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Positive Externalities and the Economics of Proximate Cause

Israel Gilead

Hebrew University of Jerusalem

Michael D. Green

Wake Forest University School of Law

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Positive Externalities and the Economics of Proximate Cause

Israel Gilead & Michael D. Green*

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* Bora Laskin (Emeritus) Professor of Law, Hebrew University of Jerusalem; The Academic Center of Law and Sciences & Williams Professor of Law, Wake Forest University. The authors would like to thank Kelsey Kolb, class of 2016 at Wake Forest School of Law, for her superb research assistance.

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I. Introduction

Proximate cause is a major, longstanding, and well-established doctrine of tort law. The particular form of this doctrine adopted in the *Restatement (Third) of Torts: Liability for Physical and Emotional Harm* provides that “[a]n actor’s liability is limited to those harms that result from the risks that made the actor’s conduct tortious.”¹ The essence of the doctrine—as nicely phrased by Warren Seavey, discussing *Palsgraf v. Long Island Rail Road Company*²—is that “[p]rima facie at least, the reasons for creating liability should limit it.”³ In England, Lord Hoffmann wrote that “[n]ormally the law limits liability to those consequences which are attributable to that which made the act wrongful.”⁴ For the Commonwealth, John Fleming wrote that “[l]imitations on legal responsibility inevitably reflect a policy of

1. RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 29 (AM. LAW INST. 2010).

2. *Palsgraf v. Long Island R.R. Co.*, 162 N.E. 99 (N.Y. 1928).

3. Warren A. Seavey, *Mr. Justice Cardozo and the Law of Torts*, 48 YALE L.J. 390, 404 (1939). A classic judicial expression of this limitation is “to confine the liability of a negligent actor to those harmful consequences which result from the operation of the risk, or of a risk, the foreseeability of which rendered the defendant’s conduct negligent.” *Marshall v. Nugent*, 222 F.2d 604, 610 (1st Cir. 1955).

4. *S. Austl. Asset Mgmt. Corp. v. York Montague Ltd.* [1997] 3 AC 191 (HL) 213 (Eng.); see also W.V.H. ROGERS, WINFIELD AND JOLOWICZ ON TORT 345 (18th ed. 2010) [hereinafter ROGERS] (“Liability is generally limited to those consequences . . . which are attributable to that which makes the act complained of wrongful.”).

keeping a rough correlation between what made the defendant's conduct culpable and what consequences he should be answerable for."⁵ This doctrine has also been titled "harm-within-the-risk" (HWR), which holds that liability is limited to harms materializing from *tortious* risks for which the defendant is responsible.⁶ For the sake of accuracy, we refer to this doctrine as "HWTRS"—harm-within-the-tortious-risk—standard.

When applied to the tort of negligence, the doctrine fits comfortably into the two-stage structure of negligence law: the *ex ante* stage (before harm occurs) and the *ex post* stage (after harm has materialized).⁷ In the *ex ante* stage, the court (jury) determines whether the defendant's conduct—at the time and in the circumstances of its occurrence—was negligent, given its foreseeable risks.⁸ Where the social cost of the foreseeable and unreasonable (tortious) risks on the negative scale exceeds the foreseeable social value of the conduct on the positive scale, the conduct is characterized as negligent. This is the essence of the judicial "Hand Formula" now embodied in the *Third Restatement*.⁹ In the second *ex post* stage, the HWTRS (proximate cause or scope of liability, as the *Third Restatement* characterizes it)¹⁰ steps in.

5. JOHN G. FLEMING, *THE LAW OF TORTS* 232 (9th ed. 1998).

6. See Heidi M. Hurd & Michael S. Moore, *Negligence in the Air*, 3 THEORETICAL INQUIRIES L. 333, 334 (2002) (explaining the HWR label). "[HWR] comes from this formulation of the negligence liability question: Was the harm that happened to this plaintiff within the risk that made it negligent for the defendant to have acted as it did?" *Id.* Hurd and Moore trace the origins of the HWR analysis to Baron Pollock's opinions from 1850 and to his grandson Frederick's hornbook, published in 1894. *Id.* at 339–40.

7. For the distinction between the two stages see, e.g., Ariel Porat, *Ex-Post Right, Ex-Ante Wrong*, 89 NOTRE DAME L. REV. 1209, 1210 (2014) (arguing that the law should impose liability for conduct that was negligent *ex ante* but became non-negligent *ex post*).

8. See Mark F. Grady, *Proximate Cause and the Law of Negligence*, 69 IOWA L. REV. 363, 392 (1984) ("When a court is assessing whether there was a breach of duty, the court assumes the eyes of a reasonable person in the injurer's position prior to the accident and tries to look into the future.").

9. See RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 3 (AM. LAW INST. 2010) (defining "negligence" by comparing the costs of reducing the risks involved with the magnitude and probability of the risks).

10. See *id.* § 29 cmt. a ("The difficulties arise in working out the framework for this limit, both between no-duty limitations and scope-of-liability limits, and in the form that scope-of-liability rules take.").

The court must not only verify that the alleged harm was *in fact* caused by the negligent conduct, but also that this harm meets the HWTRS—the harm materialized from foreseeable and unreasonable (tortious) risk; that *ex ante* lay on the negative scale that tipped the balance toward the finding that the conduct was negligent.¹¹

The HWTRS can be easily justified in terms of *corrective justice* as it connects the tortious aspect of the defendant's (*D*) conduct with the victim's (*V*) actual harm. Indeed, Ernie Weinrib argues that the HWTRS proves the correlative nature of tort law such that “proximate cause connects the defendant's *negligence* to the plaintiff's suffering of the kind of injury or accident the risk of which rendered the defendant's act wrongful.”¹² It is also intuitively justified in terms of fairness. If, for example, a given act is negligent because it creates a tortious risk of harm *X* to *V1*, and the harm that actually materializes originates in non-tortious risk *Y* to *V2*, finding *D* liable to *V2* for *Y* seems unfair. As Judge Cardozo characterized this fairness matter, one should sue for a wrong that is personal to him “and not as the vicarious beneficiary of a breach of duty to another.”¹³ The same principle applies to cases where *D*'s conduct *ex ante* generates two risks of harm to *V*, one tortious and one non-tortious, and *ex post*, it is the latter that

11. For the distinction between the *ex ante* stage and the *ex post* stage in tort law, in general and especially in negligence, see Ariel Porat, *Misalignments in Tort Law*, 121 YALE L.J. 82, 90 (2011) [hereinafter Porat, *Misalignments*] (“There are typically two stages to a court's determination of liability in torts. In the first stage the court decides whether the defendant behaved wrongfully . . . if the court decides affirmatively, it proceeds to the second stage and decides on the amount of damages to award.”); Mark F. Grady, *Causation and Foreseeability*, in RESEARCH HANDBOOK ON THE ECONOMICS OF TORTS 114, 115–18 (Jennifer H. Arlen ed., 2013) (stressing that, while the proper breach-of-duty perspective is always *ex ante*, the scope of liability perspective is *ex post*).

12. Ernest J. Weinrib, *The Disintegration of Duty*, in EXPLORING TORT LAW 143, 150 (M. Stuart Madden ed., 2005). Because proximate cause is a requirement of liability, Weinrib explains, “the defendant is not held legally responsible for the materialization of a harm that is not within the set of possibilities that supply a reason for exercising due care.” *Id.*

13. *Palsgraf v. Long Island R.R. Co.*, 162 N.E. 99, 100 (N.Y. 1928). Although Judge Cardozo did this as a matter of duty, *Palsgraf* is generally understood today as addressing scope of liability rather than duty. See, e.g., MARC A. FRANKLIN, ET AL., TORT LAW AND ALTERNATIVES 421 (10th ed. 2016) (placing *Palsgraf* in the proximate cause chapter).

materializes. The *Third Restatement* presents fairness as a major rationale of the HWTRS.¹⁴ Unlimited liability, it is argued, creates an unfair imbalance between the degree of wrongdoing and the extent of responsibility, while the risk standard appeals to intuitive notions of fairness and proportionality.¹⁵ “[T]here is a penal aspect to imposing liability merely because of deficient conduct.”¹⁶

In this Article, we discuss the economic *efficiency* of the HWTRS, namely, whether the exclusion of harms from the scope of liability by the HWTRS is welfare-enhancing.¹⁷ As we limit our discussion to the major aspect of efficiency in tort law—deterrence¹⁸—the general question addressed is whether the deterrent effect of HWTRS is efficient or welfare-enhancing. To properly tackle this question, we assess the different kinds of harms that the HWTRS excludes from the scope of liability for negligent conduct.¹⁹ Following a thorough analysis of proximate cause, we distinguish among the different categories of harms according to the risks from which they *ex ante* originate and the harms that *ex post* materialize.²⁰ The first category of harms

14. See RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 29 cmt. e (AM. LAW INST. 2010) (discussing the rationale).

15. See *id.* (“Limiting liability to harm arising from the risks created by the tortious conduct has the virtue of relative simplicity.”).

16. *Id.*

17. See *infra* Part III.D.4 (discussing findings from the illustrations).

18. We do not address the efficiency aspects of loss spreading and only address the impact of administrative costs on efficiency briefly. See *infra* notes 48, 52, 154 and accompanying text (describing affirmative reasons for restricting the scope of liability in certain models).

19. See *infra* Parts III, V (exploring seven different exclusions to HWTRS).

20. See *infra* Parts III, V (describing and analyzing each category separately). Here we do not discuss rules of proximate causation that apply to the *extent* of harm, such as the thin-skull rule that allows liability for unforeseeable magnitude, or type of harm when resulting from the victim’s pre-existing condition. See RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 31 (AM. LAW INST. 2010) (explaining that despite a plaintiff’s pre-existing condition that results in unforeseeable extent or type of harm, nevertheless the actor remains liable). As explained in the *Third Restatement*, rules that govern the extent of harm can hardly be reconciled with the HWTRS because “other policies are at work.” *Id.* § 29 cmt. p. Indeed, the thin-skull rule is a branch of the direct-consequences doctrine of proximate cause. See Grady, *supra* note 11, at 139–45 (analyzing application of the “direct-consequences” doctrine in several

excluded by the HWTRS, the category upon which we focus, is that of “reasonable” risks of harm: risks that are socially desirable, such as those that exist with beneficial drugs that contain inevitable adverse effects.²¹ The second category addresses risks of “coincidental” harm, such as a falling tree that harms passenger *V* in *D*’s car because the car happened to be at the location of the falling tree due to *D*’s negligence in speeding.²² The third category is of “unforeseeable” risks of harm,²³ such as adverse effects of

different contexts). English Law demonstrates that this “directness” test is more suitable for the question of liability for the *extent* of harm, while the appropriate general test for proximate causation is the HWTRS. While in *In re Polemis & Furness, Withy & Co.* [1921] 3 KB 560 (AC), the British Court of Appeal embraced the directness test for determining the scope of liability, subsequently, the Privy Council rejected that test in the general context of proximate causation and actually embraced the HWTRS in *Overseas Tankship (U.K.) Ltd. v. Morts Dock & Engineering Co., Ltd.* (The “Wagon Mound” (No. 1)) [1961] AC 388. ROGERS, *supra* note 4, at 334–38.

21. See *infra* Part III.D.3 (proffering medical treatment and driving as good examples).

22. See *infra* Part V.A (describing coincidental harms as those whose risk of occurring is unaffected by defendant’s negligence).

23. See *infra* Part V.B (stating the reason for excluding unforeseeable harms in the Hand Formula). The distinction between foreseeable and unforeseeable risks by the HWTRS has been criticized on the grounds that the decision whether a given risk is foreseeable depends on the level of generality at which the risk is described. A risk that is considered foreseeable (and tortious), if described in a general manner (road accident), may be considered unforeseeable (and non-tortious) if described with particularity (exactly how, when, and why the road accident occurred). “As a matter of argumentation, it always serves the defendant to describe the risk as precisely as possible and the plaintiff to describe it as abstractly as possible.” DAN B. DOBBS, *THE LAW OF TORTS* 468 (2000). Michael Moore and Heidi Hurd refer to this problem as the “description problem.” See Hurd & Moore, *supra* note 6, at 365 (“[F]or how one describes the risk(s) that make the defendant’s conduct negligent does all the work to place the harm(s) in question either within or outside of the stated risk(s).”). Arguing that neither human psychology, nor morality, nor the law provides “a source of determinate answers concerning how the risks generated by the defendant’s conduct ought to be described,” the authors conclude that “the [HWTRS] test is entirely vacuous” and “arbitrary.” *Id.* at 375–80. Although there is no fine-grained rule that provides the precise degree of detail for a risk description, the authors go too far in arguing that all risk descriptions are arbitrary. First, details that merely describe the scenario but play no role in the risk should be omitted. Thus, it would not matter what color the *D*’s eyes were or whether she wore a skirt or pants. Second, with regard to excessive risk-related details—including that *D* was driving 16.5 miles per hour over the speed limit and was on a cell-phone conference call with her three boyfriends—courts regularly respond “with the

drugs that cannot be discovered during premarketing testing.²⁴ Although unforeseeable risks are excluded at the *ex ante* stage, when they materialize, the courts must address them at the *ex post* stage when those unforeseeable risks concur with foreseeable risks sufficient to make *D*'s conduct negligent. The fourth category is of “unusual,” “abnormal,” or “freakish-like” risks, namely, risks with low probability of materialization,²⁵ such as fatally falling from a treadmill. The next, fifth, category includes “usual,” “ordinary,” or “background” risks that exist even in the absence of negligent

dictum that the manner of harm is irrelevant.” *Ruiz v. Victory Props., LLC*, 107 A.3d 381, 391–92 (Conn. 2015) (quoting RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 29 cmt. i (AM. LAW INST. 2010)); *see also, e.g.*, *Cay v. La., Dep’t of Transp. & Dev.*, 631 So. 2d 393, 399 (La. 1994) (“The fact that the precise manner of harm (an intoxicated person’s staggering or being frightened toward a bridge railing) may not have been anticipated does not break the claim of causation.”); *Ollison v. Weinberg Racing Ass’n*, 688 P.2d 847, 851 (Or. Ct. App. 1984) (“[I]t is not necessary that the exact manner of harm should be foreseen; the question is whether the harm is of the general kind to be anticipated from the conduct.”). “Overriding, perhaps, is the guiding principle that the hazard should not be defined with over particularity. . . . Nor should it be defined too broadly.” FLEMING, *supra* note 5, at 243; *see also* *Bradford v. Robinson Rentals Ltd.* [1967] 1 All ER 267 at 269–70 (Eng.) (embracing the principle that to establish a coherent chain of causation it is not necessary that the precise details leading up to the accident be reasonably foreseeable; however, it is sufficient if the accident that occurred is of a type that should have been foreseeable by a reasonably careful person). Common sense does provide limits that Hurd and Moore ignore. Clarence Morris explains that advocates’ efforts to describe a risk in either too-general or too-specific terms are counter-productive because they are apparent and lead the court to adopt the adversary’s characterization. CLARENCE MORRIS & C. ROBERT MORRIS, JR., *MORRIS ON TORTS* 163–67 (2d ed. 1980). Stephen Perry, discussing “the coherence of foreseeability,” concludes—after considering the “description problem” and reviewing the literature in this regard—that “there is enough agreement, enough of the time, to make foreseeability a normatively useful concept,” despite its indeterminacy. Stephen R. Perry, *Responsibility for Outcomes, Risk, and the Law of Torts*, in *PHILOSOPHY AND THE LAW OF TORTS* 101 (Gerald J. Postema ed., 2001).

24. *Infra* Part V.B; *see also* Michael D. Green, *Prescription Drugs, Alternative Designs, and the Restatement (Third): Preliminary Reflections*, 30 SETON HALL L. REV. 207, 211 (1999) (exploring exceptions to the idea that drugs cannot be designed differently). For a court denying liability for unforeseeable risks, *see Doughty v. Turner Mfg. Co.*, [1964] 1 QB 518, W.L.R. 240, 1 ALL ER 98 (finding the risk of nudging an asbestos cover so it might fall into molten bath and splash someone was foreseeable, but the risk that it would subsequently explode was unforeseeable, which is what occurred).

25. *Infra* Part V.C.

conduct, such as the road risks that are present even with careful driving and the risks of medical complications that accompany competently-performed surgery.²⁶ The sixth category is of risks of harm that actually materialized only because of an “intervening cause,” such as faulty or non-faulty conduct of another person or forces of nature; such harms would not have materialized otherwise.²⁷ Finally, the seventh category consists of “negligence per se” cases, in which some harms are excluded from the scope of liability on the grounds that the statute’s intent was limited to protecting against different harms.²⁸ A statute requiring a lifeguard at a pool to protect swimmers from drowning is not intended to protect against the risk that a poolside sun bather will suffer a stroke, which rendered her unable to summon emergency aid.²⁹ As we shall see,³⁰ the different categories may sometimes overlap with each other.

The economic-analysis literature has developed convincing economic justification for the exclusion of both “coincidental” risks of harm (second category) and “unforeseeable” risks of harm (third category) from the scope of liability for negligent conduct, although some doubts remain regarding the latter.³¹ In contrast, the prevailing view is that the exclusion of foreseeable but “reasonable” risks of harm (first category) is, in principle, inefficient where these risks are accompanied by other risks that render the risk-generating conduct negligent.³² Views are amorphous and seem to differ regarding the efficiency of the exclusion of the other four categories of risks from the scope of liability (“low probability” risks; “usual/ordinary/background” risks; “intervening” fault risks; and “negligence per se” risks). On

26. *Infra* Part V.D.

27. *Infra* Part V.E.

28. *Infra* Part V.F.

29. *Infra* Part V.F.

30. *Infra* Part V.E.

31. *Infra* Parts V.A and V.B.

32. See Porat, *Misalignments*, *supra* note 11, at 126 (“Indeed if courts do set the standard of care based on all foreseeable risks . . . then the wrongful risks limitation should not apply But it seems that courts are often confused about the application of the wrongful risks limitation . . .”).

the whole, it appears that the efficiency of the HWTRS has been either denied or questioned.

On this background, our core and major argument is that a major factor that bears on the efficiency of the exclusion of harms by the HWTRS has so far been neglected. This factor is the externalized expected *benefits* that negligent conduct generates. Although economic analysis has acknowledged the importance of this factor in other contexts of tort law,³³ it has failed to apply it to the HWTRS. Our primary argument is that this factor provides strong economic justification for the exclusion of “reasonable” (although foreseeable) harms (the first category) from the scope of liability by the HWTRS, challenging the prevailing view that the exclusion of this category of harms from liability is inefficient.³⁴ After analyzing why and when exclusion of “reasonable” harms is efficient in light of externalized expected benefits, we apply the insights of this analysis—the externalized-benefits analysis—to each of the other categories of harms to examine how it affects the efficiency analysis of their exclusion.³⁵ We conclude that taking account of this “missing factor”—externalized benefits—provides significant support for the HWTRS, demonstrates its overall positive economic balance, and helps to draw the efficiency lines of this doctrine.

Externalized benefits are often, but not exclusively, present when there is a relationship between the plaintiff and the defendant. For example, a doctor performing surgery may harm the patient during the course of the surgery but may also provide a benefit by resolving a medical issue. A drug may significantly reduce a patient’s risk of heart disease while also causing adverse side effects. Third-party benefits can of course occur as well; as for example, when an experimental medical procedure harms the first patient but provides insight that enables successful use for others.³⁶

33. See *infra* notes 72 & 117 and accompanying text (considering externalized benefits to offset externalized harms).

34. See Porat, *supra* note 11, at 123 (referring to the limitation as the “wrongful risks limitation”).

35. See *infra* Part V (applying the externalized-benefits analysis).

36. For externalized benefits that render *D*’s act reasonable, see *Parsons v. Crown Disposal Co.*, 936 P.2d 70, 72 (Cal. 1997) (finding no liability for a disposal

This Article proceeds as follows: Part II presents the basic economic justification for the exclusion of harms from the scope of liability for negligent conduct, focusing on the concepts of internalization and excessive liability.³⁷ Part III explains why, how, and when the “missing factor” of externalized expected benefits renders the exclusion of “reasonable” risks from the scope of liability by the HWTRS welfare enhancing despite a “correlation” problem, which limits the ability to characterize risks as “reasonable.”³⁸ This analysis and the ensuing conclusion—that exclusion of “reasonable” risks reduces the inefficiencies created by excessive liability—are exemplified with three illustrations.³⁹ Part IV responds to and critiques the claim made by Ariel Porat (joined recently by Robert Cooter) that the exclusion by HWTRS of *any* foreseeable risk considered by the court is inefficient (the “misalignment” claim).⁴⁰ It also refutes a parallel claim made by Heidi Hurd and Michael Moore that the exclusion by HWTRS of *any* risk from the scope of liability makes no sense (the “all-inclusiveness” claim).⁴¹ Part V applies the externalized-benefits analysis to the other six categories identified above, showing for each of them how and when this externalized-benefits analysis strengthens the economic rationale for excluding from liability harm that materializes from these risks.⁴² Part VI concludes with some reflections on the adequacy, or inadequacy, of the Hand Formula as a guide for efficient internalization and thereby appropriate deterrence incentives.⁴³

company “operating socially beneficial machinery” when a company garbage truck frightened a nearby horse, resulting in injury to the horse’s rider); *Beatty v. Cent. Iowa Ry. Co.*, 12 N.W. 332, 334 (Iowa 1882) (noting that the risk involved in constructing railroad tracks in proximity to a road is one that roadway travelers must accept as the price for an improved method of transportation).

37. *Infra* Part II.

38. *Infra* Part III.B.

39. *Infra* Part III.

40. *Infra* Part IV.

41. *Infra* Part IV.

42. *Infra* Part V.

43. *Infra* Part VI.

II. Why is it Efficient to Exclude Harms from the Scope of Liability?

To understand why and when it is efficient under the HWTRS to exclude from the scope of liability harms that were, in fact, caused by the negligent conduct, one has to return to the roots of the economic analysis of tort law—the Pigouvian/Coasian concept of internalization of externalized harms.⁴⁴ At the heart of the internalization concept lies the idea that an actor, *D*,⁴⁵ engaged in an activity that created risks of harm to another, *V*, and tended to disregard all or some of these risks when deciding on the extent of the activity and the amount of care taken to engage in it.⁴⁶ Whenever such risks of harm to *V* (or *Vs*) are externalized, the *private* cost of the activity to *D* is lower than its *social* cost, which includes the risk to *V* (or *Vs*).⁴⁷ This gap inefficiently incentivizes *D* to reduce her level of care, or increase the extent of the activity, or both, leading to under-deterrence—the social cost of the harm risked by *D*'s activity exceeds the social cost of its prevention.⁴⁸ The role of tort law is to close this gap by forcing *D* to internalize liability for the externalized risks of harm to any *V*. Faced with higher costs of the activity (if the risk materializes and liability is imposed), *D* is encouraged to adjust the level of care and the level

44. See Barbara White, *Coase and the Courts: Economics for the Common Man*, 72 IOWA L. REV. 577, 583 (1987) (analyzing Pigouvian and Coasian theories).

45. “*D*” stands for an actual or would-be defendant.

46. See White, *supra* note 44, at 580–82 (using the example of a firm polluting a river due to production that results in harm to a farm downstream).

47. See ARTHUR C. PIGOU, *THE ECONOMICS OF WELFARE* pt. II, ch. IX (4th ed. 1932) (discussing “divergence between marginal social net product and marginal private net product”); see also Ronald H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 1 (1960) (“This paper is concerned with those actions of business firms which have harmful effects on others . . . [E]conomic analysis of such a situation has usually proceeded in terms of a divergence between the private and social product of the factory, in which economists have largely followed the treatment of Pigou . . .”). Cf. Harold Demsetz, *The Problem of Social Cost: What Problem? A Critique of the Reasoning of A.C. Pigou and R.H. Coase*, 7 REV. L. & ECON. 1, 3 (2011) (seeking to refute Pigou’s and Coase’s arguments that a competitive, private-ownership economic system that conforms to the neoclassical model fails to allocate resources efficiently).

48. See GUIDO CALABRESI, *THE COSTS OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS* 26 (1970) (explaining that tort law should seek to minimize the sum of the costs of accidents, accident prevention, and administrative expenses).

of the activity to efficient levels. This is the essence of the theory of efficient deterrence.

In principle, the burden that should be internalized to *D* is the *social* cost she externalizes. When the burden internalized through tort liability is *lighter* (partial internalization), some under-deterrence will remain because the gap between social cost and private cost is not completely closed. But what happens when the internalized burden is *heavier* than the externalized social cost (over-internalization)? Would that lead to over-deterrence in the form of a care level that is too high and/or activity level which is too low?

The traditional, simplified, economic models assumed that over-internalization in the form of excessive tort liability would *not* usually lead to over-deterrence under negligence law, which considers only levels of care and not levels of activity.⁴⁹ Excessive liability, it was reasoned, only strengthens *D*'s incentives to avoid negligent conduct by adhering to the efficient level of care under the Hand Formula.⁵⁰ For example, if an externalized risk (PL) of 10 can be avoided by a precaution cost (B) of 9, excessive liability of 20 or even 100, instead of 10, only strengthens *D*'s incentive to

49. According to traditional economic analysis, negligence law—as embodied in the Hand Formula—seeks to incentivize *D* to adjust her level of *care* to the efficient level, but not her level of *activity*. Only strict liability regulates this aspect of *D*'s activity. See RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 205 (9th ed. 2014) (“Rarely will a court in a negligence case try to determine the optimal level of the activity that gave rise to the accident.”); STEVEN SHAVELL, *ECONOMIC ANALYSIS OF ACCIDENT LAW* 21–32 (1987) (discussing levels of care and levels of activity under negligence and under strict liability rules); Grady, *supra* note 8, at 399 (stating that excessive liability will not result in excessive precaution taking). *But see* Stephen G. Gilles, *Rule-Based Negligence and the Regulation of Activity Levels*, 21 J. LEGAL STUD. 319, 320 (1992) (“[M]odern American negligence law regulates activity levels to a considerably greater extent than has previously been recognized.”). The exclusion of activity levels from the Hand Formula is one of its shortcomings. See *infra* Part VI (questioning whether the Hand Formula is the correct way to evaluate the efficiency of risk-creating conduct).

50. See Grady, *supra* note 8, at 399 (“As a preliminary matter, note that the effect of making a negligent dam owner liable for all harm that a widened spillway would have prevented will not induce dam owners to widen their spillways. It will induce them instead to find the precaution level that precludes liability least expensively.”).

invest 9 in precaution and avoid liability.⁵¹ To justify the exclusion of harms from the scope of liability, these models had to resort to affirmative reasons for restricting the scope of liability. These reasons include concerns that actors would be discouraged from engaging in socially worthwhile activities, *inter alia*, because of uncertainties and errors in the determination of negligence and that failure to restrict the scope of liability would increase administrative costs.⁵²

More realistic and contemporary economic models, however, take into account imperfections in the negligence system such as errors, insufficient information, inadvertence, and nonmeritorious claims.⁵³ These models recognize that over-internalization through excessive tort liability may lead to over-deterrence, not only in the form of inefficiently reduced levels of activity, but also in the form of inefficiently increased levels of care—too many or inadequate precautions.⁵⁴

51. See SHAVELL, *supra* note 49, at 108 (“Were liability for negligence unrestricted in scope optimal behavior would also result, since the threat of liability would be wielded more often.”); WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF TORT LAW* 236 (1987) (“[L]iability of however broad a scope will have only one effect—to induce the defendant to take due care . . .”); Omri Ben-Shahar, *Causation and Foreseeability*, in 3 *ENCYCLOPEDIA OF LAW AND ECONOMICS* 644, 651 (Boudewijn Bouckaert & Gerrit De Geest eds., 2000)

Under the negligence rule an unrestricted scope of liability does not necessarily deter the injurer from engaging in the activity. The injurer is induced to take due care and thereby avoid liability and thus becomes indifferent as to the actual scope of liability As long as the exaggerated scope of liability does not boost the level of due care, it has no adverse incentive effects *per se*.”

52. See SHAVELL, *supra* note 49, at 108–09 (“Then it would be socially desirable for victims to bring suit, because that would serve to induce injurers to reduce risk, and thereby also reduce the number of claims and administrative costs.”). For saving administrative costs by excluding low probability harms, see LANDES & POSNER, *supra* note 51, at 243.

53. For the transformation of the economic analysis of tort law from ideal, simplified, and general models into more realistic, complex, and context-sensitive models, see Jennifer H. Arlen, *Introduction*, in *RESEARCH HANDBOOK ON THE ECONOMICS OF TORTS* 1 (Jennifer H. Arlen ed., 2013).

54. See LANDES & POSNER, *supra* note 51, at 236 (finding that in the real world of errors, excessive liability “will have misallocative effects.”); Ben-Shahar, *supra* note 51, at 651–52 (“Inasmuch as the application of the negligence rule is plagued with errors and uncertainties . . . the unrestricted scope of liability can

The concern is that over-internalization due to excessive liability would lead to over-deterrence that contributes to the justification for the exclusion of harms from the scope of liability by the HWTRS. This concern, however, applies only to harms that would lead to excessive liability if included in the scope of liability. Are the harms actually excluded by HWTRS such harms? Given differences among the seven categories of risk of harm excluded by the HWTRS, this question must be asked and answered with regard to each category. We start with and focus on the first category, “reasonable” but foreseeable risks of harm, because the discussion of this category illustrates best the “missing factor” in HWTRS analysis—externalized benefits—and highlights its significance and importance. The externalized-benefits analysis is later applied to the other six categories of harm to examine whether and when their exclusion is justified by concerns of excessive liability and over-deterrence.

III. The Exclusion of Foreseeable Reasonable Risks

To examine how excluding harms which materialize from foreseeable reasonable risks from the scope of negligence liability contributes to efficiency, we begin by characterizing “reasonable risks,”⁵⁵ identifying a correlation problem that may sometimes obstruct the ability to classify risks as reasonable or unreasonable,⁵⁶ and employing an economic analysis as to when “reasonable” risks that materialize in harm should be excluded from the scope of *ex post* liability due to concerns about excessive

have the crushing effect”); Porat, *Misalignments*, *supra* note 11, at 119 (“[I]n the real world, with court and injurer risk of error . . . [w]hen the actual liability leads to the expected liability exceeding the social risks, the injurer will take excessive precautions.”); *see also* Robert Cooter & Ariel Porat, *Does Risk to Oneself Increase the Care Owed to Others? Law and Economics in Conflict*, 29 J. LEGAL STUD. 19, 22 (2000) (“Economists typically see no advantage in imposing liability beyond the point that already internalizes social costs.”). Mark Grady argues that excessive liability may induce *D* to substitute inefficient precautions for efficient precautions. Grady, *supra* note 11, at 125–26.

55. *Infra* Part III.A.

56. *Infra* Part III.B.

liability.⁵⁷ We then conclude with three illustrations illuminating how the HWTRS promotes efficiency in this regard.⁵⁸

A. *When is a Risk “Reasonable”?*

A foreseeable risk of harm is “reasonable” if it generates expected social benefits that equal or exceed its expected social costs of harm. When the benefits associated with an act that creates risk exceed its expected harms, the risk is not only reasonable, but also socially desirable, as it enhances welfare. Medical treatment and driving are good examples of risk-generating activities that are nevertheless socially beneficial.

When *D*'s conduct generates only *one* risk and that risk is reasonable, the conduct, by definition, is not negligent. In such cases, we do not need to advert to the matter of *ex post* scope of liability because liability is cut off at the *ex ante* stage. Though, it is often the case that a given conduct generates a variety of risks: risks to different parties⁵⁹ (including *D*⁶⁰); risks to different interests (to bodily, property, and emotional tranquility, or to economic interests, etc.); risks that differ in their probability given the chain of events that leads to their materialization; and risks that differ in their magnitude. Any given act may, therefore, create both kinds of foreseeable risks—unreasonable and reasonable.

Using the terms of the Hand Formula, PL_i denotes the expected harms of a given risk *i*, and PB_i denotes the expected

57. *Infra* Part III.C.

58. *Infra* Part III.D.

59. The risk of unfenced excavation filled with water may be reasonable to boaters but unreasonable to divers. *See* *Hendricks v. Peabody Coal Co.*, 253 N.E.2d 56, 58 (Ill. App. Ct. 1969) (addressing risk where a minor dove into a water-filled strip mine area and broke his neck on the bottom).

60. *See* Cooter & Porat, *supra* note 54, at 19 (arguing that judges should reconceptualize the Hand Rule so that risk to oneself increases the care owed to others). *See generally* *Bhd. Shipping Co. v. St. Paul Fire & Marine Ins. Co.*, 985 F.2d 323 (7th Cir. 1993) (involving a ship suing for damage incurred during a storm at a particularly dangerous site in a city port where several other ships had similarly suffered damage).

benefits of risk i .⁶¹ A given risk i is reasonable when $PL_i < PB_i$ and is unreasonable when $PL_i > PB_i$.

B. The “Correlation Problem”

Determining whether a risk is reasonable (with net positive social value, i.e., $PL_i < PB_i$) or unreasonable (with net negative social value, i.e., $PL_i > PB_i$) is not always possible due to a correlation problem. The essence of this problem is that when a single act generates multiple expected risks but only a single benefit, there is no appropriate way to allocate that benefit among the multiple risks; namely, there is no way to correlate a separate benefit with each specific risk of harm to determine whether each specific risk is reasonable or unreasonable. A major cause of this difficulty is that, quite often, the only benefit of a given conduct is its benefit to D in avoiding prevention costs—factor B in the Hand Formula. This kind of benefit (on the positive scale) can often be balanced only against *all* expected risks of harm (the negative scale), as there is no logical or otherwise justified criterion to allocate the unitary benefit among the conduct’s multiple risks to distinguish between its reasonable and unreasonable risks.

To illustrate, assume that D , V ’s employer, decides not to buy safety equipment that costs 75 and protects each employee against a risk of harm of 50. If there is only one employee, $V1$, there is no correlation problem because the benefit of 75 of not buying the equipment can be correlated only with the risk to $V1$. Obviously, this risk is reasonable, having a positive net social value ($75 - 50 = 25$), and D ’s conduct is not negligent. Now, let us assume that there are two employees, $V1$ and $V2$, each of them independently subjected to a risk of 50. Here it is clear that D ’s decision not to buy the equipment is negligent as its net social value turns out negative ($75 - 50 - 50 = -25$). But, in this case, unlike the former, there is a correlation problem because there are many ways to allocate the benefit of 75 (saved prevention cost) between the two risks to $V1$ and $V2$. Correlating a benefit greater than 50 to one risk would make the risk to one employee

61. In the “narrow” Hand Formula, B denotes the benefit of saving the burden of precaution. In our extended Hand Formula, B denotes all benefits associated with risk i .

reasonable and the risk to the other unreasonable, and correlating a benefit greater than 26 but less than 50 to any risk would make risks to both employees unreasonable. In the absence of any tenable ground to allocate to a given risk expected benefits greater than its expected harm, the default rule in such cases should be to characterize *all* risks as unreasonable.⁶² The same applies to different kinds of risks to the same person.⁶³

More generally, this correlation problem will arise whenever the same conduct creates multiple risks and the conduct is unreasonable only when those risks must be aggregated to outweigh the benefits of the conduct, as in the illustration with *V1*, *V2*, and *D* above.

Due to the correlation problem, it is not always possible at the *ex ante* stage to perform the balancing of the social costs and benefits of a given act in terms of *risks*—putting the reasonable risks on the positive scale and the unreasonable risk on the negative scale (risk balancing). To avoid this difficulty, courts perform the balancing in terms of *overall* expected harms and benefits: they aggregate all expected harms on the negative scale and all expected benefits on the positive scale (aggregate balancing) without associating harms with benefits in the framework of reasonable/unreasonable risks.⁶⁴ This is what the Hand Formula does, balancing all expected harms ($\sum PL_i$) against *all* aggregate benefits ($\sum B_i$) (aggregate balancing). However, where courts can associate expected harms with benefits (comparing PL_i with B_i of each separate risk) and thereby differentiate among

62. See Porat, *Misalignments*, *supra* note 11, at 124–27 (arguing that when prevention costs are greater than any single risk, but less than the aggregate cost of all risks, liability should be imposed for all risks).

63. See *Petition of Kinsman Transit Co.*, 338 F.2d 708, 725 (2d Cir. 1964)

We see no reason why an actor engaging in conduct which entails a large risk of small damage and a small risk of other and greater damage, of the same general sort, from the same forces, and to the same class of persons, should be relieved of responsibility for the latter simply because the chance of its occurrence, if viewed alone, may not have been large enough to require the exercise of care.

64. See Patrick J. Kelley & Laurel A. Wendt, *What Judges Tell Juries About Negligence: A Review of Pattern Jury Instructions*, 77 CHI.-KENT L. REV. 587, 591 (2002) (stating that judges advocating the Hand Formula instruct the jury on a cost-benefit analysis).

reasonable and unreasonable risks (risk balancing), they should, from an efficiency perspective, prefer to do so. For example, failure to add warnings and instructions in Chinese to a product may be considered reasonable for Chinese English speakers, but unreasonable for non-English Chinese speakers. Another example is that failure to provide goggles to employees who repair, maintain, and disassemble vehicles may be considered reasonable with regard to employees with two good eyes, but unreasonable with regard to employees with only one good eye.⁶⁵ Indeed, when evaluating the desirability of conduct that generates a variety of risks—to different people, to different kinds of interests, and with different degrees of probability and extent—we all tend to think in terms of distinct risks, reasonable and unreasonable, and not in terms of aggregate harms and aggregate benefits.⁶⁶ Moreover, even if courts at the *ex ante* stage do aggregate balancing (Hand Formula) rather than risk balancing,⁶⁷ when they reach the *ex post* stage and apply the HWTRS, they must still think and decide in terms of distinct risks rather than in aggregate terms. After all, the HWTRS excludes materialized *risk* (harm) from the scope of liability.⁶⁸ In the above illustration, at the *ex ante* stage, a court may add up the risks to all Chinese consumers and distinguish between English speakers and non-speakers only at the *ex post* stage.

65. See *Paris v. Stepney Borough Council*, [1951] A.C. 367 (H.L. 1950) (involving a worker with one eye that was damaged during work and finding negligence by the employer because of the greater consequences for the one-eyed worker in losing vision in that eye).

66. For the argument that many judges oppose the aggregation of risks across persons, see Kenneth W. Simons, *Tort Negligence, Cost-Benefit Analysis, and Tradeoffs: A Closer Look at the Controversy*, 41 LOY. L.A. L. REV. 1171 (2008).

67. See *In re Polemis & Furness, Withy & Co.* [1921] 3 KB 560, 577 (AC) (“In the present case [defendant] was negligent in discharging cargo to knock down the planks of the temporary staging, for they might easily cause some damage either to workmen, or cargo, or the ship.”). Beyond this kind of language, there are several other methods to verify the fact that courts do take multiple risks into account in determining breach of duty. See Grady, *supra* note 8, at 383 (explaining that courts take multiple risks into account in determining negligence).

68. See *supra* note 6 and accompanying text (introducing the HWTRS formula).

*C. The Efficiency of Excluding Reasonable Risks from the
Scope of Liability*

Despite the correlation problem, frequently it is possible to distinguish between expected reasonable risks (with positive net social value of $PL_i < PB_i$) and expected unreasonable risks (negative net social value of $PL_i > PB_i$), which courts are asked and often do in the *ex post* stage. The question is whether and when the exclusion of (foreseeable) reasonable risks from the scope of liability under the HWTRS is efficient because it reduces excessive liability and associated inefficiencies.

The answer is provided by the internalization concept. This core concept, as we have seen, sanctions the internalization of expected *harms* that *D* externalizes in order to close the gap between social cost of the conduct and its lesser private cost to *D*.⁶⁹ The same logic dictates that where *D*'s conduct generates not only expected *harms*, but also expected *benefits*, the benefits that are externalized by *D* should also be internalized to her.⁷⁰ Failure to do so will create an opposite gap in which the private cost of the conduct to *D* (who disregards these benefits) exceeds its true social cost (which does account for these benefits).⁷¹ Such a gap and the resultant excessive liability will induce actors to reduce inefficiently the level of activity or increase the level of care, leading to excessive precautionary costs. Internalization of the externalized benefits is required to eliminate or narrow this gap.⁷²

69. See *supra* Part II (“In principle, the burden that should be internalized to *D* is the social cost she externalizes.”).

70. See Ariel Porat, *Private Production of Public Goods: Liability for Unrequested Benefits*, 108 MICH. L. REV. 189, 190 (2009).

When people promote their own interests, they often create negative or positive effects for other people's interests, without the latter's consent. Economists refer to these effects as “negative externalities” . . . and “positive externalities” Ideally, from an economic perspective, both the negative and positive effects should be internalized by those who produce them, for with full internalization, injurers and benefactors alike will behave efficiently.

71. See LANDES & POSNER, *supra* note 51, at 180 (“Because the defendant does not reap the full benefits of his act, neither should he have to pay the full costs. Otherwise there will be too little of his activity.”).

72. That tort law should internalize not just externalized harms, but also externalized benefits—by offsetting the latter against the former—has been long

So how can tort law internalize externalized benefits? Tort law is well equipped to internalize externalized *risks of harms* (by imposing liability), but, unfortunately, much less equipped to internalize externalized expected *benefits*. The legal tools that can be used to that end are few and not well calibrated for the task.⁷³

recognized. At first, it was in the context of the rule that denies liability in negligence for pure economic loss. See W. Bishop, *Economic Loss in Tort*, 2 OXFORD J. LEGAL STUD. 1 (1982) (arguing that the exclusionary rule can be justified on efficiency grounds where and to the extent that *V*'s economic loss is offset by economic gains to others who benefit from *V*'s loss, because *V*'s offset loss is a *private* and not a *social* cost); Mario J. Rizzo, *A Theory of Economic Loss in the Law of Torts*, 11 J. LEGAL STUD. 281, 286–91 (1982) (same); LANDES & POSNER, *supra* note 51, at 251–55 (same); SHAVELL, *supra* note 49, at 135–40 (same). For a discussion of externalized benefits in the broader context of tort law, see Israel Gilead, *Tort Law and Internalization: The Gap between Private Loss and Social Cost*, 17 INT'L REV. L. & ECON. 589, 590 (1997) (arguing that the failure of tort law to internalize externalized benefits in an efficient manner casts doubt on the overall efficiency of tort law and that the expansionist trend of tort liability is therefore not necessarily compatible with the internalization theory). Ariel Porat has argued that the positive effects of medical treatment should be offset against its harms to avoid over-internalization which leads to over-deterrence in the form of “defensive medicine.” See Ariel Porat, *Offsetting Risks*, 106 MICH. L. REV. 243, 265–66 (2007) (illustrating this concept with the example of child birth). Porat further broadened the scope of the “benefits internalization” discussion by applying it to the law of restitution; he suggested that for better internalization, the law of restitution should, under specified conditions, require recipients to compensate benefactors for unrequested benefits. See Porat, *supra* note 70, at 195 (“In contrast, when benefits are voluntarily conferred but not at the recipient’s request, the law does not impose any duty of restitution on the recipient, and she is allowed to keep the benefits at no cost to her. This rule, which this Article advocates changing, has certain exceptions.”). Cooter recently joined Porat in this regard. See ROBERT D. COOTER & ARIEL PORAT, GETTING INCENTIVES RIGHT: IMPROVING TORTS, CONTRACTS, AND RESTITUTION 149–64 (2014). The scope of the “benefits internalization” discussion has been extended even further by Dari-Mattiacci, who introduced different ways in which different branches of law—not just tort and restitution but also intellectual property and public law—can and do internalize externalized benefits. See Giuseppe Dari-Mattiacci, *Negative Liability*, 38 J. LEGAL STUD. 21, 49–55 (2009) (demonstrating first through tort law and then with intellectual property and government intervention); see also Lily L. Batchelder et al., *Efficiency and Tax Incentives: The Case for Refundable Tax Credits*, 59 STAN. L. REV. 23, 43–44 (2006) (addressing Pigouvian tax subsidies designed to internalize externalized social benefits). For a recent discussion of the harms-benefits interrelations, see *infra* note 117.

73. One such potential major tool is the duty concept, which—theoretically at least—enables courts to exclude from the scope of liability harms that are offset by externalized benefits. A prominent example is the claim just discussed: the exclusion of pure economic loss from the scope of negligence liability by the duty

On this background, we argue that the exclusion of “reasonable” risks from the scope of negligence liability by the HWTRS is an important tool of tort law for internalizing externalized benefits in order to reduce excessive liability and thereby promote efficiency.

The theory behind this argument is the following. Reasonable risks are risks with a net *positive* social value: they are reasonable because their expected benefits (PB_i) exceed their expected costs (PL_i) or at least equal these costs. Obviously, the expected harms of a reasonable risk should not be internalized to *D* (if externalized) unless the benefits are also internalized (if externalized). Such one-sided internalization would lead to excessive liability on *D*. If the balance of risk X, for example, is expected benefits of 12 ($PB_x = 12$), and expected harms of 8 ($PL_x = 8$), and all harms and benefits are externalized by *D*, the externalized net social value of *D*’s activity is positive ($12 - 8 = 4$). Thus, it is this positive externalized value, not cost, that should be internalized to *D*. *D* should be credited for generating net social value of 4, rather than

concept can be explained because this loss is not a social cost that should be internalized to *D* because it is offset by externalized benefits to other parties. See *supra* note 72 and accompanying text (“At first, it was in the context of the rule that denies liability in negligence for pure economic loss.”). But, as one of us has argued, the way in which the exclusionary rule is *actually* applied by courts can hardly be reconciled with its suggested economic rationale. The rule often fails to internalize either externalized social benefits (thereby leading to over-internalization of harms), or externalized social harms (leading to under-deterrence). See Gilead, *supra* note 72, at 604–06 (“When the exclusionary rule allows liability for direct losses that do not represent social costs, it disregards the Gap and leads to over deterrence of injurers.”); see also Rizzo, *supra* note 72, at 282 (arguing that in most cases of “pure economic loss,” the loss constitutes true social cost). Another potential tool for offsetting externalized benefits are rules of harm assessment and quantification that theoretically allow reduction of damages awards by the amount of externalized benefits. Ariel Porat, for example, has proposed to do so in the context of medical liability to prevent “defensive medicine,” but he acknowledges that in practice, such offsetting does not take place. See Porat, *supra* note 72, at 266–68 (illustrating with two different precautions). Dari-Mattiacci argues that two additional ways in which tort law internalizes externalized benefits include allowing benefactors to injure third parties in the course of assisting gainers and punishing failure to produce a positive externality in cases covered by liability for nonfeasance. See Dari-Mattiacci, *supra* note 72, at 23, 49–53 (“[I]f the injurer were to completely compensate the victim, he would actually be paying damages in excess of the social loss. In turn, this would induce the injurer to take care beyond the socially optimal level. There are two possible solutions to this conundrum.”).

be “punished” by liability of 8, which would be excessive liability of 12. It should be borne in mind, though, that because *D* often does internalize some expected harms⁷⁴ and some expected benefits⁷⁵ of her activity,⁷⁶ it is only the *externalized* (E) harms and benefits that should be internalized. The relevant balance for internalization is not $\sum PL_i$ compared with $\sum PB_i$, but rather the balance of $\sum EPL_i$ compared with $\sum EPB_i$.⁷⁷ In the above illustration, assuming that EPB_i is not 12, but only 9 (because *D* already internalizes benefit of 3 which is prevention cost), the positive net social balance would be 1, rather than 4, and the imposition of liability of 8 on *D* would lead to excessive liability of 9, rather than of 12.

To sum up and generalize, by excluding foreseeable harms that materialized from reasonable risks from the scope of *ex post* liability, the HWTRS reduces the extent of excessive liability otherwise caused by the failure of tort law to internalize the expected externalized *benefits* that render these risks reasonable. Excessive liability is reduced by the magnitude of the excluded harms. This exclusion, in other words, offsets expected externalized benefits and expected externalized harms against each other and thereby reduces the scope of excessive liability to the extent of this offset. As excessive liability may lead to inefficient over-deterrence, its reduction or elimination by the operation of the HWTRS is welfare-enhancing. We refer to this generalized conclusion as the externalized-benefits analysis.

74. Such as harms to herself or harms to her reputation caused by the infliction of harms on others.

75. Such as saved costs of prevention.

76. Possibly, *D* may internalize *all* the expected harms and benefits of her activity.

77. If it is the externalized net difference between EPL_i and EPB_i that should be internalized, why does the Hand Formula sanction the internalization of PL instead of $EPL_i - EPB_i$? The answer, so it seems, is that under the Hand Formula, it is assumed that all expected harms are externalized ($E = 1$), and that all expected benefits are internalized ($E = 0$) because *B* stands for prevention costs which *D*, by presumption, internalizes. For further discussion of the Hand Formula and its shortcomings in this regard, see *infra* Part VI.

For a better understanding of the externalized-benefits analysis and its application and implications, we present three illustrations that highlight different aspects of this analysis.⁷⁸

D. Illustrations

The first illustration of the HWTRS externalized-benefits analysis is a well-known hypothetical case used in HWTRS literature: the gun illustration.⁷⁹ The second illustration is taken from case law: the pond illustration.⁸⁰ The third illustration applies the externalized-benefits analysis to a more complex multiparty situation where a variety of different benefits and costs are involved: the drug illustration.⁸¹ In each illustration, we distinguish between a reasonable risk *r* and unreasonable risk *u* that *ex ante*, being foreseeable, renders certain conduct negligent. We then explain, by applying the externalized-benefits analysis, how the *ex post* exclusion of the reasonable (and foreseeable) risk *r* from the scope of liability by the HWTRS promotes efficiency by reducing excessive liability. The different illustrations tackle the different aspects of the externalized-benefits analysis as further explained in the overview following the illustrations.⁸²

*1. Loaded Gun and Injured Toe*⁸³

A hunter *D* hands over a loaded gun to a child *P*, who drops it on her toe and breaks it. Handing over a loaded gun to a child creates *ex ante* two foreseeable risks: a risk *r* that *P* will drop the gun and injure herself or another person, and a risk *u* that the gun

78. *Infra* Part III.D.

79. *Infra* Part III.D.1.

80. *Infra* Part III.D.2.

81. *Infra* Part III.D.3.

82. *Infra* Part III.D.4.

83. This illustration is drawn from Charles E. Carpenter, *Workable Rules for Determining Proximate Cause*, 20 CAL. L. REV. 229, 231 (1932). The illustration found its way into RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 29 cmt. d, illus. 3 & rptrs note (AM. LAW INST. 2010).

will fire and injure someone.⁸⁴ Assume that risk *r* (dropping) is *reasonable* because *D* and *P* derive from the activity of handing over objects to each other a benefit of 5 each, while the expected harm of dropping the gun is only 5. The *ex ante* net balance of this risk is positive $B_r > PL_r$ ($5 + 5 > 5$). Risk *r* generates net social welfare of 5 ($10 - 5$). Assume further that risk *u* (firing) is *unreasonable* because expected harm (PL_u) is 20 and it can be prevented at a cost (B_u) of 3 (checking the gun before handing). Risk *u*'s overall balance is negative: $PL_u > IB_u$ ($20 > 3$). Overall, the *ex ante* balance of *D*'s conduct is negative because $\sum PL_i$ ($5 + 20 = 25$) exceeds $\sum B_i$ ($5 + 5 + 3 = 13$) ($I = r, u$) by 12. The conduct is *ex ante* negligent.

At the *ex post* stage, in which the scope of liability is determined by the HWTRS, the question is whether the exclusion of the harm caused by materialization of risk *r* (dropping) is efficient. According to the externalized-benefits analysis, the answer is in the affirmative. *D* externalizes expected costs of 25 (20 firing + 5 dropping) and benefits of 5 (child's benefit).⁸⁵ Overall, the externalized net social cost ($\sum EPL_i - \sum EB_i$) is 20 ($25 - 5$). Holding *D* liable only for the unreasonable risk *u* (20), but excluding the reasonable risk *r* (5) from the scope of *ex post* liability by the HWTRS, would achieve efficient and optimal internalization and deterrence because the risk of liability given the exclusion (20) would equal net externalized social cost (20). Liability in this amount would incentivize actors who hand over objects to children to monitor and reduce *unreasonable* dangers of these objects (firing in this case⁸⁶), but it would not incentivize them to refrain from handing over objects to children where the associated risks are *reasonable* (dropping in this case). Failure to exclude risk *r* from the scope of *ex post* liability would increase expected liability to 25, namely, to excessive liability of

84. Note that in this illustration, there are two distinct aspects of *D*'s conduct that could prevent risk: (1) not handing the gun to the child, which would prevent both risks, and (2) unloading the gun before handing it to the child, which would only prevent the risk of the gun being fired.

85. The other benefits of 5 (from handing over objects) and 3 (saved costs of prevention) are internalized by *D*.

86. Obviously, *D* would prefer to invest 3 in preventing the firing risk rather than take the liability risk of 20.

5 (25 – 20).⁸⁷ Such excessive liability could lead to inefficient over-deterrence by incentivizing actors to refrain from the socially desirable activity of handing over to children (or receiving from them) objects, activity that involves only reasonable risks.

2. *Landowner Fails to Warn Not to Swim in a Polluted Pond*

A landowner fails to post a sign warning others not to swim in a pond that has been polluted with bacteria that cause a fatal disease.⁸⁸ This failure creates *ex ante* two foreseeable risks: a risk *r* that a swimmer *V* will drown for reasons unrelated to the pollution, and a risk *u* that *V* will contract the disease. Let us assume that risk *r* (drowning) is *reasonable* because the benefits to *V* (pleasure of swimming) are 9 while the expected danger of drowning is only 5. The *ex ante* net balance of this risk is positive: $B_r > PL_r$ ($9 > 5$). Risk *r* generates social welfare of 4. Assume further that risk *u* (disease) is *unreasonable* because expected harm is 35 and it can be prevented at a cost of 3 (posting a sign). Risk *u*'s overall balance is negative: $PL_u > B_u$ ($35 > 3$). Overall, the *ex ante* balance of *D*'s conduct is negative because $\sum PL_i$ ($5 + 35$) exceeds $\sum B_i$ ($9 + 3$) ($I = r, u$) by 28. The conduct is *ex ante* negligent.

At the *ex post* stage, in which the scope of liability is determined by the HWTRS, the question is whether the exclusion of the harm caused by materialization of risk *r* (drowning) is efficient. According to the externalized-benefits analysis the answer is in the affirmative. *D* externalizes expected costs of 40 (5 of drowning + 35 of disease) and benefits of 9 (swimming). Overall, the externalized net social cost ($\sum EPL_i - \sum EB_i$) is 31 ($40 - 9$). Holding *D* liable only for the unreasonable risk *u* (35), but excluding the reasonable risk *r* (5) from the scope of *ex post* liability by the HWTRS, would not affect efficient internalization and deterrence because the extent of liability despite the exclusion (35) would exceed the net externalized social cost (31). Such expected burden would incentivize actors who control access to polluted

87. Twenty is the externalized net social cost and 25 is the expected liability.

88. This illustration is based on *Darby v. Nat'l Tr.*, [2001] EWCA (Civ) 189 (Eng.). The court ruled that the plaintiff's decedent's death was outside the defendant's scope of liability.

swimming water to warn against unreasonable risks associated with swimming in these waters. On the other hand, the exclusion of liability for harm due to risk *r* would promote efficiency by reducing the incentives of those who control access to swimming water to forbid reasonable swimming in nonpolluted water. Note that unlike the former gun illustration—where the exclusion of risk *r* by the HWTRS eliminated *any* excessive liability and equalized expected liability with the net externalized social cost—in this illustration, some excessive liability (of 4 (35 – 31)) would remain even after the exclusion of risk *r* by the HWTRS. Yet, the exclusion of risk *r*, as mentioned, reduces the size of excessive liability and thereby mitigates its related inefficiencies. Failure to exclude risk *r* from the scope of *ex post* liability would increase expected liability to 40, namely, to excessive liability of 9 (40 – 31)⁸⁹ rather than of 4, more than doubling excessive liability.

3. A Cholesterol-Reducing Drug

A cholesterol-reducing drug is used by 1,000 consumers. The market price is 5, and the average production cost is 2 (total cost of production = 2,000). Each consumer enjoys a reduction of cholesterol level that is valued, on average, at 12.⁹⁰ The same causal process that reduces cholesterol also causes a minor liver problem with a cost of 4; all consumers are made aware of this associated problem, although there is no way to avoid or mitigate this risk other than ceasing to take the drug.

In addition to the liver problem, the drug creates a risk of a more serious heart problem—about which the consumers are unaware⁹¹—due to a different causal process, with a cost of 80% to 10% of users, here 100 users. The only available precaution is to cease selling the drug, as there is no way to identify which patients will suffer heart problems in advance, nor is there any way to mitigate the adverse effect once it occurs.

89. The externalized net social cost is 31 and the expected liability is 40.

90. The range of the value to different consumers lies between 15 and 9 along a downward sloping demand curve.

91. We assume that the producer either knows or at least has reasonably foreseeable knowledge of the heart risk.

The risks (PL_i) that the drug generates can be classified by courts in two ways. One classification is according to the two sets of affected consumers: risk to the 900 consumers who are exposed only to the risk of liver harm (group A) and risks to the group of 100 consumers who are exposed to the risk of heart problems as well (group B). The alternative classification is based on the expected kind of harm and the causal process: risk of liver harms and risk of heart harms.

Starting with the classification of risks according to groups, the risk to group A, risk r , is clearly reasonable. The overall benefits ($\sum B_r$) are 10,800 (900×12) and the overall harms ($\sum PL_r$) are 3600 (900×4). The positive social balance is 7,200 and after deducting production costs of 1,800 (900×2), the net positive social benefit is 5,400.⁹² Group A and each of its members are beneficiaries of the product.⁹³ In contrast, the risks to group B, risk u , are clearly unreasonable. The risks to group B ($\sum PL_u$), comprising the 100 consumers who are *ex ante* exposed to both risks, are 8,400 ($100 \times 80 + 100 \times 4$) and the overall social cost, which includes production costs of 200 (100×2) is 8,600. The benefits ($\sum B_u$) are 1,200 (12×100), so that the overall social value is negative—cost of 7,400 ($8,600 - 1,200$). Looking at the overall social balance of the drug, given its two risks ($(\sum PL_i - \sum B_i)(I = r, u)$), the outcome is negative—a social cost of 2,000 ($7,400 - 5,400$).⁹⁴ The production of the drug is negligent.

At the *ex post* stage, in which the scope of liability is determined by the HWTRS, the question is whether the exclusion from liability of the harm caused by materialization of risk r (group

92. Some of which the manufacturer internalizes, i.e., revenue of 5 less the cost of production of 2 equals 3 for each of the 900 units for a total of 2,700. The remainder, 2,700, is consumer surplus.

93. On a personal level, each member faces a market price of 5 and a risk of 4, but an average gain of 12. Ultimately, this means an average personal gain of 3.

94. Again, 7,400 is the net *negative* value of the risk to group B (combined harms of 8,400 minus benefits of 1,200 plus production costs of 200). The net *positive* social value to group A is 5,400 (benefits of 10,800 minus harms of 3,600 minus production costs of 1,800). This negative balance of the overall social value of the drug (2,000) can also be reached simply by deducting the overall benefits of reduced cholesterol (12,000) from overall costs of harms ($4,000 + 8,000 = 12,000$) and costs of production (2,000) ($12,000 - 14,000 = -2,000$).

A) is efficient. According to the externalized-benefits analysis, the answer is in the affirmative. On the costs side, *D* externalizes all the health risks to both groups, which are 12,000 (3,600 group A + 8,400 group B).⁹⁵ On the benefits side, *D* internalizes only the sale revenues of 5,000 (5 X 1,000), and externalizes the remaining 7,000 of the product's 12,000 benefits (12 X 1,000). Overall, the net balance of externalities that should be internalized to *D* is 5,000 ($\sum EPL_i - \sum EB_i = 12,000 - 7,000 = 5,000$). Efficiency requires that *D*'s liability should be set at 5,000: the optimal *ex ante* expected burden.⁹⁶ If liability is *ex post* imposed for both risks, its burden (12,000) would exceed the optimal burden by 7,000 (12,000 – 5,000). Exclusion of risk *r* to group A from the scope of liability (3,600) by the HWTRS would reduce the burden of liability to 8,400 and reduce excessive liability to 3,400. Failure to exclude risk *r* from the scope of *ex post* liability would increase expected liability to 12,000, namely, to excessive liability of 7,000 rather than of 3,400 (12,000 – 5,000), more than doubling excessive liability. In sum, the exclusion of liability for the materialization of risk *r* by the HWTRS from the scope of liability enhances efficiency by reducing, although not eliminating, excessive liability and consequent concerns that drug producers will refrain from producing more helpful than harmful drugs with *reasonable* side effects.

The externalized-benefits analysis is similar, and the efficiency of the HWTRS is even greater if risks are classified not according to groups A and B but according to the different *causal chains* that lead to the different kinds of expected harms. Under this classification, risk *r* is the causal chain that causes liver problems while reducing cholesterol to all the 1,000 consumers. Risk *r* is reasonable, having a net social value of 8,000 ($\sum B_r - \sum PL_r = 12,000 - 4,000$), and after deduction of all production costs (2,000) a net social value of 6,000. Risk *u*, the causal chain that causes heart problems, is clearly unreasonable as its expected

95. Production costs (2,000) are internalized by *D*.

96. Risk of liability of 5,000 will incentivize *D* to stop producing the drug given that *D*'s net gain from production is only 3,000 minus revenues of 5,000 (1,000 X 5) and production costs of 2,000 (1,000 X 2). Arguably, liability of 3,000 would suffice to incentivize *D* efficiently to cease production but only liability of 5,000 will fully internalize to *D* the full externalized cost of the activity.

costs ($\sum PL_u$) are 8,000 and it has no benefits ($\sum B_u = 0$). The overall social balance of the drug ($\sum PL_i - \sum B_i$) is, again, a negative social cost of 2,000 (8,000 – 6,000) and, therefore, the production of the drug is negligent. Here as well, despite *D*'s negligent conduct, the externalized-benefits analysis shows that the exclusion of risk *r* from the scope of *D*'s liability by the HWTRS is efficient. As the optimal burden on *D* is 5,000 ($\sum EPL_i - \sum EB_i$),⁹⁷ if liability is imposed for both risks, its burden (12,000) would exceed the optimal burden by 7,000 (12,000 – 5,000). Exclusion of the reasonable risk *r* from the scope of liability ($PL_r = 4,000$) would reduce the burden of liability to 8,000 (12,000 – 4,000) and reduce excessive liability from 7,000 to 3,000 (compared to a smaller reduction to 3,400 under the former risk classification).

4. An Overview of the Illustrations

The above illustrations reveal that:

(1) Expected-benefit analysis can contribute to efficient deterrence when the benefits produced by an actor engaging in risky conduct do not accrue solely to the actor, i.e., benefits are, at least in part, externalized.

(2) Despite the “correlation problem,”⁹⁸ specific risks and specific benefits of a given conduct can often be associated with each other in order to distinguish between reasonable risks and unreasonable risks (dropping versus firing; drowning versus disease). Sometimes the different risks are to the same people (child; swimmer) and sometimes to different people (group A and group B). There are various ways to classify risk (by groups of people versus causal chains).

(3) Reasonable risks, by definition, are risks of harm that are correlated with benefits that exceed or at least equal the expected harms. These expected benefits, if externalized, should be internalized alongside the internalization of externalized harms to avoid excessive liability.

97. As under the classification by groups, the balance is 12,000 – 7,000 = 5,000.

98. See *supra* Part III.B (“The essence of this problem is that when a single act generates multiple expected risks but only a single benefit, there is no appropriate way to allocate that benefit among the multiple risks . . .”).

(4) By excluding from the scope of liability harms that *ex post* materialized from an *ex ante* reasonable risk, the HWTRS actually internalizes the externalized benefits of this risk to the extent that these benefits offset the externalized harms.

(5) The exclusion of reasonable risks from the scope of liability by HWTRS does not undermine incentives to avoid negligent conduct (checking a gun before handing it over; warning against swimming in a polluted pond; ceasing production of a drug that is more harmful than helpful).

(6) The internalization of externalized benefits through the exclusion of reasonable risks of harm from the scope of liability by HWTRS reduces or avoids excessive liability.

(7) Reduction or avoidance of excessive liability may well be welfare-enhancing, as it mitigates or prevents over-deterrence through excessive liability on socially desirable activity (handing objects to children; allowing others to swim in one's pond; producing drugs that are more helpful than harmful).

(8) The exclusion of reasonable risks from the scope of liability by the HWTRS may lead to *optimal* liability, but only where it offsets and avoids *any* excessive liability (the gun illustration). Otherwise, it only *reduces* excessive liability (the pond and the drug illustrations).

IV. Responding to the Critique of HWTRS for Excluding Foreseeable Harms

The conclusion that the HWTRS promotes efficiency by reducing excessive liability via the *ex post* exclusion of foreseeable harms that materialized from *ex ante* reasonable risks challenges a prevailing view that the exclusion of *foreseeable* risks of harm from the scope of liability in negligence, unlike the exclusion of coincidental risks or unforeseeable risks, is in principle inefficient. Grady, for example, takes it for granted that the efficient rule for the paradigm of harm resulting from reasonably foreseeable risks should be liability rather than exclusion.⁹⁹

99. Grady, *supra* note 11, at 136.

A major attack on the HWTRS for excluding harm resulting from foreseeable risks from the scope of liability has been launched by Porat,¹⁰⁰ now joined by Cooter,¹⁰¹ who argues that such exclusion is inefficient because it may result in under-deterrence. Porat and Cooter argue that to avoid this inefficiency, *all* foreseeable risks considered by the court at the *ex ante* stage should generate liability at the *ex post* stage if materialized in harm.¹⁰² This argument corresponds with the argument previously made by Hurd and Moore that the distinction under the HWTRS between those foreseeable risks that should generate liability and those that should not, makes no sense.¹⁰³ Applying the externalized-benefits analysis, the following sections explain why Porat and Cooter's attack on the exclusion of foreseeable harms from the scope of liability by the HWTRS is misconceived from an efficiency perspective, and why Hurd and Moore are incorrect in claiming that such exclusion makes no sense.

A. The "Alignment Principle" and Porat's/Cooter's
Criticism of the HWTRS

In a 2012 Yale Law Journal article, Porat argues that tort law is (and should be) governed by a principle that he titles "the alignment principle."¹⁰⁴ This principle is presented as one of tort law's fundamental principles and as a major criterion for understanding and evaluating tort doctrines, rules, and the

100. Porat, *Misalignments*, *supra* note 11.

101. Cooter & Porat, *supra* note 54.

102. See Cooter & Porat, *supra* note 54, at 20–21 ("To be specific, courts should interpret the injurer's burden of care in the Hand Rule as 'net burden.' By net burden we mean the injurer's cost of care minus the resulting reduction in the injurer's risk.").

103. See Hurd & Moore, *supra* note 6, at 364–65

[O]nce one appreciates that all risks created by a defendant weigh in an assessment of his negligence, it would appear that *any* and *all* harms that materialize from the defendant's conduct are within the category of risks that make such conduct negligent. If this is true, then of course the test fails as a test of anything; for it fails to provide any means of distinguishing harms for which the defendant ought not to be held responsible from harms for which he ought to be liable.

104. Porat, *Misalignments*, *supra* note 11, at 84.

functioning of courts. The essence of the alignment principle is that when a court determines that certain conduct is negligent because of the foreseeable risks of harm that it creates *ex ante*, liability *ex post* should be imposed for *all* the harms materializing from these foreseeable risks that were considered at the *ex ante* stage.¹⁰⁵ Doing so is an alignment—*ex post* liability is aligned with the *ex ante* setting of the standard of care. Failing to do so is a misalignment.¹⁰⁶ Porat further argues that misalignments should be suspected of being inefficient in terms of deterrence, and, therefore, require convincing justifications either on efficiency grounds or on grounds of corrective justice.¹⁰⁷

Porat identifies the *Third Restatement's* HWTRS as an unjustified misalignment that creates inefficient incentives.¹⁰⁸ Following a claim made in a previous 2009 Article,¹⁰⁹ and later reiterated in a book coauthored with Robert Cooter,¹¹⁰ Porat argues in his 2012 Yale Article that, when a court considers a foreseeable risk of harm at the *ex ante* stage in which *D's* act is evaluated for negligence, the risk, if materialized in harm, should be internalized to *D* at the *ex post* stage.¹¹¹ The *ex post* exclusion of such foreseeable harm from the scope of liability by the HWTRS is, according to Porat, an unjustified misalignment that leads to

105. *Id.*

106. In Porat's words, "In negligence law, the risks taken into account by courts when setting the standard of care are the same risks considered when imposing liability and awarding damages. I call this the 'alignment principle.'" *Id.*

107. *See id.* at 87 ("It argues that from both efficiency and corrective justice perspectives, the misalignment cannot be justified.")

108. *See id.* at 123–24 (identifying the *Third Restatement's* HWTRS rule as "the wrongful risk limitation," and arguing that "the wrongful risks limitation, or at least the way it is often applied by courts, is yet another manifestation of misalignment").

109. *See* Ariel Porat, *Expanding Liability for Negligence Per Se*, 44 WAKE FOREST L. REV. 979, 979 (2009) ("The normative argument this Article makes is that the weight given to the limiting liability conditions should be dramatically decreased.")

110. *See* COOTER & PORAT, *supra* note 72, at 47–60 (arguing that all foreseeable risks should be taken into account *ex post* when determining the scope of liability).

111. *See* Porat, *Misalignments*, *supra* note 11, at 123–24 (examining the wrongful risk limitation).

inefficient under-deterrence. In Porat's words, "[m]y argument is twofold: (a) absent special policy considerations, all foreseeable risks created by the injurer should be and are considered by courts when they set the standard of care; (b) therefore, exempting the negligent injurer from liability for harms materializing from foreseeable risks creates misalignment."¹¹²

Although Porat does not explicitly mention "reasonable risks" as the foreseeable risks that the HWTRS (the wrongful risk limitation) inefficiently excludes from the scope of liability, he obviously includes the exclusion of these risks in his criticism of the HWTRS. He refers to "non-tortious,"¹¹³ "ordinary," and "usual" risks as risks that by their exclusion from the HWTRS create a misalignment;¹¹⁴ thus encompassing what one might understand as reasonable risks. Moreover, Porat reiterates that *all* harms materializing from foreseeable risks should not be excluded at the *ex post* stage if considered at the *ex ante* stage, and that such exclusions can be justified, if at all, only by policy considerations under the "duty" concept.¹¹⁵

True, Porat's (now also Cooter's) criticism of HWTRS may appeal to intuitive perceptions. If *D*'s conduct is *ex ante* negligent because its overall foreseeable balance is negative (although some risks are reasonable) and if *ex post*, the reasonable risk that resulted in materialized harm could have been avoided if *D* was not negligent, should not *D* pay for the materialized harm? But as we have seen, the externalized-benefits analysis undermines this misleading intuition. A risk is reasonable because its expected benefits exceed its expected harms and, therefore, one-sided internalization—only of the externalized harms but not of the externalized benefits—leads to excessive liability and

112. *Id.* at 124.

113. COOTER & PORAT, *supra* note 72, at 53.

114. See Porat, *Misalignments*, *supra* note 11, at 125 ("In light of this analysis, a misalignment arises.").

115. See Porat, *supra* note 109, at 991 ("Limiting liability for policy considerations, however, is completely unrelated to the argument that risks that do not define the injurer as negligent should not result in liability."); see also COOTER & PORAT, *supra* note 72, at 58 ("In the absence of policy considerations that exclude liability, liability should be imposed for all foreseeable harms that materialize from risks increased by the injurer's negligence.").

over-deterrence rather than under-deterrence as argued by Porat and Cooter.¹¹⁶

Porat's omission to account for the need to internalize not just externalized harms, but also externalized benefits when evaluating the efficiency of HWTRS is puzzling. After all, Porat is a leading scholar calling for internalization of externalized benefits,¹¹⁷ albeit in contexts other than the HWTRS. Unfortunately, it appears that Porat's omission to extend his own externalized-benefits analysis to the HWTRS led him to unjustified criticism of the latter.¹¹⁸

An example used by Porat and Cooter to illustrate the inefficiency of HWTRS in excluding foreseeable risks¹¹⁹ demonstrates its efficiency once externalized benefits are taken into account rather than mistakenly disregarded:

A doctor delivered a baby vaginally, even though the large size of the baby warranted a C-section. A knot of the umbilical cord caused the baby's death. Prior to delivery, nothing indicated unusual risk relating to the umbilical cord In this case, a C-section would have saved the baby's life. The parents bring a wrongful death action against the doctor for her negligent failure to deliver by C-section. Should she be held liable?¹²⁰

116. See *supra* notes 100–101 and accompanying text (explaining over-deterrence).

117. *Supra* note 72. Moreover, Porat's recent work focuses on the interrelations between benefits and harms. See Oren Bar-Gill & Ariel Porat, *Harm-Benefit Interactions*, 16 AM. L. & ECON. REV. 86, 87 (2014) (discussing cases in which harms to victims are accompanied by a benefit to the injurer); Ariel Porat & Eric Posner, *Offsetting Benefits*, 100 VA. L. REV. 1165, 1168 (2014) (discussing offsetting benefits in two-party and three-party tort cases and proposing guidelines as to when these benefits should be offset against harms and when they should not).

118. Porat and Posner, in their detailed analysis of offsetting benefits, assume that benefits can be offset against harms to avoid excessive liability only by: (a) reducing damages; (b) granting a right to restitution to *D*; or (c) adjusting the standard of care. See Porat & Posner, *supra* note 117, at 1202, 1208 (illustrating through the example of a driver rushing a passenger having a heart attack to the hospital and injuring a pedestrian along the way). They fail to recognize that the HWTRS provides another powerful and often-used measure of offsetting benefits in both two-party and three-party cases: excluding reasonable harms from the scope of negligence liability.

119. COOTER & PORAT, *supra* note 72, at 63–64; Porat, *supra* note 109, at 986.

120. COOTER & PORAT, *supra* note 72, at 63.

Porat and Cooter predict that under the HWTRS, liability for the death would be denied because this risk is “unusual” or a “background” risk, and they argue that this would lead to inefficient under-deterrence.¹²¹ Assuming that the usual/foreground risk (the baby’s large size) is 60, all other unusual/background risks (including the umbilical cord) are 30, and that the cost of a C-section is 80, Porat and Cooter conclude that liability should be imposed not just for the foreseeable usual risk (60) but also for all unusual risks (30), including death by umbilical cord.¹²² Liability restricted to the foreground/unusual risk of 60, they argue, would not suffice to incentivize *D* to invest 80 to perform a C-section, thus leading to under-deterrence.¹²³ The problem in this analysis, however, is that it disregards the externalized benefits to the mother, child, and others of natural delivery rather than a C-section. If these benefits, for example, are 15, then the net social value of a C-section $\sum PL_i - \sum PB_i$ is not a positive 10 ($60 + 30 - 80$) as Porat and Cooter argue, but rather a negative 5 ($60 + 30 - 80 - 15$). Therefore, a C-section, being inefficient ($\sum PL_i < \sum PB_i$ $90 < 95$), should not be performed. The inclusion of the unusual/background risks in the scope of liability, as suggested by Porat and Cooter, would lead to over-deterrence: inefficient C-sections. The exclusion of these risks from the scope of liability by the HWTRS would avoid this over-deterrence.¹²⁴

121. *Id.*

122. *Id.* at 64.

123. *Id.*

124. It should be noted that the above example deviates in two major aspects from the Israeli Supreme Court’s decision upon which it is based, in which the court *dismissed* the suit for lack of proximate cause. CA 2717/02 Plonit v. Bnei Zion Med. Ctr. Haifa 58(1) PD 516 [2003] (Isr.). First, the court held that the umbilical cord risk was an *unforeseeable* risk, not a foreseeable background risk, as categorized in Porat and Cooter’s example. *Id.* Porat and Cooter agree that unforeseeable risks should be excluded from the scope of liability. COOTER & PORAT, *supra* note 72, at 14. Second, the court assumed that the foreground risk (fetus-size-related risk) was sufficient to justify the C-section, while in Porat and Cooter’s example, the foreground risk was insufficient to justify a C-section—only the combined effect of all risks justified a C-section. Adjusting the numbers to the facts of the real case means that the costs of the C-section were lower than the foreground risk (60); namely, not 80 but, for example, 50. Given these numbers, it is evident that the exclusion by the HWTRS of all the background risks, including the umbilical cord death risk, even if these risks were *foreseeable*, is efficient. Internalization of only the foreground risk of 60 is sufficient to

The same kind of analysis shows that in all of the above illustrations—loaded gun, polluted pond, and cholesterol-reducing drug—Porat and Cooter’s disregarding externalized benefits would lead to inefficient excessive liability.¹²⁵

B. Is the HWTRS “All-Inclusive”? Hurd and Moore’s Critical Conception of the HWTRS

Porat and Cooter’s alignment argument—that in principle, all foreseeable risks considered by the court at the *ex ante* stage should generate liability if *ex post* they materialize—aligns with an argument previously made by Hurd and Moore. The essence of this argument is that because the *ex ante* stage combines *all* expected harms, thereby tipping the scale toward finding the conduct negligent, *all* foreseeable harms should be considered tortious under HWTRS and none can be excluded at the *ex post* stage.¹²⁶ In their words, “[b]ut if *all* harms, discounted by their probability, are to be included in the calculus of risk, then it would appear that any harm that happens as the result of a defendant’s unjustified conduct is within the risks that make the defendant’s conduct unjustified.”¹²⁷ This outcome is termed by the authors as the inherent “all-inclusiveness” of the HWTRS.¹²⁸

The difference between Porat/Cooter on the one hand, and Hurd/Moore on the other hand, is that the former argue that the HWTRS *should be* all-inclusive and criticize it for *not being so*, while the latter argue that the HWTRS *is* all-inclusive and criticize it for *being so*.¹²⁹ According to Hurd and Moore, the alleged

incentivize *D* to perform the C-section ($60 > 50$). Non-exclusion of this risk, as suggested by Cooter and Porat, leads to excessive liability of 90 (instead of 60), which may incentivize physicians to perform inefficient C-sections as a practice of “defensive medicine,” criticized by Porat. *Id.* at 51.

125. Porat has expressed a contrary view, “I see no reason why . . . liability should not be imposed on the hunter in the Restatement example.” Porat, *Misalignments*, *supra* note 11, at 126 n.127.

126. Hurd & Moore, *supra* note 6, at 365.

127. *Id.*

128. *Id.*

129. Compare COOTER & PORAT, *supra* note 72, at 51, with Hurd & Moore, *supra* note 6, at 365.

“all-inclusiveness” of the HWTRS is a major problem because it leads to the outcome that “all defendants are responsible for all harms that they cause to all persons,” which is absurd in their view.¹³⁰ Yet, despite their contrasting views regarding what the HWTRS *is* and what it *should be*, they all make the same mistakes—disregarding benefits that render some risks reasonable. Descriptively, the HWTRS is not all-inclusive, as argued by Hurd and Moore, because expected harms that can be correlated with expected benefits in the framework of reasonable risks *are* actually excluded from the scope of liability by the HWTRS. Normatively, the HWTRS should not be all-inclusive because reasonable risks should be excluded by the HWTRS to promote efficiency.

V. Applying the Externalized-Benefits Analysis to the Other Six Categories Excluded by the HWTRS

Our major argument to this point, that the missing factor of the HWTRS analysis—recognition of externalized benefits—not only provides a solid economic justification for the exclusion of foreseeable reasonable risks from the scope of liability, but also has broader implications. We argue that applying the externalized-benefits analysis to the other six categories of cases excluded by the HWTRS from the scope of *ex post* liability supports the economic rationale behind the exclusion of risks addressed in the other categories. We briefly draw the general outlines as to when and how it does so, hoping that further research in this direction will shed more light on the economic rationale of these categories.

A. Coincidental Harms

Some harms caused by negligent acts are considered “coincidental.”¹³¹ These are harms that would have been avoided

130. Hurd & Moore, *supra* note 6, at 365.

131. See RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 30 cmt. a (AM. LAW INST. 2010) (“When tortious conduct does not generally

but for the *D*'s act, but the negligent act did not increase the risk of the harm occurring.¹³² The seminal case is *Berry v. Sugar Notch Borough*.¹³³ A tree that the municipality allegedly should have removed fell on a trolley and injured the motorman while he was negligently speeding.¹³⁴ The accident would have been avoided were the motorman driving carefully (more slowly) because he would not have reached the tree at the time and place of its fall.¹³⁵ Yet, the only causal effect of the negligent speeding was to put the trolley at the place and time that the tree fell.¹³⁶ Viewed *ex ante*, the negligent speeding did not increase the probability that a tree would fall on the trolley because this risk is coincidental and unrelated to the speed of the trolley. Actually, *ex ante*, the chances that the negligent speeding would, in fact, cause such harm are equal to the chances that negligent speeding would in fact avoid such harm.¹³⁷ The court held that the negligent speeding was not a proximate cause of the harm, therefore the plaintiff's negligence did not bar his claim.¹³⁸

As external risks unrelated to *D*'s negligent conduct, coincidental risks are not, and should not be, considered as the basis for negligence liability.¹³⁹ That explains why the HWTRS, in accord with its inner logic, excludes them from the scope of liability for negligent conduct, even though this conduct was a but-for cause

increase the risk of the type of harm that occurred, the wrongful aspect of the actor's conduct is merely serendipitous or coincidental in causing the harm.”).

132. *See id.* (“The critical inquiry is whether the risks posed by the tortious conduct of the actor, would, if repeated, make it more likely that harm such as that suffered by the other person would also occur.”).

133. *Berry v. Sugar Notch Borough*, 43 A. 240 (Pa. 1899).

134. *Id.* at 240.

135. *See id.* (explaining the defense's argument that the plaintiff was contributorily negligent because the plaintiff would not have been struck by the tree if he had been driving at a slower speed).

136. *Id.*

137. Had the motorman driven carefully, it was equally likely that a tree would have fallen on the trolley at another place or time. *See id.* (“The same thing might as readily have happened to a car running slowly, or it might have been that a high speed alone would have carried him beyond the tree to a place of safety.”).

138. *Id.*

139. Nor for a determination of contributory or comparative negligence.

of their materialization. The *Third Restatement* provides that “[a]n actor is not liable for harm when the tortious aspect of the actor’s conduct was of a type that does not generally increase the risk of that harm.”¹⁴⁰

From an economic perspective, risks of coincidental harms, because of their nature, do not increase the *ex ante* probability that negligent conduct of *D* would cause such harm.¹⁴¹ Being unrelated to *D*’s negligent conduct, these risks should not be internalized to *D*. *Ex post* imposition of liability on *D* for such conduct-unrelated harm will have no efficient deterrent effect on *D*’s incentives to avoid harms because increased care would not reduce the probability of the coincidental risk’s materialization.¹⁴² Such liability would be excessive and lead to over-deterrence.¹⁴³ Accordingly, exclusion of coincidental risks of harm from the scope of liability is efficient because non-exclusion leads to excessive liability.¹⁴⁴

140. RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 30 (AM. LAW INST. 2010).

141. *See id.* (“When tortious conduct does not generally increase the risk of the type of harm that occurred, the wrongful aspect of the actor’s conduct is merely serendipitous or coincidental in causing the harm.”).

142. *See* SHAVELL, *supra* note 49, at 113 (stating that the socially optimal level of care is reached by excluding coincidental harms from *D*’s duty of care).

143. “[R]estriction of scope tends to prevent injurers from bearing more than the increment in expected accident losses that their activities create and thus forestalls the problem that injurers would be discouraged from engaging in socially worthwhile activities.” SHAVELL, *supra* note 49, at 113.

144. The above analysis, it should be noted, also applies to and explains the economic logic of the preliminary requirement of factual causation, namely, the requirement that the harm sued for would not have occurred but for the negligent conduct. *See* LANDES & POSNER, *supra* note 51, at 236

To hold a defendant liable for the consequences of an accident that would have occurred even if he had not been negligent (in the economic sense) will yield no allocative gains because, by assumption, liability will not deter a similar accident in the future . . . There is also the danger that if the defendant is liable for accidents that he cannot prevent, he will use excessive care.

See also SHAVELL, *supra* note 49, at 108 (imposing liability for harms that would have occurred anyway may lead to over-deterrence). Along the same lines, Cooter and Porat conclude that “[l]iability should be restricted to wrongdoing that increased the probability of the injuring occurring.” COOTER & PORAT, *supra* note 72, at 55. “Generally a causal link between an activity and an injury would be required. It would clearly be unproductive to try to induce a modification in

The externalized-benefits analysis provides additional support for the exclusion of coincidental risks: the externalized risk that a coincidental harm may occur if the conduct is negligent is offset by the externalized benefit of avoiding a similar coincidental harm by a non-negligent conduct. The risk and the benefit offset each other. In *Berry*, for example, the *ex ante* externalized risk that a tree may fall on car if its driver negligently speeds is offset by the *ex ante* externalized benefit of avoiding the fall of another tree on the car at another place or time were the driver driving at or below the speed limit.¹⁴⁵

B. Unforeseeable Harms¹⁴⁶

Being a regime of fault-based liability, the law of negligence, at the *ex ante* stage of applying the Hand Formula on *D*'s conduct, takes into account only reasonably *foreseeable* risks of harm.¹⁴⁷ *Unforeseeable* risks are not included in the PL side of the Hand Formula equation.¹⁴⁸ The reason is simple: failure to avoid risks that one could not and should not have foreseen¹⁴⁹ involves no fault and, therefore, *D*'s conduct should not be deemed negligent because of such risks at the *ex ante* stage (although other

conduct for the purpose of reducing injury costs unless we believed the conduct to be causally linked to those injury costs." Guido Calabresi, *Concerning Cause and the Law of Torts: An Essay for Harry Kalven, Jr.*, 43 U. CHI. L. REV. 69, 84 (1975). Calabresi explains that, although the but-for requirement is not a "categorical imperative," it is "a sound way of determining, on a case-by-case basis, what burden-incentive should be placed on the loss bearer." *Id.* at 85, 87.

145. Assuming that the chance of a tree falling on a moving vehicle is the same whether that vehicle is driving slowly or speeding.

146. For a "description problem" in distinguishing between foreseeable and unforeseeable risks, and the scope of this problem, see *supra* note 23.

147. See RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 3 (AM. LAW INST. 2010) (stating that two of the primary factors that courts consider when determining the standard of reasonable care are the foreseeable likelihood that harm would result and the foreseeable severity of the harm).

148. See *id.* § 3 cmt. g ("To establish the actor's negligence, it is not enough that there be a likelihood of harm; the likelihood must be foreseeable to the actor at the time of conduct.").

149. Risks that are not foreseeable, even if all measures for reasonably required research were taken.

foreseeable risks may nevertheless be the basis for *ex ante* negligence). As the creation of unforeseeable risks is not considered tortious, the HWTRS excludes such risks from the scope of liability.

The economic rationale behind this exclusion is that *ex post* liability for unforeseeable risks of harm would not promote efficient deterrence.¹⁵⁰ If a given risk is *ex ante* unforeseeable, *D* would not be able to avoid or reduce that risk because *D* is unaware of the risk.¹⁵¹ So inclusion of unforeseeable risks in the scope of liability would lead to excessive liability and, thus, exclusion of liability for unforeseen risks contributes to efficiency.

The above economic rationale for exclusion is questionable on the grounds that while *Ds* are unaware of *specific* unforeseeable risks that their conduct generates, they are often aware that *some* unforeseeable risks may materialize into harms and, therefore, will take additional precautions to avoid liability for such harms. The counter argument is that taking such additional precautions against unforeseeable risks is “a shot in the dark” that can hardly be efficient.¹⁵² Liability that encourages such speculative attempts to reduce unknown risks can hardly be effective and may well be excessive.¹⁵³

150. For a concise review of the literature in this regard (by Calabresi, Shavell, Posner, Landes, and Grady), see Ben-Shahar, *supra* note 51, at 661–62. Cooter and Porat, who criticize the HWTRS for excluding foreseeable risks, stress that “[w]e do not suggest abandoning foreseeability as a precondition for liability, a requirement with valid justifications.” COOTER & PORAT, *supra* note 72, at 58; see *supra* Part IV.A (noting Cooter and Porat’s criticism).

151. See RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 3 cmt. g (AM. LAW INST. 2010) (“Foreseeability often relates to practical considerations concerning the actor’s ability to anticipate future events or to understand dangerous conditions that already exist.”).

152. See Grady, *supra* note 11 (“The purpose of the reasonable-foresight doctrine of proximate cause is to avoid the administrative costs of imposing liability for harms that would impose larger cost on injurers to foresee than the social benefit that would follow from liability.”).

153. An additional economic justification for the exclusion of unforeseeable harms from the scope of liability has been proposed by Mark Grady. Grady argues that inclusion of unforeseeable harms (as well as coincidental, low probability, and intervening-fault harms) in the scope of *ex post* liability may be inefficient so that their exclusion promotes efficiency. *Id.* at 133. The reason, Grady explains, is that in the real world, courts impose negligence liability for risks that are created inadvertently even where such inadvertence is efficient. *Id.* at 129. This

The externalized-benefits analysis provides, in our view, another economic justification for the exclusion of unforeseeable risks from liability. To the extent that nonspecific prospects of unforeseeable *harms* should be taken into account, the same applies to nonspecific prospects that some unforeseeable *benefits* may materialize. A drug, for example, may not just have unforeseeable side effects that are detrimental, but also unforeseeable beneficial effects. Arguably, these contradicting prospects may offset each other, and, given the uncertainty, it may well be better that *all* unforeseeable outcomes are disregarded. As with reasonable risks, one-sided internalization of unforeseeable harms without the corresponding internalization of unforeseeable benefits would lead to excessive, potentially inefficient liability. The need for reciprocity in this regard has roots in considerations of fairness as well. Once “the rules of the game” are changed and *D* is discredited for unforeseeable harms, fairness requires that *D* should be credited for unforeseeable benefits.¹⁵⁴

*C. Low-Probability Risk: “Unusual,” “Abnormal,” or
“Freakish” Risks*

The basic economic rationale for the exclusion of “unusual,” “abnormal,” or “freakish” risks from the scope of liability by the HWTRS is closely related to the corresponding rationale for the

over-internalization leads to excessive liability that may lead to over-deterrence. The exclusion of harms by the HWTRS, Grady argues, restricts the scope of liability and thereby avoids or reduces excessive liability. Whether or not negligence law indeed imposes a kind of strict liability for harms caused by efficient inadvertence is questionable. But, even if this is the case, Grady’s rationale justifies exclusion only of harms caused by efficient inadvertence. He, therefore, must establish that harms actually excluded by HWTRS—unforeseeable, coincidental, law-probability, etc.—are harms typically caused by efficient inadvertence. We are not convinced that this has been sufficiently established. It stands to reason that in many situations of inadvertence (such as driving or medical treatment), the risks are quite foreseeable. Robert Cooter & Ariel Porat, *Lapses of Attention in Medical Malpractice and Road Accidents*, 15 THEORETICAL INQUIRIES L. 329, 329 (2014).

154. For an analysis of denying liability for risks unknown and not reasonably knowable to the actor on grounds of fairness and administrative cost, see OLIVER WENDELL HOLMES, *THE COMMON LAW* 94–96 (1881).

exclusion of *coincidental* and *unforeseeable* risks of harm. The low probability of the unusual, abnormal, or freakish may minimize or nullify the deterrent effect of liability for such risks or be outweighed by the additional costs of litigation.¹⁵⁵

Here, as well, externalized-benefits analysis provides an additional supporting rationale. To the extent that externalized low-probability risks of harm are associated with externalized low-probability benefits that render the risks reasonable, or otherwise offset the expected harms of low-probability risks, the latter should be excluded from the scope of liability.

D. Foreseeable, “Usual,” “Ordinary,” or “Background” Risks

Ariel Porat’s¹⁵⁶ criticism of the exclusion by the HWTRS of foreseeable risks of harms focuses on the exclusion of foreseeable risks that are “usual,” “ordinary,” or “background” risks from the scope of liability.¹⁵⁷ Porat claims, based on his “alignment” principle, that because these kinds of risks should be considered in the *ex ante* stage, at which *D*’s conduct is evaluated as being negligent, they should not be excluded by HWTRS at the *ex post* stage of imposing liability for materialized risks considered at the *ex ante* stage.¹⁵⁸ Their exclusion from the scope of liability, Porat claims, is a “misalignment” that leads to inefficient under-deterrence.¹⁵⁹

Discussing Porat’s claims in the context of reasonable risks, we show above that to the extent that these kinds of usual, ordinary, or background risks are reasonable—namely, associated with benefits that offset the risks of harm—Porat’s criticism is misconceived because he fails to take into account externalized benefits.¹⁶⁰ Once these benefits are considered, there is a strong economic case for their exclusion by the HWTRS.

155. SHAVELL, *supra* note 49, at 109; LANDES & POSNER, *supra* note 51, at 243.

156. COOTER & PORAT, *supra* note 72, at 47–60.

157. *Supra* Part IV.A.

158. *Id.*

159. *Id.*

160. *Id.*

Assuming, however, that sometimes these usual, ordinary, or background risks are *unreasonable* (associated harms exceed associated benefits), we agree with Porat that these risks should not as a rule be excluded from the scope of liability if otherwise externalized by *D*. Such exclusion would usually lead to inadequate liability to deter socially harmful conduct. Yet, as with unforeseeable risks,¹⁶¹ an exception to the rule should be recognized in cases in which *D*'s conduct generates not just externalized usual, ordinary, or background risks of harm, but also externalized usual, ordinary, or background expected benefits. If the former are offset by the latter, exclusion of the former from the scope of liability is justified on economic grounds.

E. Intervening Factors: Faulty or Non-Faulty Conduct of Another Person or Forces of Nature

Sometimes *D*'s negligent conduct would not have caused *P*'s harm but for the operation of an *intervening factor*: the fault of another person (intentional, reckless, or simply negligent); the nonfaulty conduct of another person; or a force of nature. The *Third Restatement* has no special provisions for such intervening factors and rightly so. It applies HWTRS to intervening factors by providing that “[w]hen a force of nature or an independent act is also a factual cause of harm, an actor’s liability is limited to those harms that result from the risks that made the actor’s conduct tortious.”¹⁶²

What are the economic justifications for excluding harms that materialize through intervening factors from the scope of *D*'s liability for her negligent conduct? Such justifications exist wherever the intervening factor renders the risk of harm coincidental, unforeseeable, reasonable, or of low probability. The economic justifications for the exclusion of these kinds of risks, reinforced by the externalized-benefits analysis, are discussed above. However, when the intervening factor does not render the risks created by *D*'s negligent act unforeseeable, unreasonable, or

161. *Supra* Part V.B.

162. RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 34 (AM. LAW INST. 2010).

of low probability, liability for harms materializing from intervening factors may well be justified.

F. Negligence Per Se

Under the negligence per se doctrine, breach of a statutory duty may generate tort liability for harm factually caused by the breach. Yet, as provided by the *Third Restatement*, liability is limited only to the type of accidents and class of persons that are within the statute's designed scope of protection.¹⁶³ This limitation on the scope of liability parallels the common law's HWTRS. It may be understood as a doctrine requiring Harm Within the Statutorily-defined Risk (HWSR). In practice, absent explicit statement in the statute regarding the excluded risks, it is the courts that interpret the statute and decide which risks to exclude. In these cases, HWSR gets very close to HWTRS and even merges with it. Thus, the above analysis of HWTRS is applicable to HWSR. Whether the legislature or the courts exclude from the scope of liability risks of coincidental harms, unforeseeable harms, reasonable risks, or other (externalized) risks that are counterbalanced by (externalized) benefits, such exclusion may well be efficient according to the externalized-benefits analysis.

Porat has argued that courts tend inefficiently to exclude risks from the scope of negligence per se risks that are considered to be usual, ordinary, or background risks.¹⁶⁴ The evidence provided to support this descriptive statement is quite thin—Porat¹⁶⁵ provides one case to support his claim.¹⁶⁶ But, even if Porat is descriptively correct, our earlier analysis about the exclusion of usual, ordinary, or background risks by the HWTRS being economically justified by externalized benefit applies to HWSR as well.¹⁶⁷ In any case, to the extent that inefficient exclusion of usual, ordinary, and

163. *Id.* § 14.

164. Porat, *Misalignments*, *supra* note 11, at 89.

165. *Id.* at 124 n.122.

166. *See generally* Carman v. Dunaway Timber Co., 949 S.W.2d 569 (Ky. 1997) (involving a log striking a logger as he attempted to unchain the load at the mill).

167. *Supra* Part V.D.

background risk does take place under HWSR, it does not follow that the same happens under HWTRS. The scope of liability for common law claims is broader than for negligence per se claims. *Anderson v. Turton Development, Inc.*,¹⁶⁸ another case addressed by Porat,¹⁶⁹ reveals precisely this point.¹⁷⁰ In that case, although the court decided the plaintiff could not rely on negligence per se based on scope of liability limitations, the appellate court reversed the summary judgment granted to defendant so that the plaintiff could pursue her common law negligence claim.¹⁷¹ The *Third Restatement* explains precisely the same principle, revealing the inappropriateness of comparing negligence per se with common law negligence limitations on the scope of liability.¹⁷²

168. 483 S.E.2d 597 (Ga. Ct. App. 1997).

169. Porat, *Misalignments*, *supra* note 11, at 124 n.122.

170. *See Anderson*, 483 S.E.2d at 598–99 (involving a hotel patron suffering an injury on a hotel ramp).

171. *Id.* at 600. For other cases similar to *Anderson*, permitting a party to pursue a common law negligence claim despite denying the use of negligence per se because of its more stringent restrictions on scope of liability, see *Freeman v. United States*, 509 F.2d 626, 631 (6th Cir. 1975) (finding that even though the regulation in question—prohibiting parachutists from parachuting into clouds—was designed to protect the parachutists-plaintiffs and, therefore, would not support contributory negligence per se, plaintiffs could still be found contributorily negligent under common law standards); *Thoma v. Kettler Bros.*, 632 A.2d 725, 728 (D.C. 1993) (finding that prospective townhouse purchasers were not entitled to per se negligence instruction because they did not come within class of persons intended to be protected by Occupational Safety and Health Administration regulations violated by defendant, but that evidence of such violations was admissible to determine defendant's negligence); and *Shahtout v. Emco Garbage Co.*, 695 P.2d 897, 899 (Or. 1985) (holding that while violations of occupational safety rules did not establish negligence per se for injured nonemployee plaintiff, such violation may be considered with regard to the issue of due care by defendant).

172. *See* RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 14 cmt. g (AM. LAW INST. 2010) (“[I]f a statute designed to prevent falls by persons with disabilities requires elaborate railings on the side of stairways, and if a person who is able-bodied is then injured in a fall . . . , this fall can be seen as not the type of accident the statute is considering.”). For example, a worksite may contain a plainly dangerous condition that proves the employer's violation of an occupational safety regulation; even so, under this section, negligence per se cannot be invoked if the person suffering injury on account of that dangerous condition turns out to be not a worker but rather a business invitee on the employer's premises. However, in such a case—and in many of the cases involving a victim who is not in the proper class—the discrepancy between the harm that happens and the harm the regulation has sought to prevent is narrow.

VI. Conclusion and Some Reflections on the Hand Formula

The core of economic analysis of tort law explains tort liability as a method to internalize to *Ds* the social cost of harms that their conduct inflicts upon *Vs*, social cost that is otherwise externalized. But risk-generating conduct often generates not just risks of harm but also benefits, actual and expected, other than the saving of prevention costs. When these benefits are externalized, they should also be internalized. While tort law is well equipped to internalize externalized costs of harm, it is not equipped to internalize externalized benefits, i.e., require victims or third parties to pay *Ds* for the benefits they received from *Ds*' conduct. Although the economic literature has recently been much more attentive to this major aspect of tort law's efficiency, it has neglected to account for it in the context of proximate cause—the operation of HWTRS. This unfortunate disregard of externalized benefits has led to unjustified criticism of HWTRS. Integration of the missing factor of externalized benefits into the economic analysis of HWTRS reveals that this form of the proximate cause doctrine can and does serve as a major benefit internalizer that contributes significantly, although not necessarily sufficiently, to the efficiency of tort law by reducing excessive liability.¹⁷³

The integration of externalized benefits into the efficiency analysis of HWTRS has led us to reconsider a related aspect of this analysis—the extent to which the Hand Formula: a) accounts for benefits when *ex ante* evaluating *D*'s conduct, b) should be applied or otherwise taken into account at the *ex post* stage where the scope of liability is determined.

As to the benefits of a risk-generating activity, the question is which benefits are actually taken into account by the Hand Formula at the *ex ante* stage when deciding whether PL exceeded B. Obviously, the benefit to *D* of saving the costs of precautions is

Accordingly, even if negligence per se is properly not applied in these cases, the actor's violation of the regulation may be admissible as evidence of negligence.

173. This conclusion substantiates the intuition that “[i]f it would be inefficient to provide tort damages for a class of injuries, courts can exculpate the defendant from liability under the element of proximate cause.” Mark A. Geistfeld, *Fault Lines in the Economic Analysis of Law*, in RESEARCH HANDBOOK ON THE ECONOMICS OF TORTS 158 (Jennifer H. Arlen ed., 2013).

embodied in factor B, but what about the other *benefits* that *D* derives from her given level of activity? These benefits appear to be absent from the Hand Formula. Indeed, Cooter and Porat have argued that one kind of such benefits, the reduction of the self risk to which *D* is exposed, is absent from the Hand Formula and should be integrated into it¹⁷⁴ as the *Third Restatement* recognizes.¹⁷⁵ Another question is whether and how the Hand Formula embodies the benefits that other persons, third parties, derive from *D*'s risk-generating activity. Are these benefits deducted from the PL component, added to B, or simply disregarded? According to Posner and Landes the answer seems to be that these benefits are disregarded. While describing "optimal or due care," Posner and Landes assume that "everyone else's utility is independent of" the litigating parties' utility.¹⁷⁶ Moreover, Posner excludes from the Hand Formula benefits (and costs) that *D* derives from the given level of activity when compared to alternative higher or lower levels of activity.¹⁷⁷ Given the absence of each of these three kinds of benefits (*D*'s, third parties', level-of-activity-related benefits) from the Hand Formula, one may wonder whether this formula is indeed the right way to evaluate, *ex ante*, the efficiency of risk-generating conduct.

Another question raised by the externalized-benefits analysis is the role of the Hand Formula at the *ex post* stage, when the scope of liability is determined. While at the *ex ante* stage the court determines whether *D*'s conduct was negligent given its expected harms and benefits, at the *ex post* stage, the court has to decide on the scope of liability that should internalize to *D* the net social cost that *D* externalizes. What should be internalized is not PL, but rather $\sum EPL_i - \sum EB_i$, as exemplified by all of the above

174. COOTER & PORAT, *supra* note 72, at 32–46; Cooter & Porat, *supra* note 54, at 24; Porat, *Misalignments*, *supra* note 11, at 129–33.

175. See RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 3 cmt. b (AM. LAW INST. 2010).

176. LANDES & POSNER, *supra* note 51, at 59.

177. *Supra* note 49. In this regard, Posner acknowledges that "[j]udicial inability to determine optimal activity levels except in simple cases is potentially a serious shortcoming of a negligence system." POSNER, *supra* note 49, at 176. Shavell, as well, refers to the exclusion of levels of activity from the determination of due care as "the defect of the negligence rule." SHAVELL, *supra* note 49, at 25.

illustrations. Yet, it seems that there is common understanding that at the *ex post* stage the court should internalize PL.¹⁷⁸ Porat's alignment principle, for example, is based on this kind of alignment between the two stages.¹⁷⁹ But, the internalization of PL, rather than $\sum EPL_i - \sum EB_i$, is clearly mistaken from the internalization perspective. It is defensible only where $PL = \sum EPL_i - \sum EB_i$. That may be the case where the only benefit is of saving precautions and this benefit is fully internalized by *D* (so that $\sum EB_i = 0$), and PL equals $\sum EPL_i$ as all risks of harms are externalized. Yet, it appears that in many cases, PL does not equal $\sum EPL_i - \sum EB_i$, and internalization of PL may lead to either over-deterrence or to under-deterrence.

The conclusion emerging from our analysis is that negligence liability should *ex post* internalize not the expected loss (PL) but rather the expected difference between externalized costs and benefits ($\sum EPL_i - \sum EB_i$). This conclusion may be conceived, we recognize, as revolutionary because it questions and seems to undermine the basics of the traditional economic analysis of tort law. Yet, this conclusion fits well into the major argument made, as early as 1960, by Ronald Coase in his seminal Article, *The Problem of Social Cost*.¹⁸⁰ In his 1988 book, Coase clarifies the main purpose of his 1960 Article was to criticize internalization of externalities that is "equal to the damage caused," as opposed to the externalized social cost that has to be internalized.¹⁸¹ Adapted to the Hand Formula, and taking into account externalized benefits, Coase's criticism surely applies to the internalization of PL rather than the internalization of $\sum EPL_i - \sum EB_i$.¹⁸²

The above reflections on the implications of the externalized-benefits analysis on the *ex ante* and *ex post* efficiency of the Hand Formula are preliminary and call for further and deeper scrutiny. Yet, they do suggest that externalized-benefits analysis should play a greater role in the economic analysis of tort

178. Actual liability equals L and not PL, but in terms of *ex post* deterrence, liability for L equals *ex ante* deterrence of PL.

179. *Supra* notes 104–112 and accompanying text.

180. Coase, *supra* note 47.

181. RONALD COASE, *THE FIRM, THE MARKET, AND THE LAW* 157, 184 (1988).

182. For questioning the efficiency of the Hand Formula as "an internalizer," see Gilead, *supra* note 72, at 600–03.

law than it does today. We hope that in applying this analysis to the HWTRS, we contribute to such a change.