legislator while only having the situation of upstream component suppliers in mind. This becomes clearly by analysing both alternative options in which it can be invoked by defendants (see *supra* nr. 201).

On the one hand, repairers and refurbishers who have integrated in the product a defective spare part cannot claim that “*the defectiveness of the product in which that component has been integrated is attributable to the design of that product*”,²⁶⁵⁴ simply because the main product already existed prior to the repair and they have themselves integrated the spare part in the product, not someone else downstream, like the final product manufacturer does in the normal application of this defence (see also *supra* nr. 201). Moreover, we discuss here situations where a repairer or refurbisher is liable because the spare part itself is defective, which precisely excludes situations where the defect is rather situated in the main product's design.

On the other hand, repairers and refurbishers who have integrated in the product a defective spare part can also not claim that “*the defectiveness of the product in which that component has been integrated is attributable [...] to the instructions given by the manufacturer of that product to the manufacturer of the component*”.²⁶⁵⁵ The manufacturer of the main product has not directly given instructions on how to repair the product, at least not in the same manner as he orders his upstream supplier to provide particular components for a product he still has to manufacture, for which said component supplier is entirely reliant on the final product manufacturer, his client. Furthermore, the manufacturer of the main product and of the spare part might be one and the same person, which would make this defence meaningless. The manufacturer of the spare part can of course also be another person than the manufacturer of the main product, but the former definitely has not received from the latter the same binding instructions as the upstream component supplier has received. Most importantly, the sequence of events on which the traditional component defence is based, is not present here (see also *supra* nr. 354.b). The spare part might have been manufactured and placed on the market prior to when the individual product in which it is later integrated was manufactured and placed on the market or put into service.

Therefore, this defence cannot be meaningfully invoked by a repairer or refurbisher who is liable for a defect in a spare part he used. When analysing in the previous section the different potential grounds of secondary liability of repairers and refurbishers in relation to the spare parts they use, it also did not become apparent why specifically they should *de lege ferenda* benefit from a similar defence as the component defence, which art. 7(f) PLD-1985 and art.

²⁶⁵⁴ Art. 11(1)f *ibid.* See also art. 7(f) PLD-1985.

²⁶⁵⁵ Art. 11(1)f PLD-2024. See also art. 7(f) PLD-1985.

11(1)f PLD-2024 now provide to upstream suppliers of components. The different sequence of events and the fact that repairer or refurbisher operates after the moment when the main product was placed on the market or put into service,²⁶⁵⁶ diminish the need for such a defence.

f. Liability of existing defendants for repairs or refurbishments within the manufacturer's control

435. ART. 7(2)E PLD-2024: THE SEMI-EXTENDED LIABILITY OF AN EXISTING DEFENDANT OF A PRODUCT THAT IS BY HIMSELF OR ANOTHER PERSON REPAIRED OR REFURBISHED 'WITHIN THE MANUFACTURER'S CONTROL' (EFFECTIVELY INTEGRATING A SPARE PART OR MODIFYING THE PRODUCT) – An existing harmonised product liability defendant in relation to a product that is already placed on the market or put into service as well as another person acting under authorisation or consent of the product's manufacturer, might perform a repair or refurbishment of said product that meets one of the requirements of art. 4(5) PLD-2024's concept of the (extended) 'manufacturer's control'.²⁶⁵⁷ *Supra* nrs. 402-403, it has already been examined how this concept can be interpreted with regards to original repair and refurbishment services.²⁶⁵⁸ Either, this can consist of a repair or refurbishment performed by the product's manufacturer or with his authorisation or consent, that effectively involves an "*integration [...] of a component*" into the product, such as the use of a spare part.²⁶⁵⁹ Alternatively, this can consist of a repair or refurbishment performed by the product's manufacturer or with his authorisation or consent, that effectively 'modifies' the product,²⁶⁶⁰ which ostensibly requires simply a change compared to the product's original design.²⁶⁶¹

²⁶⁵⁶ See also *mutatis mutandis* the distinction made *supra* footnote 2635.

²⁶⁵⁷ Art. 4(5) PLD-2024: "*'manufacturer's control'* means that:

(a) *the manufacturer of a product performs or, with respect to actions of a third party, authorises or consents to:*

(i) *the integration, inter-connection or supply of a component, including software updates or upgrades; or*

(ii) *the modification of the product, including substantial modifications;*

(b) *the manufacturer of a product has the ability to supply software updates or upgrades itself or via a third party."*

²⁶⁵⁸ *Supra* nrs. *supra* nr. 402.b and 403, this dissertation examined and rejected an even broader interpretation of the 'manufacturer's control' pursuant to art. 4(5)a(i)-(ii) PLD-2024. This alternative interpretation would have already accepted the manufacturer's consent with any (original) repair or refurbishment, because the latter entails by nature the mere possibility that it can subsequently result in the integration of a spare part or a modification of the product, without any certainty that this would effectively occur.

²⁶⁵⁹ Art. 4(5)a(i) PLD-2024.

²⁶⁶⁰ Art. 4(5)a(ii) *ibid.*

²⁶⁶¹ It remains of course to be seen how minute and superficial such 'modification' to the product might be to still qualify as an extension of the 'manufacturer's control' according to art. 4(5)a(ii) PLD-2024. After all, while repairs and refurbishments strive to restore products as much as possible to their original state (cf. *supra* nrs. 88-89), a slightly different setting or even a different cosmetic finishing might already be considered a 'modification' interpreted broadly.

In both situations, such a post-marketing repair or refurbishment of the product that occurs ‘within the manufacturer’s control’ means that any subsequent defect assessment relating to the product must on the basis of art. 7(2)e PLD-2024 be postponed to “*the moment in time when the product left the control of the manufacturer*”. In other words, any person who is already subject to ‘quasi-strict’ harmonised product liability for said product, will now see the defect assessment corresponding with this liability be changed to the moment in time, the state of the product and the public’s safety expectations existing when the aforementioned repair or refurbishment effectively integrated a spare part or effectively modified the product ‘within the manufacturer’s control’.²⁶⁶² Note how it does not matter, for the purposes of this extension of liability based on art. 7(2)e PLD-2024, whether it is the existing harmonised product liability defendant or another person who performs this repair or refurbishment, only that it occurs ‘within the manufacturer’s control’.

However, as examined *supra* nr. 405, if the defect on which the plaintiff’s claim is based has effectively originated during this temporal expansion after the product was placed on the market or put into service, like a defect that specifically resulted from the aforementioned repair or refurbishment, then the defendant will in many cases be able to successfully invoke the posteriority defence of art. 11(1)c PLD-2024, because the text of this provision *de lege lata* fails to consider art. 7(2)e PLD-2024.²⁶⁶³ After all, the repair or refurbishment, although it occurred ‘within the manufacturer’s control’, is likely to have not been reasonably foreseeable when the product was placed on the market or put into service (see Figure 9 *supra* nr. 239 and *supra* nr. 414). Only in two exceptions, will the defendant be unable to invoke this defence and will he still be liable for a repair or refurbishment based on art. 7(2)e PLD-2024’s aforementioned postponement of the defect assessment. First of all, this is the case if the repair or refurbishment ‘substantially modified’ the product pursuant to art. 11(2)d PLD-2024. Second, this is the case if our defendant was merely a distributor in the product’s distribution chain who made the product available only after this repair or refurbishment ‘within the manufacturer’s control’ occurred. This is because art. 11(1)c PLD-2024 is – at least *de lege lata*²⁶⁶⁴ – personally applicable to him as a distributor.

This dissertation calls this on the basis of art. 7(2)e PLD-2024’s postponed defect assessment for a repair or refurbishment ‘within the manufacturer’s control’, a ‘semi-extended liability’, due to this broad possibility for defendants to evade it *de lege lata*²⁶⁶⁵ by means of current art. 11(1)c PLD-2024’s posteriority defence.

²⁶⁶² An alternative interpretation of art. 7(2)e *ibid.* is possible, where the defect assessment is only postponed for aspects that qualify under art. 4(5) *ibid.*’s ‘manufacturer’s control’. But this interpretation opens up new issues and is not followed in this dissertation, which preserves a single relevant moment in time for a product’s defect assessment. See the discussion *supra* nr. 402, *in fine*.

²⁶⁶³ Note that this dissertation proposes *de lege ferenda* to also amend art. 11(1)c *ibid.* in a way that would ensure that this defence could no longer be applied to undercut art. 7(2)e *ibid.*’s postponement of the defect assessment. See *supra* nr. 405.d.

²⁶⁶⁴ Note that this dissertation proposes *de lege ferenda* to amend art. 11(1)c *ibid.* by offering defendants who merely made the product available on the market the benefit of a producer-specific interpretation of the defence. See *supra* nr. 322.b-c.

²⁶⁶⁵ Note that this dissertation proposes *de lege ferenda* to also amend art. 11(1)c *ibid.* by simply inserting

When the product has been repaired or refurbished by another person acting ‘within the manufacturer’s control’, then this is of course not an actual liability for having personally repaired or refurbished a product. In this sense, this hypothesis actually fits better in the previous Section of this Chapter, where it was also already discussed (see *supra* nrs. 402 et seq.). Yet, it leads of course to an actual extension of the harmonised product liability of existing defendants for a repaired or refurbished product. Moreover, in terms of outcomes, it is identical to the situation where it is an existing defendant of the product who personally performs the repair or refurbishment ‘within the manufacturer’s control’, like the manufacturer or other defendant in the product’s original distribution chain. And this hypothesis fits of course squarely in this Section on grounds of harmonised product liability for repair and refurbishment activities.

Finally, it is important to reiterate here that this dissertation argues to *de lege ferenda* amend the underlying concept of ‘manufacturer’s control’ in art. 4(5) PLD-2024 in a way that would restrict it to the same factual elements that are also targeted by arts. 8(2) and 11(2) PLD-2024 (see *supra* nr. *supra* nr. 404). This would mean that this ‘semi-extended liability’ pursuant to art. 7(2)e PLD-2024 for an intervening repair or refurbishment occurring ‘within the manufacturer’s control’, would become limited to repairs or refurbishments that ‘substantially modify’ the product. And this precisely corresponds with the second, more comprehensive and within the entirety of the PLD-2024 in my opinion more theoretically coherent ground of liability for repairs and refurbishments occurring ‘within the manufacturer’s control’. Namely, this is where liability is based on art. 11(2)d PLD-2024, which the next section discusses.

436. ART. 11(2)d PLD-2024: THE FULLY-EXTENDED LIABILITY OF AN EXISTING DEFENDANT OF A PRODUCT THAT IS BY HIMSELF OR ANOTHER PERSON THROUGH A REPAIR OR REFURBISHMENT ‘SUBSTANTIALLY MODIFIED’ ‘WITHIN THE MANUFACTURER’S CONTROL’ – When a product that is already placed on the market or put into service is repaired or refurbished ‘within the manufacturer’s control’, as discussed *supra* nrs. 402-403 and 436, by either an existing defendant in the product’s distribution chain or another person, it makes a drastic difference whether or not this repair or refurbishment ‘substantially modifies’ this product. If this is not the case, then this results in the consequences presented in the previous section, where the defect assessment is postponed on the basis of art. 7(2)e PLD-2024 but *de lege lata* almost all defendants subject to primary liability and some defendants subject to secondary liability are able to successfully invoke art. 11(1)c PLD-2024’s posteriority defence. In contrast, if the repair or refurbishment occurring within the manufacturer’s control ‘substantially modifies’ the product, the resulting extension of liability of existing defendants is complete due to art. 11(2)d PLD-2024’s exception to the posteriority defence.

“, or, if applicable, the moment in time when the product left the control of the manufacturer”. This would avoid how the posteriority defence now undercuts the postponement of the defect assessment based on art. 7(2)e *ibid.* Nevertheless, this amendment would be redundant if the underlying concept of ‘manufacturer’s control’ would be *de lege ferenda* limited to the same situations that are now targeted by art. 11(2) *ibid.*’s exceptions to the posteriority defence, as argued at the end of this section and *supra* nr. 404.

First of all, any repair or refurbishment performed by the manufacturer, authorised by him or consented to by him that ‘substantially modifies’ the product, automatically occurs ‘within his control’ based on art. 4(5)a(ii) PLD-2024. Second, for a repair or refurbishment to ‘substantially modify’ the product, it must meet the requirements of art. 4(18) PLD-2024. This is examined more in-depth *infra* nrs. 442, where the same concept is examined in relation to the liability of independent substantial product modifiers based on art. 8(2) PLD-2024. Essentially, however, it comes down to a repair or refurbishment that either implies a substantial change in the product according to applicable product safety rules or a change that changes the product’s accident risk profile.²⁶⁶⁶

Note that any repair or refurbishment or other post-marketing circumstance to which art. 11(2)d PLD-2024 can be applied, implies the simultaneous application of art. 7(2)e PLD-2024. The product defect assessment for an accident caused by this product is now no longer fixated at the moment when it was placed on the market or put into service but rather at the moment when it was ‘substantially modified’ ‘within the manufacturer’s control’. In my view, this not only includes the state of the entirety of the substantially modified product but also the safety expectations of the public existing at that moment in time (see *supra* nr. 402, *in fine*). It becomes, however, in contrast to the situation discussed in the previous section, a ‘fully-extended’ liability for the product’s existing harmonised product liability defendants, because they will now no longer be able to invoke the posteriority defence.²⁶⁶⁷

Defendants of the repaired or refurbished product who are subject to this ‘fully-extended’ liability for a substantial product modification that occurred ‘within the manufacturer’s control’, do not benefit from the defence of art. 11(1)g PLD-2024. The latter, which limits liability to “*a part of the product [...] affected by the modification*”, is only applicable to the new, primary liability of substantial product modifiers who acted ‘outside the manufacturer’s control’ (cf. *infra* nr. 454).

Finally, it is important to once more highlight that in my opinion the concept of ‘manufacturer’s control’ in art. 4(5) PLD-2024 has been drafted unnecessarily broadly and should *de lege ferenda* be limited to those factual cases that correspond with arts. 8(2) and 11(2) PLD-2024 (see *supra* nrs. 403-404). This would mean that only this second, in this section analysed hypothesis based on art. 11(2)d PLD-2024 would remain, where the liability of existing defendants is ‘fully-extended’ repair or refurbishment that substantially modified the product and occurred ‘within the manufacturer’s control’.

g. Substantial product modification outside the manufacturer’s control

i. Liability on the basis of the PLD-1985

437. LIABILITY UNDER THE PLD-1985 FOR PRODUCT REPAIRS AND REFURBISHMENTS THEMSELVES – Before turning to the new rule of art. 8(2) PLD-2024 on potential liability of repairers and refurbishers acting outside the ‘manufacturer’s control’, it is important to examine whether a similar rule already exists under the PLD-1985. This does not offer just a short-term legal-

²⁶⁶⁶ See art. 4(18) *ibid*.

²⁶⁶⁷ Art. 11(2)d *ibid*. Cf. *supra* nrs. 405.a-b and 435.

historical understanding of how art. 8(2) PLD-2024 came to be and how it has to be interpreted. Even after the PLD-2024's entry into force, the rules of the PLD-1985 will continue to remain applicable to all products placed on the market or put into service prior to that date.²⁶⁶⁸ Especially in the context of repairs and refurbishments of durable consumer goods, the old harmonised product liability rules will therefore continue to apply to specific cases, until art. 11 PLD-1985's extinction period has ran out 10 years after the new Directive's entry into force.

438. THE 'CATEGORICAL APPROACH': REJECTING LIABILITY FOR 'REPAIRS' BUT ACCEPTING 'REFURBISHMENTS' AS PRODUCING A NEW PRODUCT – In their influential commentary relating to the PLD-1985, TASCHNER AND FRIETSCH hold that 'refurbishments', 'reconditioning' or 'overhauls' of products can be qualified as producing a new product and placing it into circulation, in contrast to mere repairs which do not lead to a liability as a producer of a new product.²⁶⁶⁹ Over the years, several authors have followed this sharp distinction between primary liability for 'refurbishments' and no harmonised product liability at all for 'repairs',²⁶⁷⁰ with the exception of the aforementioned 'semi-exceptions' that already exist under the PLD-1985, namely the possible liability of both repairers and refurbishers as distributors or as quasi-manufacturers (see *supra* nrs. 430-432) of entire products.²⁶⁷¹ A 2014 decision by the Berlin appeals court offers the clearest example of this same distinction based on the 'repair' and 'refurbishment' labels. In this decision, the court ruled that the replacement of several parts in a hip prosthesis did not constitute the creation of a new product but merely a 'repair' for which no separate liability based on the PLDI could be imposed.²⁶⁷²

The literature has remained relatively vague when motivating this categorical, all-or-nothing distinction between repair and refurbishment. Authors like GRAF VON WESTPHALEN, KATZENMEIER AND VOIGT and OECHSLER consider that a refurbishment is sufficiently comprehensive and akin to traditional 'production' to be qualified as 'putting into circulation' a 'new product', while repairing merely constitutes restoring the functionality of an 'existing product'.²⁶⁷³ This of course calls into question how these authors factually understand 'repair' and

²⁶⁶⁸ Art. 21 PLD-2024.

²⁶⁶⁹ Taschner and Frietsch, *Kommentar*, 239. It is worth reiterating here that TASCHNER, employed by the Commission, was the main author of the PLD-1985.

²⁶⁷⁰ E.g., Graf von Westphalen, '3. Produkthaftungsgesetz', § 47, nr. 9, § 49, nrs. 24, 26; Katzenmeier and Voigt, 'Haftung aus dem ProdHaftG', § 3603, 5; Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nrs. 8.09, 9.114; Oechsler, Staudinger, 'Produkthaftungsgesetz', § 2, nr. 8, § 4, nrs. 24-25; G. Wagner, 'Produkthaftungsgesetz' in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 4, nr. 25.

²⁶⁷¹ The literature based on the PLD-1985 is generally silent in relation to spare parts. But there is little to suggest that the qualification of repairers and refurbishers as distributors, (quasi-)manufacturers and importers of spare parts (see *supra* nr. 433.a-d) would not generally be agreed to. Only the qualifications on the basis of arts. 7(2)e, 8(2) and 11(2)d PLD-2024 (see *supra* nr. 433.e-f) are of course entirely new.

²⁶⁷² KG 3 April 2024, 20 U 253/12, *GesR* 2014, 427, *MedR* 2014, 825, *BeckRS* 2014, 8802, nr. II.A.2.b. Note that the *Kammergericht* explicitly rejects the different decision of the OLG Koblenz, based on the origin of the used spare parts, which is cited *infra* footnote 2695 (*ibid.*, nr. II.A.2.b.cc).

²⁶⁷³ See, e.g., Graf von Westphalen, '3. Produkthaftungsgesetz', § 47, nr. 9, § 49, nrs. 24, 26; Katzenmeier and

‘refurbishment’. Do they believe that a refurbishment makes necessarily more modifications compared to the original product’s design than a repair? Or do they understand refurbishment as being rather identical to remanufacturing in terms of methodical disassembly, inspection, reprocessing, reassembly and testing in a highly specialized, industrial setting? Both of these interpretations would be contrary to the now established understanding of these circular strategies in the specialized literature and standards, as examined *supra* nrs. 88-90 and as applied in this dissertation’s typology.

FAIRGRIEVE AND GOLDBERG argue that, in a refurbishment, a product is being “*renovated or overhauled to such an extent that it can fairly be described as a new one.*”²⁶⁷⁴ Such motivation is actually relatively close to the more gradual ‘safety approach’, which is discussed in the next two sections. However, the difference between repairs and refurbishments is not necessarily the extent to which they can change a product, since both strategies actually try to restore as much as possible a product according to its original design. The crucial difference consists only of the fact that repairs remain limited to apparent defects while refurbishments address products in their entirety (cf. *supra* nrs. 88-89). This error is perhaps the clearest in the motivation given by WAGNER, who holds that activities like refurbishments must be qualified, contrary to repairs, as producing a new product given that “[s]uch activities have a significant impact on the safety properties of the item [...]”²⁶⁷⁵ This motivation corresponds completely with the more gradual ‘safety approach’ discussed below and which is now reflected in art. 8(2) PLD-2024. However, when looking at the impact on a product in terms of product safety, it again does not make sense to draw such a distinction between repairs and refurbishments. Either of these strategies can in concrete circumstances both substantially affect and not affect a product in terms of its product safety configuration.²⁶⁷⁶

Perhaps a better explanation for this categorical distinction between repair and refurbishment, to which some of the aforementioned authors refer explicitly,²⁶⁷⁷ is the fact that past general product safety regulation categorized “*the person who reconditions the product*” as a ‘producer’.²⁶⁷⁸ However, such an argument to interpret *ex post* product liability in conformity with *ex ante* general product safety regulation can today no longer be raised to distinguish in this regard between repairs and refurbishments. This is because the new definition of ‘manufacturer’ in art. 3(8) General Product Safety Regulation 2023/988/EU no longer refers to

Voigt, ‘Haftung aus dem ProdHaftG’, § 3603, 5; Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 4, nr. 24.

²⁶⁷⁴ Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 8.09.

²⁶⁷⁵ G. Wagner, ‘Produkthaftungsgesetz’ in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 4, nr. 25 (“*Anders liegt es, wenn das Produkt einer Generalüberholung unterzogen oder ein ‘neuer’ Recyclingartikel erzeugt wird. Derartige Aktivitäten haben erheblichen Einfluss auf die Sicherheitseigenschaften des Gegenstands und sind deshalb als Herstellung iSd § 4 Abs. 1 zu qualifizieren.*”).

²⁶⁷⁶ As examined *infra* nrs. 442 et seq., both a repair and a refurbishment can in concrete circumstances lead either to liability based on art. 8(2) PLD-2024 or the absence thereof.

²⁶⁷⁷ E.g., Fairgrieve and Goldberg, *Product Liability*, 3rd edn., nr. 8.09.

²⁶⁷⁸ Art. 2(d), first section Council Directive 92/59/EEC of 29 June 1992 on general product safety [1992] OJ L228/24, 26; art. 2(e)i General Product Safety Directive 2001/95/EC 2001/95. The ‘producer’ is the main actor subject to preventive and corrective product safety obligations.

‘reconditioning’ (nor to the synonym ‘refurbishing’). Instead, the new Regulation applies the more gradual approach based on whether a person has from a safety perspective ‘substantially modified’ a product,²⁶⁷⁹ which is more convincing than an in my opinion misguided distinction based on ‘repair’ and ‘refurbishment’ labels.

439. THE ‘SAFETY APPROACH’: INSPIRATION FROM ‘EX ANTE’ PRODUCT REGULATION – The aforementioned ‘categorical’ distinction between repair and refurbishment might have drawn inspiration from this no longer existing general product safety rule on ‘reconditioning’. Yet, the alternative approach that has over the years taken hold in the limited literature and case law on the question whether harmonised product liability is possible for certain repairers and refurbishers (see *infra* nr. 440), is even more clearly inspired by another provision from past general product safety law as well as by a comparable interpretative principle from sectoral product regulation that is reflected in the Commission’s Blue Guide.

Past EU general product safety regulation explicitly categorized as a ‘producer’ “*other professionals in the supply chain, insofar as their activities may affect the safety properties of a product*”.²⁶⁸⁰ This meant in practice that someone who repaired or refurbished a product in a manner that could change the product’s safety configuration (cf. *infra* nr. 445) and who subsequently placed this product on the market, had to comply with all general product safety requirements applicable to a producer who places a new product on the market, among which the general safety conformity assessment.²⁶⁸¹

In parallel, the Commission also started issuing from 2000 onwards guidance on the application of EU product regulation for harmonised sectors in the form of the so-called ‘Blue Guide’, which generally does not apply (directly) to general product safety rules.²⁶⁸² In these successive Blue Guides, the Commission adopted – likely in turn inspired by the rule²⁶⁸³ from then-applicable general product safety law mentioned just above – guidance on how to deal with repairs and other possible modifications of products which are already placed on the market or put into service. The Commission articulates this in the most recent 2022 version as follows. On the one hand, the Commission accepts that “[...] *some of these processes intend to maintain or restore the product to its original condition [...]*”, which should not have any consequence under applicable sectoral product rules. On the other hand, the Commission considers that other processes modify a product to such an extent that the result “[...] *must be*

²⁶⁷⁹ Art. 13(2)-(3) General Product Safety Regulation 2023/988/EU. See also *infra* nr. 439.

²⁶⁸⁰ Art. 2(d), third section Council Directive 92/59/EEC of 29 June 1992 on general product safety [1992] OJ L228/24, 26; art. 2(e)iii General Product Safety Directive 2001/95/EC 2001/95. This provision now no longer exists and is also replaced by the more general rule on ‘substantial modifications’ of art. 13(2)-(3) General Product Safety Regulation 2023/988/EU.

²⁶⁸¹ T. Klindt, *Produktsicherheitsgesetz: Kommentar* (3rd edn., Beck 2021) § 2, nr. 53. See also the authors cited *supra* footnote 1951 who apply this same rule to the liability under the PLDI distributors who affect the product’s safety configuration by for example bad transportation, bad storage, certain cases of repackaging, etc. A repair or refurbishment purely provided as a service was never targeted by this rule, since it is not part of a product’s distribution chain.

²⁶⁸² See for this confirmation in the most recent version Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 15.

²⁶⁸³ See *supra* footnote 2680.

considered as a new product [...]”, which “[...] must comply with the provisions of the applicable legislation when it is made available or put into service.”²⁶⁸⁴ The Commission also elaborated three criteria to determine more precisely when a modified product must be considered as a new product.²⁶⁸⁵ These criteria, which still apply to current EU product rules for harmonised sectors, have very clearly inspired both the new ‘substantial modification’ rule of art. 13(2)-(3) General Product Safety Regulation 2023/988/EU and its new product liability counterpart in arts. 4(18) and 8(2) PLD-2024, which is discussed *infra* nr. 445.

Note that under both aforementioned sets of rules, the resulting obligations remain(ed) limited to the extent to which the product had or has been changed compared to its pre-existing state in which it was originally placed on the market or put it into service. This is of course crucial with regards to repairs and refurbishments, which as circular strategies in principle both aim to restore a product to its original state, to the extent possible (see *supra* nrs. 88-89). For the former rule of general product safety law specific to distributors, this was explicitly so because these distributing repairers and refurbishers or other actors in the supply chain were only considered a ‘producer’ “insofar as their activities may affect the safety properties of a product”.²⁶⁸⁶ For the still applicable interpretative rule from the Blue Guide, it is confirmed that, although a modified product considered as a new product has to undergo a full conformity assessment and other regulatory obligations for placing a new product on the market or putting it into service, the product modifier can in practice rely to a significant extent on the original product’s conformity assessment.²⁶⁸⁷

This general limitation to the obligations or liability risk of actors like repairers and refurbishers is now also reflected in art. 13(2) General Product Safety Regulation 2023/988/EU and in the specific new defence of art. 11(1)g PLD-2024. Both rules confirm that the ‘substantial modifier’ is only subject to general product safety obligations or subject to primary

²⁶⁸⁴ Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 17.

²⁶⁸⁵ *Ibid.*, 17: “A product, which has been subject to important changes or overhaul after it has been put into service must be considered as a new product if: i) its original performance, purpose or type is modified, without this being foreseen in the initial risk assessment; ii) the nature of the hazard has changed or the level of risk has increased in relation to the relevant Union harmonisation legislation; and iii) the product is made available (or put into service if the applicable legislation also covers putting into service within its scope). This has to be assessed on a case-by-case basis and, in particular, in view of the objective of the legislation and the type of products covered by the legislation in question.”

²⁶⁸⁶ Art. 2(d), third section Council Directive 92/59/EEC of 29 June 1992 on general product safety [1992] OJ L228/24, 26; art. 2(e)iii General Product Safety Directive 2001/95/EC 2001/95. See P. Cartwright, ‘The Regulation of Product Safety’ in G. Howells (ed.), *The Law of Product Liability* (2nd edn., Butterworths 2007) nr. 9.37; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 34.

²⁶⁸⁷ Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 18: “[...], the technical documentation has to be updated in as much as the modification has an impact on the requirements of the applicable legislation. It is not necessary to repeat tests and produce new documentation in relation to aspects not impacted by the modification. It is up to the natural or legal person who carries out changes or has changes carried out to the product to demonstrate that not all elements of the technical documentation need to be updated.”

harmonised product liability with regards to the part(s) of the product affected by their substantial modification.²⁶⁸⁸

440. THE ‘SAFETY APPROACH’: LOOKING AT THE CONCRETE IMPACT ON PRODUCT SAFETY TO DETERMINE WHICH REPAIRS AND REFURBISHMENTS LEAD TO PRIMARY HARMONISED PRODUCT LIABILITY – This more gradual assessment in EU product regulation has over the years inspired more and more authors and courts who tried to tackle the question whether and under which conditions actors who ‘reproduce’ or otherwise intervene in an already existing product, like repairers and refurbishers, can also be held liable under the PLD-1985, even if they do not qualify as suppliers or quasi-producers. Instead of a more categorical distinction between types of interventions, this approach looks more concretely at the extent to which an intervention like a particular repair or refurbishment has affected the safety configuration of an individual product (cf. *supra* nrs. 437-439). Obviously, this gradual but safety-oriented approach fits well with a goal of accident-prevention, which is not only central to *ex post* product safety regulation but also one of the main functions of *ex post* product liability (see Figure 1 *supra* nr. 4 and *supra* nrs. 107-109, 130 and 167).

This approach has under the PLD-1985 in particular been applied in the context of distributors who either purposefully treat or mishandle products in some manner (see also *supra* nr. 307). For example, the Düsseldorf appeals court decided that a distributor who cuts rope into pieces and repackages it, cannot be considered as the rope’s producer according to the German PLDI because it did not “*affect the product in such a way that its safety properties are changed.*”²⁶⁸⁹ This is of course a factual assessment. In this case, the rope was defective and caused an accident as a result of a weaker, thermally joined section, which was determined to be probably already present at the time when the rope was originally placed on the market and not have been caused by the modification consisting of the distributor’s mechanical cutting of the rope into sections.²⁶⁹⁰

In the same vein, authors like HOWELLS, KATZENMEIER AND VOIGT and VERHOEVEN suggest with regards to the rules under the PLD-1985 that, if not *de lege lata* at least *de lege ferenda*, a distributor must become subject to primary liability if he handles a product in a manner that affects its safety configuration.²⁶⁹¹ Note, however, that they continue to limit this possibility

²⁶⁸⁸ See *infra* nr. 454 regarding art. 11(1)g PLD-2024.

²⁶⁸⁹ OLG Düsseldorf 22 September 2000, 22 U 208/99, NJW-RR 2001, 458, 458 (“*Es muss zur ‘Herstellung’ vielmehr in einer der Abgrenzung zwischen Händler und Hersteller in § 3 III ProdSG entsprechenden Weise auf das Produkt eingewirkt werden, so dass infolge des Eingriffs die sicherheitsrelevanten Eigenschaften des Produktes verändert werden.*”).

²⁶⁹⁰ *Ibid.*, 459.

²⁶⁹¹ Howells, ‘strict liability’, nr. 4.78; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3605, 5; Verhoeven, *Productaansprakelijkheid en productveiligheid*, 81-82. See also G. Wagner, ‘Produkthaftungsgesetz’ in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 4, nrs. 25-26. See also Commission, ‘Report on the Application of Directive 85/374 on Liability for Defective Products’, COM(2000) 893 final, 23-24 (referring to group of comments in consultation process arguing that professionals in the supply chain affecting a product’s safety properties should be held liable as a producer; note that the Commission eventually rejects and does not support this view, as incorrectly reported by VERHOEVEN and as discussed in the next section of this

of primary liability under the PLD-1985 for affecting a product's safety configuration to actors involved in the product's distribution chain,²⁶⁹² who are already subject to secondary liability (see *supra* nr. 430). This is undeniably because they wanted to make harmonised product liability more coherent with the aforementioned, then-applicable rule of general product safety law, which was limited to “*professionals in the supply chain*”.²⁶⁹³ Hence, persons who repair or refurbish a product purely as a service, without a subsequent supply, would according to this view still never be liable on the basis of the PLDI, even when they drastically affect the product's safety characteristics, for example by weakening the functioning or structural integrity of a repaired product or disabling one of its safety mechanisms.

In another German decision, a hospital was considered liable as a producer of a product for joining a replacement shaft to the joint head of a broken prosthetic limb.²⁶⁹⁴ In appeal, the Koblenz court rejected this in light of the concrete facts of the case but considered that this theoretical possibility would have been possible if a replacement part was purchased from a third party, which meant that components from different suppliers are combined in a new ‘production’ process. A producer qualification was excluded by the court in case of a mere assembly of original parts.²⁶⁹⁵ This aligns with German literature on when assemblers, including potential product modifiers like car ‘tuners’ or users of ‘assembly packages’ qualify under the PLDI as ‘producers’. Authors like TASCHNER AND FRIETSCH, GRAF VON WESTPHALEN, KATZENMEIER AND VOIGT and WAGNER look in this particular context at the extent to which the assembler follows an original producer's instructions and solely uses original parts or whether the assembler has effectively an impact on the resulting product's safety properties.²⁶⁹⁶

dissertation).

²⁶⁹² Howells, ‘strict liability’, nr. 4.78 (discussing specifically “*dealers in second-hand goods*”); Verhoeven, *Productaansprakelijkheid en productveiligheid*, 82 (“*De enige grens op dit ruime toepassingsgebied is te vinden in het feit dat het wel steeds moet gaan om een werkelijke tussenpersoon in de productie- en verhandelingsketen van het product.*”).

²⁶⁹³ Art. 2(d), third section Council Directive 92/59/EEC of 29 June 1992 on general product safety [1992] OJ L228/24, 26; art. 2(e)iii General Product Safety Directive 2001/95/EC 2001/95. See *supra* nr. 439.

²⁶⁹⁴ LG Mainz, 8 November 2012, 2 O 141/11 (unpublished, but discussed in published appeal decision OLG Koblenz 26 February, 5 U 1474/12, *VersR* 2014, 251, *GesR* 2013, 735, *Juris*).

²⁶⁹⁵ OLG Koblenz 26 February 2013, 5 U 1474/12, *VersR* 2014, 251, *GesR* 2013, 735, *Juris*, nr. 21. But see KG 3 April 2024, 20 U 253/12, *GesR* 2014, 427, *MedR* 2014, 825, *BeckRS* 2014, 8802, nr. II.A.2.b.cc (discussed *supra* nr. 437, criticizing explicitly this decision).

²⁶⁹⁶ See Taschner and Frietsch, *Kommentar*, 318-320; Graf von Westphalen, ‘3. Produkthaftungsgesetz’, § 49, nrs. 19-21; Katzenmeier and Voigt, ‘Haftung aus dem ProdHaftG’, § 3605, 5-9; G. Wagner, ‘Produkthaftungsgesetz’ in M. Habersack (ed.), *Münchener Kommentar BGB, Band 7. Schuldrecht BT IV* (Beck 2024) § 4, nr. 14. But see Oechsler, Staudinger, ‘Produkthaftungsgesetz’, § 4, nrs. 21-23 (advocating instead for a more economic criterion, looking at the economic value of the assembly activity, whether it has an independent professional job requirement and not solely looking at the potential product safety implications). See also B.A. Koch, ‘Product Liability in Austria’ in P. Machnikowski (ed.), *European Product Liability: An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016) (reporting that Austrian courts “*focus on the expertise of the provider, the expectations of their customers, and public perception of the product(s)*” as well as the amount of “*individual creativity [...] needed to complete the product*”, while the case examples demonstrate that it is also decisive whether only single-origin

It is striking how the existing European literature has not more generally connected this case-specific, ‘safety approach’ to the qualification under the PLD-1985 of repair and refurbishment activities. On the one hand, this is a testimony of the influence, at least in the rich German literature, of the alternative ‘categorical approach’ to this question, which draws a deceptively simple, sharp distinction between ‘repairs’ and ‘refurbishments’ (see *supra* nr. 437). On the other hand, this is a testimony of how the ‘safety approach’ in the harmonised product liability literature has remained modelled after the aforementioned rule of past general product safety regulation, which only considers persons who “*may affect the safety properties of a product*” as ‘producers’ if they are “*other professionals in the supply chain*” (see *supra* nr. 439).²⁶⁹⁷ To my knowledge, only one author studying the PLD-1985, namely DOMMERING-VAN RONGEN, has in an unequivocal manner extended the ‘safety approach’ into the field of repairs and related activities, without requiring that these are performed by actors who subsequently distribute the repaired products.²⁶⁹⁸

441. THE COMMISSION’S REJECTION AND THE LACK OF A CLEARLY ESTABLISHED BASIS UNDER THE PLD-1985 – In the consultation organised by the Commission as a follow-up to its 1999 ‘green paper’ on product liability,²⁶⁹⁹ several respondents referred to the aforementioned, then-applicable general product safety rule, which qualified as ‘producers’ other actors in the distribution chain who affect an existing product’s safety configuration (see *supra* nr. 439). They argued that “[t]he liability rules under Directive 85/374 should be extended in this sense.”²⁷⁰⁰ After weighing this argument and counterarguments by other respondents and after considering that the PLD-1985 clearly intended to strictly limit liability of suppliers to cases where no primary liable defendant can be identified, the Commission ultimately rejected this proposal.²⁷⁰¹

The Commission never returned to this point or other aspects relating to repair or refurbishment activities in subsequent periodical reports on the application of the PLD, which all concluded that no change or clarification to the PLD-1985 is required. Only in the 2018 report which started the process leading eventually to the new Directive, did the Commission

parts are used and whether assembly instructions from this same origin are strictly applied); Verhoeven, *Productaansprakelijkheid en productveiligheid*, 83, footnote 519 (referring to an older source making a similar distinction based on the single-origin of the parts used by the assembler); D. Fairgrieve and R. Goldberg, *Product Liability* (3rd edn., Oxford University Press 2020) nrs. 8.07-8.08 (ultimately arguing against qualifying professional self-assemblers of products as producers, while ostensibly assuming that in these cases all parts originate from a single, original ‘producer’).

²⁶⁹⁷ Art. 2(d), third section Council Directive 92/59/EEC of 29 June 1992 on general product safety [1992] OJ L228/24, 26; art. 2(e)iii General Product Safety Directive 2001/95/EC 2001/95. Note again that this rule is now replaced by the more general rule on ‘substantial modifications’ of art. 13(2)-(3) General Product Safety Regulation 2023/988/EU (see *supra* nr. 439).

²⁶⁹⁸ L. Dommering-van Rongen, *Productaansprakelijkheid: Een rechtsvergelijkend overzicht* (Kluwer 2000) 132: “Bij reparatiewerkzaamheden kan het zijn dat zodanig ingrijpende wijzigingen worden aangebracht dat men van een ‘nieuw’ product kan spreken.”

²⁶⁹⁹ Commission, ‘Green Paper Liability for defective products’, COM(1999) 396 final.

²⁷⁰⁰ Commission, ‘Report on the Application of Directive 85/374 on Liability for Defective Products’, COM(2000) 893 final, 23.

²⁷⁰¹ *Ibid.*, 23-24: “[...]. A fundamental change in shifting the liability to the supplier in other situations than the ones foreseen by Article 3(3) of the Directive does not seem justified at this stage.”

explicitly ask itself again the question: “[w]ho will be the manufacturer of [...] products [...] in the case of repair [...] and refurbishment?”²⁷⁰² It therefore seems to be that, at least from the Commission’s perspective, there is no clear basis under the PLD-1985 to hold repairers or refurbishers liable, outside the aforementioned possibilities of qualifications as a supplier or quasi-producer.

At the same time, the CJEU has never had the opportunity to rule on this question. Hence, it has never been clearly settled under the PLD-1985 and the literature and national case law discussed in the preceding sections remain speculative in nature. The fact that the new Directive deals with this question in a clear manner, is therefore most welcome (see also *supra* nr. 25.b-c). And it is of course not difficult to imagine that in the future, when the implementation of the PLD-1985 will still be applied in parallel to the implementation of the PLD-2024 for products placed on the market or put into service prior to the latter’s entry into force,²⁷⁰³ the interpretation of the PLD-1985 will become heavily inspired by the rules of the new Directive. This would turn into a vindication of the authors and courts discussed *supra* nr. 440, although their gradual, safety-oriented approach will then be extended to pure service providers who substantially modify products outside the distribution chain.

ii. Art. 8(2) PLD-2024

(1) *In general*

442. THE SOLUTION OF ART. 8(2) PLD-2024: PRIMARY LIABILITY FOR A ‘SUBSTANTIAL MODIFICATION’ OF A PRODUCT ‘OUTSIDE THE MANUFACTURER’S CONTROL’, FOLLOWED BY A PLACEMENT ON THE MARKET OR PUTTING INTO SERVICE – Art. 8(2) PLD-2024 now imposes the same liability as a manufacturer, namely a primary liability, on “[a]ny natural or legal person that substantially modifies a product outside the manufacturer’s control and thereafter makes it available on the market or puts it into service”. Each of these elements is discussed, from the specific perspective of repair and refurbishment activities in following sections. The key requirements that the product has been ‘substantially modified’ (see *infra* nrs. 444-446) and that this occurs ‘outside the manufacturer’s control’ (see *infra* nr. 447-448). And the requirement that this product is subsequently either ‘put into service’ or ‘made available on the market’, where this last criterion should in the view of this dissertation best be amended *de lege ferenda* (see *infra* nrs. 449-453). Importantly, art. 11(1)g PLD-2024 provides a new defence that is an integral part of the liability imposed by art. 8(2) PLD-2024, namely that the defendant is not liable if he can prove that the defect that caused the damage is situated in a part of the product that has not been affected by the substantial modification. This is discussed *infra* nrs. 454-456.

This new rule of art. 8(2) PLD-2024 has already been discussed in the context of potential harmonised product liability for repurposing and for retransferring durable consumer goods (see *supra* nrs. 262-268 and 307-309). This immediately demonstrates how this provision has a broad scope, which is definitely not limited to actors who happen to also (re)distribute the

²⁷⁰² Commission, ‘Report on the Application of the Council Directive on the approximation of the laws, regulations, and administrative provisions of the Member States concerning liability for defective products (85/374/EEC)’ COM(2018) 246 final, 9.

²⁷⁰³ Art. 21 PLD-2024.

products they have intentionally or inadvertently modified, as previously held by comparable, gradual and safety-oriented interpretations under the PLD-1985 (cf. *supra* nr. 440). Moreover, the scope of art. 8(2) PLD-2024 is thus certainly not limited to product repairers and refurbishers, although these are the focal point of this Chapter. The new liability rule also potentially encompasses distributors who improperly transport, store or otherwise inadvertently or intentionally ‘substantially modify’ their products, as well as service providers and production companies who do the same with products they use in their commercial activity. The following section further discusses the merits of this flexible but safety-oriented approach.

443. THE FUNCTIONAL SOLUTION PROVIDED BY ART. 8(2) PLD-2024 (AND ITS COUNTERPART OF ARTS. 7(2)E AND 11(2)D PLD-2024) IS THE RIGHT ONE, ALSO FOR REPAIRS AND REFURBISHMENTS – As the previous section outlined, art. 8(2) PLD-2024 thus adopts a broad and flexible approach that fixates on whether a product has been substantially modified from a product safety perspective and that is not really concerned with how and in what context this substantial modification comes about, other than that it is followed by a ‘making available’ or ‘putting into service’ (see *infra* nr. 449).²⁷⁰⁴

In early commentaries on the PLD Proposal 2022, the EUROPEAN LAW INSTITUTE and Dutch scholars regret that the new Directive does not offer a specific rule relating to product ‘refurbishments’.²⁷⁰⁵ WASSINK AND LOOS even state that a lack of such a rule, in combination with a perception that it will be generally easy for defendants in the original distribution chain to successfully invoke a posteriority defence when a defect first emerged after a refurbishment (cf. *supra* nr. 414), risk to make this circular strategy less attractive to consumers.²⁷⁰⁶ From an economical and behavioural perspective, it can be doubted that a lower product liability protection will make a circular strategy necessarily less attractive to consumers (see *supra* nrs. 123 and 143-146) and non-harmonised national liability theories of course continue to apply in parallel (see *supra* nr. 171). Yet, the main flaw in this view is the belief that art. 8(2) PLD-2024 would not effectively address refurbishments or any other circular strategy for that matter, which also do not have a separate rule in the new Directive. This rule and its counterpart

²⁷⁰⁴ There is of course also the requirement that the substantial product modification occurs ‘outside the manufacturer’s control’ (see *infra* nr. 447). Yet, this is merely to differentiate from the rules of arts. 7(2)e and 11(2)d PLD-2024, which lead to a similar liability, albeit an expansion of the liability of existing defendants of the product (see *supra* nr. 436).

²⁷⁰⁵ European Law Institute, *European Commission's Proposal for a Revised Product Liability Directive: Feedback of the European Law Institute* (2022) 19; P. Verbruggen and J. van Vliet, ‘Duurzaamheid in het buitencontractueel aansprakelijkheidsrecht: De belofte van drie Europese wetgevingsvoorstellen’ (2023) 7407 *Weekblad voor Privaatrecht, Notariaat en Registratie* 276, 286; J. Wassink and M. Loos, ‘Productaansprakelijkheid in het digitale tijdperk: De Richtlijn productaansprakelijkheid bij de tijd gebracht’ (2023) *Nederlands Tijdschrift voor Europees Recht* 22, 25. These statements can be seen as a continuation of the past ‘categorical approach’ of TASCHNER AND FRIETSCH and others, which considered refurbishments to lead to harmonised product liability for manufacturing a new product, in contrast to repairs resulting in no separate liability under the PLD-1985. See *supra* nr. 438.

²⁷⁰⁶ J. Wassink and M. Loos, ‘Productaansprakelijkheid in het digitale tijdperk: De Richtlijn productaansprakelijkheid bij de tijd gebracht’ (2023) *Nederlands Tijdschrift voor Europees Recht* 22, 25.

of art. 11(2)d PLD-2024 for modifications ‘within the manufacturer’s control’, do impose harmonised product liability for potentially all these circular strategies. But they only do so when it matters most: namely, when a product is in the course of its lifecycle changed in a way that makes a noteworthy difference in terms of underlying accident risks (see *infra* nrs. 444-446).

This approach of art. 8(2) PLD-2024, which is also applied by its counterpart of art. 14(2)d PLD-2024, can in light of the aforementioned characteristics be described as ‘functional’. It is unconcerned with formal labels like ‘refurbishment’ or ‘repair’, which also remain always factually debatable, even though a consensus has now emerged in the specialized literature about the scope of these concepts (see *supra* nrs. 85 and 88-91). The rule looks at whether the treatment of a product affects the underlying accident risks when the product would be further used, regardless in what context and for what purpose this might occur.

In my opinion, this approach is satisfactory in light of this dissertation’s framework as well as the Directive’s own main goals (see *supra* nrs. 130-133 and 168). This functional approach focused on accident risks is clearly beneficial for purposes of efficient accident-prevention. ‘Quasi-strict’ liability is imposed on precisely those actors who exercise control over product accident risks and who may take increased care, up to the efficient, socially optimal level (see *supra* nr. 108.c). In terms of risk-allocation, it is worth noting that art. 8(2) PLD-2024 still only imposes liability on defendants acting in the course of a commercial activity (see *infra* nr. 449), which ensures that these defendants remain on average less risk-averse than consumers and definitely than third parties injured in a subsequent product accident (see *supra* nr. 106). Moreover, the rule also fits well with corrective justice and the risk-internalisation principle, since someone who in a commercial activity profits from substantially modifying a product can clearly be considered as an ‘abnormal risk-taker’ who must repair damage inflicted by this risk-taking on others (see *supra* nrs. 127 and 128.c).

Finally, it can be noted how the rule of art. 8(2) PLD-2024 and its counterpart of arts. 7(2)e and 11(2)d PLD-2024 ensure that the PLD-2024 remains theoretically consistent as a form of ‘product liability’ and does not enter (too far) into the domain of liability for services. In terms of their scope of application, these rules still look primarily at the product, namely whether the product has been substantially modified (see also *supra* nrs. 35 and 101.c). This is in addition to the defect assessment and defences, which also continue to mostly focus on the product rather than to look directly at the defendant’s conduct, as discussed further in this Chapter (see also *supra* nrs. 173-174). This would have been different if liability had been simply imposed on, for example, ‘product refurbishers’, since this liability qualification would then directly look at the defendant’s conduct and impose liability for what is in essence a service that traditionally falls outside the scope of harmonised product liability (cf. *supra* nr. 424).

(2) *Substantial modification*

444. A MODIFICATION, COMPARED TO HOW THE PRODUCT WAS PLACED ON THE MARKET OR PUT INTO SERVICE – Liability on the basis of art. 8(2) PLD-2024 as an independent substantial product modifier requires that a product is ‘substantially modified’, as defined in art. 4(18) PLD-2024. First and foremost, such substantial modification requires “*a modification of a product*

after it has been placed on the market or put into service”.²⁷⁰⁷ A ‘modification’ means some form of departure from the product’s initial design, accompanying information and changes to its features in general. Strictly speaking, such a ‘modification’ can be quite minute, as illustrated *supra* nr. 402.b in the context of art. 4(5)a(ii) PLD-2024.²⁷⁰⁸ Yet, art. 4(18) PLD-2024 of course also requires that the modification is ‘substantial’, as studied *infra* nr. 445, which provides a minimum threshold that excludes, among others, totally negligible modifications (see *infra* nr. 445).

Furthermore, the modification according to art. 4(18) PLD-2024 definitely does not have to be intentional, which would otherwise undermine the underlying goal of accident-prevention (see *supra* nrs. 168 and 443) and also run contrary to harmonised product liability’s objective nature (see in particular *supra* nr. 179). In the context of retransfers, I have already referred to inadvertent substantial product modifications resulting from damage during transportation or shoddy storage conditions (see *supra* nr. 307). Similar conditions may surround a repair or refurbishment process. Various other forms of unintentional product modifications can of course occur in the repair and refurbishment context, such as a repairer who damages inadvertently a component while trying to disassemble or reprocess it, who mistakenly deviates from repair instructions, who uses the wrong spare part, etc.

Crucially, the point of reference for the ‘modification’ is the state of the product at the time when it was placed on the market, put into service or – what this dissertation for the sake of simplicity does not reiterate every single time – “when the product left the control of the manufacturer”.²⁷⁰⁹ Pursuant to art. 7(2)e PLD-2024, these are the points of reference for the defect assessment of the liability of existing defendants in relation to the same product,²⁷¹⁰ which explains why this is also the relevant moment in time to start measuring whether a change to the product is sufficient enough to warrant a new, separate liability under the PLDI for an intervening product modifier. This means that it is incorrect to look instead at the existing state of the product after it has been placed on the market or put into service and right before the possible ‘modification’, although this might feel much more intuitive. For example, the fact that a product is worn, has suffered damage during past use or even during its distribution phase, are all irrelevant.²⁷¹¹ If a repairer precisely remediates these past changes and

²⁷⁰⁷ Art. 4(18) PLD-2024.

²⁷⁰⁸ This last provision does *de lege lata* not require that the modification must also be ‘substantial’. This vast scope, seemingly without a minimum threshold, is another reason why this dissertation proposes *de lege ferenda* to change this and to require that a ‘modification’ pursuant to arts. 4(5)a(ii) and 7(2)e *ibid.* must always be ‘substantial’. See *infra* nr. 404.

²⁷⁰⁹ Art. 7(2)e *ibid.* Note how a previous ‘(substantial) modification’ that occurred ‘within the manufacturer’s control’ may have postponed this relevant point of reference for measuring whether there is a ‘substantial modification’ under art. 8(2) *ibid.*, as a result of arts. 4(5)a(ii) and 7(2)e *ibid.* See also *supra* nrs. 371, 403 and 435-436.

²⁷¹⁰ See in particular *supra* nrs. 310-316 on how this results in either a ‘single’ or ‘differentiated’ defect assessment for those defendants, depending on whether they have merely, more recently ‘made the product available on the market’ or whether they have ‘placed the product on the market’ or ‘put it into service’.

²⁷¹¹ Such past changes and forms of damage to the product may of course be highly relevant in the sense that they may have themselves constituted a ‘substantial modification’ according to art. 4(18) PLD-

brings the product back to its initial, original state, then he will not have modified the product according to arts. 4(18) and 8(2) PLD-2024, regardless of the fact that he might have significantly changed the product in comparison with its pre-repaired state.

Especially in relation to repairs and refurbishments, this is a crucial requirement. After all, both circular strategies aim in principle to bring a product as much as possible back to its original condition,²⁷¹² while their main difference is only how repairs limit themselves to already identified flaws, while refurbishments address a product in its entirety (see *supra* nrs. 88-89). Hence, a successful repair or refurbishment that manages to perfectly restore a product to its original state and only uses original spare parts in a first-rate condition, will not have modified the product, which excludes liability on the basis of art. 8(2) PLD-2024. This is also what some of the aforementioned scholars remark when they regret that there is no separate rule for refurbishments,²⁷¹³ although the same equally holds true for repairs or for any other interaction with a product during its lifecycle. In my view, this is not problematic at all. If these actions do not affect any change to a product that is already placed on the market or put into service by someone else, there is according to the normative outlook discussed *supra* nr. 443 no need at all to impose a separate harmonised product liability (but see *infra* nr. 446 regarding omissions). To the extent necessary, non-harmonised national law can of course still completely run its course with regards to the potential (extra)contractual liability of repairers and refurbishers.²⁷¹⁴

Note, however, that most repairs and refurbishments are far from perfect in practice. Perhaps as a result of a lack of repair-enabling resources, which can imply product defectiveness and lead to liability under the PLDI of existing defendants in the distribution chain (see *supra* nr. 389), a repairer or refurbisher may not have access to or due to behavioural limitations²⁷¹⁵ fail to scrupulously adhere to repair instructions, he may have only access to or prefer (cheaper) non-original spare parts or he might simply prefer to tinker and be creative in bringing the product back to a desired functional state. Alternatively, it is also possible that a

2024 (in combination either with art. 8(2) *ibid.* or with art. 11(2)d *ibid.*). *E.g.*, past repurposings of the product may constitute a substantial modification (see *supra* nr. 262) and past inadvertent damage to the product during transportation or storage may also qualify as a substantial modification achieved by a (re)distributor (see *supra* nr. 307).

²⁷¹² Cf. in particular art. 2(18) (Ecodesign for Sustainable Products Regulation 2024 (“‘refurbishment’ means actions carried out to prepare, clean, test, service and, where necessary, repair a product or a discarded product in order to restore its performance or functionality within the intended use and range of performance originally conceived at the design stage at the time of the placing of the product on the market; [...]”) with art. 2(20) *ibid.*: “‘repair’ means returning a defective product or waste to a condition where it fulfils its intended use;”. See also the literature discussed *supra* nrs. 88-89.

²⁷¹³ European Law Institute, *European Commission's Proposal for a Revised Product Liability Directive: Feedback of the European Law Institute* (2022) 19; P. Verbruggen and J. van Vliet, ‘Duurzaamheid in het buitencontractueel aansprakelijkheidsrecht: De belofte van drie Europese wetgevingsvoorstellen’ (2023) 7407 *Weekblad voor Privaatrecht, Notariaat en Registratie* 276, 286; J. Wassink and M. Loos, ‘Productaansprakelijkheid in het digitale tijdperk: De Richtlijn productaansprakelijkheid bij de tijd gebracht’ (2023) *Nederlands Tijdschrift voor Europees Recht* 22, 25. See *supra* nr. 443.

²⁷¹⁴ Art. 2(4)b PLD-2024. See also *supra* nrs. 170 and 207 et seq.

²⁷¹⁵ See *supra* nrs. 381 and 389 on the limitations of repair instructions and warnings to make a product safely repairable.

repairer or refurbisher fails to take a required action to bring a product back to its original state or that he derogates from the product's initial design because he believes this will be an improvement. In my opinion, both last hypotheses can also lead to a finding that a repairer or refurbisher has 'substantially modified' a product. Yet, given their theoretically more challenging nature, these are discussed separately *infra* nrs. 445.c and 446.

Finally, to the extent that the product already had a (design or information defect) when it was placed on the market or put into service and a repairer or refurbisher restores this defect in the original state, then he has not 'modified' the product according to art. 4(18) PLD-2024. For example, an electric heater has a design defect, consisting of the fact that it does not switch off when it topples over and may fall on a carpet or other combustible material. The fact that a repairer restores the product in this state, cannot lead to his liability based on art. 8(2) PLD-2024, since he has not 'modified' the product compared to how it was placed on the market or put into service. Of course, the manufacturer or other defendants in the product's distribution chain are in such instance still subject to harmonised product liability for this design defect, but the lack of liability of the repairer can make a difference for the plaintiff in terms of identifying solvable defendants or when the extinction period has already expired vis à vis defendants in the original distribution chain (see *infra* nr. 464).

445. A SUBSTANTIAL MODIFICATION: THE DEFINITION OF ART. 4(18) PLD-2024 – In addition to constituting a 'modification' of the product compared to its state when it was placed on the market or put into service, it must crucially be a 'substantial' modification in order to potentially lead to liability based on art. 8(2) PLD-2024. The original PLD Proposal 2022 did not further describe this concept other than a general reference to product safety regulation,²⁷¹⁶ which would have necessitated to look even more directly at the guidance on the same 'substantial modification' concept in the aforementioned section of the Blue Guide²⁷¹⁷ and in current art. 13(3) General Product Safety Regulation 2023/988/EU (see also *supra* nr. 439). Fortunately, in light of the differences between *ex ante* product safety regulation and *ex post* product liability's catch-all function,²⁷¹⁸ art. 4(18) PLD-2024 now provides a broader definition of what makes a modification 'substantial'. It establishes two main alternative options.

- a. As the first main option, art. 4(18)a PLD-2024 considers a product modification as substantial if it "*is considered substantial under relevant Union or national rules on product safety*". This achieves another convergence between product safety regulation and EU product liability harmonisation, which echoes the new second part of art. 7(1) PLD-2024

²⁷¹⁶ Art. 7(4) PLD Proposal 2022: "[...] *the modification is considered substantial under relevant Union or national rules on product safety [...]*."

²⁷¹⁷ Commission Notice 'The 'Blue Guide' on the implementation of EU product rules 2022' [2022] OJ C247/1, 17.

²⁷¹⁸ This expresses itself most clearly in the so-called 'enforcement costs advantage' of product liability over product regulation, which this dissertation has identified as being greater in the more heterogeneous context of circular strategies (see *supra* nrs. 152-154). To the extent that harmonised product liability rules would restrict themselves to what is decided in *ex ante* regulation (without allowing an additional, open-ended category), this advantage in efficiency diminishes. See also *supra* nr. 180 and *infra* footnote 2728.

(see *supra* nr. 180). Art. 13(3) General Product Safety Regulation 2023/988/EU describes which modifications are substantial for the purposes of applying the same rule as art. 8(2) PLD-2024 in general product safety law.²⁷¹⁹ However, in terms of substance this is mostly identical to the second main option of art. 4(18)b PLD-2024, as discussed *infra* nr. 445.c-d. The same largely holds true for the Blue Guide's description of when a product can be considered a 'new product' under EU sectoral product regulation.²⁷²⁰ Although this can be disputed, it seems more likely that art. 4(18)a PLD-2024 and art. 4(18)b PLD-2024 are not intended to completely overlap. It is therefore argued that art. 4(18)a PLD-2024 must be interpreted more broadly than referring to the aforementioned regulatory descriptions of 'substantial modification' and that it refers more generally to violations of essential EU or national product safety rules,²⁷²¹ which are achieved by modifying a product compared to how it was originally placed on the market or put into service.

Does every single violation of essential EU and national product safety rules resulting from a product modification then render it a 'substantial modification' and does this also apply to traceability requirements? Given the sprawling nature of product safety regulation, it is in my opinion still required that compliance with the rule has some appreciable impact on either preventing product accidents from occurring or on enabling economic actors and authorities to take preventive or corrective measures to ensure that products that are already placed on the market (or put into service under sectoral

²⁷¹⁹ Art. 13(3) General Product Safety Regulation 2023/988/EU: "A modification of a product, by physical or digital means, shall be deemed to be substantial where it has an impact on the safety of the product and the following criteria are met:

- (a) the modification changes the product in a manner which was not foreseen in the initial risk assessment of the product;
- (b) the nature of the hazard has changed, a new hazard has been created or the level of risk has increased because of the modification; and
- (c) the modifications have not been made by the consumers themselves or on their behalf for their own use."

²⁷²⁰ This is the original source of the substantial modification approach (cf. *supra* nrs. 439). See the most recent iteration Commission Notice 'The 'Blue Guide' on the implementation of EU product rules 2022' [2022] OJ C247/1, 17: "A product, which has been subject to important changes or overhaul after it has been put into service must be considered as a new product if:

- i) its original performance, purpose or type is modified, without this being foreseen in the initial risk assessment;
- ii) the nature of the hazard has changed or the level of risk has increased in relation to the relevant Union harmonisation legislation; and
- iii) the product is made available (or put into service if the applicable legislation also covers putting into service within its scope).

This has to be assessed on a case-by-case basis and, in particular, in view of the objective of the legislation and the type of products covered by the legislation in question."

²⁷²¹ Such rules are not the same as harmonised standards and less authoritative soft law, although these are highly indicative for assessing compliance with actual product safety and sectoral product rules. See arts. 7-8 General Product Safety Regulation 2023/988/EU; Commission Notice 'The 'Blue Guide' on the implementation of EU product rules 2022' [2022] OJ C247/1, 47-56. See also *supra* nr. 10.a.

rules) remain safe. The latter refers of course to traceability requirements,²⁷²² which are also in the context of harmonised product liability pertinent for injured parties to identify and successfully claim against defendants, as discussed for example *supra* nrs. 281 and 355.

For example, a repairer who modifies a toy in such a way that it no longer meets an essential toy safety requirement for the relevant category of kids, will have substantially modified the product according to art. 4(18)a PLD-2024. A refurbisher who replaces a component with traceability information identifying the product serial number and its importer, without reaffixing this information, or who polishes this component to such an extent that it is no longer legible, can based on the same approach also be qualified as a substantial modifier. Of course, the same actions may not only be pertinent under art. 4(18)a PLD-2024 but potentially also lead to significant new, regulatory requirements for the ‘substantial modifier’ under EU product regulation.²⁷²³

In comparison, it can be doubted that for example removing only the CE-marking from a product or making it less legible truly increases accident risks, since it only makes a product slightly more suspicious, which if anything may increase the level of care taken by economic actors and some consumers.²⁷²⁴ Violating these more administrative, purely formal requirements, if they have no appreciable impact on product safety or traceability, might still be problematic from a purely regulatory perspective but should in my opinion not be considered as a ‘substantial modification’ under art. 4(18)a PLD-2024.

Finally, art. 7(1) PLD-2024 now introduces the principle that a “*product shall be considered defective if it does not provide the safety [...] that is required under Union or national law*”, which has been interpreted *supra* nrs. 180 and 251 as meaning that any violation of EU or national rules on substantive product safety in the broad sense and for example potentially also encompassing certain Ecodesign requirements, now automatically constitutes a defect. Art. 4(18)a PLD-2024, by contrast, seems to limit itself more to traditional product safety rules. Nevertheless, if a substantive safety rule of traditional EU or national product safety law is violated by for example a repairer or refurbisher, it can now of course lead to not only a qualification as a defendant according to arts. 4(18)a and 8(2) PLD-2024 but at the same time mean that the product is already automatically

²⁷²² See on traceability requirements arts. 9(5)-(6), 11(1)-(3), 13(1) and 18 General Product Safety Regulation 2023/988/EU; art. 30(5) Digital Services Act; Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 56-60.

²⁷²³ A ‘substantial modification’ qualifying under art. 4(18)a PLD-2024 can of course, and is even likely, to also qualify as a ‘substantial modification’ according to art. 13(2)-(3) General Product Safety Regulation 2023/988/EU or to consist of the placing on the market or putting into service of a ‘new product’ according to sectoral regulation (see *supra* footnote 2720). This would then require our substantial modifier to also comply with all ensuing regulatory requirements, such as completing a conformity assessment. See art. 13(2) General Product Safety Regulation 2023/988/EU; Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 18.

²⁷²⁴ The CE-marking is the indicator (but not proof) of compliance with EU product regulation, affixed in principle by the manufacturer or his authorised representative. See Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 64-70.

defective according to art. 7(1) PLD-2024.²⁷²⁵ Of course, actual liability still requires proof that this defect in the product effectively caused the eventual damage and, even in that event, the substantial modifier may still invoke the defence of art. 11(1)g PLD-2024 for defects situated in parts of the product unaffected by his modification.²⁷²⁶

- b. As the second main option, art. 4(18)b PLD-2024 considers a modification as substantial if two cumulative conditions are fulfilled, which are discussed in detail below. At the outset, it is important to highlight that this second option is made explicitly subsidiary to the first one, since it only applies “*where relevant Union or national rules on product safety lay down no threshold on what is to be considered a substantial modification*”.²⁷²⁷ This could be read as a confirmation that, where existing EU product safety rules would have a maximum harmonizing character or where national product safety rules similarly impose within their ambit a ‘maximum required level of safety’, then art. 4(18)b PLD-2024 cannot be used to still find a ‘substantial modification’ based on even more stringent safety requirements, which would go beyond this regulatory maximum threshold. Such restriction to also the maximum safety limits that are potentially set by *ex ante* regulation, limits product liability’s ‘enforcement costs advantage’ and therefore seems undesirable in terms of efficient accident-prevention.²⁷²⁸ For this reason, it indeed seems advisable to interpret this provision more restrictively, as not extending maximum standards of *ex ante* product safety requirements to the domain of *ex post* harmonised product liability. Yet, art. 4(18)b PLD-2024 fortunately concerns only the scope of a qualification as a defendant based on art. 8(2) PLD-2024 (or for the parallel rule of art. 11(2)d PLD-2024) and not the actual defect assessment. The latter still clearly allows a finding of defectiveness despite the fact that a product is in full compliance with all applicable (maximum standard-setting) product rules.²⁷²⁹
- c. As the first requirement to qualify under the open-ended but seemingly subsidiary, second ‘substantial modification’ category, art. 4(18)b(i) PLD-2024 requires that the modification “*changes the product’s original performance, purpose or type, without that change being foreseen in the manufacturer’s initial risk assessment*”.

²⁷²⁵ See also art. 10(2)b PLD-2024, which now seems largely redundant given the final adopted version of art. 7(1) PLD-2024, as discussed *supra* nr. 180.

²⁷²⁶ However, note that there can still be pre-existing defects in the parts of the product that have been affected by the modification, which are not directly the result of the substantial modification itself, but for which the substantial product modifier will nevertheless remain liable. After all, the defence of art. 11(1)g *ibid.* provides him no relief for such defects. See also *infra* nrs. 446 and 454.

²⁷²⁷ Art. 4(18)b *ibid.*

²⁷²⁸ See *supra* nrs. 152-154 on this ‘enforcement costs advantage’ of flexible, open-ended *ex post* product liability compared *ex ante* product safety regulation, which this dissertation argues is even bigger in the more heterogeneous context of product repairs and refurbishments. Note that the new, second part of art. 7(1) *ibid.* was precisely still evaluated positively *supra* nr. 180, because an open-ended defect assessment continues to still exist in parallel to the ‘unitary’ approach of linking defectiveness to a breach of a rule requiring a given level of safety.

²⁷²⁹ Art. 7(1)(2) PLD-2024. See *supra* nrs. 180 and 187. See also the previous footnote as well as the restrictive nature of the compliance defence of art. 11(1)d *ibid.*, discussed *supra* nr. 198.

The first part of this requirement makes already clear that not any modification to the product will suffice (cf. *supra* nrs. 402.b and 444). Changing the product's "*original performance*" is a broad category. Any change in the product's functions, not only in terms of outputs (such as making an electric heater more or less powerful) but also in terms of inputs (such as making it less energy efficient), can arguably suffice. To the extent that a product has a decorative function, a significant change in its look might likely also be considered as a change in performance. Yet, the assessment should in my opinion remain limited to generally recognised functions of each individual product. The fact that a part of the hidden mechanics of a lawnmower has after a repair a different colour, should for example not be considered as a change in performance, in order to be able to claim against the repairer on the basis of art. 8(2) PLD-2024 for damage resulting from a pre-existing defect in those same mechanics. A change in "*purpose*" has already been discussed *supra* nr. 262.a in relation to the circular strategy of repurposing. An example is the use of various old skis and snowboards together with wooden blocks as furniture in a makeshift après-ski bar, where the edges, weight or elasticity of these potentially 'substantially modified' skis and snowboards may still injure persons. Finally, a change in "*type*" seems less clear. But, when paired with changes in performance and purpose, it likely refers to product modifications that change a product either between different production series of the same manufacturer or between different products from different manufacturers. For example, a feature of a newer model is added to a product or the design of other products on the market is mimicked.²⁷³⁰

The "*manufacturer's initial risk assessment*" likely refers to the safety assessment under general and sectoral product safety rules, which must be performed before products can be placed on the EU market (or put into service under certain sectoral rules).²⁷³¹ It can also be read more broadly, as all considerations relating to accident-prevention that one makes before placing a product on the market or putting it into service, such as avoiding liability under the PLDI.²⁷³²

Art. 4(18)b(i) PLD-2024 requires that the modification of the product had not been foreseen in that assessment before the product was placed on the market or put it into service. Must this be interpreted subjectively, by determining concretely whether the individual manufacturer or other responsible party had at that time actually foreseen the individual modification that our repairer, refurbisher or other product modifier now performs? I would say no and advocate instead for an objective interpretation, which fits better with harmonised product liability in general (see e.g. *supra* nr. 179) and which is arguably more efficient by reducing challenges in terms of evidence,

²⁷³⁰ Regardless of possible intellectual property rights infringements, this would then also provide a basis for a substantial modification according to art. 4(18)b(i) *ibid*.

²⁷³¹ See on the broader 'modular' assessment whether a product is in 'conformity' with EU product requirements, before it can be placed on the market Commission Notice 'The 'Blue Guide' on the implementation of EU product rules 2022' [2022] OJ C247/1, 70-80.

²⁷³² There will be in practice very little difference between the two. *E.g.*, compare the requirements of the safety assessment in arts. 6-8 General Product Safety Regulation 2023/988/EU with the defect assessment in art. 7 PLD-2024. See also *supra* nrs. 180 and 187.

which reduces administrative costs (see *supra* nr. 111). This more objective interpretation would then hold that art. 4(18)b(i) PLD-2024 requires a modification that objectively should not have been foreseen by the manufacturer or other person at the time when the product was placed on the market or put into service. In case of a future claim, this would also mean that, if the defect that caused the damage is actually the direct result from such a ‘substantial modification’ pursuant to art. 4(18)b PLD-2024,²⁷³³ then this defect had effectively also not been ‘reasonably foreseeable’ when the product was placed on the market or put into service. As examined earlier, this would then through the posteriority defence exclude liability for defendants in the product’s original distribution chain for damage caused by precisely this defect.²⁷³⁴ In this way, liability of the substantial modifier based on arts. 4(18)b and 8(2) PLD-2024 becomes nicely complementary to liability of defendants in the original distribution chain, although both liabilities will in many other cases still co-exist.²⁷³⁵

- d. As the second condition to qualify as a ‘substantial modification’ according to the second main category, art. 4(18)b(ii) PLD-2024 requires that the unforeseen modification as discussed above, additionally “*changes the nature of the hazard, creates a new hazard or increases the level of risk.*” This means that the modification must change something in the product’s safety configuration. For example, a robot lawnmower is repaired in a way that reduces the responsiveness of the safety mechanism to switch off when it is being picked up or toppled over. The battery replaced in a refurbished electronic device is not well connected, leading to a thermal runaway event during subsequent use. Or an electric sit-standing desk is repaired in a way where the moving parts are less well protected, leading to a child crushing its fingers while exploring the device and pushing on the operating button. There are myriad possibilities how a product modification can lead to a change in accident risks. Note that not only “*increases*” in the level of risk are sufficient. Art. 4(18)b(ii) PLD-2024 also separately accepts changes in “*the nature of the hazard*” or the creation of “*a new hazard*”. In other words, a repurposing or other modification may make a product safer in overall, absolute terms, but still constitute a ‘substantial modification’ due to internal changes in the remaining accident risks. A chainsaw refurbisher places for example different handlebars with more grip or an extra shield to protect the user. Yet, since these bars are less curved, they represent a new,

²⁷³³ The substantial modifier becomes also liable for other defects in the product, although to the extent that he invokes and manages to prove the defence of art. 11(1)g PLD-2024, he will only be effectively liable for defects located in the parts of the product affected by his modification. See also *infra* nrs. 446 and 454.

²⁷³⁴ Art. 11(1)c *ibid.* See Figure 9 *supra* nr. 239.

²⁷³⁵ First of all, there is the possibility that the substantial modification is based on art. 4(18)a *ibid.* instead, which can be a modification that does not necessarily require a lack of reasonable foreseeability at the time when the product was placed on the market or put into service. Second, there is the broad category where the harmonised product liability claim is based on a damage-causing defect in the product, that is not the direct result of the substantial modification. In such instance, the location of the defect determines whether the substantial modifier is protected by art. 11(1)g PLD-2024, as discussed *supra* footnote 2733.

slight risk of potentially causing more injury when the inactive chainsaw would happen to fall down on someone else.

To the extent that the first main category of art. 4(18)a PLD-2024 is interpreted broadly, as argued for *supra* nr. 445.a, there might in practice be significantly less room left to still apply the second category of art. 4(18)b PLD-2024, which has a subsidiary nature (see *supra* nr. 445.b). This is because the general product safety requirement of arts. 5 et seq. General Product Safety Regulation 2023/988/EU and its sectoral counterparts are so general and comprehensive in nature, that many, albeit not all,²⁷³⁶ product modifications that meet the broad, safety-oriented requirement of art. 4(18)b(ii) PLD-2024, will have already qualified as a substantial modification according to art. 4(18)a PLD-2024, because they violate essential product safety rules. Inversely, to the extent that art. 4(18)a PLD-2024 is interpreted more restrictively, the resulting gap will largely be filled by art. 4(18)b PLD-2024 and the assessment of whether a modification is ‘substantial’ will start to revolve more around the requirement of art. 4(18)b(ii) PLD-2024.

All in all, this makes that art. 4(18) PLD-2024 offers a comprehensive, flexible concept of ‘substantial modification’, which can be considered as beneficial for purposes of accident-prevention (see also *supra* nr. 443). There is only the small caveat that the first part of art. 4(18)b PLD-2024 would in combination with maximum harmonising product safety rules be potentially interpreted in a manner that would preclude art. 4(18)b PLD-2024’s more open-ended concept of ‘substantial modification’, as discussed *supra* nr. 445.b.

446. CAN OMISSIONS CONSTITUTE SUBSTANTIAL MODIFICATIONS? – A theoretical question that is particularly important in the repair and refurbishment context is whether a substantial modification pursuant to art. 4(18) PLD-2024 must always be the result of a direct action by the ‘substantial modifier’. What if a product has for example as a result of an accident suffered substantial damage and is brought to a repairer, who subsequently fails to fully remediate the pre-identified damage he was tasked to repair? Can such an omission also constitute a ‘substantial modification’? The product has after all already been modified, without the repairer’s involvement (cf. *supra* nr. 444). In my opinion, such omission can be accepted as a substantial modification attributable to the repairer, but only under quite specific circumstances. Below, first the underlying reasons are explained and thereafter the conditions for qualifying a pure omission under art. 4(18) PLD-2024.

The first reason for accepting it as a substantial modification is the overall goal of accident-prevention, which underlies the Directive and is a central part of this dissertation’s normative framework (see *supra* nrs. 108 and 168). Repairers or refurbishers who otherwise neglect to remediate issues in terms of product safety in a product may efficiently take increased care if they are subject to liability for damage later caused by remaining defects in those products.

²⁷³⁶ In particular some cases where merely “*the nature of the hazard*” is changed, without resulting in an overall increase in accident risks, may mean that a modification does not violate the general product safety requirement of arts. 5 et seq. General Product Safety Regulation 2023/988/EU but still qualifies under art. 4(18)b(ii) PLD-2024.

The second reason is the fact that art. 8(2) PLD-2024 actually imposes a ‘quasi-objective’ liability for all future product accidents caused by (remaining) defects in the substantially modified product. Art. 11(1)g PLD-2024 allows a substantial modifier to still escape liability if he manages to prove that “*the defectiveness that caused the damage is related to a part of the product not affected by the modification*”. However, both rules must be construed that, if there is still a pre-existing defect in a part of the product that has been affected by the modification and this defect, which has not been personally created by the substantial modifier, subsequently causes damage, then the substantial modifier will effectively be liable for it and will not be protected by the defence of art. 11(1)g PLD-2024 (see *infra* nr. 454). Only if the defect already existed at the time when the product was placed on the market or put into service, then ‘leaving such anterior defect untouched’ does not constitute a ‘modification’ for which liability on the basis of art. 8(2) PLD-2024 is possible (see *supra* nr. 444). This can, however, not be said of defects that only arose after the product was placed on the market or put into service but predate the substantial modification, such as damage resulting from an accident which a repair was precisely intended to remediate.

As a result, an omission to remediate already existing, post-marketing safety risks in the product – those that were not yet present when the product was placed on the market or put into service – can in certain circumstances effectively constitute a substantial modification pursuant to art. 4(18) PLD-2024. Yet, not every possible product modifier must of course remediate all already existing post-marketing safety risk in a product, to simply avoid ‘substantially modifying’ a product through pure omission. This is only the case when three conditions are fulfilled.

First of all, the modifier must have a special responsibility to remediate existing post-marketing safety problems in the product, precisely to bring it (partially) back to its original state. While this excludes most product modifiers,²⁷³⁷ this is precisely where repairers and refurbishers enter the picture (cf. *supra* nrs. 88-89).

Second, such special responsibility must have precisely concerned the specific post-marketing safety issue that ultimately turned out to have not been remediated and that would provide the basis for a substantial modification pursuant to art. 4(18) PLD-2024. For example, the brakes in a mountainbike no longer work properly and a commercial repairer is asked to specifically address this issue. *Infra* nr. 454, the extent to which refurbishments require to affect different parts of a product is discussed in more detail, because this strategy does not require to find and resolve every single issue in a product but nevertheless involves addressing a product in its entirety.

Third, even if this particular, pre-existing but post-marketing safety-risk in the product is part of the parts of the product for which the repairer or refurbisher was expected to provide a remediation, then it must still be considered that repairers and refurbishers are not expected to find and resolve every single issue within the scope of their ‘task’. After all, these circular strategies are only expected to bring products back to a ‘working condition’ or a

²⁷³⁷ E.g., repurposers and retransferors (or other product distributors) who may substantially modify a product through their (intentional or more likely unintentional) actions (see *supra* nrs. 262 and 307), do not have such special responsibility vis à vis already present, post-marketing defects in the product. Therefore, they cannot through a pure ‘omission’ substantially modify the product.

‘satisfactory condition’, respectively, which is in each case still lower than the expected quality standards of a newly manufactured or remanufactured product.²⁷³⁸ Hence, for certain pre-existing, post-marketing safety issues in the product that are in the concrete circumstances also for a commercial repairer or refurbisher exceedingly challenging to find and successfully remediate, the continued presence after the repair or refurbishment cannot be accepted as a ‘substantial modification’ through omission. Note that this small, last subset of excluded cases can be indicative of the fact that such products were perhaps already insufficiently safely repairable or refurbishable when they were placed on the market or put into service, which can be a ground of liability under the PLDI of defendants in the original distribution chain.²⁷³⁹

(3) *Outside the manufacturer’s control*

447. THE MANUFACTURER’S CONTROL’ OF ART. 4(5) PLD-2024 AS THE DECISIVE FACTOR BETWEEN THE APPLICATION OF ARTS. 7(2)E AND 11(2)D PLD-2024 OR OF ART. 8(2) PLD2024 – Crucially, a person can only become subject to the separate, primary liability of art. 8(2) PLD-2024, if he substantially modifies the product “*outside the manufacturer’s control*”.

- a. If this condition is not fulfilled, then no new, separate liability arises. Instead, the existing harmonised product liability defendants in relation to the product see their liability being ‘fully-extended’ to the moment when the product leaves the manufacturer’s control based on art. 7(2)e PLD-2024, while they can no longer invoke the posteriority defence in relation to the substantial modification due to art. 11(2)d PLD-2024. This is the ‘ground of liability’ of repairers and refurbishers discussed *supra* nr. 436. Note that in this situation, the person actually performing the substantial modification ‘within the manufacturer’s control’, like a refurbisher in a product’s original service network, might not see a personal change in terms of his liability under the PLDI. If he was not yet personally liable as an actor in the product’s distribution chain, then he remains individually unaffected by arts. 7(2)e and 11(2)d PLD-2024.
- b. If the substantial modification effectively occurs ‘outside the manufacturer’s control’ and if the substantially modified product is subsequently also ‘made available’ or ‘put into service’, as discussed *infra* nr. 449, then art. 8(2) PLD-2024 applies. The substantial modifier becomes personally liable for defects in the product, although he can invoke the defence of art. 11(1)g PLD-2024, as discussed *infra* nr. 454. Importantly, this substantial modification ‘outside the manufacturer’s control’ has no special effect on the liability of existing defendants in the product’s distribution chain. The defect assessment for their liability is not postponed pursuant to art. 7(2)e PLD-2024 and this

²⁷³⁸ Cf. *supra* nrs. 88-90 and 352.d. See also M. den Hollander, C. Bakker and E. Hultink, ‘Product Design in a Circular Economy: Development of a Typology of Key Concepts and Terms’ (2017) 21 *Journal of Industrial Ecology* 517, 522.

²⁷³⁹ See *supra* nrs. 368 et seq. See in particular also *supra* nrs. 389 et seq. on how the presence of easily accessible and high-quality repair information, spare parts and other resources can help to make a product more easily and more safely repairable.

substantial modification is for them a post-marketing circumstance, for which they can in principle invoke the posteriority defence of art. 11(1)c PLD-2024.

- c. This may create an impression that liabilities under the PLDI of both sets of defendants are mutually exclusive. But this is of course incorrect. There are first of all cases relating to pre-existing defects in the product, for which defendants in the original distribution chain cannot invoke the posteriority defence and which are logically not caused by the intervening substantial modification. Nevertheless, if those defects are located in parts of the product that have been affected by said substantial modification, like a refurbishment, then the defence of art. 11(1)g PLD-2024 cannot also not be invoked by the refurbisher. Second, there are cases where both sets of parties are jointly liable, despite the fact that the defect that caused the accident effectively arose as a result of the intervening substantial modification. For example, the substantial modification consisted of an independent repair of an e-step that gave rise to the eventually harmful product defect, but an issue leading to the flawed repair had perhaps already been reasonably foreseeable when the e-step was placed on the market. If so, then it is possible that the posteriority defence does not apply and that the e-step was already defective when it was placed on the market due to a lack of safe repairability (cf. *supra* nrs. 373 and 414), which means that defendants in the original distribution chain are definitely also liable. And third, there can of course be still other cases where both sets of parties find themselves jointly liable because one of them forgets to invoke or fails to provide sufficient proof for either of the aforementioned defences.

448. ‘OUTSIDE THE MANUFACTURER’S CONTROL’ – The requirement in art. 8(2) PLD-2024 of a substantial modification “*outside the manufacturer’s control*” is simply the opposite of what occurs within the ‘manufacturer’s control’, as defined in art. 4(5) PLD-2024. This last concept, which is another novelty of the new Directive, has already been examined earlier in this Chapter *supra* nrs. 402-404 and 435-436. Hence, this section mostly refers to the analysis there. If the conditions of art. 4(5) PLD-2024 are not fulfilled, then something occurs by definition ‘outside the manufacturer’s control’.

Art. 4(5)a PLD-2024 makes clear that the ‘manufacturer’s control’ consists of actions “*the manufacturer of a product performs or, with regard to actions of a third party, authorises or consents to*”. As discussed in the aforementioned sections, this can be generally interpreted as referring not only to all actions by the manufacturer, importer or quasi-manufacturer who placed the product on the market or put it into service. In principle, it can also consist of actions by their original service network or, only slightly less likely, by other actors in the product’s original distribution chain. At minimum, (an implicit but proven) consent is required, which may for example be deduced from the fact that the manufacturer or importer provides repair instructions, diagnostic software, spare parts, repair tools and the like to an official service provider or downstream distributor. Certifications, training of repair personnel or on-demand troubleshooting services for challenging repairs or refurbishments, would of course indicate an even higher degree of ‘manufacturer’s control. In contrast, if for example a downstream distributor in the product’s original distribution chain who is not part of the same corporate group as the person who last placed the product on the market, repairs sold goods

in a quite independent manner, without any of the aforementioned forms of support, without even a clear acknowledgement by this person, then the requirements of art. 4(5) PLD-2024 do not seem to be fulfilled. And such repairer in the original distribution chain, who may for example perform a repair as an EU consumer sales remedy,²⁷⁴⁰ could then be potentially liable on the basis of art. 8(2) PLD-2024 as an independent substantial modifier.

In practice, it will likely be mostly defendants who have to prove that an intervening ‘(substantial) modification’ of the product took place within or rather outside the manufacturer’s control. If the plaintiff tries to invoke the postponed defect assessment of art. 7(2)e PLD-2024 or even the exception to the posteriority defence of art. 11(2)d PLD-2024 in a claim against defendants in the product’s original distribution chain, then he will allege that for example an intervening refurbishment did occur ‘within the manufacturer’s control’. Unless the refurbisher would ostensibly be a completely independent third party, it will in case of doubt quickly become up to the defendant to try to disprove that the requirements of art. 4(5) PLD-2024 were fulfilled. Conversely, if the plaintiff tries to claim against said refurbisher on the basis of art. 8(2) PLD-2024, it will quickly become incumbent on the latter to try to prove that he actually acted ‘within the manufacturer’s control’ (at least if he would want to shift liability to what is likely a commercial partner or perhaps another group entity). And if the more prudent plaintiff combines both claims and both sets of defendants are enjoined in the proceedings, then definitely those defendants will have to clarify whether an already proven substantial modification occurred within or outside the ‘manufacturer’s control’.

Finally, note that this dissertation proposes *de lege ferenda* to amend art. 4(5)a(ii) PLD-2024 by requiring a ‘substantial’ rather than a simple ‘modification’ and that it more generally suggests to restrict the concept of the ‘manufacturer’s control’ to precisely those situations envisaged by arts. 8(2) and 11(2) PLD-2024 (see *supra* nrs. 404 and 435). However, for the purposes of art. 8(2) PLD-2024 this amendment would not make any difference, since this liability already requires a ‘substantial modification’, as just discussed above. Rather, this amendment would simplify things by ensuring that ‘non-substantial modifications’ of a product no longer qualify under art. 4(5) PLD-2024 and that all of the aforementioned provisions would become more logically coherent and more efficient to apply side-by-side.

(4) *Subsequently making available or putting into service of the product*

449. THE NECESSITY OF A REQUIREMENT RELATING TO A COMMERCIAL ACTIVITY – The precursor of art. 8(2) PLD-2024 in the PLD Proposal 2022 had no other requirements than the previously discussed ‘substantial modification’ occurring ‘outside the manufacturer’s control’.²⁷⁴¹ In its feedback, the EUROPEAN LAW INSTITUTE remarked that “it is [...] unclear whether a person who substantially modifies a product is treated as a manufacturer only if, or to the extent that, they make the product available on the market anew after modification, or whether this is not a requirement. In the latter case, the consequences may be unexpected or at least uncertain (cf a repair shop).”²⁷⁴²

²⁷⁴⁰ See *supra* nr. 385 on how the Promoting Repair Directive 2024 makes repair more attractive as an EU consumer sales law remedy.

²⁷⁴¹ Art. 7(4) PLD Proposal 2022.

²⁷⁴² European Law Institute, *European Commission's Proposal for a Revised Product Liability Directive: Feedback of the European Law Institute* (2022) 19.

Indeed, the absence of a requirement relating to the subsequent ‘making available on the market’ of the substantially modified product or an equivalent concept would have caused serious problem.

But this is not because the product must be further ‘distributed’ in some manner to impose harmonised product liability (cf. *supra* nr. 74). After all, someone can be perfectly held liable on the basis of art. 8(2) PLD-2024 if he outside the manufacturer’s control substantially modifies a product and then puts into use for his own purposes. And this is precisely what the final adopted version of art. 8(2) PLD-2024 now also confirms by explicitly confirming that such a substantial modifier also becomes liable when he “*puts [...] into service*” the product after the substantial modification.²⁷⁴³

The necessity of having such an additional requirement that the substantially modified product is subsequently ‘made available’ or ‘put into service’, consists of the fact that these concepts require a commercial activity.²⁷⁴⁴ Without it, it could otherwise be argued that prosumers who outside any organized commercial activity, happen to repair a product in a manner that substantially modifies it, become subject to harmonised product liability. Or a consumer who misuses or improperly stores a product in a way that results in a substantial modification pursuant to art. 4(18) PLD-2024, would also theoretically become liable as a substantial product modifier. The same could be said of a charity, a completely volunteer-operated repair association or other actors for whom the basic requirement of the PLD-2024 of a commercial activity is not fulfilled (see *supra* nr. 198). After all, products that happen to be substantially modified according to art. 8(2) PLD-2024 are already placed on the market or put into service, and therefore fall within the new Directive’s scope.²⁷⁴⁵

Hence, in this regard, it is certainly desirable that the final adopted version of art. 8(2) PLD-2024 now explicitly confirms that primary product liability is only imposed on someone who substantially modifies a product outside the manufacturer’s control “*and thereafter makes it available on the market or puts it into service*”. After all, the limitation of harmonised product liability to commercial actors is crucial from the perspective of the risk-internalisation understanding of its corrective justice rationale: only actors who profit from their abnormal risk-taking activity merit being subject to a strict liability for resulting damage (see in particular *supra* nrs. 127 and 128.c). But, also from the perspective of efficient risk-allocation, this is an important requirement, since defendants outside a commercial activity can be considered to be on average more risk-averse compared to a more strict product liability risk, which they are also less capable to efficiently spread (see in particular *supra* nrs. 106 and 128.a).

450. WHY IT IS A MISTAKE TO REFER TO ‘MAKING AVAILABLE ON THE MARKET’ INSTEAD OF ‘PLACING ON THE MARKET’ – However, by inserting the aforementioned requirement of subsequently

²⁷⁴³ Art. 4(9) PLD-2024: “‘*putting into service*’ means the first use of a product in the Union in the course of a commercial activity, whether in return for payment or free of charge, in circumstances in which that product has not been placed on the market prior to its first use;”. See also on the same concept in EU product regulation Commission Notice ‘The ‘Blue Guide’ on the implementation of EU product rules 2022’ [2022] OJ C247/1, 23-24.

²⁷⁴⁴ Art. 4(7)-(9) PLD-2024.

²⁷⁴⁵ Art. 2(1) *ibid.*

‘making the product available’ or ‘putting it into service’ in current art. 8(2) PLD-2024, which occurred relatively late during the legislative process, the EU legislator has in my opinion made a theoretical mistake. Nothing is wrong with the “*or puts it into service*” part, which delivers the necessary requirement of a commercial activity and, at the same time, confirms that merely self-using the substantially harmful product can suffice for liability (see *supra* nr. 449). The problem is the reference to “*makes it available on the market*”. Although this also delivers the necessary requirement of a commercial activity,²⁷⁴⁶ it creates at least two²⁷⁴⁷ significant problems, which are discussed in the next two sections and which would be solved by *de lege ferenda* replacing the reference with “*puts it on the market*” instead.

451. PROBLEM 1: ‘MAKING AVAILABLE ON THE MARKET’ RESULTS IN A ‘SINGLE DEFECT’ ASSESSMENT PURSUANT TO ART. 7(2)E PLD-2024 – The first problem has already been laid bare *supra* nrs. 265 and 311. It revolves around the fact that the defect assessment, according to art. 7(2)e PLD-2024, fixates at the moment when the product was placed on the market, put into service or when it leaves the manufacturer’s control. The liability of actors who merely ‘make a product available on the market’, such as distributors,²⁷⁴⁸ is therefore based on what this dissertation calls a ‘single defect’ concept: whether there is a product defect is evaluated by returning back in time to the moment preceding the making available, namely when the product was placed on the market (see *supra* nr. 310 and *infra* nr. 457). Consequently, a repairer who outside the manufacturer’s control substantially modifies a product and who as a service provider thereafter ‘makes the substantially product available’ to its client, becomes subject to liability based on art. 8(2) PLD-2024, for which the determination of the product’s defectiveness in case of a subsequent accident and liability claim, is still determined at the earlier moment when the same product, prior to the repair, was placed on the market by for example an importer.

Hence, the product’s modified state in terms of safety characteristics after the repair,²⁷⁴⁹ and the potential intervening changes in the public’s legitimate safety expectations,²⁷⁵⁰ become theoretically completely irrelevant for the application of harmonised product liability in the event that the product causes an accident after said repair. This runs completely contrary to the underlying rationale of art. 8(2) PLD-2024, which consists of accident-prevention by inducing actors who have control over accident risks to take increased care (see *supra* nrs. 108, 168 and 443). Of course, this goal is to a very limited extent still pursued as a result of the fact that potential product modifiers can (sometimes still) avoid art. 8(2) PLD-2024’s liability

²⁷⁴⁶ Art. 4(7) *ibid.*: “‘making available on the market’ means any supply of a product for distribution, consumption or use on the Union market in the course of a commercial activity, whether in return for payment or free of charge;”.

²⁷⁴⁷ There would have been a third problem, namely the fact that only when the product has been ‘put into service’ according to art. 8(2) *ibid.* would there be a newly started extinction period, while the person ‘making available a substantially modified product’ according to art. 8(2) *ibid.* would benefit from his liability being limited by the existing extinction period that had already been running since the product was originally placed on the market or put into service (art. 17(1)a *ibid.*). Fortunately, this problem is *de lege lata* avoided by the separate provision of art. 17(1)b *ibid.* See *supra* nr. 333 and *infra* nr. 464.

²⁷⁴⁸ Art. 8(3) *ibid.*

²⁷⁴⁹ Arts. 4(18) and 8(2) *ibid.* See *supra* nrs. 444–446.

²⁷⁵⁰ Art. 7(1) *ibid.* See also *supra* nrs. 179 and 310.

risk by not substantially modifying a product at all, such as by scrupulously complying with repair instructions and as much as possible restoring the product to its original state (cf. *supra* nrs. 444-445). Yet, it makes no sense that, once they have outside the manufacturer's control substantially modified the product, their liability risk becomes almost²⁷⁵¹ completely independent of how they have substantially modified the product. It would be much more preferable, not only in terms of efficient accident-prevention but also in terms of corrective justice and risk-internalisation (see also *supra* nrs. 127 and 128.c) that the independent substantial modifier's liability would be instead assessed at the moment of his own potential 'wrongdoing' or 'abnormal risk-taking' and not at the preceding moment when someone else had placed the original product on the market.

The issue does not occur when the substantial modifier 'puts the product into service', like a theme park which has refurbished its passenger train. Based on arts. 7(2)e and 8(2) PLD-2024, this liability is determined by a 'differentiated' defect assessment, which looks at substantially modified state of the product and the public's safety expectations existing at the more recent moment when the now substantially modified product is 'put into service' (see *supra* nr. 315 and *infra* nr. 458). While this approach is for the aforementioned reasons much more logical and preferable for an actor liable on the basis of art. 8(2) PLD-2024, it is even harder to justify why there should be such a remarkable difference in outcomes depending on whether the substantially modified product is 'made available' or 'put into service'. Moreover, also when the substantial modification occurs 'within the manufacturer's control' does the more logical equivalent of a 'differentiated' and not a 'single' defect assessment apply. Art. 7(2)e PLD-2024 postpones the defect assessment for the liability of existing defendants to the moment when the substantially modified product 'leaves the manufacturer's control' and art. 11(2)d PLD-2024 precludes invoking the posteriority defence with regards to this post-marketing substantial modification (see *supra* nrs. 436 and 447.a). In other words, both arts. 7(2)e, 11(2)d PLD-2024 as well as art. 8(2) PLD-2024 when the product is 'put into service' take the desirable and theoretically coherent approach for a situation where a product is during its lifecycle 'substantially modified' in terms of accident risks. Only where art. 8(2) PLD-2024 states that the product is 'made available', commit the drafters of the new Directive in my opinion a clear error.

Finally, it is worth contemplating why it was decided to insert a reference to 'making available on the market' in art. 8(2) PLD-2024, other than the fact that this is also the term used by the EUROPEAN LAW INSTITUTE in its aforementioned feedback²⁷⁵² and that this is the result of an amendment to the PLD Proposal 2022 relatively late in the legislative process. A possible explanation might be because the drafters were afraid that referring to 'placing on the market' would create the impression that defendants in the product's original distribution chain would no longer be subject to harmonised product liability in relation to the now substantially

²⁷⁵¹ Note that even under the 'single defect' concept, substantial modifiers 'making products available' according to art. 8(2) *ibid.*, still enjoy the defence of art. 11(1)g *ibid.* For the application of this defence, it still matters how many parts of the product are affected by their modification (see *infra* nr. 454). In this sense, the way how they substantially modify the product still matters.

²⁷⁵² European Law Institute, *European Commission's Proposal for a Revised Product Liability Directive: Feedback of the European Law Institute* (2022) 19.

modified product. This reasoning does of course not explain why there would not be a similar problem with stating that the substantial modifier can also ‘put into service’ the product, which is in terms of initiating liability under the PLD-2024 for a product the equivalent of ‘placing on the market’.²⁷⁵³ More problematically, however, this reasoning is simply incorrect. For example, a person injured by a product placed on the market by a quasi-manufacturer can still claim against also the product’s importer who had placed the same product, prior to the quasi-manufacturing, on the EU market. Similarly, a person injured by a collapsing bookshelf that had been refurbished, substantially modified and ‘put into service’ according to art. 8(2) PLD-2024 by a bookstore, can theoretically still also try to claim against defendants in the bookshelf’s original distribution chain like its manufacturer.²⁷⁵⁴ Of course, such parties who have previously placed a product on the market, can in addition to a potentially expired extinction period invoke the posteriority defence vis à vis defect origins dating from after the moment when they originally placed the product on the market. They furthermore benefit from a ‘differentiated defect’ concept that looks at the state of the product and the safety expectations existing when they placed the original product on the market and not a subsequent moment in its lifecycle.

It is therefore possible, when the reference in art. 8(2) PLD-2024 to ‘making available on the market’ is *de lege ferenda* changed to ‘placing on the market’, to also insert a disclaimer such as “[w]ithout prejudice to the liability for the same product of other economic operators”. However, this is in my opinion redundant and might create the incorrect impression that *a contrario* all prior liabilities would extinguish when a product, which has already been placed on the market, is being placed on the market again by another actor.

452. PROBLEM 2: THE ISSUES IN APPLYING THE DEFENCES OF ART. 11(1) PLD-2024 TO SOMEONE LIABLE ON THE BASIS OF ART. 8(2) PLD-2024 ARE EVEN WORSE WHEN THE PRODUCT IS ‘MADE AVAILABLE’ – The drafters of the PLD-2024 have seemingly forgotten about art. 8(2) PLD-2024 when they drafted the defences in art. 11(1) PLD-2024. This convoluted issue has already been studied *supra* nr. 266. We will return to it *infra* nr. 463, where the application of the defences to all potential liabilities under the PLDI of repairers and refurbishers is summarised.

Here, it suffices to point out that the fact that substantial product modifiers liable on the basis of art. 8(2) PLD-2024 either ‘put the product into service’ or ‘make it available’, leads to vastly different outcomes when applying the posteriority and development risk defences of art. 11(1)c,e PLD-2024 to these two sets of substantial product modifiers. Moreover, also applying *de lege lata* a broad, flexible interpretation of the not put into circulation defence so that it can be applied in a personal manner to persons liable on the basis of art. 8(2) PLD-2024, is made more difficult by the split between those substantial modifiers who have ‘put the product into service’ and those who have ‘made it available’. These additional issues would be resolved and the application of the defences to the liability of art. 8(2) PLD-2024 would

²⁷⁵³ Arts 2(1), 4(8)-(9) and 11(1)a *ibid*.

²⁷⁵⁴ More likely in practice, the quasi-manufacturer or bookstore are held liable in the previous examples and they claim in recourse (potentially) based on the PLDI against the importer or manufacturer who had previously placed those products on the market. *See also* art. 13(1) *ibid*.

become less problematic if art. 8(2) PLD-2024 would instead state that a substantially modified product is ‘placed on the market’.

453. PROBLEM 3: THE NEW RULES OF THE PLD-2024 WILL ONLY BECOME APPLICABLE TO THOSE LIABLE BASED ON ART. 8(2) PLD-2024 WHO ‘PUT INTO SERVICE’ THE SUBSTANTIALLY MODIFIED PRODUCT AND NOT TO THOSE WHO ‘MAKE IT AVAILABLE’ – Arts. 2(1) and 21 PLD-2024 declare that, while the new Directive will apply to products “*placed on the market or put into service*” from the date of its entry into force onwards, the rules of the PLD-1985 “*shall continue to apply with regard to products placed on the market or put into service before that date.*” In light of the current version of art. 8(2) PLD-2024, this would ironically mean that persons who outside the manufacturer’s control substantially modify products that have last been placed on the market or put into service prior to the PLD-2024’s date of entry into force and who subsequently ‘put those products into service’, become subject to this new liability and all other rules of the PLD-2024. In contrast, those merely ‘making available’ those substantially modified products that predate the entry into force of the PLD-2024, like most repairers and refurbishers who happen to substantially modify a product in the coming years, would simply continue to escape liability under art. 8(2) PLD-2024. While this would further strengthen the case of creatively interpreting the PLD-1985 to create a similar rule (see *supra* nrs. 437-441), it makes it especially clear what a mistake it is to use the term ‘making available’ in art. 8(2) PLD-2024. This undesirable outcome is avoided by simply referring *de lege ferenda* in art. 8(2) PLD-2024 to ‘placing on the market’ instead.

(5) *Art. 11(1)g PLD-2024: limitation to parts of the product affected by the modification*

454. GENERAL ASPECTS OF ART. 11(1)G PLD-2024 – Finally, a last integral part of liability of repairers, refurbishers and others on the basis of art. 8(2) PLD-2024 is what this dissertation calls the ‘modification defence’ of art. 11(1)g PLD-2024, which is exclusive to these defendants. Any person liable on the basis of art. 8(2) PLD-2024, regardless whether he ‘made available’ or ‘put into service’ the substantially modified product, is not liable for damage caused by a defect in said product if he proves that “*the defectiveness that caused the damage is related to a part of the product not affected by the modification.*”

It is of course significant that the PLD-2024 does not directly limit the liability of persons liable on the basis of art. 8(2) PLD-2024 to those parts of the product affected by their modification, but instead translates this into a separate defence. This means that the substantial modifier bears the burden of proof relating to this factual aspect (see *supra* nr. 205), about which injured parties have little to no information. The substantial modifier is indeed much better placed to offer this required proof, although it also means that he should take care to document the extent and scope of his intervention. A repairer might for example benefit from a clear contractual description about the precise parts of the product requiring remediation, which is something for which the proposed new European Repair Information Form can be helpful.²⁷⁵⁵ Additionally, he might further document in a repair survey, possibly

²⁷⁵⁵ Art. 4 Promoting Repair Directive 2024 requires B2C repair service providers to offer to consumers

complemented with photos, the extent of his intervention, which he can subsequently together with the invoice provide to the consumer at the completion of the repair process.

As discussed *supra* nr. 319, this modification defence takes priority over other defences. In the practical sense that, if a defect that caused the damage is situated in an unaffected part of the product, then it is not worth trying to invoke for example the compliance or posteriority defences, since proving the modification defence of art. 11(1)g PLD-2024 can simply suffice. However, the person liable on the basis of art. 8(2) PLD-2024 can also be subject to harmonised product liability for the same product on other grounds. For example, a repairer or refurbisher may also be liable for the entire repaired or refurbished product as a distributor or even as a quasi-manufacturer (see *supra* nrs. 430 and 432). In such cases, the other defences remain relevant even when art. 11(1)g PLD-2024 can be successfully invoked, because the defendant remains liable for defects in the entirety of the product on another basis than art. 8(2) PLD-2024 (see *supra* nr. 319).

Finally, it is important to note that the modification defence confirms that the substantial product modifier remains liable for all defects that exist in those parts of the product that have been affected by his modification(s) (see *infra* nr. 455 regarding the precise extent). The substantial modifier remains on the basis of art. 8(2) PLD-2024 responsible for these parts in their entirety. Consequently, if a part of the product that has been affected by his modification has a defect that was already present when the product was placed on the market and if such pre-existing defect causes damage, then the substantial modifier will effectively be liable. Even though this defect is not the result of his intervening substantial modification, the modification defence of art. 11(1)g PLD-2024 does not apply to this pre-existing defect due to its location in a part of the product affected by the modification.

455. INTERPRETATION OF ART. 11(1)G PLD-2024 WITH REGARDS TO NON-SUBSTANTIAL MODIFICATIONS – It can seem surprising that art. 11(1)g PLD-2024 refers to “*the modification*” and not “*the substantial modification*.” After all, unlike product modifications ‘within the manufacturer’s control’ (*de lege lata*),²⁷⁵⁶ the modification determining liability under art. 8(2) PLD-2024 must of course always be ‘substantial’. Nevertheless, this can be seen as an example of prudent drafting, because it actually answers the question how arts. 8(2) and 11(1)g PLD-2024 must be applied when a person modifies different parts of the product but only some of them in a ‘substantial’ manner. This is thus a situation where the person liable on the basis of art. 8(2) PLD-2024 has, in addition to one or more substantial modifications, also ‘modified’ some parts of the product compared to its original state but not in a ‘substantial’ manner art. 4(18) PLD-2024.²⁷⁵⁷ For example, an independent bicycle repairer replaces a tire with a new type from a third-party origin but which does not represent a change in accident risks, but he also tries to repair and ‘optimize’ the brakes in a way that now makes them snap when under heavy

this completed information form prior to being bound by a contract. According to art. 4(4)d *ibid.*, this form should stipulate “*the nature of the defect and the type of repair suggested*,”.

²⁷⁵⁶ Art. 4(5)a(ii) PLD-2024. See also *supra* nrs. 402-404.

²⁷⁵⁷ Cf. the analysis *supra* nr. 444 of the required ‘modification’ compared to how the product was placed on the market or put into service with the analysis *supra* nr. 445 of the required ‘substantial’ nature in terms of product safety (art. 4(18) *ibid.*) of the modification.

pressure. The current version of art. 11(1)g PLD-2024 makes clear that this repairer will not only become liable on the basis of art. 8(2) PLD-2024 when the change to the brakes is considered a substantial modification, but that this liability will then also extend to potential defects in the new tire. Even though the latter was not a ‘substantial modification’ it is nevertheless a ‘modification’ in the product implemented by him, for which he cannot invoke the modification defence of art. 11(1)g PLD-2024.

Admittedly, the provision can also be interpreted differently, by holding that “*the modification*” only refers to the modification “*as referred to in Article 8(2)*”,²⁷⁵⁸ which would mean that the defence would still exonerate the defendant for defects in parts of the product he had modified in only a non-substantial manner. However, this seems less persuasive based on the literal text of art. 11(1)g PLD-2024, especially when it is read in light of the Directive’s underlying goal of maximally protecting injured parties (see *supra* nr. 168). This dissertation’s normative framework offers a more nuanced answer to the question which interpretation is preferable. It still seems that both corrective justice and the goals of efficiency in accident-prevention and risk-allocation support the aforementioned solution where substantial modifiers remain also liable for defects in parts of the product they have ‘modified’ in only a non-substantial manner. Yet, this rationale is considerably weaker than vis à vis defects in substantially modified parts of the product, because the latter category implies a greater control over accident risks and therefore a possibility to take increased care as well as a greater measure of potential ‘wrongdoing’ in terms of corrective justice (cf. *supra* nr. 443).

Finally, it is important to emphasize that art. 11(1)g PLD-2024 still requires a ‘modification’. As discussed *supra* nr. 444, this entails a change, however minute, compared to the state of the product when it was originally placed on the market or put into service. In other words, when the repairer would in the aforementioned example additionally have tightened some screws or replaced the bike’s saddle with an identical, original spare part, then these actions by the substantial modifier do not constitute ‘modifications’ of the product compared to its original, pre-marketing state. The bike repairer should therefore remain able to successfully invoke the modification defence of art. 11(1)g PLD-2024 when defects in those parts of the bike subsequently cause an accident.

456. FLEXIBLE INTERPRETATION OF ART. 11(1)G PLD-2024 ACCORDING TO IMPACT OF REFURBISHMENT – The previous section outlined the general principles of art. 11(1)g PLD-2024, for which a repair process was a useful example. This is because this circular strategy is limited to remediating specific, already apparent technical issues in a product (see *supra* nr. 88). In contrast, the strategy of refurbishment concerns a product in its entirety, by aiming to restore a product as a whole to a functionally and cosmetically satisfying condition (see *supra* nr. 89). Does this mean that a refurbisher, who happens to substantially modify the product and operates ‘outside the manufacturer’s control’, will find no relief at all in the defence of art. 11(1)g PLD-2024? After all, all parts of the product are ‘affected’ by the refurbishment. Fortunately for refurbishers, the answer is no and there are still possibilities for them to invoke this modification defence. Two reasons help to explain this.

²⁷⁵⁸ Art. 11(1)g *ibid*.

First of all, this is due to the aforementioned fact that the modification defence can still be applied to parts of the product that have not been ‘modified’ compared to their original state when the product was placed on the market or put into service (see *supra* nr. 455). Hence, many parts of for example a refurbished iPhone, which are merely cleaned or which are replaced in a flawless manner by identical, original spare parts, are not ‘modified’ and therefore still allow the refurbisher to escape liability for defects in those parts based on art. 11(1)g PLD-2024. However, if the refurbisher improperly reassembles the battery, which leads to a risk of a short circuit, or if he replaces a component with a newer spare part with different features, which creates a change in underlying accident hazards, then these are parts of the product that have been modified (potentially even substantially). Consequently, the defence cannot be applied when damage has been caused by defects in those parts of the product.

Second, this is because refurbishment is not a strategy that methodically inspects, disassembles, reprocesses, cleans and tests every single component and feature of a product in the same manner as remanufacturing or manufacturing new products, which also means that the resulting quality-standard is not as high.²⁷⁵⁹ Consequently, there are potentially sub-component level areas of a product or technically highly specialized, remote risks, which can still be interpreted as having not been affected by the intervening refurbishment. This is akin to how this dissertation has interpreted art. 11(1)g PLD-2024 vis à vis repurposing *supra* nr. 267. Also for eventual defects in these, for most refurbishments admittedly relatively rare areas of potential concern that remain functionally unaffected by the refurbishment, it can be said that it should remain possible to still apply the modification defence of art. 11(1)g PLD-2024. This demonstrates clearly why it is important that the substantial modifier bears the burden of proving the defence (cf. *supra* nr. 454) and why it is important that defendants in the product’s original distribution chain remain fully liable for pre-existing defects in the same product, even when the product has in the meantime been substantially modified (cf. *supra* nr. 451).

§ 2. Defect

457. SINGLE DEFECT ASSESSMENT APPLICABLE TO DISTRIBUTORS AND SUBSTANTIAL MODIFIERS WHO ‘MADE AVAILABLE’ THE REPAIRED PRODUCT OR AN INTEGRATED SPARE PART – The liability of repairers and refurbishers of products who are held liable on a secondary basis as a distributor (see *supra* nr. 430) or of online platforms liable for repaired or refurbished products distributed through their platform,²⁷⁶⁰ is based on a ‘single defect’ assessment that returns to the moment in time when the original, pre-repaired or pre-refurbished product had been placed on the market.²⁷⁶¹ The same holds true for the secondary liability as distributors of repairers

²⁷⁵⁹ Y. Chen and F. Chen, ‘On the Competition between Two Modes of Product Recovery: Remanufacturing and Refurbishing’ (2019) 28 *Production and Operations Management* 2983, 2985; F. Lüdeke-Freund, S. Gold and N. Bocken, ‘A Review and Typology of Circular Economy Business Model Patterns’ (2019) 23 *Journal of Industrial Ecology* 36, 49. Cf. *supra* nrs. 89-90.

²⁷⁶⁰ Art. 3(3) PLD-1985; art. 8(3)-(4) PLD-2024. See also *supra* nrs. 177 and 178.d-e.

²⁷⁶¹ Art. 6(1)c PLD-1985; art. 7(2)e PLD-2024.

and refurbishers who integrate a spare part in a product they do not subsequently use themselves (see *supra* nr. 433.a). As heavily criticised *supra* nr. 451, this ‘single defect’ theoretically applies as well to the liability based on art. 8(2) PLD-2024 of persons who ‘make available’ a substantially modified product or a substantially modified spare part (see *supra* nr. 433.e). This dissertation proposes to change this *de lege ferenda*, by stipulating that substantially modified products are ‘placed on the market’ instead, which would result in a ‘differentiated defect’ assessment.²⁷⁶²

As already previously discussed *supra* nrs. 311 and 372, the ‘single defect’ assessment means that the state of the product at the time of this ‘making available on the market’ and the legitimate safety expectations held by the public at that time do not matter to harmonised product liability’s defect assessment. Hence, the fact that a trader who distributes repaired second-hand products fails to inspect the product properly and does not warn the purchasing consumer about a pre-existing defect, might be particularly relevant to national (extra)contractual liability law but is theoretically not relevant to the defect assessment.²⁷⁶³ This feature is intrinsic to the theoretical fabric of the PLDI, which fixates at the moment when a product is placed on the market or put into service. Moreover, it is also characteristic of the secondary nature of the liability imposed on distributors and online platforms,²⁷⁶⁴ if only because it is on average more beneficial for defendants to go back in time to an earlier state of the product and earlier safety expectations of the public (cf. *supra* nr. 315). This dissertation therefore does not generally oppose this ‘single defect’ assessment, although it must be admitted that it is often challenging to apply in practice due to the inclination of national liability law to look at the defendant’s conduct and the product’s state at the time when it was ‘made available’.

However, it is a different matter for the substantial modifier who has ‘made the product available’. Here, the ‘single defect’ assessment ceases to be appropriate and logical.²⁷⁶⁵ As an illustration, based on the current text of arts. 7(2)e and 8(2) PLD-2024, the defect assessment for the liability of a refurbisher who has substantially modified and then sold (‘made available’) an e-bike, cannot consider the fact that the e-bike precisely first became defective as a result of modifications by the refurbisher. Likewise, a repair service provider has for example substantially modified an angle grinder through the omission of failing to adequately repair previous, pre-identified damage he was tasked to remediate (see *supra* nr. 446). Then, the defect assessment for a claim against such substantial modifier must look only at whether the angle grinder had already been defective when it was last placed on the market by its manufacturer, which completely disregards the potential consequences of the substantial modification.

²⁷⁶² See relating to this proposed amendment in particular *supra* nrs. 265, 311 and 451.

²⁷⁶³ It is another matter that art. 11(1)c PLD-2024 now personally applies the posteriority defence to distributors, which is a rule that runs contrary to this ‘single defect’ mechanism and which this dissertation proposes to change *de lege ferenda* (see *supra* nr. 322.b-c).

²⁷⁶⁴ See also arts. 6(1)c and 7(1)c PLD-1985; arts. 7(2)e and 11(1)c PLD-2024. Cf. *supra* nrs. 184, 195, 310 and 372.

²⁷⁶⁵ See in particular the criticisms *supra* nrs. 265 and 451.

Admittedly, it can be expected that lawyers and judges will in practice often not apply such a ‘single defect’ assessment and will treat cases where substantially modified products are ‘made available’ according to the ‘differentiated defect’ concept discussed next. However, this would strictly speaking violate the text of current arts. 7(2)e and 8(2) PLD-2024 and would also run contrary to simultaneously still applying the ‘single defect’ assessment to distributors and online platforms.

458. DIFFERENTIATED DEFECT ASSESSMENT APPLICABLE TO REPAIRERS AND REFURBISHERS WHO QUASI-MANUFACTURED OR WHO SUBSTANTIALLY MODIFIED ‘OUTSIDE THE MANUFACTURER’S CONTROL’ AND SUBSEQUENTLY PUT INTO SERVICE A REPAIRED PRODUCT OR SPARE PART (AS WELL AS SELF-MANUFACTURERS AND IMPORTERS OF SPARE PARTS) – The defect assessment for all other possible grounds of harmonised product liability imposed on repairers and refurbishers is more intuitive, because it applies a ‘differentiated defect’ concept, which looks at the product’s state and the public’s legitimate safety expectations existing at the time when the product or spare part was after the repair or refurbishment placed on the market or put into service.

For example, a theme park refurbishes its own food carts and in doing so makes them heavier, these carts are subsequently put into service and one of the food carts’ brake mechanism malfunctions on a slope, which results in a crash that seriously injures two visitors. In this case, the defect assessment for the theme park’s liability based on art. 8(2) PLD-2024 must appreciate the cart’s state on the moment when it was put into service after the substantial modification. Likewise, when a repairer manufactures, quasi-manufactures or imports a spare part which it integrates in a product as part of a repair service, then the question whether the spare part is defective for a resulting claim based on the repairer’s primary liability limited to the spare part (see *supra* nr. 433.b-d), must also look at this moment when the repairer had placed the spare part on the market. This differentiated defect assessment, which naturally fits with primary harmonised product liability, has already been examined in more detail *supra* nrs. 315-316.

459. DIFFERENTIATED DEFECT ASSESSMENT APPLICABLE TO DEFENDANTS IN ORIGINAL DISTRIBUTION CHAIN FOR WHICH LIABILITY HAS BEEN EXTENDED PURSUANT TO ART. 7(2)e PLD-2024, AS A RESULT OF A PRODUCT REPAIR OR REFURBISHMENT ‘WITHIN THE MANUFACTURER’S CONTROL’ – The defect assessment for the existing harmonised product liability of defendants in a product’s original distribution chain can be extended on the basis of art. 7(2)e PLD-2024, when a repair or refurbishment occurs ‘within the manufacturer’s control’, as defined by art. 4(5) PLD-2024. Although the latter be interpreted more broadly, this dissertation argues that it must *de lege lata* consist of a repair or refurbishment by the manufacturer or performed with his authorisation or consent that either effectively integrates a spare part in the product or effectively ‘modifies’ the product (cf. *supra* nrs. 402-403).²⁷⁶⁶

²⁷⁶⁶ *De lege ferenda*, this dissertation proposes to amend art. 4(5) PLD-2024 by making it match as much as possible arts. 8(2) and 11(2) *ibid.* In the context of repairs and refurbishments, this would mean that these only still occur ‘within the manufacturer’s control’ with the effect of arts. 7(2)e and 11(2)d *ibid.* if they ‘substantially modify’ a product or spare part.

Supra nrs. 435-436, this extension of existing liability of defendants in the original distribution chain has already been examined. In essence it consists of a postponement of the defect assessment to the moment when the repaired or refurbished product, which has been modified or received a spare part ‘within the manufacturer’s control’, “*left the control of the manufacturer*”.²⁷⁶⁷ Hence, this can also be called a ‘differentiated defect’ concept, because the harmonised product liability of these existing defendants is no longer based on the moment when the product had been placed on the market or put into service but is now postponed instead.

Furthermore, the same principles apply when a repairer or refurbisher would either modify a spare part or integrate a new sub-component in it, if he would be the spare part’s own manufacturer or act under the latter’s authorisation or consent. The existing liability of defendants in the used spare part’s distribution chain would then similarly be postponed to this moment when it leaves the manufacturer’s control (see *supra* nr. 433.f).

Finally, only when the product or spare part would be ‘substantially modified’ within the manufacturer’s control, does it become no longer possible to invoke the posteriority defence if a harmful defect resulted from this post-marketing ‘substantial modification’.²⁷⁶⁸ This is why this has been called the ‘fully extended’ liability of defendants in the original distribution chain (see *supra* nrs. 405.c and 436).

§ 3. Defences

460. IN GENERAL – Preceding sections of this Chapter have already discussed aspects of applying the different harmonised product liability defences in the context of product repairs and refurbishments. *Supra* nr. 412, it has for example been examined how the not put into circulation defence under both Directives can be invoked in this context,²⁷⁶⁹ by distinguishing when precisely a product is ‘placed on the market’ or ‘made available’ by a defendant. *Supra* nr. 433, it has been examined how the component defence,²⁷⁷⁰ although ostensibly attractive, cannot be logically applied to the grounds of primary and secondary liability of repairers and refurbishers who use spare parts. And arguably the most important defence in terms of liability of repairers and refurbishers under the new Directive, the new modification defence of art. 11(1)g PLD-2024, has been examined *supra* nrs. 454-456. Moreover, past Chapters have already studied more general aspects of harmonised product liability’s substantive defences.

This is why it can suffice here to simply provide an overview of the different defences available to the different defendant qualifications that repairers and refurbishers can incur, as well as to what extent these must be applied in a ‘personal’ or ‘manufacturer-specific’ manner (see *supra* nrs. 317 et seq.). In the next section, it is discussed how the different defences must be applied to repairers liable as quasi-manufacturers or subject to traditional grounds of primary liability in relation to spare parts. *Infra* nr. 462, the analysis looks at the application of

²⁷⁶⁷ Art. 7(2)e *ibid*. See also *supra* nr. 435.

²⁷⁶⁸ Art. 11(2)d *ibid*.

²⁷⁶⁹ Art. 7(a) PLD-1985; art. 11(1)a-b PLD-2024. See also *supra* nr. 194.

²⁷⁷⁰ Art. 7(f) PLD-1985; art. 11(1)f PLD-2024. See also *supra* nr. 201.

the different defences vis à vis the in practice prevalent qualification of repairers and refurbishers as distributors of products or spare parts, not only *de lege lata* but also *de lege ferenda*. *Infra* nr. 463, the challenge is discussed of how to apply these defences to repairers and refurbishers liable on the basis of art. 8(2) PLD-2024, which makes clear that the current text of art. 11(1) PLD-2024 does not fully consider this novel ground of harmonised product liability.

461. APPLYING THE DIFFERENT DEFENCES VIS À VIS REPAIRERS AND REFURBISHERS LIABLE AS QUASI-MANUFACTURERS OF PRODUCTS OR AS (QUASI-)MANUFACTURERS OR IMPORTERS OF SPARE PARTS – All defences under the PLD-2024 but also according to a majority in the literature under the PLD-2024 must be applied to quasi-manufacturers in a personal manner (see *supra* nr. 321). Hence a refurbisher who affixes a distinguishing feature on a refurbished toddler's chair,²⁷⁷¹ is for example only able to invoke the posteriority defence for defects that originate after the moment when he placed the refurbished chair on the market but not for defects that originated during the previous use phase between the moment when the original chair was placed on the market and the placing on the market of the quasi-manufactured, refurbished chair.

All defences must also be personally applied to repairers and refurbishers who happen to be liable as manufacturers, quasi-manufacturers or importers of spare parts (see *supra* nrs. 317 and 320-321).²⁷⁷² For example, a company that imports spare parts for repairing Japanese kitchen devices can invoke the not put into circulation defence if for example a set of spare parts for a flame grill for which the conformity assessment was not yet completed are stolen when they were stored in a bond warehouse and, ultimately, used in a repair somewhere in the EU that subsequently resulted in a serious accident. The repairer using those spare parts cannot successfully invoke the not put into circulation defence. And neither of these parties could invoke this defence if the spare parts had been prematurely and unintentionally released from a batch that was still being tested by the manufacturer in Japan.

462. APPLYING THE DIFFERENT DEFENCES VIS À VIS REPAIRERS AND REFURBISHERS LIABLE AS DISTRIBUTORS OF PRODUCTS OR OF SPARE PARTS – In the more common scenarios where repairers or refurbishers are subject to secondary liability as distributors either of repaired or refurbished products (see *supra* nr. 430) or of spare parts they integrate in those products (see *supra* nr. 433.a),²⁷⁷³ matters are slightly more complicated.

Under the PLD-1985, there is a lack of certainty on how to interpret these defences but a majority seems to opt in favour of personal interpretations of all defences, while a substantial majority advocates for producer-specific interpretations instead, in particular for the posteriority and development risk defences.²⁷⁷⁴ This would for example mean that a company that repairs and resells gym equipment cannot according to the majority position invoke the posteriority defence of art. 7(c) PLD-1985 for defects that arose in those devices after they were placed on the market but prior to their repair and resale.

²⁷⁷¹ Art. 3(1) PLD-1985; arts. 4(10)b and 8(1)a-b PLD-2024. See *supra* nr. 432.

²⁷⁷² Art. 3(1)(2) PLD-1985; arts. 4(10)(12)(14) and 8(1) PLD-2024. See *supra* nr. 433.b-d.

²⁷⁷³ Art. 3(3) PLD-1985; arts. 4(14) and 8(3) PLD-2024.

²⁷⁷⁴ Cf. authors cited *supra* footnotes 2039, 2044 and 2045.

The new Directive largely confirms this pre-existing majority view, but only the development risk defence seems to result in a manufacturer-specific interpretation vis à vis distributors (see *supra* nr. 322.c-d). For example, a company refurbishes and resells consumer electronic wearables, like smartglasses and smart earbuds, which eventually turn out to make consumers ill as a result of neurological damage, caused by the interference by some electromagnetic frequencies with previously unknown neurological processes that only results from long-term, very intensive use. Yet, these defendants could now successfully invoke art. 11(1)e PLD-2024 when the strict conditions of the development risk defence would have been fulfilled at the time when these products had been placed on the market by their manufacturer,²⁷⁷⁵ even though there existed already more specialized knowledge about these risks when they later on personally refurbished and resold those products.²⁷⁷⁶

Supra nr. 322.b-c, this dissertation has argued to *de lege ferenda* also amend the posteriority defence of art. 11(1)c PLD-2024 by making it apply, just like art. 11(1)e PLD-2024 just mentioned above, only in a manufacturer-specific manner to distributors. With regards to the same defence in art. 7(b) PLD-1985, the minority view of a producer-specific interpretation could then also be confirmed for accidents involving products that remain under the scope of the old Directive.²⁷⁷⁷ Concretely, this would for example mean that a company that repairs and then leases second-hand household appliances like tumble dryers would be able to invoke this defence for defects arising in those products after they were placed on the market but prior to when they were repaired and made available by them. Of course, non-harmonised national (extra)contractual liability law continues to apply in parallel.²⁷⁷⁸ It seems logical to make secondary harmonised product liability, which only applies because no other defendants can be identified, not unnecessarily strict through a personal interpretation of the posteriority defence, which would imply an obligation to fully inspect and vouch for the absence of defects in resold products.

Admittedly, the case for such a stricter liability of distributors becomes stronger when distributors happen to first repair or refurbish the products they make available. Yet, the appropriate criterion to tie a full, new harmonised product liability risk to a product repair or refurbishment is whether it has substantially modified the product, pursuant to arts. 8(2) or 11(2)d PLD-2024.²⁷⁷⁹ This should not depend on whether a repairer or refurbisher happens to be held liable on a secondary basis. Not only does the latter depend solely on whether no other defendants can be identified rather than something to do with how the repair or refurbishment is performed. It also creates a disproportionate difference with pure repair or refurbishment service providers, who are not subject to secondary liability as distributors

²⁷⁷⁵ See *supra* nr. 200 on the stringent conditions to successfully invoke the development risk defence.

²⁷⁷⁶ This is of course a matter where post-marketing product safety obligations (which are also borne by distributors, e.g. art. 12 General Product Safety Regulation 2023/988/EU) become relevant. This refurbishing distributor may of course still be liable on the basis of national contractual or extracontractual liability. And note that this post-marketing liability may even have the same theoretical basis as the PLD, since it falls outside the scope of harmonisation, as argued *supra* nr. 213.d.

²⁷⁷⁷ See art. 21 PLD-2024.

²⁷⁷⁸ Art. 13 PLD-1985; art. 2(4)b PLD-2024. See also *supra* nr. 171.

²⁷⁷⁹ See also the arguments in favour of the substantial-modification-approach *supra* nr. 443 and the discussion of the application of the defences, i.a. the posteriority defence, in the next two sections.

(see *supra* nrs. 424 and 430) and who are therefore never subject to such a personal interpretation of the posteriority defence. In conclusion, the reasons for removing *de lege ferenda* the reference in art. 11(1)c PLD-2024 to “*or, in the case of a distributor, made available on the market*” (see *supra* nr. 322.b-c), also continue to hold when distributors first personally repair or refurbish the products they make available on the market.

463. APPLYING THE DIFFERENT DEFENCES VIS À VIS REPAIRERS AND REFURBISHERS LIABLE AS SUBSTANTIAL MODIFIATORS ON THE BASIS OF ART. 8(2) PLD-2024 – It has already been mentioned *supra* nr. 265 how the current text of the not put into circulation, posteriority and development risk defences in art. 11(1)a-c,e PLD-2024 seems to have forgotten about art. 8(2) PLD-2024’s separate liability of substantial product modifiers acting outside the manufacturer’s control. The latter is of course a particularly important ground of harmonised product liability for repairers and refurbishers of products, as examined *supra* nrs. 442-456. Moreover, when repairers or refurbishers would happen to substantially modify spare parts, they can also to this extent be subject to art. 8(2) PLD-2024 (see *supra* nr. 433.e). Again, the main underlying issue is the fact that art. 8(2) PLD-2024 distinguishes between substantial modifiers that ‘make available’ and those that ‘put into service’ substantially modified products (see *supra* nrs. 450 and 452). As discussed below, this results in particular for the posteriority and development risk defences in issues that necessitate amendments.

- a. Repairers or refurbishers liable on the basis of art. 8(2) PLD-2024 for substantially modifying a repaired or refurbished product or used spare part, should logically only be able to apply the not put into circulation defence from their personal perspectives, as argued *supra* nr. 318. However, the text of art. 11(1)a-b PLD-2024 explicitly limits both iterations of the new not put into circulation defence to “*in the case of a manufacturer or importer*” and “*in the case of a distributor*”. Since defendants liable on the basis of art. 8(2) PLD-2024 are “*considered to be a manufacturer*”, it may seem straightforward to simply apply the defence of art. 11(1)a PLD-2024 to them. But this is difficult to reconcile with the fact that most of these defendants are by the current version of art. 8(2) PLD-2024 considered to ‘make available’ (rather than ‘place on the market’) the substantially modified product. This element would in turn advocate to apply the defence of art. 11(1)b PLD-2024 to these defendants.

All in all, this is a purely theoretical, minor issue, since both options, one of which must apply, lead to the same personal interpretation of this defence vis à vis substantial product modifiers. Nevertheless, this is another point that would be coherently resolved if *de lege ferenda* the reference in art. 8(2) PLD-2024 to ‘making available’ would be replaced by ‘placing on the market’.

- b. Like for all other defences, it would be desirable that the posteriority defence of art. 11(1)c PLD-2024 would apply to substantial modifiers in a personal manner (see *supra* nr. 318). However, also this new provision has explicitly limited its personal application vis à vis actors ‘making products available on the market’ to “*in the case of a*

distributor".²⁷⁸⁰ If read literally, this would mean that repairers and distributors liable on the basis of art. 8(2) PLD-2024 who 'make available' the substantially modified, repaired or refurbished product, suddenly enjoy the benefit of being able to invoke this defence in a manufacturer-specific manner, which would take as the point of reference the moment when the original product had been "*placed on the market*".²⁷⁸¹

This outcome would of course be rather absurd and detrimental to injured parties, especially when compared to the application of the same art. 11(1)c PLD-2024 to other defendants. For example, a company that refurbishes and resells an e-step, liable based on art. 8(2) PLD-2024 for having substantially modified this product, could invoke this posteriority defence to escape from liability for defects in those e-steps resulting from their past use or even resulting from the way in which they have been substantially modified by the company itself. This is because all these defects originated after the moment when the original e-step had been placed on the market. In contrast, a holiday park that uses e-steps to enable employees to quickly move across its vast terrains and that would similarly refurbish them in a manner leading to liability based on art. 8(2) PLD-2024, could only invoke the posteriority defence in a more logical and for injured parties more beneficial, personal manner. This is because it has 'put into service' rather than 'made available' those e-steps. The defence offers the holiday park only protection against defects originating after they have put into service those substantially modified e-steps, for example as a result of a third party tampering with them. Likewise, when substantial modifications occur 'within the manufacturer's control', then art. 11(2)d PLD-2024 also allows existing defendants to only apply the posteriority defence to defects arising after this substantial modification. And even mere distributors of products are now according to art. 11(1)c PLD-2024, at least *de lege lata* (see *supra* nr. 322.b-c), subject to a personal interpretation of this defence.

In other words, a manufacturer-specific interpretation enjoyed by repairers, refurbishers and other defendants liable on the basis of art. 8(2) PLD-2024 who make substantially modified products 'available on the market', is entirely disproportionate. And it is also undesirable from the perspectives of accident-prevention and corrective justice. After all, these substantial modifiers have significant control over accident risks and take abnormal risks, for which they should not be able to simply escape liability for most defects through a manufacturer-specific interpretation of the posteriority defence (see also *supra* nrs. 319 and 443).

Hence, *de lege lata*, this dissertation proposes to interpret art. 11(1)c PLD-2024 in a manner where the reference to "*in the case of a distributor*" also encompasses those liable on the basis of art. 8(2) PLD-2024 who make substantially modified products available on the market. This is admittedly a stretch, because art. 8(2) PLD-2024 imposes a totally different, primary liability for which it declares defendants to be "*considered to be a manufacturer of that product*". Therefore, a more elegant and comprehensive solution *de lege ferenda*, is to amend art. 8(2) PLD-2024 by determining that a substantially modified product is 'placed on the market' instead of being 'made available'. This preferred

²⁷⁸⁰ Art. 11(1)c PLD-2024.

²⁷⁸¹ Ibid. See also *supra* nr. 266.b.

solution would of course, as previously discussed, not only solve the issue of coherently applying the posteriority defence but also other issues (see *supra* nrs. 451-453 and 463.a.).

- c. Finally, the development risk defence is applicable to distributors in a manufacturer-specific manner, which is something that can be agreed with (see *supra* nr. 322.d). However, due to the current text of art. 11(1)e PLD-2024, this also means that defendants who are liable based on art. 8(2) PLD-2024 for ‘making available’ a substantially modified product, can similarly invoke this defence in a manufacturer-specific manner. Following up on the example raised *supra* nr. 462, this would mean that the refurbisher and reseller of those smartglasses and smart earbuds who happens to be liable based on art. 8(2) PLD-2024, can still evade harmonised product liability through this defence when the underlying neurological health risk had been unknowable at the time these devices were placed on the market, even though the risk was already known when he more recently substantially modified those devices and made them available. In contrast, repairers, refurbishers and other defendants liable on the basis of art. 8(2) PLD-2024 for ‘putting into service’ a substantially modified device, are not be able to do the same and can only invoke art. 11(1)e PLD-2024 in a personal manner.

Such personal interpretation of the development risk defence is in light of efficient accident-prevention and corrective justice desirable for all defendants liable on the basis of art. 8(2) PLD-2024 (see also *supra* nr. 318). After all, when certain risks are objectively knowable at the time when these defendants personally determine accident risks by substantially modifying a product, then they should remain liable for these risk on the basis of the ‘quasi-strict’ liability harmonised product liability. Rather than trying to amend the text of art. 11(1)e PLD-2024, this can again be solved *de lege ferenda* in a theoretical coherent manner by replacing the reference to ‘making available’ in art. 8(2) PLD-2024 to ‘placing on the market’.

§ 4. Extinction period

464. EXTINCTION PERIOD APPLICABLE TO REPAIRERS AND REFURBISHERS WHO DO NOT SUBSTANTIALLY MODIFY THE DEFECTIVE PRODUCT OR SPARE PART – This dissertation has studied *supra* nrs. 331-333, how the extinction period of art. 11 PLD-1985 must be interpreted vis à vis different defendants and ultimately argued in favour of a coherent approach that personally applied a new period for every defendant subject to primary liability but a producer-specific interpretation for suppliers subject to secondary liability. This is also the approach taken by art. 17(1) PLD-2024. Consequently, under both existing and new product liability rules, a repairer or refurbisher who is liable for the repaired product as a quasi-manufacturer or who is liable for defective spare parts as a (quasi-)manufacturer or importer, will be subject to a newly started extinction period when he places this product or spare part on the market or puts it into service. In contrast, a repairer or refurbisher who is subject to secondary liability as a distributor (or, under the PLD-1985, as a supplier) of the product or of a spare part he integrates during the repair or refurbishment, benefits from the fact that the applicable extinction period has

already been running since the product or spare part was placed on the market or put into service. Alternative interpretations of art. 11 PLD-1985 have been discussed *supra* nrs. 332 and 334, but are not reiterated here for the sake of simplicity.

The repairers who are merely subject to secondary liability, who thus benefit from avoiding a separate extinction period starting when they made the product available, are likely to face practical difficulties in proving the exact date when the product was placed on the market or put into service, given that they were ostensibly unable to timely exonerate themselves by identifying other defendants. Yet, some elements of indicative proof of an approximative starting date for the applicable, ‘manufacturer-specific’ extinction period are available, as discussed *supra* nr. 335.

Finally, elsewhere, this dissertation has criticised the current, uniform and rigid duration of the extinction period of in principle ten years. Instead, it has proposed *de lege ferenda* to base for each product type the applicable extinction period’s duration on the average expected lifespan of the product, extended with a ‘safety margin’ period reflecting protection during reasonably foreseeable product misuse (reuse) (see *supra* nrs. 246-247). Also in the context of liability of repairers and refurbishers, this would be a desirable solution. This is mainly because the current 10-year period is for some less durable products too long, which would make it problematic that defendants subject to primary liability face a restarted period. Conversely, it is for many, other products too short, especially when considering the product lifetime extension potential of circular strategies like repairs and refurbishments, which would make it more problematic that repairers and refurbishers merely subject to secondary liability only remain subject to liability for the remainder of this already too short extinction period, if it has not already expired. The extinction period based on average expected product lifetimes would mitigate these issues.

465. EXTINCTION PERIOD APPLICABLE BASED ON ART. 17(1)B PLD-2024 TO REPAIRERS AND REFURBISHERS WHO SUBSTANTIALLY MODIFY THE DEFECTIVE PRODUCT OR SPARE PART: OUTSIDE, BUT ALSO WITHIN THE MANUFACTURER’S CONTROL? – Art. 17(1)b PLD-2024 holds that a separate extinction period “*shall run from: [...] in the case of substantially modified products, the date on which that product was made available on the market or put into service following its substantial modification.*” This avoids the same issues that plague the application of the defect assessment and the posteriority and development risk defences to the liability based on art. 8(2) PLD-2024 of repairers, refurbishers and others who have outside the manufacturer’s control substantially modified a product and then ‘made it available’ (cf. *supra* nrs. 451-452 and 463). For all defendants liable based on art. 8(2) PLD-2024, a separate new extinction period now starts. This is logical given their primary liability and this matches perfectly with the solution brought forward by art. 17(1)a PLD-2024 as well as the interpretation of art. 11 PLD-1985 advocated for *supra* nr. 333 and discussed in the preceding section. The fact that substantial product modifiers are being imposed a new, separate extinction period, is also desirable based on efficient accident-prevention and corrective justice, given how much they control and steer accident risks (see also *supra* nr. 443).

However, there seems to be one²⁷⁸² loophole in art. 17(1)b PLD-2024: it forgets about substantial product modifications occurring within the manufacturer's control. These 'fully extend' the liability of existing defendants in the product's distribution chain and, importantly cannot invoke the posteriority defence in relation to the substantial modification.²⁷⁸³ This liability-extension is for all intents and purposes the 'mirror image' of the liability based on art. 8(2) PLD-2024 who similarly substantially modify the product but do so 'outside the manufacturer's control'. The same arguments that support the current start of a new extinction period for those liable based on art. 8(2) PLD-2024, as referenced above, equally apply to defendants who see their liability being extended according to arts. 7(2)e and 11(2)d PLD-2024 for a substantial modification within the manufacturer's control.

Therefore, for purposes of efficient accident-prevention and corrective justice, it would be desirable to *de lege ferenda* amend art. 17(1)b PLD-2024 by adding at the end of this provision "*or the date when the product left the control of the manufacturer.*"

²⁷⁸² Additionally, since this dissertation proposes to amend art. 8(2) PLD-2024, by replacing 'making available' with 'placing on the market' (see *supra* nr. 450), a corresponding amendment in art. 17(1)b PLD-2024 is also proposed *de lege ferenda*. However, this is purely a matter of editing and the substantive issue lies in art. 8(2) PLD-2024, not art. 17(1)b PLD-2024.

²⁷⁸³ Arts. 7(2)e and 11(2)d PLD-2024. See *supra* nrs. 435-436.

Part V. Conclusion

466. LESSONS LEARNED – This dissertation set out to gain insights about product liability law in general and about harmonised product liability law more specifically, when it is applied in the context of a more circular consumer goods economy. The research sub-questions outlined *supra* nr. 38, aim to reveal the basic types of how circular economy manifests itself in the consumer goods sector, the correct application of current and future EU harmonised product liability law to these basic types and whether this satisfies the normative goals of product liability law in this context. However, as also explained in the Introduction, this focus of the dissertation aims to reveal more fundamental and broader applicable insights about product liability law and in particular the EU harmonised regime. In this sense, the examination in light of historically again increasing circular strategies can be considered as a ‘stress test’ or ‘catalyst’ for product liability law. This final conclusion will therefore more broadly summarise some of the main ‘lessons learned’ about product liability in general, the EU harmonisation of product liability law, how this liability theory fares in a more circular economic context and list some of the key amendments to the PLD-2024 this dissertation proposes.

§ 1. Lessons learned about product liability in general

467. PRODUCT LIABILITY, ITS FUNCTIONS AND ITS ALTERNATIVES – Product liability is the civil liability mechanism that addresses the societal problem of ‘product accidents’, which are accidents caused by movable goods, in particular consumer goods, that result in ‘extrinsic damage’, such as personal injuries and damage to other goods. Three types of product liability claims can be identified. First of all, ‘vertical’ claims by injured consumers across the product’s distribution and service chain, which can be contractual in nature when targeting a direct contractual counterparty, although French and Belgian law traditionally extend this by means of the *action directe* and the rule of *non-cumul* to claims against manufacturers and importers. The latter, who have by nature the biggest control over product accident risks, are normally targeted on an extracontractual basis, which now also Belgian law will increasingly start to do as a consequence of the abrogation of the *non-cumul* rule and perhaps in the future as an acknowledgement of EU product liability harmonisation’s impact on the hidden defects guarantee. Second, there are ‘diagonal’ claims by injured third parties against those same defendants in the product’s distribution and service chain, which are extracontractual in nature. Third, there are ‘horizontal’ claims by injured third parties against product users, which are also extracontractual. EU harmonised product liability law covers those vertical and diagonal claims with a ‘quasi-strict’ liability for placing on the market or putting into service a product with a defect that causes a recognised form of damage.

The Introductory Chapter identified ‘reparation of damage’ and ‘prevention’ of future product accidents as the two core societal functions of product liability, but at the same time recognised that there are important partial alternatives for both functions. The economic analysis in Part III further enriched this understanding. It revealed that ‘price-signalling’ is another function through which product liability can offer efficiency. Furthermore, it revealed that the product liability system also generates significant inefficient ‘administrative costs’.

The partial alternatives to product liability law for these different functions have been most comprehensively summarised in Figure 8 (*supra* nr. 150). For the core function of ‘accident-prevention’, the main alternatives are product safety regulation and the market mechanism, while criminal liability law can theoretically aid as well. For the core function of ‘reparation’ or, more correctly, ‘risk-allocation’, the main alternatives are forms of social insurance, like public healthcare and social security income protection systems, and private first-party accident insurance. Alternatives for the function of price-signalling are the market mechanism, product safety regulation and, again mostly theoretically, criminal law. Of course, all these alternatives also generate administrative costs, albeit generally lower than civil product liability. And this dissertation furthermore touched upon some of the limitations that these alternatives also have. The resulting picture is that these alternatives and product liability are better understood not as complete substitutes but as partially overlapping complements, which can also create synergies for each other. Especially *ex ante* product regulation and its enforcement can greatly support the implementation of product liability in practice. As Part IV has at various instances demonstrated, this seems to be even more true in the context of circular consumption strategies.

468. A HOLISTIC NORMATIVE UNDERSTANDING OF PRODUCT LIABILITY, WHICH COMBINES A PRINCIPAL ROLE FOR ECONOMIC EFFICIENCY WITH A SUBSIDIARY ROLE FOR CORRECTIVE JUSTICE – Part III of this dissertation developed a comprehensive normative understanding of product liability law in general, which aims to be useful beyond the contexts of EU product liability harmonisation and circular economy in the consumer goods sector. The result is summarised in Figure 7’s ‘steering wheel’ *supra* nr. 130, which is a visual representation of this dissertation’s normative framework. The aforementioned four societal functions of product liability, risk-allocation, accident-prevention, price-signalling and administrative costs, form the outer ring of potential ‘impacts’ of product liability law. The risk-allocation and accident-prevention functions are the most significant and are therefore prioritized as core criteria. At the inside are two rival normative understandings, distributive and corrective justice, which serve to guide the wheel’s steering direction or, rather, determine how the functions of product liability should be understood and which product liability rules are desirable.

On the one hand, the framework prioritizes distributive justice and, more concretely its understanding in terms of economic efficiency. The latter is to the extent possible complemented by considering sustainable development externalities. Three key reasons underpin this choice. First of all, by nature, ‘product liability’ must be assessed through the lens of a product, whether it is defective, how and when it became defective, whether this defect caused the damage and which persons (re)produced or (re)distributed the product. This

makes it less suited to corrective justice's *ex post* scheme of interpersonal 'wrongdoing' and more suited to the *ex ante*, society-wide perspective of the economic efficiency analysis. Second, product liability is determined through the product market, which means that consumers normally pay in the long run for product liability protection through increased prices. Consequently, the corrective justice rationale actually only holds from an *ex ante* perspective vis à vis injured third parties, who see their injuries being 'rectified' without having to pay for it themselves. Third, the normative analysis of product liability in light of economic efficiency offers sophisticated insights into how different product liability rules have different impacts on the four aforementioned functions ('internal perspective') and in what circumstances product liability in general is more or less efficient compared to its aforementioned alternatives ('external perspective').

On the other hand, corrective justice plays a complementary but subsidiary role in the normative framework. The main arguments for this role being subsidiary to economic efficiency, have been mentioned just above. Nevertheless, there are several reasons why corrective justice should remain a part of a comprehensive normative approach. Where corrective justice advocates for similar outcomes as the efficiency analysis, it can still enrich the understanding of what a given product liability rule means, in particular from the *ex post* perspective of an individual injured party. Where there are not sufficiently clear recommendations based on economic efficiency, corrective justice can furthermore function as a 'tiebreaker'. Additionally, corrective justice is particularly useful to fully perceive product liability's added value in the 'external comparison' with its alternatives, most of which fail corrective justice. Note also that corrective justice fixates on the traditional 'reparation' and 'prevention' functions of product liability, which the normative framework prioritizes, while it has nothing to say about price-signalling and administrative costs.

469. THE INTERNAL PERSPECTIVE: A NUANCED CASE FOR STRICTER PRODUCT LIABILITY WITH A CONTRIBUTORY FAULT DEFENCE – In a perspective strictly 'internal' to product liability *sensu lato*, a strict liability rule with a contributory fault defence turns out to be overall the most economically efficient. At least, this is the case in more ordinary circumstances, like where there is sufficient competition (or 'monopolistic competition') in product markets, consumers have limited information about product accident risks and judges are not too hesitant to find a contributory fault. Such a rule offers more complete risk-allocation away from injured parties, which is efficient since most consumers and all third parties are generally more risk-averse than product liability defendants. Stricter product liability with a contributory fault defence also requires fewer factual assumptions than fault-based liability to be equally efficient in terms of accident-prevention. Moreover, this dissertation has additionally argued that, in the sector of durable consumer goods, strict liability's benefit of avoiding excessive production provides more added efficiency in terms of accident-prevention than fault-based liability's benefit of avoiding excessive consumption. Finally, stricter product liability is also more efficient in price-signalling, while it probably generates on average similar administrative costs as a fault-based liability rule.

The criterion of corrective justice leads to slightly different outcomes in this 'internal' perspective. A fault-based product liability rule generally corresponds the most with the

traditional scheme of corrective justice, given how well it fits with notions of ‘wrongdoing’ and ‘rectification’. Nevertheless, corrective justice can be translated to the risk-internalisation principle, which holds that actors who profit from an activity that generates abnormal risks, should repair the damage others suffer as a result of those risks: *uni emolumentum, ibi onus* or *cuius commoda, eius et incommoda*. Precisely this principle or its basic features are invoked extensively in scholarship that tries to reconcile corrective justice with stricter liability rules. And, indeed, while corrective justice according to the risk-internalisation principle still generally favours fault-based product liability, a stricter product liability rule with a contributory fault defence can almost achieve the same results.

A stricter product liability rule with a contributory fault defence therefore can be considered as overall preferable in light of this dissertation’s normative framework. Of course, this matches with the basic features of EU harmonised product liability law.

§ 2. Lessons learned about harmonised product liability law *anno* 2024

470. THE SCOPE OF EU PRODUCT LIABILITY MAXIMUM HARMONISATION, UNDERSTOOD FROM THE PERSPECTIVE OF BELGIAN LAW – It is remarkable that an almost 40 years old Directive is still making waves with regards to its precise scope of harmonisation, but this is precisely what today still happens in relation to EU product liability. In addition to confirming the PLD-1985’s maximum harmonising character, the CJEU has interpreted the principle of preservation of national law restrictively, by holding that the maximum harmonisation extends to all rules of national law that are based on a similarly strict liability for damage caused by defectiveness in a product. These rules are now enshrined in arts. 2(4)b and 3 PLD-2024. Concretely, this means for Belgian law the following, as studied in-depth *supra* nrs. 207-219.

First of all, the Belgian *Cour de Cassation* is correct to rule in its decision of 14 March 2024 that this maximum harmonisation is infringed upon by the ‘objective fault’ case law that automatically derives a violation of the general standard of care constitutive of Belgian extracontractual fault-based liability from the fact that a producer or distributor have supplied (‘made available’ or ‘put into service’) a defective product that caused damage. However, as this dissertation has argued, this is only true for those cases where the product defect is either established merely on the basis that the product turns out to be harmful, that it has ostensibly malfunctioned or that a departure from the product’s intended design (manufacturing defect) is present. In contrast, in cases where the finding of a design or information defect is effectively based on an actual, concrete application of the general standard of care, which looks at what a normally prudent producer or distributor would have done in the same circumstances, there is no violation of the maximum harmonisation when a fault is subsequently derived from having made available or put into service a product with such a defect. To hold otherwise would completely overturn the principle of preservation of national law, for which the CJEU explicitly refers to fault-based liability and would mean that for example also German *Produzentenhaftung* based on § 823(1) BGB would largely cease to exist.

Second, the maximum harmonisation is also infringed upon by basing the objective component of extracontractual fault-based liability on the violation of a legal rule requiring specific conduct, when this is applied to a product accident for a violation by a producer or distributor of general or sectoral product safety rule. The new art. 7(1) PLD-2024 makes this now even clearer. However, this issue may already be largely avoided purely on the basis of existing internal Belgian law, by interpreting more restrictively the requirement of a ‘legal rule requiring specific conduct’. Many if not most product safety requirements are very general in nature and still require a context-specific application in each individual case, akin to the general standard of care, which could mean that these are not ‘legal rules requiring specific conduct’.

Third, the maximum harmonisation is furthermore infringed upon by the ‘strict’ application of claims for extrinsic damage based on the hidden defects guarantee against producers and specialised sellers of harmful products. These claims against these defendants have for all intents and purposes the same theoretical basis as the Directives, as a result of a ‘presumption of knowledge of hidden defect’ which can only be refuted by proving its ‘undetectable nature’. Note that if these are indirect vertical claims based on the so-called *actio directe*, an in my opinion persuasive minority opinion first propagated by KRUTHOF holds that such claims for extrinsic damages resulting from a future product accident cannot transfer as accessory rights along a chain of translatative contracts. Hence, such indirect vertical claims against commercial and specialized producers and importers of products cannot be based on the hidden defects guarantee provision of art. 1645 Old CC BE and are instead more appropriately based on the aforementioned extracontractual ‘objective fault’, for which the extent to which it violates the PLD’s maximum harmonisation has just been discussed.

Fourth, while I agree with the pioneering analysis of KRUTHOF in the three preceding points where current Belgian product liability law *sensu lato* indeed violates EU product liability harmonisation, I mostly disagree with him with regards to Belgian extracontractual liability for custody of defective goods. In the admittedly increasing number of factual cases where the personal scope of this theory overlaps with harmonised product liability, it still has a different theoretical basis, despite the fact that art. 6.16, 3rd section CC BE now adopts the same ‘defect’ concept and despite the French *Cour de Cassation* ruling to the contrary in its decision of 11 July 2018 relating to the closely related French *responsabilité du fait des choses*. This is because the liability for custody of defective goods does not require – like the PLD-1985 and like most of the PLD-2024 – that a defective product is ‘made available’ or ‘put into service’ by a defendant before the latter can be held liable. However, this is now different in situations where the liability for custody of defective goods would overlap with the new arts. 8(2) and 11(2) PLD-2024 relating to liability for substantial product modifications and the ‘digital exception to the posteriority defence’. This limited expansion of harmonised product liability into the domain of post-marketing liability, where the same factual control over a product targeted by the extracontractual liability for custody of defective goods can now also lead to liability under the PLD-2024, maximally harmonises to this extent this Belgian liability theory. To this extent, the latter thus also violates the maximum harmonisation pursued by the new Directive.

Finally, it is important to fully realise that this encroachment by EU product liability harmonisation into national law, remains in turn restricted by the many limitations to the scope of harmonisation achieved by both Directives. First of all, any of the aforementioned claims

remains possible against defendants who fall outside the PLD's personal scope of application, like prosumers acting outside "*the course of a commercial activity*" or liability for defects in service provisions with the exception of the new arts. 8(2) and 11(2) PLD-2024. Second, the Directives do not in my opinion maximally harmonise the absence of liability when a defendant can successfully invoke either the not put into circulation or the posteriority defence. Hence, any of the aforementioned claims with the same basis as the Directives can theoretically still be made against harmonised product liability defendants for product accidents occurring either before they have personally made available or put into service a product or for post-marketing defects arising afterwards and for which these defendants can invoke the posteriority defence. In contrast, the Directives have in my opinion maximally harmonised the exemption from liability enjoyed by those same defendants when either they can prove that the extinction or limitation periods have expired or when they can successfully invoke the compliance, development risk, neither for-profit nor professional, component or modification defences. Last but not least, not only the PLD-1985 but also art. 6(3) PLD-2024 must be interpreted according to the CJEU's *Leroy Somers* decision. This means that any of the aforementioned national liability theories with the same theoretical basis as the Directives can still be invoked against defendants for product accidents falling within the personal and material scopes of the Directives, to the extent that heads of damage are claimed that are not recognised in art. 9 PLD-1985 or art. 6 PLD-2024.

471. THEORETICAL CLARIFICATIONS ABOUT THE DEFECT ASSESSMENT – The study of how harmonised product liability must be applied to different circular strategies, has brought us several generally important theoretical insights about this liability theory.

First of all, the PLD-1985 remained vague about how to apply the defect assessment to other defendants than the producer, but this is now largely clarified by the PLD-2024. For defendants subject to primary liability, with the exception of those liable under art. 8(2) PLD-2024 who 'make available' the substantially modified product, the assessment fixates on the state of the product and the safety expectations existing when they 'place on the market' or 'put into service' the product. This has been called a 'differentiated defect' concept, because it may create a separate assessment of the same product's defectiveness when, for example, a quasi-manufacturer places on the market or a substantial modifier puts into service a product that was previously placed on the market or put into service. Art. 7(2)e PLD-2024 now temporarily postpones this relevant moment of the defect assessment to the "*the time when the product left the control of the manufacturer*". For reasons of simplicity, this is not reiterated every time in this conclusion, although it will return to this new provision.

In contrast, for defendants subject to secondary liability and for those liable under art. 8(2) PLD-2024 who 'make available' the substantially modified product, a – for many lawyers tricky – 'single defect' concept must be respected. Instead of the moment when these defendants 'make available' the product, the defect assessment must travel back and remain fixated at the moment in the past when the product had been placed on the market or put into service. For a reseller liable as a product distributor, this for example means that he can strictly speaking not be held liable for defects which arose in the product during its initial use phase and which he has failed to find and remediate, although this can of course be highly pertinent to

national liability law. This creates friction with how art. 11(1)c PLD-2024 now personally interprets the posteriority defence vis à vis these defendants, which is why an amendment is proposed for this last provision. Problematically, however, the same ‘single defect’ assessment also means that the aforementioned defendant liable under art. 8(2) PLD-2024 cannot be held liable for defects resulting from how he has personally substantially modified the product outside the manufacturer’s control. This is the first main reason why an amendment to art. 8(2) PLD-2024 is proposed below. As a side note, the second reason is the fact that, on the basis of arts. 2(1) and 21 PLD-2024, the new liability rule of art. 8(2) PLD-2024 would, in case of a substantial modification of a product that was originally placed on the market or put into service prior to the PLD-2024’s date of entry into force, only apply to defendants who in the future substantially modify those products and ‘put them into service’ and not those who ‘make them available’.

Another important point relating to the defect assessment has already been developed in existing literature, yet has at several instances resurfaced when applying harmonised product liability to circular strategies. This is the fact that the defect assessment criterion of the product’s presentation must be interpreted in a manner informed by behavioural science, which means that warnings but also other product information like for example repair instructions are not a ‘silver bullet’ that can always still avoid a defect qualification for a design or manufacturing defect. Instead, a generally useful rule of thumb is the ‘safety hierarchy’, which prioritises wherever feasible that accident risks are avoided or mitigated through product design rather than product information.

Finally, this illustrates how the product defect typology can be useful to understand harmonised product liability’s nature, which is generally described as ‘quasi-strict’. As also already noted by scholars in the recent past, the defect assessment is generally stricter in case of manufacturing defects than in case of design or information defects. This dissertation has argued that this is because an objective standard like the derogation from the product’s intended design is only available in case of manufacturing defects, while the assessment of design and information defects must grapple with the complexity, inherent drawbacks and assumptions about reasonably foreseeable use that ultimately infuse fault-based considerations into the defect assessment.

472. THEORETICAL CLARIFICATIONS ABOUT THE POSTERIORITY AND CONTRIBUTORY FAULT DEFENCES – As visually represented in Figure 9 (see *supra* nr. 239), the criterion of ‘reasonable foreseeability’ provides the dividing line between the defect assessment and the posteriority defence, for which different parties bear the burden of proof. If the defect in the product that caused the damage is the result of a post-marketing circumstance that had been reasonably foreseeable when the product was placed on the market or put into service, then this actually constitutes a product defect for which the defendant is liable, such as for example abnormal wear and tear in the product, reasonably foreseeable accident risks relating to repurposing or retransfers or the product’s lack of safe repairability. In contrast, when, according to a standard of probability, such post-marketing circumstance that gave rise to the product defect had not been reasonably foreseeable, then this constitutes a positive proof of the posteriority defence, like not reasonably foreseeable misuse or mishandling of a product by

a consumer, downstream distributor or service provider. Purely negative evidence of a posterior defect origin, like documented quality controls, is in itself normally insufficient to successfully invoke the defence.

Contrary to what is sometimes suggested in the literature, the contributory fault defence must be assessed entirely separately from both the product defect assessment and the posteriority defence. For example, whether the injured party has committed a fault while reusing a product for which the defendant's eventual liability can be reduced, must still be evaluated independently from the defect assessment's appreciation whether the concrete instance of reuse had objectively been reasonably foreseeable when the product had been placed on the market. The conditions for both the contributory fault defence and the defect assessment can be fulfilled simultaneously, while both may also not be fulfilled in the same product accident case

473. INTERPRETATIONS OF THE SUBSTANTIVE DEFENCES AND THE LIMITATION AND EXTINCTION PERIODS VIS À VIS DIFFERENT DEFENDANTS – Similar to the interpretation of the defect assessment, the PLD-1985 also did not clarify how the substantive defences and the extinction and limitations periods must be interpreted vis à vis different defendants. Again, this is something that has largely been clarified by the PLD-2024, although some of these choices are questionable.

Regarding the defences, this dissertation has argued to interpret them in a personal manner vis à vis all defendants under the PLD-1985, except the posteriority and development risk defences must instead – contrary to a majority view in the limited literature on this topic – be interpreted in a producer-specific manner vis à vis suppliers subject to secondary liability. In the more accurate terminology of the new Directive, the former means that, for example a refurbisher liable as a quasi-manufacturer cannot invoke the posteriority defence for defects that arose after the product was initially placed on the market but prior to the refurbishing. The latter means that a distributor can, to the contrary, invoke the posteriority defence for defects arising after the product was placed on the market but prior to personally making the product available. This is necessary to ensure that distributors do not become liable due to their merely 'secondary' harmonised product liability on a 'quasi-strict' basis for defects for which the manufacturer, importer or others who placed the product on the market could not be held liable. A completely personal interpretation of the posteriority defence risks also to conflate too much harmonised product liability with aspects of personal conduct of distributors that are at least in terms of product safety regulation part of post-marketing obligations and that are in my opinion also more appropriately governed by non-harmonised, (extra)contractual liability of distributors. Moreover, it also risks to seriously undercut the 'single defect' concept that is logically applicable to the secondary liability of distributors and online platforms, as already summarised *supra* nr. 471. The same reasoning holds for the development risk defence, for which a personal interpretation to distributors would even be more disproportionate. Normatively, both criteria of efficient accident-prevention and corrective justice can support this view, because distributors have very limited control over these accident risks and are not 'abnormal risk-takers' like the defendants subject to primary liability who have actually placed these defective products on the market.

The PLD-2024 has generally confirmed this view, including a manufacturer-specific interpretation of the development risk defence for defendants subject to secondary liability. However, it has made two different choices for which amendments are proposed. First of all, art. 11(1)c PLD-2024 confirms a personal interpretation of the posteriority defence vis à vis distributors and online platforms. This seems undesirable given the reasons just discussed above and a corresponding amendment is therefore proposed (see *infra* nr. 481). Second, the person liable on the basis of art. 8(2) PLD-2024 for ‘making available’ his substantially modified product has ostensibly been forgotten when the current defences in art. 11(1) PLD-2024 were drafted, which creates undesirable outcomes when in particular the posteriority and development risk defences are applied to this defendant. Rather than amending art. 11(1)c, PLD-2024, it seems better to immediately solve the root cause by changing in art. 8(2) PLD-2024 the reference to ‘making available’ to ‘placing on the market’ (see *infra* nr. 479). This would simultaneously solve the aforementioned issues regarding the defect assessment and the difference in entry into force of the new Directive.

Although the French PLDI holds differently, the limitation period of art. 10(1) PLD-1985 should be applied in a personal manner to claims against different defendants. Art. 16(1)c PLD-2024 now indeed confirms that for each claim against a possible defendant the 3-year period starts when the injured party became or should reasonably have become aware of the individual defendant’s identity, in addition to the damage and the product defectiveness.

Finally, regarding the extinction period, art. 17 PLD-2024 provides a logically coherent and desirable solution, by determining that a separate extinction period starts for each ground of primary liability on the date when the individual defendant has placed the product on the market or put it into service (or, in case of art. 8(2) PLD-2024 *de lege lata*, made it available on the market). Contrary to this ‘personal’ interpretation, each defendant subject to secondary liability then benefits from a ‘manufacturer-specific’ interpretation of the applicable extinction period. Hence, in case of secondary liability, this period has already been running since the product had been originally placed on the market or put into service. More or less like the UK PLDI does, art. 11 PLD-1985 should be interpreted in this exact manner, by distinguishing between primary and secondary liability.

Note how this interpretation of the extinction period fits perfectly with how this dissertation proposes to also distinguish between primary and secondary liability in terms of the defect assessment and the key posteriority and development risk defences. Admittedly, this theoretically coherent distinction between primary and secondary liability can only be fully achieved by adopting *de lege ferenda* the proposed amendment to art. 8(2) PLD-2024 (see *infra* nr. 479).

	Primary liability	Secondary liability
Defect	Personal (‘differentiated’)*	Manufacturer-specific (‘single’)
Defences	Personal*	Personal \\ posteriority and development risk defences = manufacturer-specific
Extinction period	Personal	Manufacturer-specific

* Requires proposed amendment to art. 8(2) PLD-2024.

Figure 13: Overview of ‘personal’ and ‘manufacturer-specific’ interpretations of defect assessment, defences and extinction period, pursuant to distinction between primary and secondary liability.

474. LESSONS LEARNED RELATING TO SOME OF THE NEW DIRECTIVE’S NOVELTIES – The PLD-2024 changes the harmonised product liability regime in a number of ways. Four main axes can be identified: making the liability theory fit for products using software and digital services or consisting of either software or digital manufacturing files, a convergence with EU product safety regulation, imposing new or extending existing grounds of liabilities where products are (substantially) modified and, fourth, clarifying the role of online marketplaces and fulfilment service providers. Some of these axes have been examined more than others based on the extent to which these are relevant to this dissertation’s specific subject matter and the lacunae in the literature on which this research project decided to focus. A few limited but valuable insights gained regarding the first three axes can be summarised here, in addition to closely related points mentioned elsewhere in this conclusion.

Regarding the first axis, the explicit extension of art. 4(1) PLD-2024’s product definition to software and digital manufacturing files implies that information in itself, such as separately supplied repair information or the content of digital product passports, does not itself constitute a product but a provided service, as the CJEU had already decided in *VI v. Krone*. No duration has ultimately been stipulated for art. 11(2)a-c PLD-2024’s ‘digital exception to the posteriority defence’, which means that it theoretically lasts for the full duration of art. 17 PLD-2024’s extinction period. This dissertation has suggested to instead *de lege ferenda* stipulate a duration corresponding with the average expected lifespan of a product requiring software updates or upgrades. Nevertheless, more or less the same outcome, albeit an even slightly longer period, would be achieved through the proposed amendment to convert the current 10-year extinction period into a period that is also based on the average expected lifespan of each individual product (see *infra* nr. 483).

Second, the convergence with product safety regulation is, in addition to some of the new defendant categories, the most clearly expressed in arts. 7(1) and 4(18) PLD-2024. The final adopted version of art. 7(1) PLD-2024 seems to recognise as an autonomous defect criterion, in addition to the traditional criterion of the public’s legitimate safety expectations, the violation by a product of a required level of “*safety [...] that is required under Union or national law*”. The normative analysis has revealed how an important component of product liability’s efficiency in terms of accident-prevention resides in its ‘enforcement costs advantage’ over *ex ante* product safety regulation, which is all the more important and valuable in the more heterogeneous context of circular consumption strategies. If, in the future, the original, open-ended category would wither away and product defectiveness would only or predominantly be established on the basis of a violation of an ever-expanding regulatory framework, then this ‘enforcement costs advantage’ will diminish. It is thus crucial that the open-ended *ex post* appreciation by judges of the public’s legitimate safety expectations continues to receive full attention. Additionally, art. 4(18) PLD-2024’s definition of ‘substantial modification’ leads to further rapprochement with product safety regulation. This is especially true for its first component, art. 4(18)a PLD-2024, that seems to be prioritised over the more open-ended

‘substantial modification’ criterion of art. 4(18)b PLD-2024, which fortunately still fulfils a residuary role.

This brings us to the third axis, the new rules of arts. 7(2)e, 8(2) and 11(2)d PLD-2024 relating to (substantial) modifications during a product’s lifecycle. These have been extensively studied, resulting in a number of insights, some of which are summarised in the following part of this conclusion. The dividing line in the operationalisation of these new rules is the new, pivotal concept of the ‘manufacturer’s control’. It ultimately seems strange why its definition in art. 4(5) PLD-2024 is so broadly formulated. This gives rise to interpretative difficulties and in my opinion an unnecessary set of strange cases, where the defect assessment for a product is postponed based on art. 7(2)e PLD-2024, since it still falls ‘within the manufacturer’s control’, while the posteriority defence of art. 11(1)c PLD-2024 can theoretically still be invoked by most defendants vis à vis resulting posterior defect origins. An example of such cases are repairs that ‘modify’ products compared to the state in which these were placed on the market but not in a ‘substantial’ manner or repairs that integrate spare parts in products.

De lege ferenda, it would make a lot more sense to simply redraft art. 4(5) PLD-2024 in such a way that the ‘manufacturer’s control’ only extends to the same factual situations that are also covered by the new exceptions to the posteriority defence of art. 11(2) PLD-2024 (see *infra* nr. 478). Consequently, the liability of existing defendants in the original distribution chain would only be ‘fully-extended’ in the event of substantial modifications or applications of the ‘digital exception to the posteriority defence’ occurring ‘within the manufacturer’s control’.

§ 3. Lessons learned about the application of harmonised product liability to circular strategies

475. EXTERNAL PERSPECTIVE: THE NUANCED ‘STRONGER CASE’ FOR PRODUCT LIABILITY IN A MORE CIRCULAR ECONOMY – In an ‘external perspective’, recent economic analysis of law literature tends to be sceptical about product liability’s added value. This is based on the assessment that its many alternatives can, to a significant extent, offer the same risk-allocation, accident-prevention and price-signalling efficiency benefits at lower administrative costs (cf. *supra* nr. 467). However, this analysis is based on a purely linear economic model. In contrast, this dissertation has demonstrated that, when transitioning from a purely linear to a more circular consumer goods sector, product liability’s added value compared to its alternatives overall increases, at least for the functions of accident-prevention and price-signalling.

This crucial finding is first of all based on the fact that both *ex ante* product safety regulation and criminal law become less efficient as alternatives to product liability for these functions in the more heterogeneous factual context created by circular strategies. This increases in particular *ex post* product liability’s ‘enforcement costs advantage’. Second, this same heterogeneity among second-hand, repaired, refurbished and repurposed products as well as among actors who offers these in a more circular economy, also greatly reduces the relevant information that consumers have about expected accident risks. Such information is the driver behind the market alternative to product liability for those same two functions. Third, circular strategies significantly increase the accident risks borne by third parties, like future

product users after a retransfer, additional exposed bystanders during more intensive product use over a longer lifecycle or repairers and refurbishers who might get injured during an intervention. These are accident costs that are not considered by initial consumers but which product liability compels them to consider and, in doing so, the producers and distributors of those products. The consequence is that the added value of product liability further grows both for purposes of accident-prevention and price-signalling.

Nevertheless, this is not a one-sided story. For the other key normative function, risk-allocation, there are three arguments that argue that the added value of product liability rather diminishes in a more circular consumer goods economy, because there might be more judgement-proof defendants, more adverse selection in product liability insurance and, above all, defendants might become on average slightly more risk-averse. Yet, the first argument is possibly incorrect and the impact of the second may remain quite modest. Regardless, even it is only to a limited extent, it becomes clear that the added value for efficient risk-allocation of the private first-party accident insurance and social insurance alternatives increases compared to product liability in a more circular economic setting.

The increased added value of product liability in terms of price-signalling in a more circular economic setting offers also a small but noteworthy contribution to more sustainable development. This is because this dissertation has demonstrated that the price-signalling function, which helps to reduce excessive consumption, is actually product liability's most significant contribution to sustainability. This is of course besides the potential of circular economy itself to make the consumer goods sector more sustainable, for which more legal certainty about the accurate application in this context of product liability law can offer modest but relevant support.

Finally, the major added value in terms of corrective justice of product liability risks to diminish slightly in a more circular economic setting, although it remains in this regard overwhelmingly important compared to the available alternatives. This is due to the risks of more inaccurate decisions due to the increased factual complexity and heterogeneity, the increased risk that some (jointly) liable defendants are never identified or do not have to actually contribute to the 'rectification' and the risk that non-commercial actors would be held liable on a stricter liability basis. Yet, all these three risks can be controlled, as the in-depth analysis of product liability applied to several circular strategies has for the most part demonstrated.

476. THE OVERALL ADAPTABILITY OF HARMONISED PRODUCT LIABILITY TO CIRCULAR STRATEGIES – The Introduction has, amongst others, sketched the historical background to this research project. On the one hand, specific and generally stricter theories of product liability law, of which the PLD is a prime example, have been developed in past decades precisely in response to the inadequacies of traditional extracontractual and contractual liability rules to deal with the problem of product accidents in an increasingly linear industrial economic model, with mass-production of more diverse and technologically complex products and more complex product distribution chains, after which a single consumer uses his product and then disposes off it. In parallel, circular economic strategies like repairing, second-hand redistribution, repurposing and reuse were in the past much more prevalent in the consumer goods sector

than they have become in modern times. Yet, a relative resurgence can today be observed, which is aided by socio-cultural, economic, environmental concerns as well as, at least in the EU, increasing regulatory support.

With this background in mind, harmonised product liability law, especially its most recent iteration presented in the PLD-2024, has shown itself remarkably adaptable to these different circular strategies, which were definitely not on top of mind for the drafters of the PLD-1985. Overall, this seems to be the result of the broad scope and functional, neutral language in which the PLD-1985 was already drafted. This is generally characteristic of civil liability theories but not of EU private law harmonisation, especially 40 years ago. Furthermore, this is achieved by the way in which the Directives transcend the distinction between extracontractual and contractual liability, adopt a flexible ‘quasi-strict’ liability based on product defectiveness with limited defences, identify multiple possible defendants with a redundancy system, and are not limited to particular product types or types of distribution. Four remarks can be added to these core insights on how the Directives manage to generally deal with circular economic strategies.

First of all, the analysis of harmonised product liability’s application to circular economy has highlighted how much the liability of manufacturers, importers and other defendants in the original distribution chain continues to play a central role, despite the more complex product lifecycles ensuing before reused, repurposed, retransferred, repaired or refurbished products ultimately cause an accident. To a large extent, this is of course due to harmonised product liability’s relatively strong focus on these actors compared to national product liability theories *sensu lato*. Yet, this might also have meant that circular strategies would turn out to drastically limit the possibilities for successful based on the PLDI. And this is clearly not the case. From a normative perspective, this pervasive liability risk of in particular product manufacturers is generally desirable, since these actors continue to have extensive control over product accident risks throughout a more circular product lifecycle. Yet, in order to be efficient and still satisfy corrective justice, this liability of defendants in the original distribution chain should remain generally limited to the extent that intervening accidents actually could have been prevented by those placing the product on the market or putting it into service. By and large, this is what harmonised product liability turns out to achieve in the context of circular strategies, through flexibly administering this liability through a theoretical core consisting of the defect assessment, the posteriority and contributory fault defences and, perhaps with a too significant role *de lege lata*, the extinction period

Second, harmonised product liability’s multi-layered nature with multiple defendant qualifications means at the same time that also other actors than the traditional defendants in the original distribution chain can incur liability for a subsequent product accident. The PLD-2024 has increased this potential. Repurposers, at least those acting in a commercial activity, can sometimes be qualified as substantial product modifiers liable based on art. 8(2) PLD-2024. Retransferrers, like resellers, donors and barterers of second-hand goods are always at least liable on a secondary basis as distributors, but might alternatively be liable as importers or quasi-manufacturers, for which the CJEU now has ostensibly expanded the liability risk. Moreover, like all distributors, they might also be liable based on art. 8(2) PLD-2024, since a substantial modification does not require intent and can merely result from environmental

conditions. In case of a redistributor from the product's original distribution chain, this might alternatively result in an extension of the liability of existing defendants based on arts. 7(2)e and 11(2)d PLD-2024. Repairers and refurbishers are sometimes liable as quasi-manufacturers and more frequently as product distributors. With regards to the spare parts they use, they are almost always liable at least as distributors but they can also incur liability as (quasi-)manufacturers, importers or substantial modifiers, for which liability each time remains restricted to defects in the spare part. Repairers and refurbishers who substantially modify the product compared to how it was placed on the market or put into service, either become liable based on art. 8(2) PLD-2024 or extend the liability of existing defendants based on arts. 7(2)e and 11(2)d PLD-2024, depending on whether it occurred 'within the manufacturer's control'.

Finally, actual remanufacturing or industrial re-use of products and components result in a qualification as a manufacturer of a new product. Hence, these last circular strategies make for the actors implement them little difference compared to traditional, linear economic production. Only the defendants subject to not only primary but also secondary liability in relation to the original remanufactured product or the original parts re-used as new product components might potentially still be liable as 'component suppliers', although for mere distributors of products that are later involved in remanufacturing or re-use, this secondary liability as a 'component distributor' is best confirmed by inserting in art. 8(3) PLD-2024 a separate reference to 'component', as is already the case in art. 8(1) PLD-2024 (see *infra* nr. 481). The resulting primary and secondary grounds of liability as 'component suppliers' remain of course limited to defects that are clearly limited to those remanufactured 'core' or re-used parts. Moreover, these defendants benefit from component and posteriority defences that are highly likely to be successful as well as an extinction period that is likely to have already expired by the time when the newly manufactured product would be placed on the market or put into service and have caused an accident.

Third, parallel developments in EU product regulation can impact the operation in practice of the aforementioned rules. While the role of product safety rules in harmonised product liability grows in general, as discussed *supra* nr. 474, the General Product Safety Regulation 2023/988/EU's tightening of product 'traceability' requirements may make the biggest difference. This information, which will become more often present on products itself and which may in the future remain accessible on digital product passports, will increasingly preclude secondary liability, by identifying defendants subject to primary liability. The risk observed in this dissertation that circular strategies will overall increase the likelihood of secondary liability of mere distributors products and spare parts, might therefore over time be overturned. Moreover, those digital product passports might in the future also help to not only help market surveillance authorities but potentially also help to relay useful product information, like repair instructions, downstream. Additionally, in the assessment whether a product is safely reusable or safely repairable, an increasingly prominent role will be played by Ecodesign regulation, which seem to become the main instrument with which the EU wants to make the consumer goods sector more sustainable and circular.

477. ADDITIONAL STRENGTHS DELIVERED BY THE PLD-2024, WHILE THE EXTINCTION PERIOD REMAINS A WEAKNESS OF HARMONISED PRODUCT LIABILITY IN A MORE CIRCULAR ECONOMY – The aforementioned elements, which form the key theoretical structure of EU product liability harmonisation and how it interacts with relevant product regulation, undeniably form the core reason why harmonised product liability law as it is now conceived in the PLD-2024, can overall be considered as fit for application in a more circular consumer goods economy. Three more elements are worth highlighting.

First of all, given the increased role of prosumers as actors at the supply side of many circular strategies, the neither for-profit nor professional defence of art. 7(c) PLD-1985 seems overly stringent, because it continues to subject many prosumers to liability merely because they pursue an economic profit on a purely occasional basis. A prosumer reselling a few times each year his own second-hand products or an independent hobby repairer who offers repair services once in a while, should not all too readily become subject to ‘quasi-strict’ liability for any defects in those products that subsequently cause accidents. Non-harmonised (extra)contractual liability is more appropriate for addressing any product accident risks that may directly result from the conduct of these prosumers. The same reasoning also applies to non-profit organisations that engage in a specific economic activity on an unorganised, occasional basis. Importantly, corrective justice understood according to the risk-internalisation rationale of ‘strict’ product liability, actually requires an economic ‘profit-seeking’, which is arguably more convincing when profits are pursued in a more structural rather than a very occasional manner. And due to the higher risk-aversion of prosumers, also efficiency in risk-allocation diminishes by imposing a stricter liability on prosumers. This is why it can be seen as a major improvement that the PLD-2024 abolishes this defence and instead requires as a requirement for liability that a defendant has acted “*in the course of a commercial activity*”. The formulation of this new requirement for the personal scope of application at the defendant-side, based on the ‘making available’ and ‘putting into service’ concepts, is another convergence with EU product regulation.

Second, as this dissertation has argued, the PLD-2024’s innovation of either extending existing liability or imposing a new, independent primary liability for substantial product modifications occurring later in the course of a product lifecycle, is the right one. This is contrary to the view by several commentators who would have preferred a separate provision devoted to ‘refurbishments’, which is a concept that is difficult to precisely delineate in practice. Art. 4(18) PLD-2024’s concept of ‘substantial’ modification precisely fixates on those changes in underlying accident risks that warrant expanding the harmonised product liability protection enjoyed by the public, whether it concerns a repurposing, repair or inadvertent product modifications resulting from improper storage or transportation. Letting harmonised product liability follow meaningful changes in terms of accident risks entirely matches with normative criteria of efficient accident-prevention and risk-allocation, while it also finds support in corrective justice. It has been argued that the ‘modification’ requirement must be interpreted as requiring in principle an active modification compared with the state in which the product had been placed on the market or put into service. However, for repairers and refurbishers, it can exceptionally consist of an omission, namely a clear failure to remediate according to the respective quality standards of a repair or refurbishment and the product’s

nature those post-marketing safety issues that were part of the commercial repairer's or refurbisher's 'task', which is in case of repair limited to pre-identified issues. Only when we talk about remanufacturing and actual industrial re-use of products and components, does this approach of arts. 4(18), 7(2)e, 8(2) and 11(2)d PLD-2024 no longer hold and does it also technically make sense to consider it as manufacturing an entirely new product. Of course, while this dissertation fully agrees with the 'substantial modification' approach which is the essence of arts. 4(18), 7(2)e, 8(2) and 11(2)d PLD-2024's innovation, these new provisions are not without some drafting flaws. These technicalities have already been discussed earlier in this Concluding Part and is reflected in the amendments proposed below.

The main substantive weakness of harmonised product liability in a more circular consumer goods sector turns out to be the extinction period. Having an extinction period is actually necessary for reasons of efficiency in risk-allocation, accident-prevention and limiting administrative costs. However, the current, single, fixed period of ten years can be too long for some products but is definitely also too brief for many durable consumer goods, in particular in light of circular strategies like product reuse, retransfers, repairs and refurbishments. This is why it is proposed to *de lege ferenda* adopt a more flexible extinction period based on the average expected lifespan of each product, extended by a 'safety margin' of tentatively 25% based on the fact that for reasonably foreseeable misuse, including reuse, still protection must be offered and the need to still allow injured parties to bring claims when accidents occur towards the average expected lifespan's end (see *infra* nr. 483). This would further increase alignment with product safety regulation as well as with Ecodesign minimum durability requirements. And Dutch and Finnish consumer sales law examples demonstrate that periodically updated, soft law lists with indicative lifespans can combine flexibility with sufficient basic legal certainty. Finally, the extension with another 15 years in case of latent personal injuries is desirable and can be integrated into this solution. Yet, it can be regretted that no separate new extinction period starts when a product is substantially modified 'within the manufacturer's control', which is why the proposed amendment also improves art. 17(1)b PLD-2024 (see *infra* nr. 483).

§ 4. Proposed amendments to the PLD-2024

478. PROPOSED AMENDMENT TO ART. 4(5)a PLD-2024* –

For the purposes of this Directive, the following definitions apply: [...]

(5) 'manufacturer's control' means that:

(a) the manufacturer of a product performs or, with regard to actions of a third party, authorises or consents to:

(i) the integration, inter-connection or supply of a ~~component~~-related service or software, including software updates or upgrades; or

(ii) the ~~modification of the product, including substantial modifications~~ **substantial modification of the product**;

(b) the manufacturer of a product has the ability to supply software updates or upgrades itself or via a third party;

* It has also been suggested *supra* nr. 404 to further amend art. 4(5)a(i) and 4(5)b PLD-2024 in order to let it seamlessly match with the ‘digital exception to the posteriority defence’ of art. 11(2)a-c PLD-2024, which would further enhance the Directive’s theoretical coherence. However, since these new provisions have only been studied to a limited extent in this research project, it is not included here as a formal proposal that is supported by this dissertation to the same extent as the listed amendments.

479. PROPOSED AMENDMENT TO ART. 4(10)-(11) PLD-2024 –

For the purposes of this Directive, the following definitions apply: [...]

*(10) ‘manufacturer’ means any natural or legal person who **in the course of a commercial activity**:*

(a) develops, manufactures or produces a product;

(b) has a product designed or manufactured, or who, by putting their name, trademark or other distinguishing features on that product, presents themselves as its manufacturer; or

(c) develops, manufactures or produces a product for that person’s own use;

480. PROPOSED AMENDMENT TO ART. 8(2) PLD-2024 –

*2. Any natural or legal person that substantially modifies a product outside the manufacturer’s control and thereafter ~~makes it available on the market~~ **places it on the market** or puts it into service shall be considered to be a manufacturer of that product for the purposes of paragraph 1.*

481. PROPOSED AMENDMENT TO ART. 8(3) PLD-2024 –

*3. Member States shall ensure that, where an economic operator from among those referred to in paragraph 1 and established in the Union cannot be identified, each distributor of the defective product **or component** is liable where:*

(a) the injured person requests that distributor to identify an economic operator from among those referred to in paragraph 1 and established in the Union, or its own distributor that supplied it with that product; and

(b) that distributor fails to identify an economic operator or its own distributor, as referred to in point (a), within one month of receiving the request referred to in point (a).

482. PROPOSED AMENDMENT TO ART. 11(1)c PLD-2024 –

1. An economic operator referred to in Article 8 shall not be liable for damage caused

by a defective product if that economic operator proves any of the following: [...]

(c) that it is probable that the defectiveness that caused the damage did not exist at the time the product was placed on the market, put into service or, **if applicable, the moment in time when the product left the control of the manufacturer** ~~in the case of a distributor, made available on the market~~, or that that defectiveness came into being after that moment;

483. PROPOSED AMENDMENT TO ART. 17 PLD-2024 –

1. Member States shall ensure that an injured person is no longer entitled to compensation pursuant to this Directive upon the expiry of a period **consisting of the product's average expected lifespan extended with an additional 25% of that average expected lifespan's duration** ~~of 10 years~~, unless that injured person has, in the meantime, initiated proceedings against an economic operator that can be held liable pursuant to Article 8. That period shall run from:

(a) the date on which the defective product which caused the damage was placed on the market or put into service; or

(b) in the case of substantially modified products, the date on which that product was ~~made available on the market~~ **placed on the market** or put into service following its substantial modification **or the date when the product left the control of the manufacturer.**

2. By way of exception from paragraph 1, where an injured person has not been able to initiate proceedings within 10 years of the dates referred to in paragraph 1, second subparagraph, due to the latency of a personal injury, the injured person shall no longer be entitled to compensation pursuant to this Directive upon the expiry of **the period referred to in paragraph 1, extended by an additional 15 years** ~~a period of 25 years~~, unless that injured person has, in the meantime, initiated proceedings against an economic operator that can be held liable pursuant to Article 8.

Summary

La responsabilité du fait des produits dans une économie plus circulaire : Une étude de la responsabilité pour des méthodes alternatives de distribution et de production des biens de consommation

Résumé

Les théories spécifiques et plus strictes de la responsabilité du fait des produits, qui ont maintenant été largement harmonisées au maximum dans l'UE, se sont développées sur la base d'un modèle économique linéaire. En utilisant la recherche doctrinale et économique en droit, cette thèse examine l'état du droit européen en matière de responsabilité du fait des produits et comment il est mis à l'épreuve par des méthodes économiques alternatives et circulaires de distribution et de production de biens de consommation, comme la réutilisation des produits, le réemploi, la revente et autres retransferts, les réparations, les reconditionnements et la refabrication. Outre une pertinence directe pour l'économie circulaire dans le secteur des biens de consommation, cette étude des questions jusqu'à présent négligées offre de nouvelles perspectives théoriques sur la responsabilité du fait des produits avec une pertinence académique et pratique plus large. Après une introduction générale aux domaines de la responsabilité du fait des produits et de l'économie circulaire, un cadre normatif est développé qui mélange la justice distributive en termes d'efficacité économique avec la justice corrective. Ensuite, il est soutenu que, même dans un cadre économique plus circulaire, une règle de responsabilité du fait des produits plus stricte comme l'harmonisation de l'UE est préférable à la lumière de ce cadre normatif, tandis que la valeur ajoutée de la responsabilité du fait des produits augmente par rapport à ses principales alternatives réglementaires. La thèse étudie ensuite l'application aux stratégies circulaires susmentionnées du droit actuel de l'UE en matière de responsabilité du fait des produits basé sur la Directive de 1985 et son successeur de 2024 presque adopté. Dans l'ensemble, le droit européen en matière de responsabilité du fait des produits se révèle assez polyvalent et sa pertinence dans un secteur de consommation plus circulaire est améliorée par plusieurs des nouvelles règles proposées. Néanmoins, certaines limitations subsistent et des questions d'interprétation sont également identifiées dans la nouvelle directive proposée, pour lesquelles des amendements sont proposés.

Mots clefs français : responsabilité du fait des produits; économie circulaire; accidents de biens de consommation; Directive 1985/374; nouvelle Directive responsabilité du fait des produits; réemploi, biens d'occasion; réparation; reconditionnement

Product liability in a more circular economy: A study of liability for alternative methods of distributing and producing durable consumer goods

Abstract

Specific, more strict theories of product liability, which have now largely been maximally harmonised in the EU, have developed on the basis of a linear economic model. By using doctrinal and economic legal research, this thesis examines the state of EU product liability law and how it is tested by alternative, circular economic methods of distributing and producing consumer goods, like product reuse, repurposing, resales and other retransfers, repairs, refurbishments and remanufacturing. Besides direct relevance to circular economy in the consumer goods sector, this study of so-far overlooked questions offers new theoretical insights about product liability with broader academic and practical relevance. After a general introduction to the domains of product liability and circular economy, a normative framework is developed that blends distributive justice in terms of economic efficiency with corrective justice. Subsequently, it is argued that also in a more circular economic setting a more strict product liability rule like the EU harmonisation is preferable in light of this normative framework, while the added value of product liability increases compared to its main regulatory alternatives. The thesis then studies the application to the aforementioned circular strategies of current EU product liability law based on the 1985 Directive and its almost finally adopted 2024 successor. Overall, EU product liability law turns out to be quite versatile and its relevance in a more circular consumption sector is improved by several of the new proposed rules. Nevertheless, some limitations remain and also some interpretative issues are identified in the proposed new Directive, for which amendments are proposed.

Keywords : product liability; circular economy; consumer product accidents; Directive 1985/374; new Product Liability Directive; reuse; repurpose; second-hand; repair; refurbish

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