

Proportional Liability: Analytical and Comparative Perspectives

Tort and Insurance Law



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Proportional Liability: Analytical and Comparative Perspectives

Israel Gilead
Michael D Green
Bernhard A Koch (eds)

With Contributions by

Bjarte Askeland • Ewa Bagińska • Giovanni Comandé • Eugenia Dacoria •
Andreas Bloch Ehlers • Israel Gilead • Michael D Green • Jiří Hrádek • Anne LM
Keirse • Bernhard A Koch • Ulrich Magnus • Miquel Martín-Casals • Olivier
Moréteau • Johann Neethling • Luca Nocco • Ken Oliphant • Boaz Shnoor • Josep
Solé • Luboš Tichý • Vibe Ulfbeck • Pierre Widmer • Bénédict Winiger

DE GRUYTER

European Centre of Tort and Insurance Law
Reichsratsstraße 17/2
A-1010 Vienna
Tel.: +43 1 4277 29650
Fax: +43 1 4277 29670
E-Mail: ectil@ectil.org

Institute for European Tort Law
Reichsratsstraße 17/2
A-1010 Vienna
Tel.: +43 1 4277 29651
Fax: +43 1 4277 29670
E-Mail: etl@oeaw.ac.at

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Preface

Causal uncertainty is a wide-spread phenomenon. Courts are often unable to determine whether a defendant's tortious conduct was a factual cause of a plaintiff's harm. The conventional way to cope with this uncertainty has been to apply the evidentiary rule of 'standard of proof', leading to an 'all-or-nothing' result either in favour of the plaintiff or of the defendant, depending on whether the plaintiff established the probability required by the standard.

However, a 'no liability' outcome can lead to unfairness by absolving defendants who acted tortiously and may also create undesirable incentives that result in greater wrongful conduct and injustice to victims. On the other hand, full liability despite considerable doubts remaining with respect to the defendant's actual contribution to causing harm may lead to another kind of unfairness and to over-deterrence. Some courts have decided that both extremes are undesirable at least in some scenarios. They have instead adopted rules of proportional liability that compensate plaintiffs according to the probability that their harm was caused by the defendant's tortious conduct.

In 2005 the European Group on Tort Law made a breakthrough in this regard by embracing rules of proportional liability in certain cases in their Principles of European Tort Law (PETL). With this current project, several members of the Group at the time as well as new members that have joined the Group thereafter have endeavoured to make further inquiries into the desirable scope of proportional liability, to offer a more detailed view of its meaning, implications, and ramifications and to describe and analyse their national laws in this regard including recent developments.

We wish to extend our gratitude to the European Centre of Tort and Insurance Law (ECTIL) and to the Institute for European Tort Law for their support. In particular, we would like to thank Donna Stockenhuber and Kathrin Karner-Strobach for their editing efforts with the manuscript and Vanessa Wilcox for her superb administrative assistance throughout this project.

Israel Gilead
Michael D Green
Bernhard A Koch

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Israel Gilead, Michael D Green and Bernhard A Koch

General Report

Causal Uncertainty and Proportional Liability: Analytical and Comparative Report

I. Introduction^{*}

1. Meaning and Definition of Proportional Liability in the Project

The term ‘proportional liability’ is used loosely and can mean several different 1
things. In its broader sense it means apportioning the burden of a given harm
between defendant(s) D(s) and plaintiff(s) P(s), and among Ds, either on the
grounds of comparative fault, or on the grounds of comparative causal (risk)
contribution, or on both grounds. The defence of contributory (comparative)
negligence and the rules concerning contribution among multiple tortfeasors are
the common forms of proportional liability in this broader sense.¹ A recent project
of the European Centre of Tort and Insurance Law (ECTIL), ‘Aggregation and
Divisibility of Damage’ deals with these broader aspects of the apportionment of
harm and also examines its procedural and insurance aspects.²

This project focuses on one specific, challenging aspect of proportional 2
liability. Its starting point is the traditional rule that attributes responsibility for
a given harm to D or P only where it has been established by the required

* In the following, references to the country reports of this volume are made by using a two-letter code followed by the respective marginal number: AT stands for the Austrian report (77 ff), CH for the Swiss report (323 ff), CZ for the Czech report (99 ff), DE for the German report (153 ff), DK for the Danish report (117 ff), ES for the Spanish report (295 ff), FR for the French report (141 ff), GR for the Greek report (171 ff), IL for the Israeli report (183 ff), IT for the Italian report (199 ff), NL for the Dutch report (227 ff), NO for the Norwegian report (249 ff), PL for the Polish report (253 ff), UK for the report on England and Wales (121 ff), US for the US report (343 ff), and ZA for the South African report (283 ff). ‘Digest I’ stands for B Winiger/H Koziol/BA Koch/R Zimmermann (eds), Digest of European Tort Law I: Essential Cases on Natural Causation (2007), ‘Digest II’ for B Winiger/H Koziol/BA Koch/R Zimmermann (eds), Digest of European Tort Law II: Essential Cases on Damage (2011).

1 Cf WVH Rogers (ed), Unification of Tort Law: Multiple Tortfeasors (2004).

2 Ken Oliphant (ed), Aggregation and Divisibility of Damage (2009).

standard of proof limits that the tortious activity of D or P's fault³ was a 'causa sine qua non' of the harm. Given that rule, it discusses the question of the extent to which this traditional 'all-or-nothing' rule should be replaced by a rule of proportional liability which attributes responsibility for a harm according to the *probability* that the tortious activity was a factual cause of this harm, a probability that ranges from 1 % to 99 %.⁴ Thus, by contrast with apportionment based on comparative fault, culpability,⁵ this project is limited to a consideration of factual causation.

3 Alternatively, proportional liability might be based on the *ex ante* risk created by D, rather than an *ex post* assessment of the probability of having caused a specific P's harm.⁶

4 For the purpose of this project, proportional liability is therefore defined as follows:

Proportional liability is tort liability imposed on D for harm suffered by P, for part of it, or for harm that P may suffer, according to the causal probability that D's tortious conduct may have caused the harm or caused part of it or may cause harm in the future.⁷

3 The term 'fault' as used here may not match the definitions used by some jurisdictions where it is understood that P cannot commit a fault against herself for lack of duty to exercise due care in her own affairs; cf, eg, *U Magnus/M Martin Casals*, Comparative Conclusions, in *U Magnus/M Martin Casals* (eds), *Unification of Tort Law: Contributory Negligence* (2004) 259 (260-261).

4 See *infra* I.3.

5 See *infra* I.2.

6 To illustrate, consider a company D that markets a generic drug that results in a serious adverse effect. D has 25 % of the relevant market share and thus has created, among those who suffer the adverse effect, a 25 % chance of having caused it. However, if a given patient P who suffers the adverse effect can rule out having received the drug from one large producer of the drug, responsible for 50 % of the market, because of individual circumstances, the *ex post* probability that D's drug caused the adverse effect is 50 %.

7 Note that we do not include in this definition proportional liability which is imposed on risk-creation *per se* regardless of whether P actually suffered or will suffer harm. For a suggestion to impose liability merely on the basis of risk creation see *Ch H Schroeder*, Corrective Justice and Liability for Increasing Risks, *UCLA Law Review* (UCLA L Rev) 37 (1990) 439 (arguing that a wrongful act is complete once it has been committed and concluding therefore that imposing liability for increased risks – the proceeds of which will be used to pay those who ultimately suffer harm – is appropriate).

2. Causal Proportional Liability Contrasted with Proportional Liability Among Multiple Tortfeasors Based on Contributory (Comparative) Negligence

Given the focus of this project explained above, it is important to clarify the difference between rules of CPL (causal proportional liability) on the one hand, and, on the other hand, rules that apportion liability among multiple tortfeasors (recourse claims⁸) or between Ds and Ps (contributory/comparative fault defence).

Rules that apportion liability among multiple tortfeasors who are held solidarily liable⁹, and between Ds and Ps under the defence of contributory/comparative fault, differ from rules of CPL if they apportion harm *after it has been established by the required burden and standard of proof that the multiple tortfeasors or P were a factual cause of the same share (or all) of P's harm*. Once it is established that all Ds were the factual cause of P's harm (and therefore are being held solidarily liable for it), or that P was a factual cause of her own harm, liability is apportioned not because of causal uncertainty but because justice and fairness require that such apportionment be made among the parties that were each a cause of the harm. Therefore, apportionment is usually made in accordance with the relative fault of the parties.¹⁰ Moreover, in cases of multiple tortfeasors, the apportionment among the Ds is made not *vis-à-vis* P, as the Ds are held solidarily liable to P, but among the Ds, usually in a 'second-stage' contribution/recourse

⁸ Also known as contribution claims: *WVH Rogers*, Comparative Report on Multiple Tortfeasors, in: *WVH Rogers* (ed), *Unification of Tort Law: Multiple Tortfeasors* (2004) 271 (nos 29 ff).

⁹ For purposes of this General Report, the term 'solidary liability' will be used instead of 'joint and several liability' (J&SL) even though the common law terminology may prefer the latter. However, we follow the decision of the European Group on Tort Law to use the former term as explained by *WVH Rogers* in: *Principles of European Tort Law. Text and Commentary* (2005) Title V no 2 (p 138): The term 'solidary' is used 'to describe the situation where each of a number of tortfeasors is individually liable for the whole of the damage suffered by the victim. It is difficult to find a suitable form of words here. It is essentially the same as the common law expression "joint and several liability" but we consider that to be very unclear. We consider "solidary" to be preferable even though it is used as a term of art in some systems and not in a wholly consistent manner.'

¹⁰ See Art 9:102 (2) *Principles of European Tort Law* (PETL). Even when liability is apportioned not just according to the relative fault of the Ds, but also according to their relative ex ante causal contribution to the risk, such apportionment is made after the court determines that all the parties were factual causes of P's fault.

claim. Therefore, when one D is insolvent, her share is borne by the other Ds¹¹ and not by P.¹²

- 7 It therefore follows that in cases of causal uncertainty regarding which part of the actual harm was caused by which D,¹³ rules of recourse among independent multiple tortfeasors are actually an alternative to rules of CPL. The court can either hold all Ds liable for the whole harm (as each of them is considered a factual cause of P's whole harm), and then apportion liability among them according to the rules of recourse among joint tortfeasors, or, as an alternative, apply a rule of CPL and apportion liability among the independent Ds, *vis-à-vis* P, in accordance with their causal contribution to the risk of harm, with each D being 'severally liable'¹⁴ for its CPL share.¹⁵

3. The Aim of This Project

- 8 Causal uncertainty is a wide-spread phenomenon.¹⁶ It is often the case that courts are unable to determine with anything resembling certainty (100 %) whether D's tortious conduct was or was not the factual cause of P's harm. They can at best only determine that the probability that D caused P's harm lies somewhere in the range between 1 % and 99 %¹⁷ often with considerable variance in the probability

11 Cf, eg, sec 28 Irish Civil Liability Act 1961: 'Where, of three or more concurrent wrongdoers, judgment for contribution is given in favour of one against two or more, the claimant, at any time within the period limited by law for the enforcement of judgments and upon proof that, after taking reasonable steps, he has failed to obtain satisfaction of any judgment in whole or in part, shall have liberty to apply for secondary judgments having the effect of distributing the deficiency among the other defendants in such proportions as may be just and equitable.'

12 Unless P contributed to her own harm, in which case the insolvent's share may in part also be reallocated to her; cf *WVH Rogers* (fn 8) no 25 on the Irish solution; cf also sec 38 par 2 Irish Civil Liability Act 1961.

13 These are B1 cases; see *infra* nos 39 (categorization) and 109 ff (analysis).

14 On the distinction between joint and several liability, where the harm caused by independent multiple tortfeasors is considered indivisible ('same damage'), and several liability, where the harm is considered divisible because there exists 'reasonable basis for attributing only part of it to each of the member of persons liable to the victim', see Art 9:101 (3), 9:102 (4) PETL. Cf *WVH Rogers* (fn 8) nos 12-14 on the (in)divisibility of harm.

15 However, these two alternative bases for apportionment may produce quite different results. The comparative fault of each actor bears no necessary relationship to the probability that the actor was a factual cause of the harm.

16 See *A Porat/A Stein*, *Tort Liability Under Uncertainty* (2001).

17 Where it lies precisely is rarely ever determined by an exact figure by the trier of fact, though. Instead of a precise percentage, courts tend to speak more of segments of that range that may be

estimate based on what evidence is available. The common, traditional, way to cope with this uncertainty has been to apply the evidentiary rules of ‘standard of proof’. Where the probability that D caused P’s harms does not meet the standard of proof required by the national law,¹⁸ the court determines that causation has not been established and liability for P’s harm is denied. Where the required standard of proof is met, the court determines that causation has been established and D is held liable for P’s harm.

The application of this rule of ‘all-or-nothing’ in cases of causal uncertainty 9 leads to the outcome that Ds are absolved from liability, and Ps are left with no redress, although it is established that D acted tortiously, and although it is established that D’s tortious conduct may have been the cause of P’s harm. Some courts, in some countries, in some kinds of cases, have found this ‘no-liability’ outcome undesirable. So they have adopted a rule of proportional liability that compensates Ps according to the established probability that their harm was caused by D’s tortious conduct, even though the probability does not meet the required standard of proof.

In other kinds of cases, in which there are multiple Ds and it is unclear which 10 D(s) caused P’s harm or how much of P’s harm was caused by each D, some countries have adopted a shift in the burden of proof, accompanied by solidary liability. Where appropriate, this project contrasts and compares such burden shifting paired with solidary liability to a proportional liability approach.¹⁹

as crude as concluding that the required standard of proof has or has not been met, perhaps with additional layers for the top and bottom segment. Percentage points identified by expert opinions that are deemed convincing may come to their rescue, though, despite the fact that these may not necessarily have been determined with an eye to the relevant legal thresholds. Cf also *Nulty & Ors v Milton Keynes Borough Council* [2013] England and Wales Court of Appeal, Civil Division (EWCA Civ) 15 at [35] per Longmore LJ: ‘The civil “balance of probability” test means no less and no more than that the court must be satisfied on rational and objective grounds that the case for believing that the suggested means of causation occurred is stronger than the case for not so believing. ... Sometimes the “balance of probability” standard is expressed mathematically as “50 + % probability”, but this can carry with it a danger of pseudo-mathematics, as the argument in this case demonstrated. When judging whether a case for believing that an event was caused in a particular way is stronger than the case for not so believing, the process is not scientific (although it may obviously include evaluation of scientific evidence) and to express the probability of some event having happened in percentage terms is illusory.’

18 Regarding the various standards of proof under national laws see *infra* nos 47 f.

19 Another method sometimes used in the face of causal uncertainty is when two independent and sufficient tortious forces are operating. When it is uncertain which occurred first, some courts will assume that they operated simultaneously, thereby imposing joint and several liability on both Ds.

- 11 A transition from a rule of ‘all-or-nothing’ to a rule of proportional liability affects not only the ‘nothing’ but also the ‘all’. If Ps are entitled to compensation according to the probability that their harm may have been caused by D’s tortious conduct, then logically, they should be entitled only to *partial* compensation even when this probability meets and exceeds the required standard of proof. At least in a strict understanding of proportional liability, only where there is 100 % certainty that D’s tortious conduct was the factual cause of P’s harm should P be entitled to obtain full recovery.
- 12 As rules of proportional liability not only benefit Ps (award something rather than nothing), but may also operate to their detriment (award partial compensation rather than full), the following question has emerged: would courts extend proportional liability to its logical end and embrace proportional liability also in cases in which it leads to partial compensation rather than to full compensation? Or should they limit its application to cases where it only benefits Ps? But if so, on what grounds? And, under any of these options, in what kinds of cases should proportional liability be applied?
- 13 In 2005 the Principles of European Tort Law (PETL) made a breakthrough in this regard by embracing rules of proportional liability. A general provision which allows and welcomes proportional liability has been accepted and incorporated in Art 3:106 PETL, which states that ‘[t]he victim has to bear his loss to the extent corresponding to the likelihood that it may have been caused by an activity, occurrence or other circumstance within his own sphere’. Art 3:103(1) and 3:103 (2) PETL sanction proportional liability in specific situations. Art 3:101(1) PETL²⁰ addresses what we term ‘alternative liability,’ dealt with in Sub-category A1, below, in which there are multiple parties engaged in tortious conduct that caused P’s harm but the one that did so is unknown. Art 3:103(2) PETL²¹ addresses ‘pollution or drug cases,’ considered in Sub-category A3:²² A single tortfeasor has caused some of the disease in a group of persons with the disease but not all of it. The actual victims of the tortfeasor cannot be determined. Art 3:105 PETL addresses ‘several liability’ in some cases of independent multiple tortfeasors that are considered in Sub-category B1.²³ Yet, PETL should not be read as supporting an ‘across the board’ adoption of proportional liability in all cases of

20 It reads: ‘In case of multiple activities, where each of them alone would have been sufficient to cause the damage, but it remains uncertain which one in fact caused it, each activity is regarded as a cause to the extent corresponding to the likelihood that it may have caused the victim’s damage.’

21 See *infra* in and at fn 62 f.

22 *Infra* nos 35, 73 ff.

23 *Infra* nos 39, 109 ff (with the wording of Art 3:105 PETL in fn 90).

causal uncertainty.²⁴ These provisions also raise the question whether proportional liability should be applied at the ends of the distribution of probabilities, ie, when the probability is quite low or exceedingly high.²⁵

Given developments since PETL in this regard in our countries, this project, building on PETL²⁶, endeavours to make further inquiries into the desirable scope of proportional liability and to offer a more detailed view of its meaning, implications and ramifications. As the discussion reveals, some countries (primarily the common law jurisdictions but also some civil law countries²⁷) have had more extensive experience with issues of the type we confront in this project. We therefore hope that those countries in which these issues are yet to be resolved will benefit from this project.

The main aim is to examine further why, how and in what situations rules of proportional liability can promote the goals of tort law.²⁸ The major goal of tort law is to foster justice and fairness. Subject to considerations of justice and fairness in the allocation of risks and harms, the increase of the aggregate well-being in society (efficiency) is also a worthy secondary goal of tort law. This goal attempts to increase overall well-being by inducing potential actors to avoid

24 See, eg, *J Spier* in: *Principles of European Tort Law. Text and Commentary* (2005) Art 3:106 no 7: '[T]o some extent our principles are based on proportional liability, which the Group does not deem an ideal solution, but the best available for certain types of case.'

25 Cf *Spier* (fn 24) Art 3:106 no 16: 'It is open to debate whether Art. 3:106 should be applied in cases where the possible contribution is either very small (close to nil) or very substantial (close to 100 %). If, e. g., ... the chance to fall ill due to a natural cause is, say, 98 %, the court may well ignore the small chance that it may also have been caused by malpractice. And if, conversely, the chance that the illness is due to a natural cause is, say, 2 %, the doctor may well be held liable in full.'

26 For the potential contribution of PETL to the development of CPL, refer to the Dutch reporter who concludes that 'one may ask oneself whether it would not be more prudent to opt for the proportional provisions contained in the PETL as they provide a somewhat more elegant solution. In particular, the provisions established in chapter 3 of the PETL not only unequivocally address the issue of causal uncertainty in liability – even when a multitude of unknown tortfeasors and/or causations are involved – but they also provide a decisive framework for evaluating such factors as the relative likelihood of liability or cause' (NL no 46). See also FR no 2, cited *infra* fn 75; and AT no 38 on the implementation of Art 3:103 and 3:106 PETL in one of the drafts of a possible tort law reform.

27 The Dutch reporter observes that the 'proportional approach in tort law concerning cases of causal uncertainty has over the past two decades gained firm footing within the Dutch tort law system. The traditional "all or nothing" approach, by which the burden of proof is solely borne by the plaintiff, has been contended by "proportional alternatives"' (NL no 1).

28 For a review of scholarly treatment of proportional liability, see the US report (US nos 5-24).

harms that can be prevented at lower cost than the harm (deterrence)²⁹ and by minimizing the costs of determining who should bear the costs of those accidents that do occur (administrative efficiency). Given that, the question is which rules best promote the goals of tort law. Both the traditional ‘all-or-nothing’ rule, and the rival ‘proportional liability’ rule, should be understood as alternative legal tools to promote these goals of tort law, and the question therefore is in which situations the ‘all-or-nothing’ rule does a better job in promoting these goals, and in which situations proportional liability is a better promoter.

- 16 Given the trade-offs among the different goals of tort law, views may well differ with regard to what is the desirable trade-off. In addition, the question whether proportional liability furthers a given goal may be indeterminate and subject to controversy. We do not shrink from such differences, instead choosing a transparent identification of these tensions and uncertainties when they arise. The national reports, which lay the foundations of this general report, reflect such differences.

4. Structure

- 17 The analysis begins in section II by categorizing the different situations in which the law has to choose between the ‘all-or-nothing’ rule and proportional liability. After explaining the importance of categorization, the different situations are grouped into three major categories A, B and C, and then into sub-categories. Cases not fitting entirely into either of these three groups fall into a residual category D. Categories A and B accommodate cases in which the uncertain causation refers to *past* harms, harms that already occurred but it is uncertain whether they were caused by D’s tortious activity on the one hand, or by another tortious or non-tortious activity, including P’s contributory negligence, or by a

29 The extent to which tort law actually deters socially sub-optimal conduct is a matter of considerable controversy (cf *infra* fn 44). The best evidence of which we are aware suggests that tort law, while imperfect, does provide some effective deterrence. Its potency in deterring appears to be quite variable, depending on the category of activity and types of persons or entities involved. See *D Dewees/D Duff/M Trebilcock*, Exploring the Domain of Accident Law (1996); *G T Schwartz*, Reality in the Economic Analysis of Tort Law: Does Tort Law Really Deter, UCLA L Rev 42 (1994) 377. Thus, some arenas are more susceptible to influence by tort rules and their knowledge can assist in determining the categories of cases in which CPL rules may be more or less effective in contributing to efficiency. A recent empirical study casts considerable doubt on the deterrent effect of tort law at least with respect to private individual conduct: *WJ Cardi/RD Penfield/AH Yoon*, Does Tort Law Deter Individuals? A Behavioural Science Study, 9 Journal of Empirical Legal Studies (2012) 567. Cf also *infra* fn 44.

natural event on the other hand.³⁰ The difference between Category A and B is that Category A deals with cases in which it is uncertain whether D caused P's harm *at all*, while Category B deals with situations in which it is established by the required standard of proof that D caused harm to P but it is uncertain which *part of the harm* was caused by D. The third category, Category C, accommodates cases in which the causal uncertainty regards *future* harms, namely, where it is uncertain whether D's tortious conduct will cause any harm to P, or where the extent of this future harm is uncertain.

Section III below briefly discusses the policy considerations that govern the decision in each category or sub-category whether to apply proportional liability or to continue with the 'all-or-nothing' rule. These policy considerations originate, as mentioned, in the goals of tort law – justice and fairness as the major goal and efficiency as a secondary goal. Three criteria are derived from these goals: (1) fair, just and efficient allocation of harms and risks, (2) fair, just and efficient deterrence, and (3) minimisation of administrative costs. 18

Section IV focuses on the 'burden and standard of proof'³¹. Proportional liability is an alternative to the 'all-or-nothing' rule, which imposes full liability for harm where it has been established by the required standard of proof that the harm or part of it was (or will be) caused by D's tortious conduct, and denies liability completely where the required standard has not been met. The effect and implications of proportional liability therefore differ from the burden and standard of proof. In countries where the required standard of proof is a 51 % probability ('more probable than not'), these effects and implications may be quite different from those in countries where the required standard of proof is around 75 % ('clear and convincing evidence'), or is above 90 % ('almost certainty'). 19

Section V examines the question of proportional liability in Category A cases. Following the sub-categorization in Section II, it discusses: cases of 'alternative liability' where it is uncertain, given a group of Ds, which D actually caused the harm (Sub-category A1); cases of 'market-share liability' where it is unknown which D of the group of Ds harmed which P in the group of Ps (A2); 'pollution or drug case' where it is uncertain which P in a group of Ps was the actual victim of D's tortious conduct (A3); Section V concludes with the more common 'hard 20

30 In this project we are interested in those cases in which one factor was the operative cause (either D's conduct or another factor), while the others were potential but not actual causes.

31 We use 'burden of proof' to identify the party who must come forward with evidence on a given factual issue. We use 'standard of proof' to mean how persuaded the fact finder must be for that party to have sustained her burden.

cases' where it is uncertain whether D is a tortfeasor and P is a victim of a tort (A4); and finally 'lost chance' cases as a special form of A4 cases (A5).

- 21 Section VI discusses Category B cases, namely cases in which the question of causal uncertainty is which *part* of P's harm was caused by D, and which part of it was caused by another causal factor. We distinguish between cases in which it is established by the required standard of proof that *all* the parts of the harm were caused by the tortious Ds (Sub-category B1), although none of them has caused all of it, and cases in which it is established that part of the harm was caused not by the Ds but rather by P's contributory fault or by a non-tortious factor (B2).
- 22 Section VII addresses Category C cases in which the uncertainty pertains to whether D's tortious conduct will inflict *any* harm in the future upon P (Sub-category C1), or having already caused some harm, to the *extent* of future harm (C2).
- 23 Section VIII briefly considers a sample of 'combination cases', cases that have the characteristics of more than one category or sub-category, and therefore do not fit uniquely into any of the above categories. Category D is therefore a mere placeholder for such residual scenarios.
- 24 Section IX summarizes our conclusions regarding the ways to approach proportional liability dilemmas, the factual matters that should be addressed, and the policy considerations that should govern the decision. It presents different legal techniques to monitor the development of proportional liability, and finally, provides an overview of the present comparative landscape of CPL and looks forward to future developments.

II. Categories of Proportional Liability

1. Why Categorize?

- 25 Our analysis begins with a categorization of the different situations in which the question is whether to apply the traditional 'all-or-nothing' rule or the alternative rule of CPL. There are four major reasons behind this categorization.
- 26 First, as the choice between these alternative rules has to be made in accordance with the relative contribution of each rule to the promotion of the goals of tort law, and as the goals of tort law may point to different directions in different situations, classification of these situations is of great importance. CPL may well be the preferable rule in one category but not in another, and the same may apply to different sub-categories of the same major category. This is so, *inter alia*, because in some situations the alternative to CPL is no liability ('nothing'), while in others it is full liability ('all'). This means that in some situations CPL makes plaintiffs better-off and defendants worse-off, and in other situations its effect is the opposite: those

who gain from it are the defendants and the plaintiffs are the ‘losers’. The identification of gainers and losers in which we engage is purely descriptive. It is the goals of tort law that fuel the normative conclusions in this project.

Second, categorization helps clarify the practical and the theoretical questions that CPL raises as well as its implications and ramifications. As we shall see, the distinctions between past and future harm, between multiplicity of Ds and multiplicity of Ps, between uncertainty regarding the mere infliction of any loss and the uncertainty regarding its magnitude, as well as the other categorization-related distinctions, provide such important help. 27

Third, some categorization has already been made by national laws that embrace or deny CPL. These decisions, and the accompanying literature, have distinguished between different kinds of situations and labelled some of them by titles such as ‘alternative liability’, ‘market share liability’ and ‘lost chances’. The following categorization embraces these labels and integrates them into a more comprehensive structure of CPL. 28

Finally, categorization is a crucial factor, actually ‘a must’, in any serious attempt, academic, judicial and legislative, to mark the areas of CPL and to draw its boundaries. It enables the courts to define in advance the situations in which CPL is to be imposed, and thereby make it easier for them to administer a CPL regime.³² But even more importantly, defining the scope of CPL, with the help of categorization, is a precondition for *certainty* about the law. Uncertainty in general, and in the CPL context in particular, may be most detrimental to the promotion of the goals of tort law and may undermine the desirable effects of CPL.³³ 29

In the categorizations that follow, we use certain iconic cases as illustrations such as the ‘hunters case’ for Sub-category A1 and the DES cases for Sub-category A2. These icons are borrowed from well-known cases that exist in some, but not necessarily all, of the jurisdictions covered. We also use probabilities of 20 % and 90 % alternatively in the Illustrations. We do so because 20 % is paradigmatic of probability which is way below the standard of proof in all jurisdictions and 90 % usually meets this standard in all jurisdictions. 30

³² The Swiss reporters argue that ‘categorisation, ie putting together groups of cases according to different criteria is certainly a valuable academic exercise. This, however, involves the risk of establishing a systematic pattern which may be too rigid to comprehend reality and to accommodate the nuances which may arise’ (CH no 52).

³³ See *infra* no 46.

2. Category A – Uncertain Causes of Past Harm

- 31 Category A is composed of those cases in which it is uncertain whether D's tortious conduct was a factual cause of P's *past* harm, because P's harm may have been factually caused by another D, by a non-tortious factor, or by P's fault. The probability that P's harm was caused by D may range from 1 % to 99 %. Under the traditional 'all-or-nothing' rule, D is held liable for the whole harm where this probability exceeds the required standard of proof, which may be 51 %, 75 % or 91 %, ³⁴ and is absolved from liability when the probability is lower than this standard. Under a 'pure' rule of CPL, in contrast, D is held liable according to the established probability, namely for 1 % up to 99 % of the harm.
- 32 We suggest that for the reasons enumerated above, this wide category of cases, which accommodates a substantial share of all tort cases, be further classified into the following five sub-categories:

A. Sub-category A1 – 'alternative liability' – indeterminate tortfeasors

- 33 Sub-category A1, which we call 'alternative liability', refers to cases in which multiple independent Ds each may have been a cause of P's harm, but less than all (or just one D) are actually the cause.

Illustrations:

1. Three hunters are independently hunting in a forest at the same time and each negligently and simultaneously fires at what she thinks is the prey. P is struck by one bullet and sues all three hunters but the evidence does not permit ascertaining which hunter fired the bullet that struck P.
 2. P is exposed to asbestos insulation at her workplace, which over a span of 20 years entails four different employers. Each employer negligently fails to provide protective equipment to shield P from inhaling the asbestos fibers and the risk of consequent asbestotic disease. P contracts mesothelioma, which only requires a small threshold dose of fibers to begin the lengthy disease process. It is unknown at which employer or employers P inhaled the fibers that caused her mesothelioma. P sues the four employers.
-

³⁴ See *infra* nos 47 f.

B. Sub-category A2 – ‘market-share liability’ – causally unrelated tortfeasors and victims

Sub-category A2, which is denominated as ‘market-share liability’, includes cases 34 in which multiple tortfeasors (Ds) cause harm to multiple plaintiffs (Ps), but which tortfeasor caused which P’s harm is unknown.³⁵

Illustrations:

3. Two hundred companies (Ds) produce and sell a generic drug, DES, to prevent miscarriage. The DES sold by each company has an identical chemical structure and therefore equal risk of causing harm. After the drug has been marketed for several decades, it was discovered that it causes cancer in the offspring of women who took DES during pregnancy. Those offspring (Ps) are unable to prove which manufacturer’s DES was taken by her mother and hence caused her cancer. They sue some, but not all of the producers of DES.

4. Dozens of companies (Ds) produce products containing asbestos. The products do not pose identical risks, because they contain different proportions of asbestos and are not similarly likely to permit fibers to escape when worked with. Employees in the construction trades (Ps) are exposed to various products of those companies and subsequently contract mesothelioma. Some companies no longer exist and some are bankrupt. Ps are unable to show which Ds provided the fiber that caused their mesothelioma or even if any of the Ds did.

C. Sub-category A3 – ‘pollution or drug cases’ – indeterminate victims

Sub-category A3 includes cases in which pollution, a drug or equivalent sources 35 of risk, increase the number of those suffering a disease, but non-tortious factors are independently responsible for some number of other cases.

Illustrations:

5. D’s Pharmaceuticals produces a drug to control diabetes in pregnant women. After several years of marketing the drug, researchers discover that the incidence of birth defects in the offspring of women who took the drug (Ps) is (a) 40 % or (b) 101 % higher than it is in women who have not taken the drug.

35 For the major differences between Sub-categories A1 and A2 see *infra* no 60.

D. Sub-category A4 – ‘The hard case’

- 36 In sub-categories A1 and A2 it is certain that P’s harm was caused by a tort committed by one member or more of a group of ‘suspects’ to which D belongs, who all acted tortiously. In sub-category A3, although it is uncertain whether P is a victim of a tort, it is certain that D is a tortfeasor who caused harm of the kind suffered by P and who may have caused P’s harm. Sub-category A4, in contrast, includes cases in which it is uncertain whether a single P is a victim of a tort and whether a single D, although acting tortiously (and therefore increasing the risk of harm), actually caused harm to anyone. In these cases, which are common, it may well be that P is not a victim of a tort and D is not a tortfeasor. We therefore refer to this sub-category as the ‘hard case’ of causal proportional liability.

Illustrations:

6. D, a landlord, negligently fails to replace light bulbs in the common stairway of the apartment building she owns. P falls down the unlit stairway and is injured. It is uncertain whether P’s fall was due to the lack of sufficient light, her own clumsiness or a smashed tomato found on the staircase, but it is known that only one of these potential causes is involved.

7. P is born with severe brain damage. It is uncertain whether the damage was an inevitable outcome of her premature birth or caused due to the negligent treatment by Dr D, the obstetrician. It is established that the probability that D’s mistreatment caused the damage is 20 % (or 90 %).

E. Sub-category A5 – ‘lost chances’

- 37 Sometimes the uncertainty as to whether a single D caused harm to a single P is not conceived of in causal terms of increased risk, but rather as a reduction of P’s chances not to suffer the harm, a reduction that constitutes a *standalone harm* of ‘lost chances’ for which P may be fully compensated. When such distinct harm is recognized, the case falls into sub-category A5.³⁶

Illustrations:

8. Dr D negligently fails to diagnose P’s cancer. As P’s symptoms worsen, she consults another doctor who diagnoses her cancer, but because of its advanced stage, treatment is unsuccessful, and she dies. If Dr D had diagnosed the cancer when initially consulted, P would have had a 20 % (or 90 %) chance of successful life-saving treatment, which she lost.

36 The relation between Sub-category A4 and A5 cases is discussed *infra* nos 99 ff.

9. During a horserace, D, a jockey, intentionally interfered with the progress of another horse owned by P. P's horse finished out of the money, and P sues D for the lost opportunity (20 % or 90 %) to finish higher in the race and win money.

3. Category B – Indeterminate Parts of Harm

While Category A accommodates cases in which it is uncertain whether D's tortious activity was the factual cause of *any part* of P's harm at all, Category B accommodates cases in which it is established by the required standard of proof that D tortiously caused at least some harm to P, and the causal uncertainty is *which part* of P's harm was caused by D, and which part of it was caused by another causal factor. 38

A. Sub-category B1 – all parts of P's harm were caused by liable Ds

With regard to Category B cases, we distinguish between cases in which it is established by the required standard of proof that *all* the parts of the harm were caused by tortious Ds, although none has caused all of it (Sub-category B1), and cases in which it is established that part of the harm was caused by a non-tortious factor or by P's contributory fault (Sub-category B2). 39

Illustrations:

10. In the course of several months, P is involved in two separate automobile accidents, in each of which she suffers injury to the same part of her body. As a result of both accidents, P has suffered a permanent disability, but the extent of injury caused by the negligence of each of the two defendants (Ds) cannot be determined, even though it can be excluded that one of the accidents would have caused P's disability alone.

11. P is attacked, bitten, and harmed by three dogs. Each of these dogs belongs to a different owner D1-D3. It is uncertain which specific part of injury was caused by which dog.³⁷

37 Another illustration: Marauding cows from three different farms belonging to D1-D3 ruin P's corn crop. Each of the cows caused a discrete amount of lost crop, but it is unknown how much each caused.

B. Sub-category B2 – some parts of P's harm were caused by other factors

- 40 In B2 cases, as mentioned, it is established by the required standard of proof that a single D or multiple Ds caused only part of P's harm, and that the other part or parts were caused by a non-tortious factor or by P's contributory fault. Yet, it is uncertain which part was caused by each factor.

Illustrations:

- 10A. Same facts as Illustration 10, except that part of the loss was also caused by P's own fault.
- 10B. Same facts as Illustration 10 except that one of the accidents was not due to the negligent conduct of anyone.
- 11A. Same facts as Illustration 11, except that one of the dogs was a stray and had no owner.
12. Medical failure of Dr D to diagnose a cancer in his patient P results in an increased size of the tumour and therefore in greater harm, but the extent of this increase in size (and consequent magnitude of harm) due to D's fault cannot be identified and established by P.
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4. Category C – Unrealized Risks with Potential for Future Harms

- 41 The third category, Category C, accommodates cases in which the causal uncertainty is whether D's tortious conduct would inflict *future* harm.³⁸ We distinguish in this regard between cases in which it is uncertain whether D's tortious conduct will cause *any* harm to P in the future (Sub-category C1), and cases in which it is established by the required standard of proof that D tortiously inflicted past harm upon P, or will inflict future harm upon P, but the *extent/severity* to which this harm will develop in the future is uncertain.³⁹

38 The risk of yet unrealized future harm may cause 'derivative harms' such as 'prevention costs' (costs of reducing or eliminating the risk) or emotional harm (fear and anxiety that the risk may materialize). Whether these 'derivative harms' are compensable or not and whether they should be is an interesting question, but it is not a question of causal uncertainty once it is established that these harms were caused by D's tortious conduct. Hence, we do not address this issue further.

39 Cases in which uncertainty exists not only with regard to the extent/severity of established future harm but also to whether an additional different kind of risk may also materialize are dealt with below (combination cases, *infra* VIII.).

Illustrations:

13. P is occupationally exposed to a known toxic substance through the negligence of her employer D. At the time of suit, P has suffered no physical harm yet, but there is a (a) 20 % or (b) 90 %) probability that she will contract a disease in the future (C1).
14. P suffers serious bone fractures in an accident caused by D's negligence. At the time of trial, it is uncertain whether P's condition will deteriorate in the future (C2).

5. Category D – ‘Combination Cases’

It should be made clear that in the above categorization we have not exhausted all the possible CPL situations. Notably, there are cases that have the characteristics of more than one category or sub-category and therefore do not fit uniquely into any of the above ‘compartments’. For example, some cases combine uncertainty regarding the identity of the D who actually caused the harm given a group of ‘suspected’ Ds (Sub-category A1), with uncertainty as to whether the harm was indeed caused by any D and not by P's fault or by a non-tortious factor (Sub-category A4). Another example is a case in which it is not just uncertain whether D's tortious conduct was a factual cause of P's harm (Category A), but it is also uncertain which part of the harm was caused by D if indeed she caused any harm (Category B). We do not identify each and every combination that might occur, instead limiting discussion to a representative few.

Illustrations:

- 1A-2A. Same facts as Illustrations 1 and 2, except that one hunter (1A) or two employers (2A), were not at fault.
- 2B. Same facts as Illustration 2, except that P suffers from lung cancer, which may have also been caused by P's fault (not stopping smoking despite recurrent warnings).

III. Policy Considerations

As the aim of this project is to examine in which situations CPL promotes the goals of tort liability better than the traditional ‘all-or-nothing’ rules, more elaboration on this aim is required. As mentioned, the major goal of tort law is to promote

justice and fairness,⁴⁰ and subject to considerations of justice and fairness, increasing the aggregate well-being in society (efficiency) is also a worthy secondary goal of tort law.⁴¹ Tort law can increase aggregate well-being by providing incentives for appropriate behaviour when engaging in risk-taking conduct (sometimes also described as deterring socially inefficient behaviour), through loss-spreading and by minimizing administrative costs.

- 44 As to the promotion of justice and fairness, the question is in what situations a transition from the ‘all-or-nothing’ rule to a rule of CPL would promote just and fair outcomes, taking into account the nature and the value of the protected interests.⁴² Where CPL better facilitates the just and fair allocation of the burden of past harms through compensation, and the just and fair allocation of future risks by the deterrent effect of tort liability, these are major considerations for its adoption. On the other hand, CPL should be avoided in situations where its contribution to justice and fairness is negative. As to efficiency, the question is in what situations a transition to CPL can do a better job than the ‘all-or-nothing’ rule in discouraging Ds and Ps from creating risks that can be avoided at lesser costs to society, in promoting efficient loss-spreading by improving the operation of third-party (liability) insurance and first-party insurance, and in reducing the administrative costs of litigation.⁴³

40 In the words of the Swiss reporters ‘the aim of tort law is essentially to compensate and ... such compensation has to be granted in accordance with common conceptions of justice and fairness in the allocation of loss and risk’ (CH no 6).

41 That efficiency considerations are only secondary to justice considerations and subordinated to them was emphasized by the Israeli Supreme Court: IL no 19 at fn 17. Cf the Swiss report arguing ‘the accent should be put even more explicitly on the aims of justice and fairness in risk and damage allocation, whereas the goals of deterrence and efficiency should clearly have less weight and be of secondary importance’ (CH no 57). The Spanish reporters equally maintain ‘that compliance with the goals of “justice” and “fairness” should be given more weight than compliance with the goals of “efficiency” or “deterrence”, to the extent that ... the primary function of the law of torts is compensation not deterrence ... This means only that proportional liability should not be preferred over its alternatives (no liability or solidary liability in full) when it fulfils the goals of efficiency or deterrence better but it fulfils the goals of justice or fairness to a worse extent’ (ES no 75).

42 See *EJ Weinrib*, *The Idea of Private Law* (rev ed 2012) 56 ff; *idem*, *Corrective Justice in a Nutshell*, *University of Toronto Law Journal* (UTLJ) 52 (2002) 349; regarding the distinction between corrective justice and distributive justice. While corrective justice focuses on the correction of the injustice caused by D (doer) to P (sufferer) during the loss-inflicting interaction between them, distributive justice takes into account all other considerations of justice and fairness including equality and other societal goals.

43 In terms of Calabresi’s efficiency analysis, the question is whether a shift to CPL would promote primary, secondary and tertiary cost reduction: *G Calabresi*, *The Costs of Accidents* (1970) 26 ff.

Thus, the question of the desirability of a shift to CPL should be examined and decided by reference to the following three criteria: allocation of harms and risks, deterrence and administrative costs. The allocation of harms and risks criterion examines whether the shift to CPL would promote just, fair and efficient allocation of the costs of harms and risks or derogate from it. The deterrence criterion examines the effect of this shift on the extent to which tort law deters potential Ds and Ps from activities that are immoral, socially undesirable, or inefficient.⁴⁴ The administrative cost criterion examines whether this shift increases or decreases administrative costs and to what extent.⁴⁵ A component of this assessment requires consideration of the informational difficulties associated with CPL. A shift to CPL would accordingly be desirable when its overall

44 There are different views regarding the deterrent effect of tort liability in general and that of CPL in particular (cf also *supra* fn 29). The German reporter, for example, cautions that ‘it would indeed change German tort law dramatically, would proportional liability be accepted as an unrestricted general principle. It would in particular change the general idea of individual freedom and responsibility and socially allowed behaviour: everybody would have to expect to be held liable for any activity that is likely to cause damage irrespective of whether it indeed causes damage. Proportional liability would appear as a kind of penalty for risky activities. The development of an over-cautious society could be the result.’ (DE no 48). The Swiss reporters, in contrast, argue that it is ‘widely acknowledged that the fact that one has to pay damages for a loss inflicted upon another person may have a certain preventive (side) effect The extent to which this actually contributes to deterrence in the sense of the “Economic Analysis of Law” is controversial. First of all, it is not certain that people are sufficiently aware of the applicable norms. And it is even more controversial whether the knowledge of different alternatives concerning the way in which one deals with causal uncertainty could influence the conduct of people or (risk-) management decisions in enterprises’ (CH no 7). They also believe that ‘for individual actors, the aspect of deterrence (as well as under- and over-deterrence) in particular seems to be largely overestimated, as is certainly also the possibility and the will of the parties involved to adapt and to plan their activities according to the probability or risk of suffering damage or to be burdened with compensation claims. Anyhow, it may be that deterrence could at least in the future have a certain effect on important industrial actors who have to plan in the long term and to evaluate the financial consequences of risky activities’ (CH no 57). Cf also the quote from the Spanish report *supra* fn 41.

The Principles of European Tort Law recognize a certain deterrent effect in Art 10:101 PETL, whose second sentence reads: ‘Damages also serve the aim of preventing harm.’ Cf *U Magnus* in: Principles of European Tort Law. Text and Commentary (2005) Art 10:101 no 13: ‘The majority of legal systems attributes an accompanying preventive aim and function to the law of damages or accepts prevention at least as a desirable side effect while for instance Greek, Italian or Dutch law are reluctant to recognise such a separate function.’

45 For a discussion of the effect of proportional liability on administrative costs, see the US report (US nos 29 ff). The Swiss reporters, however, comment, for their jurisdiction, that ‘[a]n aspect which is rarely mentioned in this context is that of the administrative costs involved in the enforcement of compensation claims and of the reduction of such costs being sought in shaping tort law’ (CH no 8).

effect in terms of harm and risk allocation, deterrence and administrative costs is positive. It would be undesirable when its overall effect is negative.⁴⁶

- 46 Last but not least, it should be borne in mind that another factor that may affect the ability of CPL to achieve its aims is the degree of certainty or uncertainty associated with it. Where actors and potential victims do not know in advance whether they may be subjected to CPL, for better or for worse, and where courts are undecided as to its scope and limits, this uncertainty may be detrimental to the promotion of the goals of tort law.⁴⁷

IV. Burden and Standard of Proof

- 47 The effect of CPL on the desirable mixture of harm allocation, deterrence and administrative cost depends to a great extent on whether the alternative to it is full liability ('all') or no liability ('nothing'). This is often determined by rules of evidence regarding the burden of proof and the standard of proof. The *burden* of proof usually lies upon P but it may be shifted to D by various doctrines, such as the

46 Another consideration, discussed by the Israeli Supreme Court, is 'that partial liability under CPL in Category A cases does not match reality, and that in this sense it involves built-in judicial errors. After all, in reality D either caused the entirety of P's harm or did not cause it at all'. See the recent English Court of Appeal decision in *Nulty & Ors v Milton Keynes Borough Council* [2013] EWCA Civ 15, where Toulson LJ argued at [37] that 'you cannot properly say that there is a 25 per cent chance that something has happened ... Either it has or it has not. In deciding a question of past fact the court will, of course, give the answer which it believes is more likely to be (more probably) the right answer than the wrong answer, ...' See also the Swiss Supreme Court decision cited by the Swiss reporters at CH no 30 (particularly the citation in fn 35): In this decision, the *Bundesgericht* specifically emphasized that a chance as such never shows in one's assets – it either converts into a gain once the chance of gaining materializes, or 'into nothing at all' if it does not. See also *BA Koch* in Digest II (fn *) 26/30 no 6. Yet, as one Israeli Justice wrote, 'although the alternative "all-or-nothing" rule involves fewer errors, these errors may be of a greater magnitude – leaving a victim of tort uncompensated or imposing full liability on D who did not cause any harm' (IL no 20).

47 For the far-reaching effects of uncertainty in the context of tort liability see *R Rabin*, The Pervasive Role of Uncertainty in Tort Law: Rights and Remedies, *DePaul Law Review* (DePaul L Rev) 60 (2011) 431. The Swiss reporters, however, argue that 'one should not ... overemphasise the aspect of the certainty of law. Tort law is by nature a field of uncertainty and there is no way whatsoever to eliminate the aleatory essence of this branch of law. To a certain extent, "excessive certainty" and foreseeability would even be counter-productive in the sense that it could reduce the "ambilateral" efforts to avoid damage and to act with due diligence and self-responsibility' (CH no 56).