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I. SORTING OUT THE ISSUES

Recently there has been considerable debate about the proper allocation of liability in tort law when there are multiple responsible causes of the same injury. The debate encompasses two distinct but related issues. The first issue has been argued primarily in the political arena, while the second has been argued almost exclusively in the academic arena. The first issue is the general method that should be used to allocate liability among the responsible parties. For example, should each responsible defendant (tortfeasor) be liable to the plaintiff for the entire injury, with a right to obtain partial reimbursement from the other tortfeasors, or instead be liable, initially as well as ultimately, only for a fractional share of the injury? The second issue is the specific method that should be used to calculate the fractional shares under any general method, such as the two just mentioned, which provides (initially or ultimately) for fractional apportionment of liability among the multiple responsible causes.

In the political arena the debate has focused on the traditional joint and several liability allocation rule. According to this rule, when more than one defendant has tortiously contributed to the same injury, each tortfeasor is held jointly and severally liable for the entire injury. The plaintiff may recover compensation for the full amount of the injury

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from any one, or any combination, of the defendants who tortiously contributed to the injury, but cannot receive compensation for more than the full amount of the injury in the aggregate. The tortfeasors who actually pay the plaintiff may be able to obtain indemnity (full reimbursement) or, increasingly, contribution (partial reimbursement) from the other tortfeasors, based on their comparative responsibility for the injury.¹

In recent years, organizations representing prospective defendants have attempted, with some success, to eliminate or limit joint and several liability and to replace it with proportionate several (separate) liability, whereby each tortfeasor is liable, initially as well as ultimately, only for a fraction of the injury to which she tortiously contributed.² Since each tortfeasor can be held liable only for a proportionate share, rather than for the entire injury as under joint and several liability, there is no need for a contribution action (although there still might be grounds for an indemnity action).

If all the tortfeasors are available and solvent, joint and several liability with contribution and proportionate several liability both ultimately achieve the same result: liability is apportioned among the multiple responsible causes according to their comparative responsibility. However, two major practical differences exist between joint and several liability and proportionate several liability. Under proportionate several liability, the plaintiff can recover full compensation for his injury only if he locates, sues, and collects from each party who tortiously contributed to his injury. The plaintiff therefore bears a substantial risk of receiving less than full compensation if any tortfeasor is missing, insolvent, or has an expected share of liability that would not be worth the cost of litigation. In addition, the costs in time and dollars of the multiple actions required to obtain theoretically full compensation will substantially delay and reduce the plaintiff's actual net compensation even if all the tortfeasors can be sued successfully. Conversely, under joint and several liability the risk of insolvent or otherwise unavailable tortfeasors and the expense of multiple actions is placed on the solvent tortfeasors, if any, from whom the plaintiff initially obtains compensa-

¹ See generally 3 F. HARPER, F. JAMES, JR. & O. GRAY, *THE LAW OF TORTS*, § 10.1, at 3-7, 11, 17-20, 23-30, § 10.2, at 39-63 (2d ed. 1986) [hereafter HARPER, JAMES & GRAY]; W.P. KEETON, D. DOBBS, R. KEETON & D. OWEN, *PROSSER AND KEETON ON THE LAW OF TORTS* § 47, at 328-30, §§ 50-52, at 336-55 (5th ed. 1984) [hereafter PROSSER & KEETON].

² See Granelli, *The Attack on Joint and Several Liability*, 71 A.B.A.J. 61 (July 1985); see *infra* text accompanying notes 73-95.

tion. The plaintiff can obtain full compensation in the initial suit, and the tortfeasors who pay the plaintiff must seek contribution or indemnity from the other tortfeasors.

The fundamental issue, therefore, in the political debate should be whether the plaintiff, the tortfeasors, or both should bear the expense of apportionment and the risk of collecting from insolvent or otherwise unavailable tortfeasors.³ Unfortunately, as we shall see in Part II below, this issue usually has been overlooked or slighted in the political debate. In particular, opponents of joint and several liability generally ignore this fundamental issue and instead rely on distorted depictions of past and current tort law and practice.

In the academic arena the debate has focused on the issue of how liability ultimately should be apportioned among the multiple responsible causes of the same injury. As noted above, this issue arises sooner or later regardless of the choice that is made between joint and several liability and proportionate several liability. It arises sooner under proportionate several liability, since it determines each tortfeasor's direct liability to the plaintiff. It arises later under joint and several liability with contribution, since it determines the contribution rights among the tortfeasors, each of whom is directly fully liable to the plaintiff.

Recently, several scholars have asserted that there is no conceptually compelling, just, or efficient method for apportioning liability among the multiple responsible causes of an injury.⁴ These assertions have been made in response to, and in the context of, claims that liability should be apportioned among the responsible causes by comparing their causal contributions to the injury. Both the claims and the response are based on an all too familiar confusion of the distinct concepts of causation, risk, and responsibility.⁵ The proponents of "causal apportionment" believe that causation is or should be sufficient for responsibility.

³ 4 HARPER, JAMES & GRAY, *supra* note 1, § 22.17, at 412-13; McNichols, *Judicial Elimination of Joint and Several Liability Because of Comparative Negligence — A Puzzling Choice*, 32 OKLA. L. REV. 1, 3, 8-9, 12-13, 16-17, 62 (1979).

⁴ E.g., Epstein, *Causation—In Context: An Afterword*, 63 CHI.-KENT L. REV. 653, 670-72 (1987); Kaye & Aickin, *A Comment on Causal Apportionment*, 13 J. LEGAL STUD. 191, 191-93 & nn.5 & 11, 201-06 & nn.41 & 42 (1984); Kelman, *The Necessary Myth of Objective Causation Judgments in Liberal Political Theory*, 63 CHI.-KENT L. REV. 579, 611-17 (1987); Kruskal, *Terms of Reference: Singular Confusion About Multiple Causation*, 15 J. LEGAL STUD. 427, 427-28, 435-36 & n.9 (1986).

⁵ See generally Wright, *Causation in Tort Law*, 73 CALIF. L. REV. 1735, 1750-51 (1985) [hereafter Wright, *Causation*]; Wright, *Causation, Responsibility, Risk, Probability, Naked Statistics, and Standards of Proof: Pruning the Bramble Bush by Clarifying the Concepts*, 73 IOWA L. REV. — (1988) (forthcoming) [hereafter Wright, *Bramble Bush*].

To handle the problem of multiple causation, they have devised allocation formulas based either on arbitrary, shifting "causal priorities"⁶ or on relative risk creation that is improperly denominated "relative causal contribution."⁷ Their critics, on the other hand, have assumed that the failure of these "causal" or risk-based proposals demonstrates the unavailability of any conceptually plausible, just, or efficient apportionment method. Although some of these critics realize that factors other than causation and risk creation are necessary for responsibility, they generally fail to appreciate that these other factors can be and have been used to apportion liability among the multiple responsible causes of an injury.

To hold a defendant responsible for an injury in tort law, the plaintiff must prove that: (1) the defendant behaved tortiously, (2) the tortious aspect of her behavior was an actual cause of the injury, and (3) there are no reasons of policy or principle to absolve her of responsibility despite her tortious causation of the injury. To be classified as tortious, even under strict liability actions, the defendant's behavior must have created a risk of injury to others that was significant, objectively foreseeable, and unaccepted. Such tortious behavior is further classified as intentional, negligent, or subject to strict liability based on such factors as the level and reasonableness of the risk.⁸

When there is more than one responsible cause of a particular injury, the comparative responsibility of each cause depends on a number of factors: the level of the risk that was created, the objective foreseeability and reasonableness of the risk, the actual awareness of the risk, the "remoteness" of the causal connection between the risk and the injury, and the policies that underlie the various categories of tortious behavior. These factors govern the determination of comparative responsibility, not according to any detailed formula but rather through

⁶ Epstein, *A Theory of Strict Liability*, 2 J. LEGAL STUD. 151, 180-85 (1973); Epstein, *Defenses and Subsequent Pleas in a System of Strict Liability*, 3 J. LEGAL STUD. 165, 174-85 (1974); Epstein, *supra* note 4, at 670-71.

⁷ Rizzo, *The Imputation Theory of Proximate Cause: An Economic Framework*, 15 GA. L. REV. 1007 (1981) [hereafter Rizzo, *Proximate Cause*]; Rizzo & Arnold, *Causal Apportionment in the Law of Torts: An Economic Theory*, 80 COLUM. L. REV. 1399 (1980) [hereafter Rizzo & Arnold, *Causal Apportionment*]; Rizzo & Arnold, *Causal Apportionment: Reply to the Critics*, 15 J. LEGAL STUD. 219 (1986) [hereafter Rizzo & Arnold, *Reply*]; see Robinson, *Multiple Causation in Tort Law: Reflections on the DES Cases*, 68 VA. L. REV. 713, 748 & n.128, 752-69 (1982); Rosenberg, *The Causal Connection in Mass Exposure Cases: A "Public Law" Vision of the Tort System*, 97 HARV. L. REV. 851, 866 n.66, 869-74 (1984).

⁸ Wright, *Causation*, *supra* note 5, at 1741-74.

rational commonsense judgment, in strict liability and intentional tort actions as well as negligence actions.⁹

The attempts to devise causal formulas for apportionment of liability have been encouraged in part by some courts' and commentators' adoption of the term "comparative causation" to describe apportionment of liability when one or more of the parties is strictly liable. These courts and commentators have been driven to the "comparative causation" language by the apparent inapplicability of the traditional term, "comparative fault," in strict liability cases. They seem not to recognize that more is required for responsibility than causation even in strict liability cases, and that the comparison of responsibility is and must be based on factors other than causation. More likely they recognize these facts but are unable to conceive of an appropriate term other than "comparative fault" or "comparative causation." Some adopt the "comparative causation" language, while others choose "comparative fault" and define strict liability behavior, in this context, as a form of "fault."¹⁰

Obviously, strict liability behavior is not "faulty" in the ordinary sense of being morally blameworthy. Rather it is "faulty" only in the technical sense of being subject to moral and legal responsibility. This is also true of much behavior deemed negligent, since negligence is judged by the objective "reasonable person" standard of conduct, which results in a finding of negligence ("legal fault") even when the person was behaving reasonably in the light of her own subjective knowledge and capacities. For both strict liability and negligence, liability is based on moral responsibility rather than moral blameworthiness.¹¹ The appropriate term, therefore, is neither "comparative causation" nor "comparative fault," but rather "comparative responsibility."¹²

Although causation is necessary for responsibility, it is not used to calculate the comparative responsibility of multiple responsible causes

⁹ UNIF. COMP. FAULT ACT § 2 comment, 12 U.L.A. 44 (Supp. 1988) (percentages of fault). See generally 4 HARPER, JAMES & GRAY, *supra* note 1, § 22.16, at 395-402.

¹⁰ 4 HARPER, JAMES & GRAY, *supra* note 1, § 22.16, at 395-401; Pearson, *Apportionment of Losses Under Comparative Fault Laws—An Analysis of the Alternatives*, 40 LA. L. REV. 343, 344 n.7, 345 n.9 (1980).

¹¹ 3 HARPER, JAMES & GRAY, *supra* note 1, § 12.1, at 103-06, § 16.2, at 389-93; O.W. HOLMES, *THE COMMON LAW* 85-88, 92-93, 115-18 (M. Howe ed. 1963); PROSSER & KEETON, *supra* note 1, § 31, at 169, § 32, at 173-82.

¹² See Law Reform (Contributory Negligence) Act of 1945, 8 & 9 Geo. VI ch. 28, § 1 (England); Montford & Barber, *1987 Texas Tort Reform: The Quest for a Fairer and More Predictable Texas Civil Justice System* (pt. 2), 25 HOUS. L. REV. 245, 273-75 (1988) (describing shift from "comparative causation" language to "comparative responsibility" language in Texas tort law).

of the same injury, even in strict liability actions. Causation, unlike the level or foreseeability of the risk or most of the other factors relevant to responsibility, is not a matter of degree. Some condition either was or was not a cause (in the proper scientific sense) of a particular injury. There is no way, based purely on causation, to identify one cause of an injury as more important or significant than any other cause of the same injury.¹³ Thus, proponents of causal theories of absolute liability have had to rely on arbitrary "causal priorities" or risk-based "relative causal contributions" to allocate liability when there are multiple causes of the same injury. True "causal apportionment" is conceptually meaningless. Pseudo "causal apportionment" based on relative risk creation is conceptually confused, since, contrary to the assumptions or arguments in much recent scholarship, risk creation is not the same as causation.¹⁴ In addition, apportionment of liability based merely on relative risk creation, even with causation as a necessary precondition for responsibility, is descriptively and normatively inadequate, since it considers only the level of risk and ignores the other factors, outlined above, which are relevant to responsibility.

However, the risk-based apportionment methods may be useful for another purpose. Although they are inappropriate for apportioning liability among the multiple responsible causes of some actual harm, these methods may be appropriate for distinguishing the causes of injuries which consist not in some actual harm, but rather in exposure to the risk of such actual harm. Recovery for such risk exposure, at least when the risk exposure possibly contributed to some actual harm, seems necessary if tort law is to keep up with modern scientific knowledge and technology which, by increasing individuals' awareness of and

¹³ 4 HARPER, JAMES & GRAY, *supra* note 1, § 22.16, at 400; PROSSER & KEETON, *supra* note 1, § 67, at 474; Kaye & Aickin, *supra* note 4, at 203-04, 206; Pearson, *supra* note 10, at 345-46 & nn.9 & 12; Wright, *Causation*, *supra* note 5, at 1799 n.265; see Kruskal, *supra* note 4, at 433-36 & n.9. The only situations in which it might make sense to speak of relative causal importance would be those in which each cause operates in an identical manner through a mechanism, such as transfer of energy, which is capable of relative measurement. See Honoré, *Causation and Remoteness of Damage*, in XI INTERNATIONAL ENCYCLOPEDIA OF COMPARATIVE LAW, TORTS, PT. 1, § 7-143 (A. Tunc ed. 1983). However, even if the concept of relative causal contribution could be meaningfully applied in these (rare) situations, it would be insufficient for determining comparative responsibility, since, as explained in the text, many factors other than causation are relevant to responsibility.

¹⁴ Wright, *The Efficiency Theory of Causation and Responsibility: Unscientific Formalism and False Semantics*, 63 CHI.-KENT L. REV. 553, 558-61, 576-78 (1987) [hereafter Wright, *False Semantics*]; Wright, *Bramble Bush*, *supra* note 5, Parts IV & V.

exposure to a much broader range of significant risks from multiple sources, have made it increasingly difficult to establish a causal connection between any particular source of the risk exposure and subsequent actual harm. In such cases of insoluble uncertainty about causation of the actual harm, many courts have been willing to allow recovery for the risk exposure itself, as a new form of legal injury, when the plaintiff can establish that the defendant tortiously caused such risk exposure and that the risk exposure possibly contributed to the actual harm.¹⁵

In the remainder of this Article, I examine the various issues that have been identified in this Part. In Part II, I criticize the arguments that have been used by defendants' organizations and their allies to distract attention from the fundamental issue in the political debate: whether the plaintiff-victim, the defendant-tortfeasors, or both should bear the expense of apportionment and the risk of collecting from insolvent or otherwise unavailable tortfeasors. In Part III, I analyze this fundamental issue from the perspectives of efficiency and corrective justice. I conclude that the efficiency perspective is unhelpful, not only because efficiency is a morally unattractive goal, but also because there is no efficient allocation method. From the perspective of corrective justice, on the other hand, I argue that the traditional allocation method, joint and several liability with contribution and indemnity when appropriate, is the clearly preferred method for allocating liability among the multiple responsible causes of the same injury.

Finally, in Part IV, I analyze the conceptual soundness, efficiency, and justice of various methods for distinguishing risk exposure injuries and allocating liability among the causes of such injuries. I describe what I believe is the conceptually correct method for distinguishing different components of such risk exposure as distinct injuries. I then affirm that, for these risk exposure injuries as well as the more usual actual harm injuries, the traditional allocation method, including joint and several liability with contribution and indemnity when appropriate, is the clearly preferred allocation method from the perspective of corrective justice, and that there is no efficient allocation method.

II. THE ATTACK ON JOINT AND SEVERAL LIABILITY IN THE POLITICAL ARENA

In recent years, joint and several liability has come under increasing attack in the political arena.¹⁶ The attack, led by defendants' lobbying

¹⁵ See sources cited *infra* notes 178 & 179.

¹⁶ See Granelli, *supra* note 2.

organizations and their allies in the Reagan Administration, has been based on raw interest group politics. Little or no attempt has been made to evaluate joint and several liability and its proposed replacement, proportionate several liability, in terms of their justice, fairness, or efficiency. Instead, the opponents of joint and several liability attempt to portray it, as well as other aspects of current tort doctrine, as deviations from, or obsolete elements of, the traditional principles of tort liability.

For example, the principal defense-oriented reports, including the reports of the Reagan Administration's Tort Policy Working Group¹⁷ and a report prepared for a lengthy list of defendant organizations,¹⁸ assert that joint and several liability traditionally applied only to defendants acting in concert, that application of the doctrine to other situations is a recent innovation which leads to highly inequitable treatment of defendants, and hence that the doctrine should be eliminated except for defendants who acted in concert.¹⁹ The authors of these reports have overlooked or ignored warnings, in the very sources that they cite for support,²⁰ not to confuse several distinct meanings and issues covered by the terms "joint tort," "joint tortfeasors," and "joint liability."²¹

Originally, the term "joint tort" referred to concerted tortious action by multiple actors in pursuance of a common plan. In such situations, each tortfeasor could be held fully liable for injuries caused by the other tortfeasors, in addition to those injuries to which she herself directly

¹⁷ U.S. ATT'Y GEN. TORT POLICY WORKING GROUP, REPORT OF THE TORT POLICY WORKING GROUP ON THE CAUSES, EXTENT AND POLICY IMPLICATIONS OF THE CURRENT CRISIS IN INSURANCE AVAILABILITY AND AFFORDABILITY (Feb. 1986) [hereafter REAGAN REPORT]; U.S. ATT'Y GEN. TORT POLICY WORKING GROUP, AN UPDATE ON THE LIABILITY CRISIS (Mar. 1987) [hereafter REAGAN REPORT UPDATE].

¹⁸ THE NEED FOR LEGISLATIVE REFORM OF THE TORT SYSTEM: A REPORT ON THE LIABILITY CRISIS FROM AFFECTED ORGANIZATIONS (May 1986) [hereafter INDUSTRY REPORT].

¹⁹ REAGAN REPORT, *supra* note 17, at 33-34 & nn.29-30, 64-65; REAGAN REPORT UPDATE, *supra* note 17, at 76-78; INDUSTRY REPORT, *supra* note 18, at 2, 23-25, 70; *see* V. SCHWARTZ, COMPARATIVE NEGLIGENCE § 16.3, at 257, § 16.5, at 261 n.74 (2d ed. 1986) (stating that "harsh" joint and several liability rule has recently been enlarged by including defendants who did not act in concert).

²⁰ *See, e.g.*, REAGAN REPORT, *supra* note 17, at 33 n.28 (citing PROSSER & KEETON, *supra* note 1, §§ 46-52); *see* V. SCHWARTZ, *supra* note 19, § 16.2, at 255 & n.26 (citing warning in PROSSER & KEETON, *supra* note 1, § 47).

²¹ *See* PROSSER & KEETON, *supra* note 1, § 46, at 322, § 47, at 324-25, 328-29; *see also* 3 HARPER, JAMES & GRAY, *supra* note 1, § 10.1, at 1, 3-5, 7-10.

contributed, and all the tortfeasors could be joined in the same lawsuit.²² Presently in England and at one time in the United States, this was almost the only situation in which multiple tortfeasors could be joined in the same lawsuit.²³

This procedural issue, concerning the permissible joinder of multiple tortfeasors in the same lawsuit, is confused, perhaps intentionally, by the authors of the defense-oriented reports with the relevant substantive issue: the liability of multiple tortfeasors who each tortiously contributed to the same injury. In England as well as in the United States, such tortfeasors have long been held jointly and severally liable for the full amount of the injury, even if they acted independently rather than in concert.²⁴ The only differences are that, in England, independently acting tortfeasors are called "concurrent tortfeasors" rather than "joint tortfeasors"²⁵ and, unlike in the United States, cannot be joined in the same lawsuit.

The defense-oriented reports also assert that (1) tort liability, including joint and several liability, traditionally applied solely or primarily to faulty behavior, which is interpreted to mean morally wrongful or blameworthy behavior, (2) recent developments have weakened or obliterated this fault-based limitation on tort liability, and (3) as a result joint and several liability requires "deep pocket" defendants who "have done nothing wrong" to provide "social insurance" for harms caused by the wrongful behavior of others.²⁶ These assertions also are patently false.

²² 3 HARPER, JAMES & GRAY, *supra* note 1, § 10.1, at 1-3; PROSSER & KEETON, *supra* note 1, § 46, at 322-23.

²³ 3 HARPER, JAMES & GRAY, *supra* note 1, § 10.1, at 7-9; PROSSER & KEETON, *supra* note 1, § 47, at 324-25. An employee and the employer who was vicariously liable for the employee's torts also were treated as joint tortfeasors and hence could be joined in the same action. *Id.* § 47, at 325 n.3.

²⁴ 3 HARPER, JAMES & GRAY, *supra* note 1, § 10.1, at 7-10; PROSSER & KEETON, *supra* note 1, § 47, at 324-29.

²⁵ C. BAKER, TORT 142-43 (4th ed. 1986).

²⁶ REAGAN REPORT, *supra* note 17, at 30-33 & nn.26-28; REAGAN REPORT UPDATE, *supra* note 17, at 53-59; INDUSTRY REPORT, *supra* note 18, at 2, 9-17, 24, 67, 69-70. Studies by more objective analysts have also fallen prey to this erroneous assumption. See, e.g., Kelley & Beyler, *Large Damage Awards and the Insurance Crisis: Causes, Effects and Cures*, 75 ILL. B.J. 140, 150-51 (1986). The Reagan Administration's Tort Policy Working Group spends considerable time denouncing *O'Brien v. Muskin Corp.*, 94 N.J. 169, 463 A.2d 298 (1983), in which it was held to be a jury issue whether a product for which there allegedly was no alternative safer design might nevertheless be defective because the risks created by the product outweighed its utility. The Working Group blasts this decision as an example of unjustified absolute liability, arguing that (1) the mere absence of an alternative safer design should immunize a product from being held defective even if its risk outweighs its utility (yet this is the

As Oliver Wendell Holmes pointed out long ago, tort liability is not based on moral fault in the sense of moral blameworthiness.²⁷ Tort law is not criminal law.²⁸ Rather, tort liability has long been based, and continues to be based, on moral *responsibility* for conduct that has exposed others to a significant, objectively foreseeable, and unaccepted risk of injury which actually results in such injury, whether or not the conduct is considered to be morally blameworthy.²⁹ With rare and isolated exceptions, modern extensions of tort liability, including strict products liability, fit well within, and can only be understood as expressions of, this traditional corrective justice concept of liability. The authors of the defense-oriented reports admit that strict liability for ultrahazardous activities such as blasting or keeping dangerous animals has long existed.³⁰ They also concede that strict products liability is consistent with traditional notions of responsibility.³¹ Occasionally, they even indirectly acknowledge that negligence itself is defined as objective "legal fault" rather than as personal moral fault.³²

minimal test even for *negligence*) and (2) the mere fact that people have purchased a product indicates that not only such purchasers but also nonpurchasers have accepted the risks created by the product (contrary to the usual requirements for assumption of the risk, including fully voluntary exposure to the risk with explicit knowledge of the precise risk). REAGAN REPORT UPDATE, *supra* note 17, at 55-57. It is the Working Group's argument, rather than the decision as described, which radically departs from traditional principles of tort liability.

²⁷ O.W. HOLMES, *supra* note 11, at 33, 65-72, 78-80, 86-87, 92-95, 104-09, 115-18. Not surprisingly, Holmes is miscited by the defense advocates, who cite him to support the proposition that "liability is generally appropriate only when the defendant can in a meaningful way be said to be at fault or otherwise blameworthy for the plaintiff's injury." INDUSTRY REPORT, *supra* note 18, at 17 & n.17. The major thrust of Holmes' argument is that liability, even in negligence actions, is *not* based on personal moral fault or blameworthiness.

²⁸ Holmes also argued that criminal law is not based on moral blameworthiness, but his argument on this point is facially less plausible and substantively weaker than his argument with respect to tort liability. See O.W. HOLMES, *supra* note 11, at 34-62.

²⁹ *Id.* at 115-18; see *supra* text accompanying notes 8-12.

³⁰ *E.g.*, INDUSTRY REPORT, *supra* note 18, at 10-11, 13-14. However, they incorrectly characterize this as a form of absolute liability based solely on causation, allegedly bottomed on an "explicit cost-shifting rationale," which converts the defendant into an insurer against any resulting injury. *Id.* at 10 n.8, 14 n.14. The rationale is rather a corrective justice rationale: responsibility for the creation and realization of a significant, foreseeable, unaccepted risk of injury to others, which is limited to injuries caused by and within the scope of the ultrahazardous risk. See Wright, *Causation*, *supra* note 5, at 1750-51, 1769-70.

³¹ *E.g.*, REAGAN REPORT, *supra* note 17, at 61.

³² INDUSTRY REPORT, *supra* note 18, at 17; see *supra* text accompanying note 11.

Thus, the indirect attack on joint and several liability, which presumes that tort liability traditionally was limited to defendants whose behavior was morally wrongful or blameworthy, rests on a false premise. It is simply incorrect to state that tort liability traditionally was based on personal moral fault, or that defendants who are held liable in the absence of personal moral fault are being treated as insurers for societal risk for which they have no personal moral responsibility. Defendants are liable, even under the various strict liability regimes, only for injuries that resulted from significant, foreseeable, and unaccepted risks that they imposed upon others and for which they therefore are personally responsible.

It may be that a few cases in certain jurisdictions have gone beyond this traditional justification for liability,³³ but that can be demonstrated only by starting with an accurate depiction of the traditional justification, which the defense advocates have completely ignored. Moreover, even if such extensions exist and are improper, the logical remedy is the elimination of those extensions, rather than the elimination of joint and several liability. Similarly, if juries have found deep pocket defendants liable in some cases in the absence of sufficient evidence of tortious behavior, the obvious and usual remedy is policing of the juries' findings by trial and appellate judges, rather than the elimination of joint and several liability. In such cases the real problem is not joint and several liability, but rather *any* liability.

There is some evidence that tort judgments against deep pocket defendants — municipalities, businesses, and perhaps doctors — are higher than those against other defendants for similar types of injuries.³⁴ However, the implications of this evidence, assuming it is accurate, are not nearly as clear as some believe, particularly regarding the joint and several liability issue. They assume that the deep pocket effect reflects a prejudice against, or "soak the rich" attitude toward, deep pocket defendants and that the true measure of damage is the typical award against shallow pocket defendants.³⁵ But it is at least as likely that (1) the larger damage awards against deep pocket defendants reflect the factfinder's honest assessment of the actual damages suffered by the plaintiff and (2) the lower awards against shallow pocket defendants reflect a realistic and perhaps sympathetic recognition by the factfinder of these latter defendants' limited ability to provide full com-

³³ *But see supra* note 26.

³⁴ Kelley & Beyler, *supra* note 26, at 146-54.

³⁵ *See id.* at 156, 159-60; REAGAN REPORT UPDATE, *supra* note 17, at 54 & n.75; Granelli, *supra* note 2, at 61, 62-63.

pensation for the injuries that they have tortiously caused.³⁶ In cases in which the damage award is excessive, judges have the power, and have exercised it, to reduce the award. Once again, that is the appropriate remedy for the problem, if it exists, rather than elimination of joint and several liability.

In sum, the defense advocates have failed to explain why alleged problems with aspects of tort liability that are distinct from joint and several liability should lead, as they propose, to the elimination of joint and several liability in all cases, including the vast majority in which liability clearly is justified on traditional grounds.

In a more direct attack on joint and several liability, the defense advocates and others assert that the doctrine unfairly permits a defendant who was responsible for only a portion of the plaintiff's injury, or who bore only partial responsibility for the injury, to be held liable for the entire injury.³⁷ This again is a misrepresentation of the actual law. Joint and several liability applies only to injuries for which the defendant herself is fully responsible. She is responsible for the entirety of some injury only if her tortious behavior was an actual and proximate cause of the entire injury. She is not liable for injuries, including sepa-

³⁶ See Kelley & Beyler, *supra* note 26, at 162 (answers to questions 6 and 7).

³⁷ "[T]he doctrine has been expanded to require any defendant who is responsible for *any* portion of the plaintiff's injury to be jointly liable for *all* of the damages." INDUSTRY REPORT, *supra* note 18, at 24 (emphasis in original). "This doctrine . . . can impose tremendous burdens on defendants whose responsibility for the injury is really quite minimal." *Id.* "[Joint and several liability] increasingly has been used to make a defendant with only a limited role in causing an injury bear the full cost of compensating plaintiff [sic]." REAGAN REPORT, *supra* note 17, at 33. "Joint and several liability . . . is now in many cases applied to all defendants, regardless of their connection to the injury." *Id.* at 64. "[It is unfair to require] a defendant who bears only minimal responsibility for an injury to pay all of plaintiff's damages." REAGAN REPORT UPDATE, *supra* note 17, at 76. "[I]t is unfair for a defendant to bear the cost of another person's responsibility." *Id.* at 77. "A person [should be liable] only for those damages directly attributable to the person's pro-rata share of fault or responsibility for the injury." *Id.* at 78. "A defendant who is found jointly liable for the injuries of a plaintiff is liable for the *entirety* of the damages awarded in favor of the plaintiff even if he is only *partly* responsible for the injuries." TEXAS HOUSE/SENATE JOINT COMMITTEE ON LIABILITY INSURANCE AND TORT LAW AND PROCEDURE, MAJORITY REPORT 182 (filed with the 70th Leg., Jan. 1987) [hereafter TEXAS REPORT], *quoted in* Montford & Barber, *supra* note 12, at 282 n.180 (emphasis in original). "[T]he joined defendants [are] required to bear a greater portion of the plaintiff's loss than is attributable to their fault." PROSSER & KEETON, *supra* note 1, § 67, at 477-78. For additional examples, see Clark, *Joint and Several Liability: The Battle in California Moves to the Courts*, 16 LINCOLN L. REV. 121, 130-34 & n.55, 145-46 (1986); *infra* notes 40 & 161.

rable portions of injuries, to which she did not contribute. She is not liable unless the tortious aspect of her conduct was an actual cause of the injury. Moreover, even then, she is not liable if, for reasons of policy or principle, her connection to the injury is considered too remote or minimal to be "proximate."³⁸

The fact that some other person also tortiously contributed to the same injury does not — logically or otherwise — eliminate or reduce each tortfeasor's responsibility for the entirety of the injury that was proximately caused by her tortious behavior, especially when her tortious behavior was a necessary or independently sufficient condition for the injury.³⁹ The defense advocates fail to explain why the concurrent full responsibility of another tortfeasor for the same injury should reduce each tortfeasor's independent full responsibility to the plaintiff, rather than merely providing a basis (comparative responsibility) for contribution or perhaps indemnification among the tortfeasors.⁴⁰

The defense advocates also have claimed, often with no elaboration,⁴¹ that the recent widespread adoption of liability regimes based on comparative responsibility has eliminated or substantially weakened the justification for joint and several liability. This is the principal argument raised against joint and several liability in the recent report of the American Bar Association's Action Commission.⁴² Although much more thoughtful than the reports prepared by defendant organizations or their allies in the Reagan Administration, especially on topics other than joint and several liability, the Action Commission report also fails

³⁸ 3 HARPER, JAMES & GRAY, *supra* note 1, § 10.1, at 3-7, 11, 17-18; 4 HARPER, JAMES & GRAY, *supra*, § 20.3, at 114-15, 120, 122-24; PROSSER AND KEETON, *supra* note 1, § 47, at 328-29, § 52, at 345-46, 347-49. *See infra* note 158.

³⁹ *See infra* text accompanying notes 155-61.

⁴⁰ Clark, *supra* note 37, at 136-48. The confusion between a defendant's tortious causation of the entire injury and her comparative responsibility given other defendants who also tortiously contributed to the entire injury is all too common. It is exhibited in (and hence undermines) the particular rationale given by the Florida Supreme Court for upholding a statutory shift to proportionate several liability in certain types of cases. The court held that the statute was valid because the right of access to the courts under the state constitution "does not include the right to recover for injuries beyond those caused by the particular defendant." *Smith v. Department of Ins.*, 507 So. 2d 1080, 1091 (Fla. 1987); *cf.* *Prudential Life Ins. Co. v. Moody*, 696 S.W.2d 503, 505 (Ky. 1985) (Vance, J., concurring) ("[unfair] for a defendant who is only 50% responsible for an injury to be saddled with 100% of the liability").

⁴¹ *E.g.*, REAGAN REPORT UPDATE, *supra* note 17, at 76.

⁴² AMERICAN BAR ASSOCIATION, ACTION COMMISSION TO IMPROVE THE TORT LIABILITY SYSTEM, REPORT TO THE HOUSE OF DELEGATES 21-22 (Feb. 1987) [hereafter ABA ACTION COMMISSION].

to examine the fundamental issue in the debate over joint and several liability: the question of whether the injured plaintiff, the defendant tortfeasors, or both should bear the expense and risk of apportionment of liability when there are multiple responsible causes of the same injury. Instead, as with the defense-oriented reports, the Action Commission report focuses on irrelevant or inaccurate diversionary arguments.⁴³

The commission argues that continued adherence to joint and several liability is called into question not by any recent shift in the doctrine itself, but rather by "a series of related departures from the common law tradition."⁴⁴ The argument is that unlimited joint and several liability is no longer appropriate given (1) the alleged recent shift from all-or-nothing liability, based on a supposed refusal to consider degrees of fault under the traditional negligence regime, to liability that is apportioned according to the relative fault of the plaintiff and the multiple tortfeasors under the new regime of comparative negligence, (2) the alleged recent emergence of situations involving multiple tortfeasors engaged in unlike activities, in contrast with earlier situations that purportedly involved multiple tortfeasors engaged in like activities, which supposedly reinforced the refusal to consider relative degrees of fault, and (3) the elimination of sovereign immunity for municipalities, which has exposed them to liability for tortiously caused injuries, including allegedly novel joint and several liability for injuries contributed to by distinct or unlike activities.⁴⁵

⁴³ It should be noted that the Reporter was expected to provide rationales for the positions that the Commission adopted. *Id.* at x, 45. This obviously proved to be an especially difficult task with respect to the joint and several liability section, which was one of the most controversial.

⁴⁴ *Id.* at 21.

⁴⁵ *Id.* at 20-22. The commission's reference to municipal liability underscores the practical significance of municipal liability in the "tort reform" crusade. With the elimination of sovereign immunity and the weakening of "public duty" no-liability rules, municipalities have been increasingly subject to liability for tortiously caused injury. The municipalities collectively have considerable political clout, and their lobbying efforts ostensibly are clothed in the public interest. Thus, whenever possible, defendants' lobbying efforts focus on the plight of the municipalities, and other defendant groups oppose special dispensations for municipalities which would deprive them once more of these valuable allies. *See id.* at 21-23, 25; *INDUSTRY REPORT*, *supra* note 18, at 3, 21-23, 24-25, 45-46, 57-60; *REAGAN REPORT UPDATE*, *supra* note 17, at 73 & n.128, 77; Clark, *supra* note 37, at 129-30, 132-34, 149; Granelli, *supra* note 2; Rabin, *Some Reflections on the Process of Tort Reform*, 25 *SAN DIEGO L. REV.* 13, 40-41 (1988). Although the authors of the Industry Report expected state and local governments to endorse the report, none did. *Compare* A Report on the Liability Crisis: The Need for Legislative Reform of the Tort System 1 (Apr. 7, 1986 draft on file with Richard W. Wright) with *INDUSTRY REPORT*, *supra*, at iii-ix, 1.

The commission's distinction between like and unlike activities is a puzzling one. It is not immediately obvious why the distinction is relevant to the debate over joint and several liability. The commission's basic yet unelaborated premise appears to be that joint and several liability is inconsistent with comparative responsibility. Hence joint and several liability was uncontroversial under the earlier common law only because the courts refused to take into account degrees of fault, while the current commitment to basing liability on degrees of fault undermines joint and several liability. If significant differences in degrees of fault are more probable with unlike activities than with like activities, cases involving parties engaged in unlike activities would put a greater strain on a legal system that refused to consider degrees of fault. Thus such cases must have been relatively rare under the earlier common law, but are more frequent now. Or so the commission seems to reason.

But there is no reason to believe that unlike activities are inherently more probable than like activities to generate significantly different degrees of fault. The commission itself backs away from any such assertion, noting only that it might be easier to ignore or overlook differing degrees of fault for like activities.⁴⁶ Yet, contrary to the commission's view, it would seem to be easier to recognize and comparatively rank differing degrees of fault for like activities, since their very likeness provides an obvious scale by which to measure degrees of fault. For unlike activities, it is more difficult to construct such a scale.

The commission also fails to provide any support for its assertion that joint and several liability situations in the past typically involved like rather than unlike activities, at least to a significantly greater extent than today, and it is doubtful that any support could be provided. It is true that certain categories of tortfeasors, who previously were shielded from liability for all or many of their tortious actions, have lost much of their special immunity. For example, despite some recent backsliding, most states have completely or partially abrogated governmental entities' sovereign immunity and have weakened or eliminated the "public duty" exception to governmental liability. Manufacturers, who previously were insulated from liability by "privity of contract" limitations and insuperable proof problems, are now subject to strict products liability for injuries caused by defective products which fail to operate as expected but for which it is practically impossible to prove or pinpoint negligence, given modern mass production and distribution processes. Most jurisdictions have eliminated the "local practitioner"

⁴⁶ ABA ACTION COMMISSION, *supra* note 42, at 21.

limitation on the standard of care in medical malpractice cases. And courts are increasingly willing to hold physicians and others liable for tortious risk exposure which possibly contributed to subsequent actual harm, when the impossibility of proving causation of the actual harm prevents recovery for the harm itself.⁴⁷

Although these developments undoubtedly have expanded the pool of potential defendants, they do not support the claim that multiple tortfeasors today, more than in the past, are engaged in unlike activities. Rather, they suggest that tortfeasors who previously were able to escape liability for behavior that would subject other categories of tortfeasors to liability are now being held responsible for their tortious behavior.⁴⁸ Instead of being "departures from the common law tradition,"⁴⁹ these developments represent a more consistent adherence to the underlying principles of that tradition.

Even if, contrary to the above discussion, the distinction between cases involving like versus unlike activities has any merit, its relevance is entirely dependent on the commission's basic premise that joint and several liability is inconsistent with liability based on comparative responsibility. This premise, although never explicitly articulated, is implicit in the two main parts of the commission's argument: first, that joint and several liability was uncontroversial under the earlier common law only because the courts refused to take into account degrees of fault and, second, that the current commitment to basing liability on degrees of fault undermines joint and several liability.

Neither part of this argument is valid. Under the earlier common law as formally expounded and especially as actually implemented, the courts paid considerable attention to relative degrees of responsibility ("fault"). Formally, a negligent plaintiff was barred by the doctrine of contributory negligence from recovering any compensation from a negligent defendant. But, despite the plaintiff's contributory negligence, the defendant was still liable if the defendant (1) had the last clear chance to avoid the injury and negligently failed to do so, (2) acted intentionally or recklessly (unless the plaintiff also acted intentionally or recklessly), or, in some jurisdictions, (3) was grossly negligent or otherwise

⁴⁷ See *id.* at 4-5; Wright, *Causation*, *supra* note 5, at 1811-21 & n.323.

⁴⁸ See Rabin, *supra* note 45, at 24-26.

⁴⁹ See *supra* text accompanying note 44. Section II.A.6 of the draft of the Industry Report, which described the elimination of sovereign immunity and the weakening of the "public duty" no-liability rules as instances of the "Erosion of the Concept of Fault," was eliminated in the final report. *Compare* A Report on the Liability Crisis: The Need for Legislative Reform of the Tort System i, 26-29 (Apr. 7, 1986 draft on file with Richard W. Wright) with INDUSTRY REPORT, *supra* note 18, at i, 30-31.

had a degree of fault substantially higher than the plaintiff's.⁵⁰

Informally, relative degrees of responsibility played a much more prominent role. Consideration of the relative degrees of responsibility often influenced decisions that were formally based on the doctrine of last clear chance or the related doctrine of proximate causation.⁵¹ Plaintiffs, having exposed themselves rather than others to a risk of injury, were (and are) held to a more lenient standard of care than defendants.⁵² Plaintiffs were almost always allowed to get to the jury on the issue of contributory negligence.⁵³ Significantly, it was understood that the jury, when appropriate, would refuse to find contributory negligence even when it actually existed and instead would reduce the plaintiff's damages by taking into account his relative degree of responsibility.⁵⁴

⁵⁰ 4 HARPER, JAMES & GRAY, *supra* note 1, § 22.2, at 278, § 22.3, at 287-89 & n.4, § 22.5, at 293-95, § 22.6, at 299-303 & n.15, § 22.12, at 352-74; PROSSER & KEETON, *supra* note 1, § 65, at 451-52, 461-62, § 66, at 462-68, § 67, at 469-70 & n.8. These glosses on the contributory negligence rule, which mitigate its harshness and thus are easily comprehensible from a fairness perspective, are not so easily explained from the efficiency perspective. *See, e.g.*, W. LANDES & R. POSNER, *THE ECONOMIC STRUCTURE OF TORT LAW* 91-95 (1987).

⁵¹ 4 HARPER, JAMES & GRAY, *supra* note 1, § 22.1, at 263 n.6, 266-67, 273-75, § 22.14, at 374-84; PROSSER & KEETON, *supra* note 1, § 65, at 457-59, § 66, at 462-68; V. SCHWARTZ, *supra* note 19, § 1.2(B), at 7-8; MacIntyre, *The Rationale of Last Clear Chance*, 53 HARV. L. REV. 1225 (1940); Watermeyer, *Causation and Legal Responsibility*, 58 S. AFR. L.J. 232 (1941), 62 S. AFR. L.J. 126 (1945) (author identified in H.L.A. HART & T. HONORÉ, *CAUSATION IN THE LAW* 303 (2d ed. 1985)).

⁵² 3 HARPER, JAMES & GRAY, *supra* note 1, § 16.2, at 391-93; 4 HARPER, JAMES & GRAY, *supra*, § 22.4, at 293-94, § 22.10, at 334-42; PROSSER & KEETON, *supra* note 1, § 65, at 453, 455 & nn.36, 37 & 41, 457-58, 459; V. SCHWARTZ, *supra* note 19, § 1.2(B), at 6-8; Cooter & Ulen, *An Economic Case for Comparative Negligence*, 61 N.Y.U. L. REV. 1067, 1073 & n.29 (1986); Schwartz, *Contributory and Comparative Negligence: A Reappraisal*, 87 YALE L.J. 697, 716-17 & nn.88 & 94, 722-25 & n.117 (1978) [hereafter Schwartz, *Contributory Negligence*]; Schwartz, *Tort Law and the Economy in Nineteenth-Century America: A Reinterpretation*, 90 YALE L.J. 1717, 1759-62 & n.333 (1981); Seavey, *Negligence—Subjective or Objective?*, 41 HARV. L. REV. 1, 7-8 & n.7 (1927).

⁵³ 4 HARPER, JAMES & GRAY, *supra* note 1, § 22.1, at 263 n.4; PROSSER & KEETON, *supra* note 1, § 65, at 455-56 & nn.42 & 44; V. SCHWARTZ, *supra* note 19, § 1.2(B), at 6-7.

⁵⁴ *Li v. Yellow Cab Co.*, 13 Cal. 3d 804, 811-12 & n.5, 119 Cal. Rptr. 858, 863 & n.5, 532 P.2d 1226, 1231 & n.5 (1975); 4 HARPER, JAMES & GRAY, *supra* note 1, § 22.2, at 285 n.41, § 22.3, at 290 & nn.15 & 16, § 22.14, at 376-77 & nn.8 & 9; PROSSER & KEETON, *supra* note 1, § 67, at 469; V. SCHWARTZ, *supra* note 19, § 1.2(B), at 7; Keeton, *Creative Continuity in the Law of Torts*, 75 HARV. L. REV. 463, 504-08 (1962); Schwartz, *Contributory Negligence*, *supra* note 52, at 726.

Thus, the recent widespread adoption of comparative negligence, which permits liability to be apportioned explicitly between the plaintiff and the defendant based on their comparative responsibility for the injury,⁵⁵ does not constitute a radical shift from the prior informal practice. Previously, the courts were stymied by the felt need for a detailed formula for apportioning liability. In the absence of any such formula, the only alternatives appeared to be no liability or arbitrary per capita (equal) divisions which did not reflect the parties' comparative responsibility. Both of these alternatives were unsatisfactory. So the courts let the apportionment occur covertly (and sometimes not so covertly⁵⁶), by leaving the issue to the jury.⁵⁷ But, as with other similar issues,⁵⁸ this covert approach undermines the integrity of the law. Finally recognizing this, courts and legislatures are now willing to permit explicit apportionment of liability between the plaintiff and the defendant, based on their comparative responsibility, even in the absence of any detailed apportionment formula.⁵⁹

For two reasons, the covert approach could not be used to apportion liability among the jointly liable tortfeasors. First, all the tortfeasors usually were not joined in the same lawsuit and, second, even when they were, the jury was limited to a single finding on the extent of the injury, for which each tortfeasor was fully liable under joint and several liability. Yet courts and legislatures were least willing to permit explicit apportionment of liability among multiple tortfeasors based on comparative responsibility. Significant complications can arise as a result of insolvent tortfeasors, releases, settlements, and so forth.⁶⁰ Those

⁵⁵ 4 HARPER, JAMES & GRAY, *supra* note 1, § 22.1, at 262-63 & n.6, § 22.15, at 384-90; PROSSER & KEETON, *supra* note 1, § 67, at 471-74.

⁵⁶ See 4 HARPER, JAMES & GRAY, *supra* note 1, § 22.1, at 263 n.4 (discussing Arizona practice), 272 n.26 (citing *Raisin v. Mitchell*, 9 C. & P. 613, 173 Eng. Rep. 979 (C.P. 1839)); Watermeyer, *supra* note 51, 58 S. AFR. L.J. at 249 (citing *Smith v. Dobson*, 3 M. & G. 59 (1841)).

⁵⁷ See sources cited *supra* note 54.

⁵⁸ See, for example, the decisions in some jurisdictions which allow the plaintiff to get to the jury on the issue of causation of some actual harm, based merely on evidence of increased risk, on the expectation that the jury will limit damages to the value of the lost chance. The cases are discussed in Wright, *Bramble Bush*, *supra* note 5, Part V.D.

⁵⁹ See generally 4 HARPER, JAMES & GRAY, *supra* note 1, § 22.16, at 395-402. The factors which are relevant to the determination of comparative responsibility are discussed *supra* text accompanying note 9.

⁶⁰ See 3 HARPER, JAMES & GRAY, *supra* note 1, § 10.2, at 50-51, 54-57; PROSSER & KEETON, *supra* note 1, § 50, at 339-40; Fleming, *Report to the Joint Committee of the California Legislature on Tort Liability on the Problems Associated with AMERI-*

jurisdictions which permitted contribution generally used per capita formulas that apportioned the liability equally among the tortfeasors.⁶¹ This approach was administratively much simpler than any attempt to apportion the liability according to comparative responsibility, and it satisfied the felt need for an explicit apportionment formula. However, as a general rule, it often produced unfair results, since it permitted a tortfeasor who was relatively more at fault and who perhaps even had greater financial assets than a second tortfeasor to shove half the liability burden onto the second tortfeasor.⁶²

Therefore, until recently, most jurisdictions in the United States refused to allow contribution, which results in a sharing of the liability among the jointly liable tortfeasors. Instead, they adopted indemnity rules, which permit a paying tortfeasor to shift the entire liability to another tortfeasor. Indemnity generally was limited to situations in which the indemnitee was vicariously liable for the acts of the indemnitor, or otherwise had a responsibility for the injury that was clearly secondary to the indemnitor's primary responsibility. However, as with the contributory negligence rule, the courts also formulated distinctions, such as the distinction between "active" and "passive" negligence, which allowed indemnity in a broader set of circumstances by taking into account significant differences in the tortfeasors' comparative responsibility for the injury.⁶³

Nevertheless, the indemnity rule was much more limited in its scope and effect than the various formal and informal glosses on the contributory negligence rule. Hence the recent shift in most jurisdictions to contribution (or "partial indemnity") among jointly liable tortfeasors, based on their comparative responsibility,⁶⁴ has had a much greater practical as well as formal effect than the parallel shift from contributory negligence to comparative negligence.

CAN MOTORCYCLE ASSOCIATION V. SUPERIOR COURT, 30 HASTINGS L.J. 1464 (1979).

⁶¹ 3 HARPER, JAMES & GRAY, *supra* note 1, § 10.2, at 51-52 & nn.31-33; PROSSER & KEETON, *supra* note 1, § 50, at 340, § 51, at 344, § 67, at 471.

⁶² Moreover, the equal division rule is not so simple, either, once parties who are not joined as defendants are included in the calculation (as they should be, from the standpoint of efficiency or fairness). See 4 HARPER, JAMES & GRAY, *supra* note 1, § 22.16, at 404-06; W. LANDES & R. POSNER, *supra* note 50, at 202.

⁶³ See 3 HARPER, JAMES & GRAY, *supra* note 1, § 10.2, at 57-63 & n.57; PROSSER & KEETON, *supra* note 1, § 51, at 341-44 & nn.26 & 31.

⁶⁴ 3 HARPER, JAMES & GRAY, *supra* note 1, § 10.1, at 29-30, § 10.2, at 51-53 & n.32, 58-59 n.57; 4 HARPER, JAMES & GRAY, *supra*, § 22.17, at 414-16 & n.41; PROSSER & KEETON, *supra* note 1, § 50, at 337-38 & n.17, 341 n.44, § 51, at 344-45 & nn.30-31, § 67, at 476-77.

In sum, both the formal doctrines and the actual implementation of the earlier common law disprove the first part of the Action Commission's argument — that joint and several liability was uncontroversial under the earlier common law only because the courts refused to take into account degrees of responsibility. The courts, while firmly adhering to joint and several liability, paid considerable attention to relative degrees of responsibility. This fact also casts considerable doubt on the second part of the commission's argument — that joint and several liability is undermined by the recent shift to liability regimes which explicitly take into account the parties' comparative responsibility for the injury.

Like others who assume that joint and several liability is inconsistent with comparative responsibility,⁶⁵ the Action Commission fails to explain that assumption. As applied to contribution claims among multiple tortfeasors, the shift from a no-contribution or a per capita contribution rule to a comparative responsibility contribution rule provides no support, in itself, for a limitation on joint and several liability. The shift makes joint and several liability more fair, rather than less fair, than it was before. Now the tortfeasor who pays the plaintiff can seek contribution, based on their comparative responsibility, from the other tortfeasors who contributed to the plaintiff's injury. In contrast, previously she was either barred from obtaining any contribution or obtained per capita (equal share) contribution that often diverged substantially from the tortfeasors' comparative responsibility.

Similarly, the formal shift from contributory negligence to comparative negligence provides greater assurance than before of a just apportionment of the loss between the plaintiff and the tortfeasors, independent of any change in the joint and several liability doctrine. Under the informal "send it to the jury" approach that prevailed in actual practice under the contributory negligence rule, the negligent plaintiff might receive full compensation or (rarely) nothing, neither of which was consistent with comparative responsibility. Under comparative negligence with joint and several liability retained, the jury is explicitly instructed to reduce the negligent plaintiff's joint and several liability claim against each tortfeasor in accordance with the plaintiff's comparative responsibility for his injury.

This proportionate reduction of the plaintiff's joint and several liability claim would seem sufficient to satisfy the principle of comparative

⁶⁵ *E.g.*, REAGAN REPORT UPDATE, *supra* note 17, at 76; Montford & Barber, *supra* note 12, at 262 (remarks of Senator Caperton), 282-83 n.180 (quoting TEXAS REPORT, *supra* note 37, at 184).

responsibility. The Action Commission and others who argue that joint and several liability is inconsistent with comparative responsibility fail to explain why the plaintiff's claim against each tortfeasor should be reduced even further by eliminating his ability to hold each tortfeasor jointly and severally liable for this reduced amount of damages, especially since the tortfeasors now (unlike before) can seek contribution from one another based on their comparative responsibility. Why should the plaintiff only be able to obtain a fractional share of his already reduced damages from each tortfeasor when (1) each tortfeasor's tortious conduct was an actual and proximate cause of the plaintiff's entire injury and (2) the recoverable damages already have been reduced in proportion to the plaintiff's comparative responsibility?

The commission and others also fail to explain why explicit adoption of comparative responsibility requires that joint and several liability be replaced by proportionate several liability even when the plaintiff is completely innocent and bears no responsibility for his injury. Why should the innocent plaintiff be worse off under a comparative responsibility regime than he was under the contributory negligence regime?

The commission sets forth a hypothetical which appears often in the anti-joint-and-several liability literature. The hypothetical is based on an actual case, in which an innocent passenger was crippled and brain-damaged when a driver high on drugs went through a stop sign and caused a collision with the car in which the innocent victim was a passenger. The negligent driver's view of the stop sign was obscured by bushes which the defendant city had negligently failed to trim. The city, which was found to be twenty-two percent at fault by the jury, expected to pay almost all of the \$2.16 million verdict, since the driver was insolvent and three co-defendants had settled for the total amount of their insurance coverage (\$200,000 in the aggregate).⁶⁶ The commission, echoing others, states: "There is a perceived sense of unfairness in cases [such as this] where the blameworthiness of the defendant's conduct contributing to the plaintiff's harm is so dramatically out of line with the ultimate burden of damages borne by the defendant."⁶⁷

There is indeed a sense of unfairness here. But the commission and others misperceive its source. The sense of unfairness flows from the fact that the tortfeasor with comparatively much greater fault escapes all liability, while the tortfeasor with comparatively lesser fault bears

⁶⁶ *Sills v. City of Los Angeles*, C-333504, Superior Court, San Fernando, California, 1979, discussed in ABA ACTION COMMISSION, *supra* note 42, at 22; INDUSTRY REPORT, *supra* note 18, at 20; Granelli, *supra* note 2, at 61.

⁶⁷ ABA ACTION COMMISSION, *supra* note 42, at 22.

all or almost all of the liability. That is, the unfairness exists between or among the multiple tortfeasors, rather than between the innocent plaintiff and any jointly and severally liable tortfeasor. Why should the innocent plaintiff be able to obtain only twenty-two percent of his damages from a defendant — the city — who was a tortious cause of his entire injury, simply because the city is unable to obtain contribution from the driver who also tortiously contributed to the injury? Although the jury found that the city's percentage of comparative responsibility was less than the driver's, the jury also found that the city was negligent and that the city's negligence was an actual and proximate cause of the innocent plaintiff's entire injury. Contrary to the implication of the commission and others, the fact that the city had a lower percentage of *comparative* responsibility than the driver does not change the fact that the city, as well as the driver, was *fully* responsible for the innocent plaintiff's entire injury, since its negligence was an actual and proximate cause of the entire injury.

The case is a "horror story" only with respect to the fairness issue among the responsible tortfeasors. It is not a horror story from the standpoint of the innocent plaintiff's claim for full compensation from each fully responsible tortfeasor. The commission and others have confused these two issues, and they have traded upon the confusion in an attempt to justify the elimination or limitation of joint and several liability. Under the contributory negligence regime of the earlier common law, the innocent plaintiff could hold each tortfeasor jointly and severally liable for the entire injury, even though the limited provisions for indemnity or contribution usually guaranteed unfairness among the multiple tortfeasors even when all the tortfeasors were available and solvent. Why should the shift to a fairer system for the tortfeasors — one which permits contribution among them based on their comparative responsibility — lead to elimination or limitation of the innocent plaintiff's preexisting right to obtain full compensation from any defendant who was a tortious cause of the entire injury?

The questions raised in the preceding paragraphs are all variants of the fundamental issue that was identified at the beginning of this Article: whether the plaintiff-victim, the defendant-tortfeasors, or both should bear the expense of apportionment and the risk of collecting from insolvent or otherwise unavailable tortfeasors. Under traditional joint and several liability the expense and risk fall on the tortfeasors, while under proportionate several liability the expense and risk fall on the injured party, the plaintiff. This issue is not addressed, or even articulated, in the Action Commission report or the defense-oriented reports.

The defense-oriented reports completely ignore the individual plaintiff's side of the issue and simply proclaim, without elaboration, that it is unfair for any tortfeasor to be held liable for more than her proportionate share based on comparative responsibility.⁶⁸ They ignore three crucial facts. First, each tortfeasor, having tortiously contributed to the entire injury, is independently responsible for the entire injury. Second, proportionate several liability results in the plaintiff's being liable for more than his proportionate share of comparative responsibility whenever there are insolvent or otherwise unavailable tortfeasors. Third, even when all the tortfeasors are solvent and available, proportionate several liability imposes considerable expense and delay on the injured party, the plaintiff, which ordinarily will prevent him from receiving either timely or full compensation.

The Reagan Administration's Tort Policy Working Group is able to perceive the plaintiff's side of the issue only when the federal government is the plaintiff. While calling for the elimination of joint and several liability in suits by private plaintiffs, the Reagan Report attempts to distinguish and preserve the government's ability to obtain joint and several liability under federal environmental statutes, which

are founded upon congressional objectives which provide that those who contributed to the problem or profited from the manufacture which created the waste, ought to bear the cost of cleaning it up. . . . Without some degree of joint and several liability under [these statutes], the effective enforcement of these programs could be impeded as a result of protracted and costly litigation among responsible parties over the precise allocation of cleanup costs.⁶⁹

The authors of the report fail to explain why there is not similar concern about the serious adverse impact that abolition of joint and several liability will have on full and prompt compensation of private victims of tortious conduct.

The Action Commission report, unlike the defense-oriented reports, recognizes the appeal of the innocent plaintiff's claim for full compensation for tortiously inflicted injury. However, the commission slights the claim by phrasing it as an "injured persons need compensation" social insurance claim rather than as a "persons who tortiously cause injury to others are responsible for that injury" corrective justice claim.⁷⁰ Failing to perceive the precise nature of the plaintiff's claim or

⁶⁸ See *supra* note 37 and accompanying text.

⁶⁹ REAGAN REPORT, *supra* note 17, at 65 n.7.

⁷⁰ ABA ACTION COMMISSION, *supra* note 42, at 22-23; see Rabin, *supra* note 45, at 27-28, 40-41 (Professor Rabin was the reporter for the Action Commission).

the fundamental issue at the core of the joint and several liability debate, the commission adopts an unsupported and unexplained pragmatic compromise. The commission recommends that proportionate several liability replace joint and several liability only with respect to noneconomic damages and only on behalf of a tortfeasor whose comparative responsibility is significantly less than (*e.g.*, less than one-third of) that of any other tortfeasor.⁷¹

The political debate on joint and several liability in the various states has been an oft-repeated reenactment of the inaccurate and irrelevant arguments discussed above.⁷² These arguments, as no doubt was intended by the defense advocates, have diverted attention from the traditional underpinnings of the joint and several liability rule and the consequences of its elimination or limitation. The defense advocates have successfully confused the important distinction between (1) each tortfeasor's *independent full responsibility* for the injury which she has tortiously caused and (2) the appropriate method for allocating liability among the multiple responsible causes of the injury, including, to the extent possible, the ultimate apportionment of liability among the responsible causes based on a *comparative weighing* of each cause's full (not partial or proportionate) responsibility. As a result of this confusion, the defense advocates usually have been able to prevent the debate from focusing on, or at least have been able to bias the discussion of, the fundamental issue: who should bear the expense and risk of the effort to achieve this apportionment, the injured plaintiff or the defendants who tortiously injured the plaintiff?

Yet, despite the smokescreens and false alarms that have been employed by the defense advocates in their carefully orchestrated crusade for so-called "tort reform,"⁷³ most legislatures have not totally lost sight of the plaintiff's side of the debate. By the end of 1987, only a few

⁷¹ ABA ACTION COMMISSION, *supra* note 42, at 23-24.

⁷² See, *e.g.*, Clark, *supra* note 37, at 121-36, 145-49 (describing debate in California); Montford & Barber, *supra* note 12, at 281-91 & n.180 (describing debate in Texas).

⁷³ As many commentators have noted, the laundry list of so-called "tort reforms" can be viewed as reforms only if one determines a rule's fairness, as the defense advocates have, solely in terms of its impact on defendants' liability costs. See, *e.g.*, O'Connell, *Balanced Proposals for Product Liability Reform*, 48 OHIO ST. L.J. 317, 318-19 (1987); Rabin, *supra* note 45, at 19, 22-23, 31-42; Sugarman, *Taking Advantage of the Torts Crisis*, 48 OHIO ST. L.J. 329, 329-30, 338-42, 347-50; Wade, *An Evaluation of the "Insurance Crisis" and Existing Tort Law*, 24 Hous. L. REV. 81, 86-91, 96 (1987). For a lengthy example of the use of this arbitrary and self-serving definition of fairness, in what seems to be an attempt to bias the legislative history after biasing the law itself, see Montford & Barber, *supra* note 12, *passim*.

states had replaced joint and several liability with proportionate several liability in all or almost all tort actions.⁷⁴ Many states still adhered to joint and several liability with no limitations or modifications.⁷⁵ The remaining states, reflecting the widespread confusion and lack of proper focus in the debate, had adopted a wide variety of pragmatic compromises.

One state gave the trier of fact the discretion to impose proportionate several liability in lieu of joint and several liability in all tort cases,⁷⁶ while another state authorized such discretion only if the plaintiff was

⁷⁴ *Arizona* (exceptions for concerted action, vicarious liability, and hazardous wastes or substances or solid waste disposal sites): ARIZ. REV. STAT. ANN. § 12-2501 to -2509 (Supp. 1987); *Colorado* (exception for concerted action): COLO. REV. STAT. § 13-21-111.5 (1987); *Idaho* (exceptions for concerted action, vicarious liability, hazardous waste or substances or solid waste disposal sites, manufacture of medicines or medical devices): IDAHO CODE §§ 6-801 to -804 (Supp. 1987); *Kansas* (exception for intentional): KAN. STAT. ANN. § 60-258a (1983); *Brown v. Keill*, 224 Kan. 195, 580 P.2d 867 (1978); *Sieben v. Sieben*, 231 Kan. 372, 378, 646 P.2d 1036, 1041 (1982); *North Dakota* (exceptions for concerted action and accessories to the tortious behavior): N.D. CENT. CODE §§ 32-03.2-02 to -03 (Supp. 1987); *Utah*: UTAH CODE ANN. §§ 78-27-37 to -43 (1987); *Vermont*: VT. STAT. ANN. tit. 12, § 1036 (Supp. 1987); *Wyoming* (perhaps only when plaintiff contributorily negligent): WYO. STAT. § 1-1-109 (Supp. 1987); *Palmeno v. Cashen*, 627 P.2d 163, 166 (Wyo. 1981).

⁷⁵ For comparative negligence jurisdictions, see *Arkansas*: ARK. STAT. ANN. §§ 16-61-201 to -212, 16-64-122 (1987); *Welton v. Tull*, 234 Ark. 882, 356 S.W.2d 20 (1962); *Delaware*: DEL. CODE ANN. tit. 10, §§ 6301-6308 (1975); *Massachusetts* (pro-rata contribution): MASS. GEN. LAWS ANN. ch. 231B, §§ 1-4 (1986); *Mississippi* (pro-rata contribution): MISS. CODE ANN. § 85-5-5 (1973); *Nebraska* (pro-rata contribution): *Royal Indem. Co. v. Aetna Casualty & Sur. Co.*, 193 Neb. 752, 229 N.W.2d 183 (1975); *New Hampshire*: N.H. REV. STAT. ANN. §§ 507:7-e to -f (Supp. 1987); *New Jersey*: N.J. STAT. ANN. § 2A:15-5.3 (1987); *Pennsylvania*: 42 PA. CONS. STAT. ANN. §§ 7102(b), 8321-8327 (Purdon 1982); *Elder v. Orluck*, 511 Pa. 402, 417-19, 515 A.2d 517, 524-25 (1986); *Rhode Island*: R.I. GEN. LAWS §§ 10-6-1 to -11 (1985); *Wisconsin*: WISC. STAT. ANN. §§ 113.01-11 (West 1988); *Wisconsin Natural Gas Co. v. Ford, Bacon & Davis Constr. Corp.*, 96 Wis. 2d 314, 330-34, 291 N.W.2d 825, 833-35 (1980). For contributory negligence jurisdictions, see *Alabama*: *General Motors Corp. v. Edwards*, 482 So. 2d 1176, 1195 (Ala. 1985); *District of Columbia*: *Knell v. Feltman*, 174 F.2d 662 (D.C. Cir. 1949); *Maryland* (pro-rata contribution): MD. CODE ANN. art. 50, §§ 16-24 (1986); *North Carolina* (pro-rata contribution): N.C. GEN. STAT. §§ 1B-1 to 1B-7 (1983); *South Carolina*: *South Carolina Dep't of Health & Envir. Control v. Fed-Serve Indus.*, 362 S.E.2d 311 (S.C. App. 1987); see S.C. CODE ANN. § 15-78-100(c) (Supp. 1987) (special verdict, specifying proportion of liability, required if multiple defendants include governmental entity; effect on joint and several liability not clear); *Tennessee* (pro-rata contribution): TENN. CODE ANN. §§ 29-11-101 to -106 (1980); *Virginia*: VA. CODE §§ 8.01-34, 8.01-443 (1984).

⁷⁶ *Kentucky*: KY. REV. STAT. ANN. § 454.040 (1985); *Prudential Life Ins. Co. v. Moody*, 696 S.W.2d 503 (Ky. 1985).

contributorily negligent.⁷⁷ One state replaced joint and several liability with proportionate several liability only in dram shop cases.⁷⁸ Another state adopted proportionate several liability only in medical malpractice or governmental liability cases and only for a defendant whose comparative percentage of all the tortfeasors' fault was less than twenty-five percent.⁷⁹

Some states adopted proportionate several liability only in negligence actions,⁸⁰ or only in negligence actions in which the plaintiff was contributorily negligent,⁸¹ or only for a defendant whose comparative responsibility was less than the plaintiff's,⁸² or only for a defendant whose comparative responsibility was less than a certain percentage,⁸³ or only for a defendant whose comparative responsibility was either less

⁷⁷ *Georgia*: GA. CODE ANN. § 51-12-33 (Supp 1987); see *id.* § 51-12-31 (1982); *Craven v. Allen*, 118 Ga. App. 462, 164 S.E.2d 358 (1968).

⁷⁸ *Maine*: ME. REV. STAT. ANN. tit. 28-A, § 2512 (Supp. 1987) (dram shop); cf. *id.* tit. 14, § 156 (1980) (general provision); see *supra* note 75 (South Carolina).

⁷⁹ *West Virginia*: W. VA. CODE § 29-12A-7 (1986) (governmental liability); *id.* § 55-7B-9 (Supp. 1987) (medical malpractice); cf. *id.* § 55-17-13 (1981) (general provision); *Sitzes v. Anchor Motor Freight*, 289 S.E.2d 679 (W. Va. 1982).

⁸⁰ *Indiana* (exceptions for actions not subject to Comparative Fault Act: for example, medical malpractice, tort claims): IND. CODE ANN. §§ 34-4-33-5(b)(4), 34-4-33-7 (1986); *New Mexico* (exceptions for vicarious liability, intentional, strict product liability, and "situations . . . having a sound basis in public policy"): N.M. STAT. ANN. § 41-3A-1 (Supp. 1987).

⁸¹ *Nevada* (section applies only to actions in which the comparative negligence of the plaintiff is asserted as a defense; exceptions for concerted action, intentional, strict liability, product liability, and toxic or hazardous substances): NEV. REV. STAT. ANN. § 41.141 (Supp. 1987); *Oklahoma*: OKLA. STAT. ANN. tit. 12, § 832 (Supp. 1988); *Laubach Ins. Co. v. Morgan*, 588 P.2d 1071 (Okla. 1978); *Berry v. Empire Indem. Insur. Co.*, 634 P.2d 718 (Okla. 1981); *Washington* (exceptions for concerted action, vicarious liability, intentional, hazardous waste or substances or solid waste disposal sites, tortious interference with contracts or business relations, and product liability claims involving indistinguishable generic products; when joint and several liability exists only because the plaintiff was not contributorily negligent, the joint and several liability is limited to the sum of the proportionate shares of the defendants against whom judgment is entered): WASH. REV. CODE ANN. §§ 4.22.015, 4.22.030 to .070 (Supp. 1988); see *supra* note 74 (Wyoming).

⁸² *Louisiana* (otherwise limited to 50% of total recoverable losses; exceptions for concerted action and statutory solidary liability): LA. CIV. CODE ANN. art. 2324 (Supp. 1988).

⁸³ *Illinois* (less than 25%; exceptions for intentional, traditional strict liability, medical expenses, medical malpractice, environmental pollution): ILL. ANN. STAT. ch. 110, CODE CIV. PROC. §§ 2-1117 to -1118 (Supp. 1987); *Iowa* (less than 50%; exception for intentional): IOWA CODE ANN. §§ 668.1-4 (1987); *Montana* (less than 50%; negligence actions only; exceptions for concerted action and vicarious liability): MONT. CODE ANN. § 27-1-703 (1987).

than the plaintiff's or less than a certain percentage.⁸⁴

Some states adopted proportionate several liability for noneconomic losses only. In these states, the proportionate several liability for noneconomic losses applies only in actions "based upon principles of comparative fault" (which, literally interpreted, would seem to be limited to situations in which the plaintiff was contributorily negligent),⁸⁵ or only in negligence actions in which the plaintiff was contributorily negligent,⁸⁶ or only for a defendant whose comparative responsibility was less than a certain percentage.⁸⁷ Some states adopted proportionate several liability for noneconomic losses in almost all tort actions, but they applied proportionate several liability to economic losses only if the defendant's comparative responsibility was less than the plaintiff's⁸⁸ or was either less than the plaintiff's or less than a certain percentage.⁸⁹

Some states put a cap or limit on a defendant's joint and several liability.⁹⁰ Other states adopted a modified form of joint and several liability, according to which the uncollectible shares are reallocated

⁸⁴ *Texas* (20% or less if plaintiff contributorily negligent, 10% or less otherwise; exceptions for intentional, exemplary damages, environmental pollution, and toxic or hazardous substances): TEX. CIV. PRAC. & REM. CODE ANN. §§ 33.002, 33.013 (1986 & Supp. 1988).

⁸⁵ *California*: CALIF. CIV. CODE §§ 1430-1432 (West Supp. 1988).

⁸⁶ *Ohio*: OHIO REV. CODE ANN. § 2315.19 (Baldwin Supp. 1987); *see infra* note 93 (Connecticut).

⁸⁷ *Hawaii* (less than 25%; exceptions for intentional, strict liability, product liability, environmental pollution, toxic and asbestos-related, motor vehicles, aircraft, and highway maintenance and design where reasonable notice of prior similar occurrence): HAW. REV. STAT. §§ 663-10.9, 663-11 to -17 (1985 & Supp. 1987); *see id.* § 663-10.9 note (Supp. 1987) (limitations on joint and several liability repealed Oct. 1, 1989); *New York* (50% or less of "total liability assigned to all persons liable," not including persons over whom plaintiff was unable to obtain jurisdiction; exceptions for concerted action, vicarious liability, nondelegable duties, intentional, reckless disregard, wrongful death, property damage, release of hazardous substances, product liability where manufacturer could not be joined, motor vehicles, and workers' compensation): N.Y. CIV. PRAC. L. & R. §§ 1600-1603 (Supp. 1988).

⁸⁸ *Florida* (exception for economic damages from pollution; exceptions for economic and noneconomic damages if \$25,000 or less, intentional tort, or statutory joint and several liability): FLA. STAT. ANN. § 768.81 (West Supp. 1988).

⁸⁹ *Oregon* (less than 15%; exceptions for environmental pollution and hazardous wastes and substances): OR. REV. STAT. ANN. § 18.485 (1988).

⁹⁰ *Alaska* (limited to twice defendant's comparative responsibility): ALASKA STAT. §§ 09.16.010 to .060, 09.17.080 (1983 & Supp. 1987); *South Dakota* (same; two or more persons may be treated as a single party if their behavior is "so interrelated that it would be inequitable to distinguish between them"): S.D. CODIFIED LAWS ANN. §§ 15-8-15.1 to -15.2 (Supp. 1987); *see supra* note 82 (Louisiana) and *infra* note 91 (Missouri).

among all the responsible parties, including the plaintiff if the plaintiff was negligent.⁹¹ Other states adopted a similarly modified form of proportionate several liability, which displaces joint and several liability only if the plaintiff was contributorily negligent⁹² or only in negligence actions.⁹³

Most of the statutes which have displaced, limited, or modified joint and several liability contain exceptions for certain types of actions, which continue to be fully subject to joint and several liability. Many of the statutes are riddled with exceptions. The most popular exceptions apply to concerted action, vicarious liability, intentional torts, environmental pollution, hazardous wastes or substances, and product liability.⁹⁴

As even the defense advocates admit, the recent legislative action on joint and several liability has resulted in a wide variety of compromises and distinctions that have no apparent rationale in logic or principle.⁹⁵ The confused results reflect the confused and distorted nature of the debate which the defense advocates have fostered. What has been lacking in the political debate, and what is needed if any legislature is to consider the issue clearly, honestly, and realistically, is a careful analysis of the merits of the various alternatives in the light of the theoretical foundations of tort liability. I turn to that task in the next part, in which I examine the alternative allocation methods from the respective viewpoints of the two major competing theories of tort law: the efficiency theory and the corrective justice theory.

⁹¹ *Minnesota* (for product liability claims, uncollectible shares are reallocated only among persons in chain of manufacture and distribution, and proportionate several liability applies to a person whose comparative responsibility was less than plaintiff's; for all claims, liability of governmental unit with comparative responsibility of less than 35% is limited to twice its comparative responsibility): MINN. STAT. ANN. § 604.02 (West Supp. 1988); *Missouri* (exception for medical malpractice; reallocation limited to twice defendant's comparative responsibility if her comparative responsibility is less than plaintiff's): MO. ANN. STAT. §§ 537.067, 538.230, 538.300 (Vernon 1988).

⁹² *Michigan* (exception for product liability and property damage; joint and several liability eliminated entirely for governmental agencies other than medical care facilities; no reallocation of uncollectible shares to such governmental agencies): MICH. COMP. LAWS ANN. § 600.6304 (West 1987).

⁹³ *Connecticut* (exceptions for property damage and breach of fiduciary obligations; uncollectible economic damages reallocated only among tortfeasors): CONN. GEN. STAT. ANN. § 52-572h (West Supp. 1988). For a discussion of the differences between modified joint and several liability and modified proportionate several liability, see *infra* text accompanying notes 164-66.

⁹⁴ See *supra* notes 74, 76-93.

⁹⁵ REAGAN REPORT UPDATE, *supra* note 17, at 77.

III. THE THEORETICAL BASES FOR ALLOCATING LIABILITY

A. The Efficiency Theory

I have argued elsewhere that the efficiency theory of tort law is normatively unappealing and descriptively inadequate.⁹⁶ However, the efficiency theory has a number of followers, at least in the academic community. Hence it is useful to inquire whether, from the viewpoint of efficiency, there is any preferred method for allocating liability among the multiple responsible causes of the same injury.

According to the legal economists, the goal of tort law is or should be the maximization of aggregate social utility or wealth. Plaintiffs and defendants are treated as morally and economically indistinguishable causes of the effects of their interacting activities.⁹⁷ Thus, for the legal economists, the problem of allocating liability among the plaintiff and the multiple tortfeasors is a straightforward extension of the bilateral allocation problem that exists when there is a single tortfeasor.⁹⁸

The standard economic account is that, in a hypothetical ideal world of no transaction costs, perfect information, and no risk aversion, any liability rule will lead to the efficient outcome, since the interacting parties will always bargain to the efficient result as long as the rules are clearly specified.⁹⁹ The legal economists therefore focus on a semi-

⁹⁶ Wright, *False Semantics*, *supra* note 14, at 562-78. See also Dworkin, *Is Wealth a Value?*, 9 J. LEGAL STUD. 191 (1980).

⁹⁷ See, e.g., G. CALABRESI, *THE COSTS OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS* 6 n.8, 26-28, 133-35, 201 & n.2, 203 (student ed. 1970); W. LANDES & R. POSNER, *supra* note 50, at 16-17, 19, 31-36, 190, 192 n.6, 201-02, 229-30; A.M. POLINSKY, *AN INTRODUCTION TO LAW AND ECONOMICS* 7-14 (1983); R. POSNER, *ECONOMIC ANALYSIS OF LAW* §§ 2.2 & 2.3, at 21-26, § 3.5, at 43-45 (3d ed. 1986); S. SHAVELL, *ECONOMIC ANALYSIS OF ACCIDENT LAW* 1, 4, 7, 30 (1987); Calabresi, *Concerning Cause and the Law of Torts: An Essay for Harry Kalven, Jr.*, 43 U. CHI. L. REV. 69 (1975); Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960).

⁹⁸ See, e.g., R. COOTER & T. ULEN, *LAW AND ECONOMICS* 409-10 (1988); R. POSNER, *supra* note 97, § 6.8, at 172-73; Landes & Posner, *Joint and Multiple Tortfeasors: An Economic Analysis*, 9 J. LEGAL STUD. 517, 518-19 & n.5 (1980), reprinted in W. LANDES & R. POSNER, *supra* note 50, ch. 7, at 190-91 & n.4 (with revisions).

⁹⁹ This proposition, known as the Coase theorem, was first stated in Coase, *supra* note 97, at 2-15. See also M. KUPERBERG & C. BEITZ, *LAW, ECONOMICS, AND PHILOSOPHY: A CRITICAL INTRODUCTION, WITH APPLICATIONS TO THE LAW OF TORTS* 4-6 (1983); W. LANDES & R. POSNER, *supra* note 50, at 31-36; A.M. POLINSKY, *supra* note 97, at 11-12, 16-17; R. POSNER, *supra* note 97, § 1.1, at 7, § 3.5, at 43-45. However, the Coase theorem is invalid. It is based on the erroneous assumption that individual utilities are fully captured by market transactions. R. Wright, *The Failure of the Economic Theories of Tort*, May 1987, at 7-13 (unpublished manuscript on file

ideal world, in which the rule of liability does matter, since transaction costs are assumed to prevent efficient bargains (the assumptions of perfect information and risk neutrality are retained).¹⁰⁰

Ordinarily it is argued that, in a semi-ideal world of perfect information, risk neutrality, and solvent defendants, the efficient result will be achieved if, and only if, (1) all or all but one of the contributing parties are subject to negligence liability, (2) negligence is defined as a failure to achieve the efficient level of precaution (including both the level of activity and the level of care), which is the level that minimizes the sum of the parties' injury and precaution costs, (3) the total liability for negligence is at least equal to the amount of the injury caused by the negligence, and (4) the party who is ultimately strictly¹⁰¹ liable if no one is negligent is liable for the exact amount of the injury.¹⁰² Since it is assumed that all defendants will be subject to the same liability rule, condition (1) limits us to prima facie negligence rules in the multiple defendant context. Thus, if none of the defendants is negligent, the plaintiff will be the ultimately strictly liable party.

If a party subject to strict liability is not liable for the full amount of the injury that she caused, or a party subject to negligence liability is not potentially liable for the full amount of the injury that was caused by her negligence, she may adopt too little precaution, which may raise

at IIT Chicago-Kent College of Law) [hereafter Wright, *Economic Theories*].

¹⁰⁰ E.g., R. COOTER & T. ULEN, *supra* note 98, at 341; W. LANDES & R. POSNER, *supra* note 50, at 31, 36-37, 54-58, 61-62; A.M. POLINSKY, *supra* note 97, at 12-14, 37; R. POSNER, *supra* note 97, § 3.5, at 45-47, § 6.1, at 148; S. SHAVELL, *supra* note 97, at 5-6; Coase, *supra* note 97, at 15-28.

¹⁰¹ To avoid confusion, in this part I will follow the legal economists' convention of using the term "strict liability" to refer to any liability that is imposed, simply on the basis of causal contribution, even though the liable party has achieved the efficient level of precaution. In actual legal practice, strict liability refers to liability for creation and subsequent actualization of a significant, foreseeable, reasonable, yet unaccepted risk of injury to others. Liability based merely on contribution to the injury is absolute liability, rather than strict liability as that term is used in the law. See Wright, *Causation*, *supra* note 5, at 1750-51.

¹⁰² This proposition was first elaborated in Brown, *Toward An Economic Theory of Liability*, 2 J. LEGAL STUD. 323, 325, 327-29, 333, 335-43 (1973). See also R. COOTER & T. ULEN, *supra* note 98, at 347-60, 362-66 & n.27; W. LANDES & R. POSNER, *supra* note 50, at 36-40, 58-64, 73-82, 193-97, 214-15; A.M. POLINSKY, *supra* note 97, at 37-49; R. POSNER, *supra* note 97, § 6.4, at 154-57; S. SHAVELL, *supra* note 97, at 10-16. Although Cooter, Ulen, and Shavell show that, in the bilateral context, each party will achieve the efficient level if the other party does, they do not demonstrate that at least one of the parties will achieve the efficient level even if the other party does not, which is necessary to complete the argument. See generally Wright, *Economic Theories*, *supra* note 99, at 13-23.

the level of injury over that which would occur at the efficient levels of precaution, which in turn may lead the ultimately liable party to adopt too much precaution (compared to the efficient levels). Similarly, if a party subject to strict liability is liable for more than the injury that she caused, she will have an incentive to adopt too much precaution. On the other hand, if a party subject to negligence liability is liable for more than the injury that was caused by her negligence, she will not adopt excessive precaution, since, being subject to liability only if she is negligent, she is certain (in a semi-ideal world of perfect information) that she will avoid all liability by adopting the efficient (nonnegligent) level of precaution. She therefore has no reason to adopt excessive precaution. In sum, in order to achieve the efficient level of precaution, liability in strict liability must be for the exact amount of the injury, while potential liability in negligence must be at least equal to, but may be greater than, the amount of the injury caused by the negligence.¹⁰³

It is also essential that all but one of the parties be able to avoid liability by achieving the efficient (nonnegligent) level of precaution. There is no efficient method for allocating liability if more than one party is subject to strict liability. For example, if two parties are each strictly liable for the injury,¹⁰⁴ each may adopt too little or too much precaution, depending on expected costs and liabilities, strategic behavior, and whether the efficient solution involves joint or alternative precaution.¹⁰⁵

¹⁰³ E.g., A.M. POLINSKY, *supra* note 97, at 17, 39-40, 46-47; R. POSNER, *supra* note 97, § 6.10, at 176; Wright, *Economic Theories*, *supra* note 99, at 21-22. Some legal economists, assuming that a negligent party is liable for the full amount of the injury that was caused by her activity as a whole, argue that the efficient level of precaution may be reached even if she is liable for less than the full amount of that injury. E.g., R. COOTER & T. ULEN, *supra* note 98, at 351-53 & n.24; S. SHAVELL, *supra* note 97, at 167-68. But negligence liability is limited to the injury that was caused by the negligent aspect of the activity. Wright, *Causation*, *supra* note 5, at 1759-74. As noted in the text, the liability must be at least that high to assure attainment of the efficient level of precaution.

¹⁰⁴ As suggested by Cooter and Shavell, each of whom erroneously states that the efficient result would be achieved in the bilateral plaintiff-defendant context by coupling strict liability for the defendant with an equivalent fine or tax on the plaintiff. S. SHAVELL, *supra* note 97, at 29-30 & n.36; Cooter, *Unity in Tort, Contract, and Property: The Model of Precaution*, 73 CALIF. L. REV. 1, 3-4 (1985); see Rizzo, *Law Amid Flux: The Economics of Negligence and Strict Liability in Tort*, 9 J. LEGAL STUD. 291, 292-93 (1980) [hereafter Rizzo, *Flux*] (states that, to achieve efficient result, each actor must bear full social costs of her activity).

¹⁰⁵ W. LANDES & R. POSNER, *supra* note 50, at 214-15; Schwartz, *Contributory Negligence*, *supra* note 52, at 707 n.47; see R. POSNER, *ECONOMIC ANALYSIS OF LAW* §§ 6.2 & 6.3, at 122-24 (2d ed. 1977); Calabresi & Hirschoff, *Toward a Test for Strict*

Do these economic principles point to a preferred method, from the viewpoint of efficiency, for allocating liability among the multiple responsible causes of the same injury? I will examine several different methods. Initially, I assume that there is no defense of contributory or comparative negligence, so that, even if the plaintiff was negligent, the negligent defendants are liable in the aggregate for at least the full amount of the injury that was caused by their negligence. I also assume that each defendant's negligence contributed to the entire injury (separable injuries are allocated severally to the tortfeasor who caused each separable injury). At least four possible methods exist for allocating the liability among the negligent defendants:

- (1) *Full several liability*. Each negligent defendant is severally (separately) liable for at least the full amount of the injury, so the plaintiff can obtain multiple recoveries for the injury.
- (2) *Joint and several liability with no contribution*. Each negligent defendant is potentially severally liable for at least the full amount of the injury, but the plaintiff is limited to a single recovery in the aggregate. The plaintiff can obtain this single recovery from a single one or any combination of the negligent defendants. No defendant who compensates the plaintiff can obtain contribution from the other negligent defendants.
- (3) *Joint and several liability with contribution*. This method is the same as the second method, insofar as the plaintiff's rights are concerned. However, any defendant who compensates the plaintiff can obtain contribution from the other negligent defendants, based on their comparative responsibility or on some other apportionment formula.
- (4) *Proportionate several liability*. Each negligent defendant is liable for only a portion of the injury that was caused by her negligence. The portion for which she is liable is based on her comparative responsibility or on some other apportionment formula. The negligent defendants in the aggregate are liable for at least the full amount of the injury.

Under method (1) each potential defendant will avoid liability by adopting her efficient level of precaution. According to the efficiency theory, failure to achieve the efficient level constitutes negligence, which under method (1) subjects each negligent defendant to liability for at

Liability in Torts, 81 YALE L.J. 1055, 1057-58 (1972); Schwartz, *supra*, at 704-07. In the last three cited sources, the authors discuss a negligence standard that is based on each actor's marginal cost of precaution compared with the marginal reduction in injury cost, rather than on the efficient level of precaution. Under this marginal "Learned Hand" standard, the actor may be held liable even though she has achieved the efficient level of precaution. This economically strict liability creates the problems that the authors discuss. If aggregate rather than marginal costs are used to define negligence, the incentives for too much or too little precaution are even greater. Brown, *supra* note 102, at 332-33 (literal Learned Hand standard). See generally Wright, *Economic Theories*, *supra* note 99, at 16-19.

least the full amount of the injury. By definition, the cost of achieving the efficient level is less than the expected injury cost. So each potential defendant will achieve the efficient level. She will not exceed the efficient level since, being free of liability once she attains the efficient level, she has no reason to spend money on additional precaution beyond the efficient level.

Methods (2), (3), and (4) are substantially equivalent from the *ex ante* perspective, which is the only one that matters under the efficiency theory.¹⁰⁶ Each negligent defendant faces an expected liability which usually will be less than the full amount of the injury, but which, especially under method (2), may be equal to or even greater than the full amount of the injury, since there is no reason under the efficiency theory to limit negligence liability to the amount of the injury.¹⁰⁷ Under each allocation method, the aggregate liability of the negligent defendants is at least equal to the full amount of the injury. By definition the aggregate cost of achieving the efficient levels of precaution is less than the full amount of the injury. Thus, no matter how the expected liability is split among the negligent defendants, the cost of achieving the efficient level of precaution (and thus being nonnegligent and nonliable) will be less than the expected share of liability for at least one of the potential defendants. In a semi-ideal world of perfect information and defendant solvency, she will be aware of that fact and will minimize her expected costs by adopting her efficient level of precaution to eliminate her potential liability.¹⁰⁸

This raises the expected share of liability for each of the remaining potential defendants, who in the aggregate remain liable, if negligent, for at least the full amount of the injury, and who each will be aware (in a semi-ideal world) of this increase in expected liability. Thus, as before, at least one of them will find it cheaper to avoid potential liability by adopting her efficient (nonnegligent) level of precaution. This argument, applied iteratively, demonstrates that each defendant will adopt her efficient (nonnegligent) level of precaution, leaving ultimate liability on the plaintiff. The plaintiff, knowing (in a semi-ideal world) that he ultimately will be fully (strictly) liable, will also adopt his effi-

¹⁰⁶ See W. LANDES & R. POSNER, *supra* note 50, at 191-93, 201 (explicitly discussing methods (2) and (3), but noting that any allocation method which holds the negligent defendants in the aggregate liable for at least the full amount of the injury will achieve the efficient result).

¹⁰⁷ See *supra* text accompanying note 103.

¹⁰⁸ W. LANDES & R. POSNER, *supra* note 50, at 193-97.

cient level of precaution. By definition, doing so minimizes the sum of his injury and precaution costs.¹⁰⁹

If there is a defense of contributory negligence, the plaintiff will be unable to recover anything from the negligent defendants if he is negligent. He therefore will adopt his efficient (nonnegligent) level of precaution, since doing so either shifts the entire injury cost (which by definition is greater than the cost of achieving the efficient level of precaution) to the negligent defendants or (again by definition) minimizes the sum of his injury and precaution costs if none of the defendants is negligent.¹¹⁰ If there is a defense of comparative negligence, the plaintiff will split the liability with the negligent defendants and, under reasoning similar to that given above, the plaintiff and each of the defendants will, through an iterative process, have the proper incentive to adopt his or her efficient level of precaution.¹¹¹

As in the single defendant context, it is essential in the multiple defendant context that the negligent contributing parties (which may include the plaintiff as well as the multiple defendants) be liable in the aggregate for at least the full amount of the injury that is jointly caused by their negligence. If the aggregate liability of the negligent parties is not at least equal to the amount of the injury that is caused by their negligence, the iterative process described above may never get started or may not work its way through all the contributing parties. Some or all of the parties may have an insufficient incentive to adopt their re-

¹⁰⁹ *Id.* Stewart Sterk has reminded me that there is one class of cases in which the efficient result may not be reached under any of the four methods. These are cases of alternative precaution in which the efficient result will be achieved if any one of the potential defendants spends the same identical amount on precaution. Thus, it is efficient for one, but only one, to spend that amount. Yet there is no way to select any of them as that one since their costs of precaution are identical. For example, assume a \$100,000 injury can be avoided if any one of four potential defendants spends \$30,000 on precaution. Under method (1), all four may adopt the precaution since the expected liability for each, if no one adopts the precaution, is \$100,000, which is greater than the precaution cost. Or none may adopt the precaution, gambling that at least one of the others will do so. Under methods (2) through (4), none will adopt the precaution since the expected liability of each if none adopts the precaution is only \$25,000, which is less than the precaution cost. *See id.* at 200-01. The source of the difficulty is the inability to identify a determinate efficient level of precaution for each potential defendant.

¹¹⁰ *Id.* at 73-76, 194-95; R. POSNER, *supra* note 97, § 6.4, at 154-56; Brown, *supra* note 102, at 340-41.

¹¹¹ This was first demonstrated, for the bilateral plaintiff-defendant situation, in Haddock & Curran, *An Economic Theory of Comparative Negligence*, 14 J. LEGAL STUD. 49, 57-63 (1985). *See also* W. LANDES & R. POSNER, *supra* note 50, at 77, 80-82; R. POSNER, *supra* note 97, § 6.4, at 156-57; Wright, *Economic Theories*, *supra* note 99, at 20-21 & n.58.

spective efficient levels of precaution.¹¹²

Similarly, as in the single defendant context, it is essential that all but one of the parties (the ultimately liable party) be able to avoid all liability by adopting their respective efficient (nonnegligent) levels of precaution.¹¹³ The liability rules which achieve the efficient result all do so by imposing negligence liability on all or all but one of the parties, by making sure the negligence liability is large enough to provide a sufficient incentive for each party to adopt her efficient level of precaution (which is assured only if each party is potentially liable for at least the full amount of the injury that is caused by her negligence), by allowing all but the ultimately liable party to escape liability by adopting her efficient level of precaution, and by holding the ultimately liable party liable for the exact amount of the injury.

In sum, in a semi-ideal world of perfect information, risk neutrality, and defendant solvency, the efficiency theory provides no basis for choosing among the four listed allocation methods, which represent fundamentally distinct approaches to allocating liability among the negligent defendants. Indeed, the efficiency theory provides no basis for selecting any specific allocation formula in such a semi-ideal world. It only requires (a) that the aggregate liability of the negligent parties be at least equal to the full amount of the injury that is caused by their negligence and (b) that any defendant be allowed to avoid liability if she achieves her efficient (nonnegligent) level of precaution.¹¹⁴

William Landes and Richard Posner claim that method (2), joint and several liability without contribution, is more efficient than any method which permits contribution or apportionment, such as methods (3) and (4), since it involves less and simpler litigation.¹¹⁵ This administrative cost claim, if valid, would also make method (2) preferable to method (1), which permits multiple recoveries by a nonnegligent plain-

¹¹² W. LANDES & R. POSNER, *supra* note 50, at 196-97, 201; *see id.* at 82 n.41.

¹¹³ *See id.* at 199-200, 214-15; S. SHAVELL, *supra* note 97, at 164-66; *supra* text accompanying notes 104-05.

¹¹⁴ W. LANDES & R. POSNER, *supra* note 50, at 193-98, 201; Cooter and Ulen, analogizing to the bilateral plaintiff-defendant context, incorrectly state that the efficient result will be achieved in situations requiring joint precaution only if each negligent defendant bears "residual liability" for the entire injury, which purportedly requires a rule of no contribution. R. COOTER & T. ULEN, *supra* note 98, at 409-10. They forget that, in the bilateral context, the efficient result will be achieved under a comparative negligence rule, which splits the liability among the negligent parties, as well as under rules which impose all the liability on one or the other negligent party. *See id.* at 356-60, 400-03.

¹¹⁵ W. LANDES & R. POSNER, *supra* note 50, at 201-02; *accord* R. COOTER & T. ULEN, *supra* note 98, at 410.

tiff. But, as Landes and Posner have admitted,¹¹⁶ the administrative cost claim is inconsistent with their prior argument that each party will adopt her efficient (nonnegligent) level of precaution under each of these allocation methods. If there is no negligence, there will be no litigation under any of the allocation methods in a semi-ideal world.

Landes and Posner state:

The inconsistency is superficial, however. The purpose of the formal [semi-ideal world] model was to isolate and compare the allocative effects of contribution and no contribution; it was not a complete model of the negligence system. We could have complicated the model to generate a positive amount of negligence and hence of litigation without affecting the basic analytical point, which is that a rule of no contribution deters negligence as effectively as one of contribution. Here we add only that it is administratively cheaper.¹¹⁷

This rejoinder proves too much. As Landes and Posner themselves acknowledge elsewhere, if the formal (semi-ideal world) model is "complicated," presumably by dropping the perfect information assumption, so that parties will not always adopt the efficient (nonnegligent) levels of precaution, then the argument for the efficiency of each allocation method collapses.¹¹⁸ This is especially true for allocation methods (2), (3), and (4), which, as we have seen, crucially depend on a precise, iterative calculation of expected shares of liability. Thus, method (3) may be administratively cheapest in an almost real world of imperfect information and risk neutrality or in the real world of imperfect information and risk aversion, but Landes and Posner have not shown that

¹¹⁶ Landes & Posner, *supra* note 98, at 529. This admission is omitted from the recent restatement of the argument in their book. See W. LANDES & R. POSNER, *supra* note 50, at 201-02.

¹¹⁷ Landes & Posner, *supra* note 98, at 529-30.

¹¹⁸ See *id.* at 525-26; W. LANDES & R. POSNER, *supra* note 50, at 197-98; S. SHAVELL, *supra* note 97, at 166. More generally, there is no efficient liability rule once the perfect-information and risk-neutrality assumptions are dropped. M. KUPERBERG & C. BEITZ, *supra* note 99, at 146-51; Brown, *supra* note 102, at 334, 343-47; Calfee & Craswell, *Some Effects of Uncertainty on Compliance with Legal Standards*, 70 VA. L. REV. 965, 965-67, 994-1001 (1984); Rizzo, *Flux*, *supra* note 104; Rizzo, *The Mirage of Efficiency*, 8 HOFSTRA L. REV. 641 (1980); Wright, *Economic Theories*, *supra* note 99, at 25-30. Many of the legal economists briefly refer to the informational problems, but then proceed with descriptive and prescriptive analyses that ignore or attempt to minimize these problems. *E.g.*, W. LANDES & R. POSNER, *supra* note 50, at 12-14, 20-24, 66-73, 123-31; A.M. POLINSKY, *supra* note 97, at 1-4, 20-24, 39-40, 44-49, 65-68, 69-71, 97-104, 123-26; R. POSNER, *supra* note 97, § 1.3, at 16; S. SHAVELL, *supra* note 97, at 3, 9, 16-17, 25-30 & n.37, 79-85; Calabresi & Hirschhoff, *supra* note 105, at 1057-61 & nn.19-21; see *infra* text accompanying note 195.

it would be efficient, or even that it would be less inefficient than any other method.

In the real world of imperfect information, risk aversion, and insolvent defendants, it simply cannot be known whether any of these methods would provide sufficient incentives for any of the defendants to achieve the efficient levels of precaution, or would instead produce inadequate or excessive precaution by some or all of the defendants. None of the methods would have any effect on insolvent defendants. Given that problem, it is doubtful that it would still be efficient for the solvent defendants to achieve their semi-ideal-world efficient levels of precaution, and it would be impossible to calculate what their "second best" efficient levels of precaution should be. Any estimate of efficient levels of precaution would be purely speculative.

Indeed, contrary to the standard economic account recited above, it is not even true that each method would achieve the efficient result in an unreal semi-ideal world. Each method requires that all or all but one of the parties be subject to negligence liability. But, under the efficiency interpretation of negligence, a party's "rights" are subject to the dynamically fluctuating calculations of highest value use. From the dynamic perspective, such a standard creates unstable entitlements that deter long term productive investment and hence undermine dynamic efficiency. When this dynamic efficiency effect is taken into account, none of the allocation methods will be efficient even in a semi-ideal world.¹¹⁹

The efficiency theory is similarly unhelpful on the indemnity issue. Indemnity, when available, allows a defendant who has paid the plaintiff for some or all of his injury to obtain complete reimbursement for the payment from another responsible defendant. For example, a defendant who is vicariously liable for the negligence of an employee, an independent contractor, or a bailee ordinarily is entitled to reimbursement from the employee, independent contractor, or bailee. Similarly, a defendant may obtain indemnity from a party who was primarily responsible for the injury or who was much more at fault in producing it.¹²⁰ As Landes and Posner recognize,¹²¹ the availability of indemnity under such rules reduces the indemnified party's incentive to adopt her efficient level of precaution.

Landes and Posner try to avoid this apparent inconsistency between the indemnity rules and the efficiency theory. They argue that indem-

¹¹⁹ Wright, *Economic Theories*, *supra* note 99, at 10-13, 23-25.

¹²⁰ 3 HARPER, JAMES & GRAY, *supra* note 1, § 10.2, at 57-63 & n.57; PROSSER & KEETON, *supra* note 1, § 51.

¹²¹ W. LANDES & R. POSNER, *supra* note 50, at 200, 210.

nity is only available in situations involving "alternative" (unilateral) precaution, rather than joint precaution — that is, situations in which only one party, the lowest-cost avoider of the injury, should exercise precaution. The indemnity rule, in such situations, allegedly is needed to ensure that liability ultimately comes to rest only on the lowest-cost avoider.¹²²

This argument fails for three obvious reasons. First, as the examples cited above should indicate, indemnity is not limited to such unilateral precaution situations.¹²³ Second, as others have pointed out¹²⁴ and as Landes and Posner themselves implicitly recognize,¹²⁵ situations calling for unilateral rather than joint precaution are extremely rare — perhaps nonexistent. Third, in a true unilateral precaution situation, the efficient level of precaution for all parties other than the lowest-cost avoider is zero, so, contrary to Landes and Posner's assumption,¹²⁶ only the lowest-cost avoider would be deemed negligent and could be held liable in the first instance. Since no one else could possibly be held liable, there would be no need for an indemnity rule to shift liability to the lowest-cost avoider.¹²⁷

¹²² *Id.* at 198-201; R. POSNER, *supra* note 97, § 6.8, at 173-74.

¹²³ See *supra* text accompanying notes 63-64, 120. In a section of their book that demonstrates once again their ability to see efficiency wherever they look, if they squint hard enough, Landes and Posner assert that these situations call for unilateral precaution by the indemnitor. Yet they frequently argue that the indemnitee should (also or instead) exercise precaution. W. LANDES & R. POSNER, *supra* note 50, at 205-10; cf. R. COOTER & T. ULEN, *supra* note 98, at 407-08 (economic reason for respondeat superior is the alleged efficiency of unilateral precaution by the employer). If this sort of reasoning were confined to academic writings, it might be fairly innocuous. Unfortunately, Judge Posner has unleashed it on real parties in real lawsuits. See, for example, his tortured economic analysis of a statute banning certain indemnity agreements, in *McMunn v. Hertz Equip. Rental Corp.*, 791 F.2d 88 (7th Cir. 1986), which is soundly criticized in Note, *Imputing the Wealth Maximization Principle to State Legislators*, 63 CHI.-KENT L. REV. 311, 320-24, 335-39 (1987).

¹²⁴ E.g., M. KUPERBERG & C. BEITZ, *supra* note 99, at 145-46; S. SHAVELL, *supra* note 97, at 10-11, 18; Brown, *supra* note 102, at 326-27; Haddock & Curran, *supra* note 111, at 53.

¹²⁵ See *supra* note 123.

¹²⁶ W. LANDES & R. POSNER, *supra* note 50, at 198-99.

¹²⁷ Landes and Posner assert that holding a party other than the lowest-cost avoider strictly liable may be the second-best solution when the lowest-cost avoider is judgment proof and therefore has no incentive, despite being primarily liable, to exercise precaution. *Id.* at 200; R. POSNER, *supra* note 97, § 6.8, at 173-74. But this rejoinder is not relevant to the indemnity issue. At most, the rejoinder supports liability for a party other than the lowest-cost avoider only when the lowest-cost avoider is judgment proof, and hence when there is no possibility of indemnity. Moreover, Landes and Posner fail to demonstrate that such liability would be the second-best solution.

In sum, the efficiency theory does not prescribe any particular method for allocating liability among the multiple responsible causes of an injury, nor does it explain the allocation methods which traditionally have been used by the courts. Once again, the alleged prescriptive and descriptive power of the efficiency theory is nonexistent.¹²⁸

B. *The Rights-Based Corrective Justice Theory*

Almost all recent analyses of tort law assume that the goal of tort law is either compensation per se (loss shifting or loss spreading) or the deterrence of inefficient or morally blameworthy behavior, or a contradictory combination of compensation and deterrence.¹²⁹ However, when the tort system is measured against these two goals, it is found seriously wanting.¹³⁰ This should hardly be surprising since, through the centuries, neither of these goals has served as the principal justification for tort liability. Instead, tort law is and always has been a system of corrective justice, which is meant to assure compensation only for those who were tortiously injured, with the compensation to be paid by the tortfeasors rather than by others, and to prevent people from imposing unreasonable foreseeable risks of injury on others, whether or not the risks are inefficient or morally blameworthy.¹³¹

Even those who favor the opposing social welfare views acknowledge the historical dominance of the corrective justice view of tort law.¹³² For

¹²⁸ See Wright, *Actual Causation vs. Probabilistic Linkage: The Bane of Economic Analysis*, 14 J. LEGAL STUD. 435 (1985) [hereafter Wright, *Bane*]; Wright, *False Semantics*, *supra* note 14; Wright, *Economic Theories*, *supra* note 99.

¹²⁹ E.g., AMERICAN LAW INSTITUTE, PROJECT ON COMPENSATION AND LIABILITY FOR PRODUCT AND PROCESS INJURIES, PROGRESS REPORT 6-11, 14-25 (Apr. 13, 1987) [hereafter ALI PROJECT]; G. CALABRESI, *supra* note 97; Rabin, *supra* note 45, at 24-28. See generally *Catastrophic Personal Injuries*, 13 J. LEGAL STUD. 415-622 (1984); *Critical Issues in Tort Law Reform: A Search for Principles*, 14 J. LEGAL STUD. 459-818 (1985) [hereafter *Critical Issues Symposium*]; *Rethinking Tort and Environmental Liability Laws: Needs and Objectives of the Late 20th Century and Beyond*, 24 HOUS. L. REV. 1-219 (1987); *Symposium: Alternative Compensation Schemes and Tort Theory*, 73 CALIF. L. REV. 548-1042 (1985).

¹³⁰ See sources cited *supra* note 129.

¹³¹ See *supra* text accompanying notes 27-32. Usually, only compensation is practically available, given the lack of sufficient prior warning to obtain injunctive relief. But injunctive relief against threatened harm is available in principle, and often obtained in practice. See, e.g., *Village of Wilsonville v. SCA Serv.*, 86 Ill. 2d 1, 426 N.E.2d 824 (1981); PROSSER & KEETON, *supra* note 1, § 1, at 2, § 88A, at 630-32 (which, however, adopts an overly restrictive view concerning the availability of injunctive relief).

¹³² E.g., ALI PROJECT, *supra* note 129, at 6; G. CALABRESI, *supra* note 97, at 296-308; R. COOTER & T. ULEN, *supra* note 98, at 326-27, 334-35, 340; 1 HARPER,

the most part, they assert that tort law has moved beyond the corrective justice view and has adopted some supposedly more enlightened social welfare goal, such as loss spreading or maximization of aggregate social wealth.¹³³ But this is not true. Tort law continues to be based on, and makes sense only in the light of, the traditional corrective justice view,¹³⁴ which is a deeply held part of our overall concept of justice. As I hope to show in a future article, even the modern development of strict products liability, which is usually offered as proof of the alleged shift to a social welfare view,¹³⁵ makes sense only as an elaboration of the corrective justice view.

In this Article, I can only present the barest sketch of the foundations and superstructure of the corrective justice theory of tort law.¹³⁶ The theory is based on the moral status of individuals as project pursuers, each with his own life to lead and each giving meaning to his life through the pursuit of a fairly stable and consistent set of ends embodied in a rational life plan. This conception of the moral status of individuals, which is considered by many to be the fundamental starting point for discussions of law and justice,¹³⁷ is irreconcilable with socially aggregative theories of law or justice, such as the efficiency theory. Instead, it leads to a theory of distributive justice based on equality of resources — the provision of an equal starting point for each person's

JAMES & GRAY, *supra* note 1, at xli-lxi; O.W. HOLMES, *supra* note 11, at 64-78, 92-95, 115-18; Cooter, *Torts as the Union of Liberty and Efficiency*, 63 CHI.-KENT L. REV. 523 (1987); Kelman, *supra* note 4, at 581-82, 589-90 & n.23, 598, 600-01, 633. The corrective justice view was articulated by Aristotle and undoubtedly goes back much further. ARISTOTLE, NICHOMACHEAN ETHICS bk. V, ch. 2, 1130^b30-1131^a10, ch. 4, 1131^b25-1132^b20, in 2 THE COMPLETE WORKS OF ARISTOTLE 1784-87 (rev. Oxford trans. J. Barnes ed. 1984).

¹³³ See sources cited *supra* note 132.

¹³⁴ See Wright, *Bane*, *supra* note 128; Wright, *Bramble Bush*, *supra* note 5; Wright, *Causation*, *supra* note 5; Wright, *False Semantics*, *supra* note 14.

¹³⁵ E.g., ALI PROJECT, *supra* note 129, at 6-7, 10-11, and the articles by George Priest, William Landes & Richard Posner, Guido Calabresi & Alvin Klevorick, and Richard Epstein in *Critical Issues Symposium*, *supra* note 129. For articles with a broader perspective, see those by David Owen, Alan Schwartz, and Gary Schwartz in the same symposium and, especially, Owen, *Rethinking the Policies of Strict Products Liability*, 33 VAND. L. REV. 681 (1980).

¹³⁶ I am currently working on a fuller elaboration of the theory, which is tentatively entitled "A Principled Theory of Tort."

¹³⁷ See, e.g., C. FRIED, AN ANATOMY OF VALUES 41-42, 97-101 (1970); R. NOZICK, ANARCHY, STATE, AND UTOPIA 48-51 (1974); J. RAWLS, A THEORY OF JUSTICE 408, 504-12 (1971); Dworkin, *In Defense of Equality*, 1 SOC. PHIL. & POL. 24, 25-29 (1983); Weinrib, *The Case for a Duty to Rescue*, 90 YALE L.J. 287-88 (1980) (also citing Immanuel Kant and Alan Gewirth).

pursuit of his life plan¹³⁸ — and a theory of corrective justice based on protection of each person's rightful stock of resources, which are deployed in the pursuit of his life plan.¹³⁹ One who creates a significant, objectively foreseeable, and unaccepted risk of injury to another's resources (and hence to that other's pursuit of his life plan) is responsible for any injury which proximately results from the risk, and in addition can be enjoined from creating the risk if it is sufficiently serious.

The traditional requirements for tort liability are an elaboration of these principles of moral responsibility. Each defendant who has behaved tortiously (by creating a significant, objectively foreseeable, and unaccepted risk of injury to the person or property of another) is liable for injuries that were caused by the tortious aspect of her behavior, subject to some narrow proximate cause limitations.¹⁴⁰ Conversely, each plaintiff who would not have suffered injury if not for the tortious behavior of others is entitled to full but not excess compensation from those who tortiously caused the injury.

This last statement does not mean that a defendant is liable only if her tortious behavior was a but—for (necessary) cause of the injury. As the courts have recognized, the but—for test is too narrow a test for causation, since there can be more than one set of actual conditions that is sufficient for the occurrence of an injury on a particular occasion. For example, two fires, each of which was independently sufficient to burn down a house, may merge and together destroy the house.¹⁴¹ A condition, in order to be a cause, need only be a NESS condition: a

¹³⁸ See Dworkin, *supra* note 137, at 24-35; cf. Narveson, *Reply to Dworkin*, 1 SOC. PHIL. & POL. 41, 43-44 (1983) (rights prior to equality, rather than vice versa as argued by Dworkin).

¹³⁹ See Lomasky, *Personal Projects as the Foundation for Basic Rights*, 1 SOC. PHIL. & POL. 35 (1984). In addition to certain rights against interference, this conception of the moral status of individuals supports limited individual duties to render aid to others, as in the "easy rescue" cases. Cf. *id.* at 53 (conception does not preclude such duties). Moreover, the principles of distributive justice, which underlie the rights in resources that are protected by corrective justice, justify general redistributive measures, including taxation. In other words, this conception of the moral status of individuals is incompatible with libertarian theories as well as social-welfare theories of law and justice.

¹⁴⁰ Wright, *Causation*, *supra* note 5, at 1745-50, 1766-74 & n.161, 1788-1821; Wright, *False Semantics*, *supra* note 14, at 571-72, 575; see *supra* text accompanying note 8.

¹⁴¹ "Independently sufficient" means sufficient in conjunction with the "background conditions," but independent of any other responsible condition that may have (duplicatively) contributed to the injury. See Wright, *Bramble Bush*, *supra* note 5, at 26-28, 54 n.209.

Necessary Element of a Set of actual antecedent conditions that was Sufficient for the occurrence of the injury.¹⁴²

Rather, the statement means that, even if the tortious aspect of a defendant's behavior was a cause of the injury, the defendant will not be liable if the injury would have occurred anyway as a result of nonresponsible conditions — for example, an act of God that was not covered by insurance. In such a situation, the plaintiff's corrective justice claim — that he would not have been injured (that his life plan would not have been disrupted) if not for the tortious conduct of others, and that he therefore is entitled to redress from those others — fails. On the other hand, if the causal overdetermination was due to the presence of other responsible conditions, the plaintiff's corrective justice claim is intact.¹⁴³

Of the four allocation methods that we are considering, the first — full several liability for each responsible defendant — is most clearly inconsistent with the corrective justice theory. Although full several liability implements the victim's right to obtain full compensation from anyone who tortiously caused his injury, it improperly goes beyond that right by allowing the victim to obtain multiple full recoveries, so that his aggregate compensation may be several times larger than the actual loss that he suffered.

In an ideal world of costless litigation and solvent tortfeasors who all can successfully be sued, each of the other three methods — joint and several liability with contribution, joint and several liability without contribution, and proportionate several liability — results in full but not excessive compensation of the tortiously injured plaintiff. Two of the methods — joint and several liability with contribution and proportionate several liability — also result in apportionment of the cost of compensation among all the tortfeasors. Joint and several liability without contribution does not ordinarily result in such apportionment, since those tortfeasors from whom the plaintiff initially obtains compensation are unable to seek contribution from the other tortfeasors.

Apportionment of the cost of compensation among the tortfeasors might not be required by a narrow formulation of the corrective justice

¹⁴² Wright, *Causation*, *supra* note 5, at 1788-1813; Wright, *Bramble Bush*, *supra* note 5, pt. III.

¹⁴³ See PROSSER & KEETON, *supra* note 1, § 52, at 349; Wright, *Causation*, *supra* note 5, at 1788-1821; Wright, *False Semantics*, *supra* note 14, at 572; *cf.* Tithe Case, Y.B. Trin., 21 Hen. 7, f. 26, 27, 28, pl. 5 (1506) (defendant who moved plaintiff's crops into barn to prevent damage from straying cattle is liable for damage to crops in barn, since by moving crops he deprived plaintiff of remedy against owner of straying cattle).

theory, which only required that the tortiously injured plaintiff receive full but not excessive compensation from those who tortiously caused the injury. This requirement arguably would be satisfied as long as the victim is paid by any tortfeasor, whether or not there is apportionment among the tortfeasors.¹⁴⁴ However, a broader formulation of the theory, more consistent with its emphasis on moral responsibility, would require that, insofar as it can be done without detracting from the tortiously injured plaintiff's right to full compensation, the cost of compensation should be apportioned among the tortfeasors based on their comparative responsibility.

The caveat is critical. Under the corrective justice theory, the tortiously injured plaintiff's claim against each tortfeasor for full compensation has priority over the tortfeasors' claims against one another for apportionment of the cost of compensating the plaintiff. As has been emphasized several times before, each tortfeasor is fully responsible for the injury, since the tortious aspect of her behavior was an actual and proximate cause of the injury. If some other person also tortiously contributed to the same injury, this fact does not eliminate or reduce the first tortfeasor's full responsibility to the plaintiff for the entirety of the injury that was proximately caused by her tortious behavior. Rather, it provides a basis (comparative responsibility) for equitably apportioning the cost of compensating the plaintiff among the tortfeasors, each of whom is independently fully responsible to the plaintiff.¹⁴⁵

In an ideal world, therefore, either joint and several liability with contribution or proportionate several liability would be preferable to joint and several liability without contribution, at least if the apportionment is based on comparative responsibility. Although all three allocation methods would result in full compensation of the tortiously injured plaintiff, only the first two would ensure that the cost of compensation is equitably apportioned among the tortfeasors. In England and almost all other countries, joint and several liability with contribution has long been the rule. Yet, beginning in the late nineteenth century and continuing until recently, joint and several liability without contribution was employed by most states in the United States. Except in certain special situations, very few jurisdictions resorted to proportionate several

¹⁴⁴ Weir, *Complex Liabilities*, in XI INTERNATIONAL ENCYCLOPEDIA OF COMPARATIVE LAW, TORTS, Pt. 2, §§ 12-106 to -107 (A. Tunc ed. 1983).

¹⁴⁵ *Id.* § 12-77 (the plaintiff's claim against each tortfeasor, which is based on each tortfeasor's infringement of the plaintiff's legally protected interest, has priority over each tortfeasor's claim against the other tortfeasors, which is based on unjust enrichment); see *supra* text accompanying notes 37-40, 67-68.

liability.¹⁴⁶

Various reasons have been suggested for the adoption of the no-contribution rule in the United States. These reasons parallel those that have been suggested for the courts' similar adoption of the contributory negligence rule. The contributory negligence rule barred a plaintiff from obtaining any recovery from a negligent defendant if the plaintiff also was negligent and his negligence also was a cause of the injury. The primary reasons that have been suggested for the contributory negligence rule are (1) an excessively moralistic "unclean hands" notion of individual responsibility, (2) a desire to subsidize developing industry, or (3) an inability to articulate a satisfactory formula for apportioning liability according to comparative responsibility. The first and third reasons also have been advanced as the primary reasons for the no-contribution rule.¹⁴⁷

The third explanation seems much more plausible than the first two. As we have already seen, courts and legislatures fashioned formal rules and informal practices which, despite the contributory negligence rule, frequently resulted in negligent plaintiffs' being compensated. Inhibited by the lack of a detailed formula for calculating comparative responsibility, most courts and legislatures declined to expressly authorize apportionment of liability between a negligent plaintiff and a negligent defendant, but nevertheless let such apportionment occur covertly by almost always allowing the plaintiff to get to the jury on the contributory negligence issue.¹⁴⁸

The lack of a detailed formula for calculating comparative responsibility also inhibited judicial or legislative authorization of contribution among tortfeasors. Since the covert approach was not possible in this context, the only choices were per capita (equal share) contribution, which often resulted in inequitable shares considering the tortfeasors' comparative responsibility, or no contribution. Some jurisdictions adopted per capita contribution, but most refused to permit any contribution.¹⁴⁹

Recently, however, all but a few United States jurisdictions have fallen in line with the rest of the world by requiring that tort liability

¹⁴⁶ 3 HARPER, JAMES & GRAY, *supra* note 1, § 10.2, at 39-40 & n.4; PROSSER & KEETON, *supra* note 1, § 50, at 336-37; Honoré, *supra* note 13, §§ 7-141, 7-189(2), 7-193; Weir, *supra* note 144, §§ 12-79 to -86, 12-105 to -109, 12-131 to -133.

¹⁴⁷ 1 HARPER, JAMES & GRAY, *supra* note 1, at xli-xlv; 4 HARPER, JAMES & GRAY, *supra*, § 22.1, at 268-72, 276-77, 284-85; PROSSER & KEETON, *supra* note 1, § 65, at 452-53, § 67, at 470-71.

¹⁴⁸ See *supra* text accompanying notes 50-59.

¹⁴⁹ See *supra* text accompanying notes 60-63.

be allocated and apportioned in accordance with the parties' comparative responsibility. Almost all the courts and most of the legislatures originally adopted joint and several liability with contribution rather than proportionate several liability as part of their comparative responsibility liability regimes.¹⁵⁰ Even today, despite the misleading arguments and extreme political pressure generated by the "tort reform" crusade, joint and several liability with contribution survives (so far) as the basic rule in all but a few states.¹⁵¹ As we have already noted, joint and several liability with contribution has long been the rule in England and almost all other countries, most of which have comparative responsibility liability regimes.¹⁵²

Why is joint and several liability with contribution so strongly preferred over proportionate several liability? It was noted above that both rules have identical effects on the plaintiff and the tortfeasors in an ideal world of costless litigation and solvent, available tortfeasors. But it has also been emphasized throughout this Article that, in the real world of costly litigation and insolvent or otherwise unavailable tortfeasors, there are major practical differences between the two allocation methods.

Under proportionate several liability, the plaintiff can obtain full compensation for his injury only if he is able to successfully locate, sue, and collect from each and every tortfeasor. The plaintiff therefore bears a substantial risk of receiving less than full compensation if any tortfeasor is insolvent or otherwise unavailable. In addition, the plaintiff bears the expense and delay of the multiple actions that are required to obtain theoretically full compensation, which will substantially delay and diminish his ultimate net compensation even if he can successfully sue and collect from each tortfeasor. Conversely, under joint and several liability the risk of insolvent or otherwise unavailable tortfeasors and the expense of multiple actions is placed on the solvent tortfeasor or tortfeasors, if any, from whom the plaintiff initially obtains compensation. The plaintiff can obtain full compensation in the initial suit, and the tortfeasors who pay the plaintiff must seek contribution or indemnity from the other tortfeasors.

We come finally to the crux of the matter. Under the corrective jus-

¹⁵⁰ 3 HARPER, JAMES & GRAY, *supra* note 1, § 10.1, at 29-30; 4 HARPER, JAMES & GRAY, *supra*, § 22.17, at 413-16; PROSSER & KEETON, *supra* note 1, § 67, at 475; McNichols, *supra* note 3, at 3-4. For a summary of the judicial decisions, see *Coney v. J.L.G. Indus.*, 97 Ill. 2d 104, 120-24, 454 N.E.2d 197, 204-06 (1983).

¹⁵¹ See *supra* text accompanying notes 74-94.

¹⁵² See *supra* text accompanying note 145.

tice theory, who should bear the expense and risk of the apportionment of liability — the tortiously injured plaintiff, the solvent tortfeasors, or both? Initially, I assume that the plaintiff was innocent, which means the plaintiff did not negligently contribute to the injury or otherwise act in a way which would justify treating him, in addition to the tortfeasors, as a responsible cause of the injury.

In this context, it seems obvious that the expense and risk of apportionment should be borne by the tortfeasors rather than the innocent plaintiff.¹⁵³ By definition, the innocent plaintiff bears no responsibility for any of his injury. Each tortfeasor, on the other hand, was a tortious, actual, and proximate cause of the plaintiff's entire injury and thus bears independent full responsibility for the injury. The fact that other tortfeasors also contributed does not detract from each tortfeasor's independent full responsibility to the innocent plaintiff, but rather only provides a basis for a claim of contribution against those other tortfeasors. If some of the tortfeasors are insolvent or otherwise unavailable, an unfair apportionment of liability among the tortfeasors results, but the unfairness is solely a matter among the tortfeasors. The plaintiff is not a part of and is not responsible for that unfairness, whereas each tortfeasor is responsible for the plaintiff's injury. The tortiously injured plaintiff's claim against each tortfeasor has priority over the tortfeasors' claims against one another.¹⁵⁴

Each tortfeasor's independent full responsibility for the plaintiff's injury is most apparent when the tortious aspect of the tortfeasor's behavior was either necessary or independently sufficient for the occurrence of the injury. If it was necessary for the occurrence of the injury, then the plaintiff would not have suffered the injury at all if not for the tortfeasor's tortious behavior. If it was independently sufficient¹⁵⁵ for the occurrence of the injury, then the tortfeasor's tortious behavior was sufficient to produce the plaintiff's injury regardless of the other tortfeasors' involvement. In either case, as the courts consistently have held, the tortfeasor clearly was a tortious cause of the plaintiff's entire injury and therefore is responsible for the entire injury.¹⁵⁶

The courts have had more difficulty with those cases, typically pollu-

¹⁵³ 4 HARPER, JAMES & GRAY, *supra* note 1, § 22.17, at 412 & n.15; Fleming, *supra* note 60, at 1482-83; see Pearson, *supra* note 10, at 366; Sugarman, *supra* note 73, at 341-42.

¹⁵⁴ See *supra* text accompanying notes 67-68, 145.

¹⁵⁵ See *supra* note 141.

¹⁵⁶ See 3 HARPER, JAMES & GRAY, *supra* note 1, § 10.1, at 18-19, 23-25; 4 HARPER, JAMES & GRAY, *supra*, § 20.3, at 114-15, 121; PROSSER & KEETON, *supra* note 1, § 52, at 347-48.

tion cases, in which the defendant's tortious behavior was neither necessary nor independently sufficient for the plaintiff's injury, but nevertheless was a (NESS) cause of the injury. Consider an example in which three units of pollution are sufficient for the occurrence of the injury, and each of four tortfeasors simultaneously contributed one unit of pollution. Each tortfeasor's unit of pollution was a cause of (contributed to) the entire injury.¹⁵⁷ If there had been only three polluters, each of them would have been fully responsible as a necessary cause of the injury. There is no apparent reason why this full responsibility should be reduced to responsibility for only a fraction of the injury merely because a duplicative unit of pollution has been added by a fourth tortfeasor.

Yet some courts have been reluctant to impose liability for the entire injury upon a single polluter in these circumstances. They have treated the injury as being theoretically separable, even when it is not, to justify a shift to proportionate several liability. Other courts, recognizing the single, indivisible nature of the injury, have adhered to joint and several liability.¹⁵⁸

It has been suggested that the reluctance of some courts to impose joint and several liability in this context was due to the no-contribution rule.¹⁵⁹ When the defendant was neither a necessary nor an independently sufficient cause of the injury, the unfairness of imposing liability for the entire injury upon the defendant, who was prevented by the no-contribution rule from even attempting to apportion the liability among the other tortfeasors, may seem most pronounced. If this is the source of the reluctance, the reluctance should be substantially diminished when contribution is permitted. It appears that this is indeed happening. In fact, in an ironic twist, two of the most frequent exceptions in the statutes eliminating or limiting joint and several liability have been the

¹⁵⁷ Wright, *Causation*, *supra* note 5, at 1789-93.

¹⁵⁸ 3 HARPER, JAMES & GRAY, *supra* note 1, § 10.1, at 25-29; 4 HARPER, JAMES & GRAY, *supra*, § 20.3, at 120-21, 125-26 & nn.28-30; PROSSER & KEETON, *supra* note 1, § 52, at 345-46, 349, 351, 354-55. When it is difficult to distinguish separately caused injuries from jointly caused injuries, the modern trend is to place the burden of proof on the tortious defendants. 3 HARPER, JAMES & GRAY, *supra*, § 10.2, at 26-29; 4 HARPER, JAMES & GRAY, *supra*, § 20.3, at 117-18, 124 n.27, 127-29 & n.32; PROSSER & KEETON, *supra*, § 52, at 345-46, 348-53. This seems appropriate as long as the resulting liability for any particular defendant is not clearly in excess of what could reasonably have been caused by her tortious behavior. *Unlimited* joint and several liability applied to small contributors to hazardous and solid waste disposal sites may well raise such a problem.

¹⁵⁹ PROSSER & KEETON, *supra* note 1, § 52, at 349.

exceptions for cases involving environmental pollution or toxic substances.¹⁶⁰

In sum, when the plaintiff is innocent, the expense and risk of apportioning the cost of compensation among the tortfeasors should be borne entirely by the tortfeasors. There is no justification for shifting any of the expense or risk to the innocent plaintiff, no matter how low a particular tortfeasor's percentage of comparative responsibility might be. Even if her percentage is much smaller than some other tortfeasor's, she nevertheless is fully responsible for the entire injury, since her tortious behavior was an actual and proximate cause of the entire injury. If her responsibility for the injury were truly minimal, she would not be a proximate cause of the injury. The calculation of comparative responsibility begins with multiple tortfeasors each of whom is fully responsible for the injury. Those, including the defense advocates, who equate (1) a low or "minimal" percentage of *comparative* responsibility with (2) minimal *actual* responsibility for the injury or, worse yet, (3) tortious causation of only part of the injury, are confusing fundamentally distinct issues and concepts.¹⁶¹

Should the result be any different when the plaintiff negligently contributed to his own injury? Having negligently contributed to the injury, the plaintiff, like each contributing tortfeasor, is a responsible cause of the entire injury. What effect should the plaintiff's own responsibility for his injury have on his corrective justice claim against each tortfeasor?

The initial issue is whether the plaintiff's own responsibility for the injury should completely negate his corrective justice claim against each tortfeasor, or rather should only reduce his claim in proportion to his percentage of comparative responsibility. When the plaintiff's comparative responsibility is not too great, it seems unnecessarily harsh to deny

¹⁶⁰ See *supra* text accompanying note 94; cf. *supra* note 158 (noting possible problems involved in applying unlimited joint and several liability to small contributors to hazardous or solid waste disposal sites).

¹⁶¹ See *supra* notes 37, 40 and accompanying text. See also Ball, *A Reexamination of Joint and Several Liability Under a Comparative Negligence System*, 18 ST. MARY'S L.J. 891, 891 (1987) (joint and several liability "can result in a defendant, who is minimally at fault in comparison to other parties, paying not only the damage he caused but also the damage caused by others"); Pearson, *supra* note 10, at 362 (assuming that the only loss "attributable to" a party's negligence is the fraction of the injury corresponding to the party's percentage of comparative responsibility), 366 (assuming that a plaintiff or defendant with only a 1% percentage of comparative negligence is "only 1% negligent" and is thus essentially indistinguishable from a totally innocent plaintiff).

his claim completely rather than merely reducing it. We have already noted that a negligent plaintiff was often allowed to recover damages under the earlier common law, despite formal rules which purported to prohibit such recovery.¹⁶² Today the formal rules in all but a few jurisdictions permit such recovery. The courts generally have preferred pure comparative responsibility, according to which the negligent plaintiff's claim is reduced but never barred, while the legislatures have usually adopted modified comparative responsibility, according to which the negligent plaintiff's claim is barred rather than merely reduced if his comparative responsibility is too great (usually around 50%).¹⁶³

Good arguments can be made for each approach, but I believe the modified approach is more consistent with the principles of moral responsibility which underlie the corrective justice theory of tort law. However, I also believe that the negligent plaintiff's corrective justice claim should be barred under the modified approach only when his responsibility for the injury substantially outweighs the tortfeasors' responsibility — for example, only when his percentage of comparative responsibility is 67% or greater, rather than the usual 50%.

Under either approach, the negligent plaintiff's corrective justice claim against each tortfeasor (if not barred under the modified approach) is reduced by the plaintiff's percentage of comparative responsibility. Once the negligent plaintiff's corrective justice claim against each tortfeasor has been reduced in this manner, the issue arises, as with the innocent plaintiff, of who should bear the expense and risk of apportioning liability for this reduced claim among the tortfeasors. I will consider the issue first from a purely pragmatic perspective.

If all the tortfeasors are available and solvent, joint and several liability with contribution ultimately results in the negligent plaintiff's loss being fully apportioned in accord with each responsible party's (including the plaintiff's) percentage of comparative responsibility. The same result is reached under proportionate several liability. But, even when all the tortfeasors are available and solvent, there are important practical differences between the two rules which often have been overlooked or slighted.¹⁶⁴ Under proportionate several liability, the plaintiff must locate, sue, and collect from each tortfeasor to obtain all of his

¹⁶² See *supra* text accompanying notes 50-59.

¹⁶³ 4 HARPER, JAMES & GRAY, *supra* note 1, § 22.15, at 385-90; PROSSER & KEETON, *supra* note 1, § 67, at 471-74; *id.* at 74 (Supp. 1988) (addition to p. 473 n.40).

¹⁶⁴ *E.g.*, 4 HARPER, JAMES & GRAY, *supra* note 1, § 22.17, at 412; Pearson, *supra* note 10, at 362, 364-65 & n.92.

reduced claim. The expense of these multiple actions, even if all the tortfeasors can be joined in one suit, will make his net recovery substantially less than the amount he is entitled to under his reduced claim. Moreover, the time required for the multiple actions will substantially delay his receipt of this reduced recovery, especially since he has to collect separately from each tortfeasor. This delay problem will be compounded by each tortfeasor's reduced incentive to settle the plaintiff's claim, since from the beginning each tortfeasor's liability is limited to her percentage of comparative responsibility.

Under joint and several liability, the expense and delay for the plaintiff are minimized, since he can obtain the full amount of his reduced claim from any one of the solvent tortfeasors, which also provides an increased incentive for each solvent tortfeasor to settle with the plaintiff. The plaintiff thus receives much prompter and fuller compensation for his reduced claim than under proportionate several liability, even when all the tortfeasors are available and solvent. Of course, the expense and delay of apportionment do not disappear. They are borne by the tortfeasor or tortfeasors from whom the negligent plaintiff initially recovers his reduced claim, who must seek contribution from the other tortfeasors based on their respective percentages of comparative responsibility. But clearly the plaintiff, who as the injured party is often urgently in need of compensation, can least afford this expense and delay.¹⁶⁵

When one of the tortfeasors is insolvent or unavailable, there is a more serious problem than the expense and delays involved in apportioning liability. In this context, ultimate apportionment of the loss to each responsible party in accordance with his or her percentage of comparative responsibility is impossible due to the uncollectible share of the insolvent or otherwise unavailable party. Under joint and several liability with contribution this uncollectible share is apportioned among the solvent, available tortfeasors. Under proportionate several liability the uncollectible share is allocated solely to the negligent, injured plaintiff. The latter alternative is least acceptable. Once it has been decided that the negligent plaintiff's claim should not be barred, but rather should only be reduced in accordance with his percentage of comparative responsibility, he should at least be on an equal footing with the tortfeasors who injured him. Allocating the uncollectible share solely to him makes him liable for more than his percentage of comparative responsibility, while limiting each solvent tortfeasor's liability to her per-

¹⁶⁵ Cf. 4 HARPER, JAMES & GRAY, *supra* note 1, § 22.17, at 413 (noting that defendants are more likely to be insured).

centage of comparative responsibility. At the very least, the uncollectible share should be reallocated among the negligent plaintiff *and* the solvent tortfeasors, according to their relative percentages of comparative responsibility.

The reallocation can occur under either a modified joint and several liability rule or a modified proportionate several liability rule. The choice will determine who bears the expense and delay of subsequent reallocation as well as initial apportionment. Once again, since the injured plaintiff can least afford the expense and delay, the modified joint and several liability rule is preferable. It is the rule which is proposed in the Uniform Comparative Fault Act and which has been endorsed by a number of tort scholars.¹⁶⁶

But is it correct to assume that, after the negligent plaintiff's corrective justice claim against each tortfeasor has been reduced in accordance with his percentage of comparative responsibility, he should share the risk of insolvent or otherwise unavailable tortfeasors, and perhaps also the expense and delay of apportionment and reallocation, with the solvent, available tortfeasors? From the corrective justice perspective, the answer is no. Although the negligent plaintiff as well as each tortfeasor bears responsibility for the entire injury, the negligent plaintiff's responsibility for the injury is of a different order than each tortfeasor's responsibility for the injury, and this difference results in different consequences in terms of ultimate liability.

Each tortfeasor's responsibility for the injury is based on her tortious causation of injury to another (the plaintiff), which gives the plaintiff a corrective justice claim against each tortfeasor for compensation for the injury. The plaintiff's responsibility for his injury, on the other hand, is not based on any tortious causation of injury to another, but rather is based on his having negligently exposed himself to injury.¹⁶⁷ Thus, with

¹⁶⁶ UNIF. COMP. FAULT ACT § 2, 12 U.L.A. 43 (Supp. 1988); *see, e.g.*, Fleming, *supra* note 60, at 1483-84, 1491-93; Wade, *supra* note 73, at 87-88.

¹⁶⁷ *See* American Motorcycle Ass'n v. Superior Court, 20 Cal. 3d 578, 589-90, 578 P.2d 899, 906, 146 Cal. Rptr. 182, 189 (1978) (relying on this distinction to support the tortfeasors' joint and several liability even when the plaintiff was negligent); *accord*, Weir, *supra* note 144, § 12-86. As we have previously noted, this distinction also results in differing standards of care being applied to plaintiffs as opposed to defendants. *See supra* note 52 and accompanying text. Fleming states that the distinction "ought, of course, to be heeded in apportioning shares of fault [based on the differing standards of care], but does not seem to justify treating the shares, once ascertained, differently under the *Li* principle (viz. that liability should not exceed an individual's share of fault)." Fleming, *supra* note 60, at 1483. I indicate in the text why the distinction is also relevant to the allocation issue.

respect to the plaintiff's injury, the tortfeasors have no corrective justice claim against the plaintiff to offset or match against the plaintiff's corrective justice claim against each of them. Rather, they only have the argument that the plaintiff's corrective justice claim against each of them for the entire injury should be reduced (or, under the modified approach, sometimes barred) in the light of the plaintiff's own responsibility for his injury.¹⁶⁸ But the reduction is precisely that: only a reduction. Each tortfeasor remains responsible for the full amount of the reduced claim.

No good reason has been given for shifting the expense, delay, and risk of apportioning liability among the tortfeasors, each of whom is responsible for the full amount of the reduced claim, from the tortfeasors themselves to the negligent plaintiff. After all, it is the tortfeasors' liability, not the negligent plaintiff's, that is being apportioned. Apportionment of the negligent plaintiff's share of the loss to him already has been accomplished, by reducing his corrective justice claim against each tortfeasor in accordance with his percentage of comparative responsibility. The negligent plaintiff still retains a corrective justice claim against each tortfeasor for the full amount of the reduced claim, which means the tortfeasors are jointly and severally liable for the full amount of the reduced claim. The negligent plaintiff stands in the same position with respect to this reduced claim as an innocent plaintiff does with respect to a nonreduced claim.¹⁶⁹

The proponents of proportionate several liability never explain why or how the negligent plaintiff's corrective justice claim against each tortfeasor is reduced by more than the plaintiff's percentage of comparative responsibility. Nor, obviously, do they ever explain why or how an innocent plaintiff's corrective justice claim against each tortfeasor is reduced to a claim for only partial compensation. The notion that a

¹⁶⁸ *Coney v. J.L.G. Indus.*, 97 Ill. 2d 104, 121-24, 454 N.E. 2d 197, 204-06 (1983). Some writers have suggested that treating the negligent plaintiff's responsibility as different in quality and effect from the tortfeasors' responsibility because of the self-directed, and hence nontortious, nature of the plaintiff's negligence might prevent using that negligence as a ground for reducing (or perhaps barring) the plaintiff's claim against each tortfeasor. *E.g.*, Fleming, *supra* note 60, at 1483; Schwartz, *Contributory Negligence*, *supra* note 52, at 722-23. But the nontortious character of the plaintiff's responsibility for his injury does not make his responsibility totally irrelevant. *See* Schwartz, *supra*, at 724-25. As indicated in the text, his own responsibility for the injury is relevant when initially deciding whether to reduce or bar his claim against each tortfeasor, and yet is irrelevant, due to its nontortious nature, when the issue is the equitable apportionment of liability among the tortfeasors, each of whom is fully liable for the plaintiff's reduced claim.

¹⁶⁹ *See supra* text accompanying notes 154, 161.

tortfeasor only caused part of the injury, or is only partially responsible for the injury, simply because her *comparative* responsibility is less than 100%, is clearly invalid. Each tortfeasor, having been a tortious, actual, and proximate cause of the entire injury, is responsible for the entire injury.¹⁷⁰

Nor, contrary to the arguments of some,¹⁷¹ is joint and several liability with contribution, even in the context of a negligent plaintiff, inconsistent with the logic or spirit of a comparative responsibility liability regime. The negligent plaintiff's corrective justice claim against each tortfeasor is reduced in accordance with his percentage of comparative responsibility, and the tortfeasors' joint and several liability for this reduced claim is allocated among them, under the contribution rule, according to their percentages of comparative responsibility. This liability scheme, which is a perfectly logical implementation of the principle of comparative responsibility, has been adopted by countries around the world and by almost all the courts in the United States which have addressed the issue.¹⁷²

The inherent justice of the joint and several liability doctrine is perhaps best demonstrated by its survival power in the face of the distorted arguments and intense political pressure that have been directed against the doctrine by the defense lobby and its allies in the Reagan Administration. Although the doctrine has been eliminated in a few jurisdictions and has been battered and cluttered by a hodgepodge of poorly conceived limitations in others, it remains the sole or dominant method for allocating liability among multiple tortfeasors in a substantial majority of the states.¹⁷³ Perhaps, after the "tort reform" frenzy has dissipated, legislatures can be convinced to undertake a calmer, more objective, and better informed assessment of the justifications for and consequences of joint and several liability and its alternatives. If such an assessment is undertaken, the legislatures should recognize that full restoration of tortfeasors' joint and several liability for the injuries that they tortiously inflict on others is required by considerations of integrity and justice.

¹⁷⁰ See *supra* text accompanying notes 37-40, 145, 154-61.

¹⁷¹ E.g., Pearson, *supra* note 10, at 362-66; see sources cited *supra* note 65.

¹⁷² See sources cited *supra* notes 146 & 150.

¹⁷³ See *supra* text accompanying notes 74-95.

IV. ALLOCATING LIABILITY FOR RISK EXPOSURE.

A. *Distinguishing Risk Exposure Injuries from Actual Harm Injuries*

As was mentioned at the beginning of this Article, several writers have proposed that liability for an injury be apportioned among the multiple responsible causes of the injury in accordance with their "relative causal contributions" to the injury.¹⁷⁴ We noted that, interpreted literally, the concept of relative causal contribution is meaningless. Causation is not a matter of degree: some condition either was or was not a cause of the injury. The formulas which have been discussed actually are based on relative risk creation. Moreover, neither causation nor risk creation, either by itself or in combination with the other, encompasses all of the factors which are relevant to the determination or comparison of responsibility. For that reason alone, it is inappropriate to apportion liability for some injury solely on the basis of the relative risks that were created by each responsible cause of the injury.¹⁷⁵

Rejection of the risk-based apportionment formulas does not imply, as some have assumed,¹⁷⁶ that there is no conceptually plausible, efficient, or rights respecting (just) method for allocating or apportioning liability among the multiple responsible causes of the same injury. The discussion in Part III of this Article demonstrated that, although there is no efficient allocation method, there is a conceptually compelling and just allocation method, which has been adopted by countries around the world, is preferred by almost every court in the United States which has considered the issue, and, despite the "tort reform" crusade, remains the sole or dominant allocation method in all but a few of the states.

This method consists of three parts: (1) reduction of the plaintiff's claim against each tortfeasor, if the plaintiff was contributorily negligent, in accordance with his comparative responsibility for the injury (assuming that his comparative responsibility was not so great as to bar his claim entirely), (2) joint and several liability of each tortfeasor for the full amount of the plaintiff's (reduced) claim, and (3) apportionment of the cost of compensating the plaintiff among the tortfeasors based on their comparative responsibility, through actions for contribution or indemnity. No precise formula can be elaborated for calculating

¹⁷⁴ See sources cited *supra* note 7.

¹⁷⁵ See *supra* text accompanying notes 4-14.

¹⁷⁶ See sources cited *supra* note 4.

comparative responsibility, but the relevant factors can be articulated,¹⁷⁷ and judges and juries around the world have been able to use these factors, explicitly or implicitly, to reach rational, common sense judgments of comparative responsibility.

Although the risk-based allocation formulas are inappropriate for allocating liability among the multiple responsible causes of an injury, they may in certain situations be useful at an earlier stage in the liability analysis. Advancing scientific knowledge and technology have given rise to a growing number of cases in which it can be proved that the plaintiff was tortiously exposed to a risk of some actual harm which subsequently occurred, but it is impossible to either prove or disprove that any particular tortious risk creator was a cause of the actual harm. In these cases of insoluble uncertainty about causation of the actual harm, courts have been increasingly willing to treat the tortious risk creator as a tortfeasor, by holding her liable for a fractional amount of the actual harm proportionate to her tortious contribution to the total risk which led to the injury.¹⁷⁸

Initially, there was some confusion about the conceptual basis for this liability. Some courts erroneously treated mere proof of increased risk as sufficient proof of causation of the actual harm, but instructed or expected the jury to reduce the damages in proportion to the risk. Recently, however, the courts have begun to clearly articulate the distinction between increasing the risk of some actual harm and causing the harm, and they therefore have recognized that liability in these risk exposure cases is for the risk exposure itself — the creation of the risk which possibly led to the actual harm — rather than for the actual harm. Risk exposure, in this context, has been acknowledged as a new type of recoverable legal injury. Those who tortiously cause others to be

¹⁷⁷ See *supra* text accompanying note 9.

¹⁷⁸ E.g., *Sindell v. Abbott Labs.*, 26 Cal. 3d 588, 607 P.2d 924, 163 Cal. Rptr. 132, *cert. denied*, 449 U.S. 912 (1980); *DeBurkate v. Louvar*, 393 N.W.2d 131, 135-38 (Iowa 1986); *Waffen v. United States*, 799 F.2d 911, 917-19, 922-23 (4th Cir. 1986) (Md. law), *qualified in* *Weimer v. Hetrick*, 525 A.2d 643, 651-53 & n.7 (Md. 1987) (mere proof of increased risk insufficient to establish causation of death; leaves open possibility of action for loss of chance in appropriate case); *Glicklich v. Spievack*, 452 N.E.2d 287, 290-92, *reh'g denied*, 454 N.E.2d 1276 (Mass. App. 1983); *Aasheim v. Humberger*, 695 P.2d 824, 827-28 (Mont. 1985); *Shackil v. Lederle Labs.*, 530 A.2d 1287 (N.J. Super. Ct. App. Div. 1987); *Morrison v. Stallworth*, 326 S.E.2d 387, 391-92, 393-94 (N.C. App. 1985); *Herskovits v. Group Health Coop.*, 99 Wash. 2d 609, 619, 664 P.2d 474, 479 (1983) (Pearson, Stafford, & Utter, JJ., & Williams, C.J., concurring specially); *Martin v. Abbott Labs.*, 102 Wash. 2d 581, 689 P.2d 368 (1984); *Collins v. Eli Lilly Co.*, 116 Wis. 2d 166, 342 N.W.2d 37, *cert. denied sub nom.* E.R. Squibb & Sons v. Collins, 469 U.S. 826 (1984).

exposed to a risk which possibly led to the subsequent actual harm are liable for the causation of such risk exposure injury. The risk exposure injury is evaluated by multiplying the actual harm by the increase in the risk of its occurrence.¹⁷⁹

In many of these cases, the identification of the risk exposure injury that was tortiously caused by the tortfeasor is fairly straightforward. For example, in the medical malpractice cases in which a physician negligently fails to diagnose or treat a disease or injury and thereby tortiously increases the risk of death or other actual harm which subsequently occurs, the risk exposure injury is the increased risk of (or, alternatively, the reduced chance of avoiding) the actual harm. But when there are multiple tortious sources of risk, it becomes necessary to distinguish the risk exposure injury attributable to each tortious source. The risk-based allocation formulas, if properly designed, should serve this function by disaggregating the total risk exposure injury into separable injuries which are then allocated to the tortious causes of those injuries.

In this final part of the Article, I will analyze the conceptual soundness, efficiency, and justice of the various risk-based allocation formulas which have been proposed or discussed. Prior discussions of these formulas have focused on their conceptual soundness, but generally have paid insufficient attention to the distinct sources of different elements of the total risk.¹⁸⁰ There has been minimal discussion of the efficiency or justice of the various formulas. The only extended discussion is by Kelman, who analyzes the formulas' efficiency and makes a few remarks about their justice in the limited context of an absolute liability regime.¹⁸¹ No one has considered applying the traditional allocation method (sole liability for separately caused injuries, and joint and several liability with contribution for jointly caused injuries) to these risk exposure injuries.

I begin my analysis by identifying the sources of different elements of the total risk in a simple two tortfeasor model. Using this model, I demonstrate that none of the previously discussed risk-based allocation formulas is conceptually sound, efficient, or just. I then argue that the traditional allocation method, including joint and several liability for jointly caused risks, continues to be conceptually sound and just when applied to risk exposure injuries. The traditional allocation method also

¹⁷⁹ Wright, *Bramble Bush*, *supra* note 5, pt. V; Wright, *Causation*, *supra* note 5, at 1813-26.

¹⁸⁰ See sources cited *supra* notes 4, 7.

¹⁸¹ Kelman, *supra* note 4, at 608-17.

is the only method that would achieve the efficient result in a hypothetical, static, semi-ideal world. No allocation method will achieve the efficient result in a dynamic semi-ideal world or in the real world.

B. Disaggregating Risk Exposure Injuries

To sort out the various attempts to allocate liability for risk exposure which possibly led to some actual harm, it is necessary, as Kruskal has pointed out, to begin with a clear picture of the overall sample space.¹⁸² I will examine a very simple model. Assume initially that Ann and Bob each engaged in tortious behavior, *A* and *B* respectively, which exposed Vic to a risk of some harm *H* that has subsequently occurred. Assume also that *A* and *B* are the only sources of risk of *H*. Let *nA*, *nB*, or *nH* indicate that *A*, *B*, or *H* has not occurred. Then, ex ante, there were eight possible outcomes:

<i>nH</i> , <i>nA</i> , <i>nB</i>	<i>H</i> , <i>nA</i> , <i>nB</i>
<i>nH</i> , <i>A</i> , <i>nB</i>	<i>H</i> , <i>A</i> , <i>nB</i>
<i>nH</i> , <i>nA</i> , <i>B</i>	<i>H</i> , <i>nA</i> , <i>B</i>
<i>nH</i> , <i>A</i> , <i>B</i>	<i>H</i> , <i>A</i> , <i>B</i>

In the context of determining liability, we are only interested in those situations in which *H* has occurred or may occur. Therefore we will focus on the right-hand group. Since *A* and *B* are the only sources of risk of *H*, the conditional probability of *H* given no occurrence of *A* and no occurrence of *B*, $P(H|nA\&nB)$, is zero. The conditional probability of *H* given only *A* or only *B* (that is, the probability that *H* will be caused by *A* when only *A* is present, or caused by *B* when only *B* is present) is:

$$P(H|A\&nB) = \alpha \quad (1)$$

$$P(H|B\&nA) = \beta \quad (2)$$

If *A* and *B* are causally independent (that is, if the probability of *A*'s causing *H* is not affected by the presence of *B*, and vice versa), then formulas 1 and 2, slightly modified, also give the independent probabilities that *H* will be caused by *A* (H_A) or that *H* will be caused by *B* (H_B) when both *A* and *B* are present:

$$P(H_A|A\&B) = \alpha \quad (3)$$

$$P(H_B|A\&B) = \beta \quad (4)$$

¹⁸² Kruskal, *supra* note 4, at 428-29, 433.

According to standard probability rules, the probability that H will be caused *duplicatively* by both A and B when both A and B are present and are causally independent is the product of their independent probabilities:

$$P(H_{A\&B}|A\&B) = \alpha\beta \quad (5)$$

The probability that H will be caused by *only* A ($H_{A\&nB}$) or by *only* B ($H_{B\&nA}$) when both A and B are present and are causally independent is obtained by subtracting formula 5 from formulas 3 and 4:

$$P(H_{A\&nB}|A\&B) = \alpha - \alpha\beta \quad (6)$$

$$P(H_{B\&nA}|A\&B) = \beta - \alpha\beta \quad (7)$$

Thus, the total probability of H when both A and B are present and are causally independent is obtained either (i) by adding formulas 6, 7, and 5, which represent those situations in which H will be caused by only A , only B , or duplicatively by A and B , respectively, or, alternatively, (ii) by adding formulas 3 and 4, which represent the independent risks, and then subtracting formula 5, which represents the duplicative risk, to avoid double counting of the duplicative risk:¹⁸³

$$(i) \quad P(H|A\&B) = (\alpha - \alpha\beta) + (\beta - \alpha\beta) + \alpha\beta \quad (8a)$$

$$(ii) \quad = \alpha + \beta - \alpha\beta \quad (8b)$$

In sum, when A and B are causally independent, we can distinguish several distinct elements of the total risk exposure. When Ann behaves tortiously but Bob does not (A is present but B is not), the total risk of H is α and Ann is the sole cause of that risk (formula 1). Similarly, when Bob behaves tortiously but Ann does not, the total risk of H is β and Bob is the sole cause of that risk (formula 2). When Ann and Bob both behave tortiously, the total risk of H increases to $(\alpha - \alpha\beta) + (\beta - \alpha\beta) + \alpha\beta$, where $\alpha\beta$ is the portion of the total risk that is caused duplicatively by both Ann and Bob, $\alpha - \alpha\beta$ is the portion that is caused solely by Ann, and $\beta - \alpha\beta$ is the portion that is caused solely by Bob (formulas 5 through 8a). If we sum the portions caused solely or duplicatively by each, we find that the total risk caused by each

¹⁸³ Kaye & Aickin, *supra* note 4, at 199 (equation (7')); Kelman, *supra* note 4, at 610; Rizzo & Arnold, *Causal Apportionment*, *supra* note 7, at 1410 (equation (3)) & n.60. Kaye and Aickin initially find it difficult to attribute any meaning to Rizzo and Arnold's equation (3). Kaye & Aickin, *supra*, at 197-99. However, it is clear that Rizzo and Arnold intended their equation (3) to have the same meaning as Kaye and Aickin attribute to their equation (7'), as Kaye and Aickin finally acknowledge. *Id.* at 199-200 (equation 7'); Rizzo & Arnold, *Causal Apportionment*, *supra*, at 1408-10 & n.60; Rizzo & Arnold, *Reply*, *supra* note 7, at 220-23.

when both behave tortiously is the same as the total risk caused by each when the other is not present: α for Ann and β for Bob. This is the necessary consequence of the fact that A and B are causally independent.

If A and B causally interact to synergistically produce more or less total risk than would exist if A and B were causally independent, the total probability of H when both A and B are present can be written as follows:

$$\begin{aligned} \text{(i)} \quad P(H|A\&B) &= (\alpha - \alpha\beta) + (\beta - \alpha\beta) + \alpha\beta + s & (9a) \\ \text{(ii)} &= \alpha + \beta - \alpha\beta + s & (9b) \end{aligned}$$

where s is the overall positive or negative synergistic effect. If s is zero, formula 9 collapses into formula 8. As Rizzo and Arnold have noted, formula 9 enables one to identify and calculate the overall synergistic effect s by measuring the total risk that actually exists when both A and B are present (encompassed by formula 9) and contrasting it with the total risk that would be expected if A and B were causally independent (encompassed by formula 8).¹⁸⁴ The latter expected risk can be calculated after first measuring the risks that actually exist when only A or only B is present (α and β , respectively).

Distinct elements of the total risk exposure also can be identified when A and B interact synergistically. As before, when Ann behaves tortiously but Bob does not, the total risk of H is α and Ann is the sole cause of that risk (formula 1); and when Bob behaves tortiously but Ann does not, the total risk of H is β and Bob is the sole cause of that risk (formula 2). When Ann and Bob both behave tortiously, the total risk of H becomes $(\alpha - \alpha\beta) + (\beta - \alpha\beta) + \alpha\beta + s$ (formula 9a). Ann and Bob each are causes of the synergistic effect s , since it results from the causal interaction of A and B . The remainder of the total risk reflects the nonsynergistic (independent) risk potentials of A and B , which as before can be divided into a portion caused duplicatively by both Ann and Bob ($\alpha\beta$) and a portion solely attributable to one or the other ($\alpha - \alpha\beta$ for Ann, $\beta - \alpha\beta$ for Bob), for a total nonsynergistic risk of α for Ann and β for Bob.

Thus, when Ann acts tortiously, she exposes Vic to a risk of α if there is no positive synergism or $\alpha + s$ if there is positive synergism. Similarly, when Bob acts tortiously, he exposes Vic to a risk of β or, if there is positive synergism, $\beta + s$. Ann is the sole cause of risk exposure $\alpha - \alpha\beta$, Bob is the sole cause of risk exposure $\beta - \alpha\beta$, and Ann and Bob

¹⁸⁴ Rizzo & Arnold, *Causal Apportionment*, *supra* note 7, at 1410-12; Rizzo & Arnold, *Reply*, *supra* note 7, at 221-22.

are both causes of the duplicative risk exposure $\alpha\beta$ and the synergistic risk exposure s . If there is a negative synergistic effect, it should not be used to reduce the risk attributable to either tortfeasor, since the risk attributable to each tortfeasor should not be less than the risk which is created by that tortfeasor in the absence of the other tortfeasor. Moreover, using the negative synergistic effect to reduce the risk attributable to each tortfeasor would double count the negative synergistic effect, with the unacceptable result that the total attributable risk would be less than the actual total risk.¹⁸⁵

Having sorted out the different elements and sources of risk in this simplified two tortfeasor model, I will now use the model to analyze the conceptual soundness, efficiency, and justice of the various risk-allocation methods that have been proposed or discussed by others. Finally, I will use the model to indicate how the traditional allocation method can be extended to risk exposure injuries.

C. Holding Each Tortfeasor Liable for the Independent Risk That She Created, as if No Other Tortiously Created Risk Were Present

One obvious method for allocating liability for risk exposure is to hold each tortfeasor liable for the independent risk that she created—that is, the risk which would result from her tortious behavior if no other tortiously created risk were present.¹⁸⁶ In the context of our model, this would be α for Ann (formula 1) and β for Bob (formula 2), which would give Vic a total compensation of $\alpha + \beta$.

If A and B are causally independent, this independent-risk allocation method holds each of Ann and Bob liable for the exact amount of risk exposure which she or he caused to Vic (formulas 3 and 4). However, the method results in overcompensation of Vic, since Vic was only exposed to a total risk of $\alpha + \beta - \alpha\beta$ (formula 8b) and yet is paid $\alpha + \beta$. The overpayment occurs because Vic is paid twice, once by Ann and once by Bob, for the duplicative portion of the risk, $\alpha\beta$, which is positive since α and β are positive (formula 5).¹⁸⁷ If there is negative synergism (s is negative), even greater overcompensation will occur under the independent-risk allocation method. Each of Ann and Bob is still liable for α or β , respectively, for a total compensation to Vic of $\alpha + \beta$, while the actual total risk exposure was only $\alpha + \beta - \alpha\beta + s$, where $\alpha\beta$ is posi-

¹⁸⁵ See *supra* text preceding and following note 184.

¹⁸⁶ This method is adopted in Shavell, *Uncertainty over Causation and the Determination of Civil Liability*, 28 J.L. & ECON. 587, 589-92 (1985). It also seems to be the method adopted in Robinson, *supra* note 7, at 750-54, 758-59, 761-64, 769.

¹⁸⁷ See Kelman, *supra* note 4, at 608, 610-11.

tive and s is negative (formula 9b).

On the other hand, if there is positive synergism, the independent-risk allocation method results in less than complete liability of Ann and Bob for the risk exposure which she or he tortiously caused to Vic, since neither Ann nor Bob is liable for the positive synergistic effect, s , although each was a tortious, necessary cause of s .¹⁸⁸ In addition, Vic will be either undercompensated or overcompensated, depending on whether the synergistic effect is greater than or less than the duplicative risk.¹⁸⁹

The independent-risk allocation method will be neither just nor efficient. Contrary to the requirements of corrective justice, the method inherently results in Vic's almost always receiving inadequate or excessive compensation and, if there is positive synergism, fails to hold either Ann or Bob liable for the full amount of the risk that was caused by her or his tortious behavior.¹⁹⁰ From the efficiency perspective, the failure, when there is positive synergism, to hold either Ann or Bob potentially liable for the full amount of the risk that she or he caused will prevent attainment of the efficient result even in a hypothetical, static, semi-ideal world of perfect information, risk neutrality, and solvent tortfeasors.¹⁹¹

If there is zero or negative synergism, the efficient result would be achieved in a hypothetical, static, semi-ideal world under any of the *prima facie* negligence rules, assuming that the efficient (nonnegligent) level of precaution takes into account the level of activity as well as the level of care. Each of Ann and Bob would be liable for the maximum amount of risk that might result from her or his negligent behavior (α and β , respectively) and thus would have a sufficient incentive to adopt the efficient (nonnegligent) level of risk creation to avoid liability. Any loss would be left on Vic, who therefore also would adopt the efficient level of precaution.¹⁹² The efficient result would not be reached under a *prima facie* strict liability rule, due to the multiple cause problem that exists with respect to the duplicative and synergistic portions of the total risk. Efficiency cannot be achieved if more than one responsible

¹⁸⁸ See *supra* text accompanying note 185; Kelman, *supra* note 4, at 608-09, 611.

¹⁸⁹ Frequently, the duplicative risk will be zero. This will be the case whenever either A or B creates no risk in the absence of the other, but together they produce a positive synergistic effect. See Kruskal, *supra* note 4, at 430. Since either α or β is zero, $\alpha\beta$ is zero. Since s is positive and $\alpha\beta$ is zero, the total risk, $\alpha + \beta - \alpha\beta + s$ (formula (9)), is greater than the sum of the independent risks, $\alpha + \beta$.

¹⁹⁰ See *supra* text accompanying notes 136-44.

¹⁹¹ See *supra* text accompanying notes 103, 112-14.

¹⁹² See *supra* text accompanying notes 101-03, 113-14.

cause is held strictly liable for the same injury.¹⁹³

As we have already seen, neither the independent-risk allocation method nor any other allocation method would achieve the efficient result in a dynamic semi-ideal world or in the real world of imperfect information, risk aversion, and insolvent tortfeasors.¹⁹⁴

Those who argue that the independent-risk allocation method achieves the efficient result explicitly or implicitly assume that there is no possibility of duplicative or synergistic risk exposure and that, in a world of imperfect information, we have perfect information about the actual and efficient levels of activity and care.¹⁹⁵ In the risk exposure context, we necessarily are dealing with imperfect information, which generates uncertainty about the actual and efficient levels of activity and care as well as uncertainty about causation of the actual harm.¹⁹⁶ Moreover, it is logically impossible for there to be no possibility of duplicative or synergistic risk exposure when, as assumed, there is more than one source of risk, such as *A* and *B*. A zero probability of duplicative risk exposure means that $\alpha\beta$ is zero (formula 5), but $\alpha\beta$ can be zero only if at least one of α or β is zero, which contradicts the assumption that *A* and *B* each was a source of risk, unless there is synergism. Whenever there is more than one source of risk, there must be either duplicative risk exposure or synergistic risk exposure, and often both effects will exist.¹⁹⁷

D. Holding Each Tortfeasor Liable for the Incremental Risk that She Created, in Excess of the Risks Created by the Other Tortfeasors

The second obvious method for allocating liability for risk exposure is to hold each tortfeasor liable for the incremental risk that she created, in excess of the total risk created by other sources of risk, including other tortfeasors.¹⁹⁸ In the context of our model, this means holding

¹⁹³ See *supra* text accompanying notes 104-05 & 113.

¹⁹⁴ See *supra* note 118 and text accompanying notes 118-19.

¹⁹⁵ E.g., Shavell, *supra* note 186, at 590-92, 594-95, 597 & n.23, 599, 600 & n.25, 602, 603-04. See also W. LANDES & R. POSNER, *supra* note 50, at 258, 270-72 (incremental-risk allocation method).

¹⁹⁶ See *supra* note 118.

¹⁹⁷ See *supra* note 189. For other examples of faulty mathematical reasoning by the legal economists, see Wright, *Bane*, *supra* note 128, at 444-49, 452-54 & nn.51, 52, 58 & 67.

¹⁹⁸ This method seems to be adopted in W. LANDES & R. POSNER, *supra* note 50, at 261-64 (single defendant but multiple sources of risk); King, *Causation, Valuation, and Chance in Personal Injury Torts Involving Preexisting Conditions and Future Consequences*, 90 YALE L.J. 1353, 1356-63, 1381-87 & n.107, 1390-94 & nn.135 &

each of Ann and Bob liable for that part of the total risk which exceeds the other's independent risk. The total risk is $\alpha + \beta - \alpha\beta + s$ (formula 9b). Bob's independent risk is β and Ann's is α (formulas 1 and 2). Thus Ann would be liable for $(\alpha - \alpha\beta) + s$ and Bob would be liable for $(\beta - \alpha\beta) + s$. For each of them, this incremental-risk liability would be less than the full amount of risk exposure that was caused by her or his tortious behavior, since neither of them is liable for the duplicative portion ($\alpha\beta$: formula 5) of her or his independent risk.¹⁹⁹

Vic's total compensation would be $(\alpha - \alpha\beta) + (\beta - \alpha\beta) + 2s$, which differs from the actual total risk, $(\alpha - \alpha\beta) + (\beta - \alpha\beta) + \alpha\beta + s$ (formula 9a), in two ways. The total compensation does not include the duplicative $\alpha\beta$ portion of the total risk, for which neither Ann nor Bob is liable, but it double counts the synergistic effect, s , for which each of Ann and Bob is fully and severally liable. Vic will receive either inadequate or excessive compensation, depending on whether s is less than or greater than $\alpha\beta$, respectively. If there is negative synergism (that is, if s is negative), the undercompensation will be especially dramatic.

Since Vic will almost always receive inadequate or excessive compensation, and neither Ann nor Bob is potentially liable for the full amount of the risk to which she or he contributed, this incremental-risk allocation method clearly fails to achieve corrective justice, and it will not achieve the efficient result even in a hypothetical, static, semi-ideal world, no matter what liability rule is used.²⁰⁰

E. Apportioning the Total Risk in Accordance with the Ratio of the Independent Risks

Rizzo and Arnold propose apportioning the total risk between the multiple tortious risk creators. Consistent with the discussion in section B above, Rizzo and Arnold begin by noting that, in a simple two tortfeasor model, the total risk can be divided into a portion, $\alpha\beta + (1 - \alpha)\beta + (1 - \beta)\alpha$ (formula 8a above), which represents the total risk expected from concurrent independent action and a portion, s , which represents the departure from the expected independent-action total risk due to synergistic interaction (formula 9a above).²⁰¹ However,

141 (1981); Rosenberg, *supra* note 7, at 856-57, 859 & n.43, 866-67.

¹⁹⁹ See *supra* formulas (3) through (7) and text accompanying note 185.

²⁰⁰ See *supra* text accompanying notes 103, 112-14, 136-44. In addition, there will be a multiple-tortfeasor incentive problem with respect to the synergistic effect under a prima facie strict-liability rule. See *supra* text accompanying notes 104-05, 113-14.

²⁰¹ Rizzo & Arnold, *Causal Apportionment*, *supra* note 7, at 1410-11 & n.60; Rizzo & Arnold, *Reply*, *supra* note 7, at 221-22; see *supra* text accompanying notes 184-85.

as Kelman has observed, the methods that Rizzo and Arnold use to apportion the independent action portion and the synergistic portion of the total risk are neither conceptually plausible, rights respecting, nor efficient.²⁰²

Rizzo and Arnold apportion the independent action portion in accordance with the ratio of the independent risks (α/β), on the ground that this ratio reflects the "relative importance" of Ann's and Bob's contributions to this part of the total risk.²⁰³ They apportion the synergistic portion equally to Ann and Bob, one half to each, on the ground that "neither [Ann nor Bob] should be held more responsible than the other for an effect that neither could have produced alone."²⁰⁴ Thus, under Rizzo and Arnold's apportionment method, the total risk is allocated as follows:²⁰⁵

$$\text{Ann's share} = \frac{\alpha}{\alpha + \beta} [(\alpha - \alpha\beta) + (\beta - \alpha\beta) + \alpha\beta] + 0.5s \quad (10)$$

$$\text{Bob's share} = \frac{\beta}{\alpha + \beta} [(\alpha - \alpha\beta) + (\beta - \alpha\beta) + \alpha\beta] + 0.5s \quad (11)$$

²⁰² Kelman, *supra* note 4, at 611, 612-13, 614-17. Kelman focuses on the incentive effects of this allocation method, and he only analyzes these incentive effects under a strict (absolute) liability rule. In some of his particular examples, the efficient result would be reached under a negligence rule in a static semi-ideal world. But, as I discuss in the text, the method in general cannot achieve the efficient result, in either a semi-ideal world or the real world. Despite a few disparaging comments on the rights issue, Kelman does not actually analyze the effects that this method has on the parties' rights.

²⁰³ Rizzo & Arnold, *Causal Apportionment*, *supra* note 7, at 1408-12 & nn.57 & 61. Rizzo and Arnold purport to apportion on the basis of the independent risks only when *A* and *B* occur "simultaneously." *Id.* When *A* and *B* are "nonsimultaneous," with *A* occurring "before" *B*, Rizzo and Arnold continue to use the independent risk for *A*, but they use the incremental risk ("probabilistic marginal product") given *A*'s prior occurrence for *B*, rather than the independent risk calculated as if only *B* were present. *Id.* at 1412-13. For Rizzo and Arnold, the distinction between "simultaneous" and "nonsimultaneous" risks is not always or even usually temporal, but rather is based on arbitrary ad hoc criteria, which are devised in an attempt to match their theory with the actual law. *See id.* at 1407-08, 1413, 1416-22, 1425; Rizzo, *Proximate Cause*, *supra* note 7, at 1017-33; Rizzo & Arnold, *Reply*, *supra* note 7, at 226.

²⁰⁴ Rizzo & Arnold, *Causal Apportionment*, *supra* note 7, at 1411; *see id.* n.61.

²⁰⁵ *Id.* at 1409-11 & nn.57 & 61. Actually, Rizzo and Arnold apportion the actual harm *H* in accordance with the ratio of these two risk-allocation formulas. *Id.* at 1411 (formula 7). This even stranger apportionment method results in part from their confusion of risk-creation and causation of the actual harm. *See supra* text accompanying notes 4-14, 174-75.

As can be seen by distributing the fraction in each equation across the terms inside the square brackets, this method allocates a portion of each of $\alpha - \alpha\beta$, $\beta - \alpha\beta$, and $\alpha\beta$ to both Ann and Bob. Rizzo and Arnold recognize that $\alpha - \alpha\beta$ is the probability of H 's being caused solely by Ann (formula 6), $\beta - \alpha\beta$ is the probability of H 's being caused solely by Bob (formula 7), and $\alpha\beta$ is the probability of H 's being caused independently and duplicatively by both Ann and Bob (formula 5).²⁰⁶ They fail to explain why either $\alpha - \alpha\beta$ or $\beta - \alpha\beta$, which are the risks solely attributable to Ann or Bob, respectively, should be apportioned between Ann and Bob. Conceptually, $\alpha - \alpha\beta$ should be allocated entirely and solely to Ann, and $\beta - \alpha\beta$ should be allocated entirely and solely to Bob.

Rizzo and Arnold also fail to explain why the ratio of the independent risks should be used to apportion $\alpha\beta$ between Ann and Bob. As noted above, Rizzo and Arnold recognize that $\alpha\beta$ is the portion of the total risk which is duplicatively caused by both Ann and Bob. Indeed, Rizzo and Arnold correctly criticize others who apportion $\alpha\beta$ equally between Ann and Bob: "The fact that [Bob] also caused harm should not detract from [Ann's] causal potency."²⁰⁷ Conceptually, $\alpha\beta$ is part of the risk independently created by each of Ann and Bob. When Ann and Bob act concurrently, this part of each of their independent risks overlaps or duplicates part of the other's independent risk, which is why $\alpha\beta$ must be subtracted from the sum of the independent risks to avoid double counting when calculating the total risk.²⁰⁸ Since $\alpha\beta$ is part of each of Ann's and Bob's independently created risk, it would seem that Ann and Bob each should be fully liable to Vic for $\alpha\beta$, rather than only holding each liable for part of $\alpha\beta$.

If $\alpha\beta$ nevertheless is apportioned, equal apportionment would be more consistent with Ann's and Bob's "causal potency" in these situations than Rizzo and Arnold's use of the independent-risk ratio, since $\alpha\beta$ is the risk of H 's being caused independently and duplicatively by both Ann and Bob. Rizzo and Arnold themselves split the synergistic effect, s , which also is caused by both Ann and Bob, equally between Ann and Bob.²⁰⁹ They fail to provide a plausible explanation or justification for their different treatment of the duplicative risk, $\alpha\beta$.

Rizzo and Arnold argue that the sum of $\alpha - \alpha\beta$, $\beta - \alpha\beta$, and $\alpha\beta$

²⁰⁶ Rizzo & Arnold, *Reply*, *supra* note 7, at 223.

²⁰⁷ *Id.* at 223, 225.

²⁰⁸ See *supra* text accompanying note 183.

²⁰⁹ Rizzo & Arnold, *Causal Apportionment*, *supra* note 7, at 1411; Rizzo & Arnold, *Reply*, *supra* note 7, at 225-26 & n.24.

should be apportioned using the independent-risk ratio because that ratio allegedly represents the “relative importance” or relative “causal potency” of A and B when both are present.²¹⁰ But this argument ignores the distinct natures of $\alpha - \alpha\beta$, $\beta - \alpha\beta$, and $\alpha\beta$, which they themselves have explicitly acknowledged. Rizzo and Arnold assume, without any explanation or justification, that these three elements of the total risk (but not the synergistic effect) must be lumped together and apportioned as a single entity. They do not consider separate apportionment of the three elements, based on the distinct nature of each element, which makes much more sense conceptually. They further assume, with an oblique reference to the notion of “probabilistic marginal products,” that the apportionment ratio should be the ratio of the independent risks.²¹¹ It is only in this context that they acknowledge that Ann and Bob each independently and duplicatively created $\alpha\beta$, in order to support their argument that $\alpha\beta$ should be fully included in each of Ann’s and Bob’s independent risks when calculating the ratio of the independent risks.²¹²

Since Rizzo and Arnold’s allocation method is conceptually deficient, it should not be surprising that it is neither just nor efficient. Neither Ann nor Bob is liable for the full amount of the risk to which she or he contributed, which is $\alpha + s$ for Ann and $\beta + s$ for Bob if there is positive synergism, or α for Ann and β for Bob if there is zero or negative synergism.²¹³ Formulas 10 and 11, which indicate Ann’s and Bob’s shares under Rizzo and Arnold’s allocation method, can be rewritten as follows:

²¹⁰ Rizzo & Arnold, *Causal Apportionment*, *supra* note 7, at 1408-11 & nn.57 & 61; Rizzo & Arnold, *Reply*, *supra* note 7, at 223, 225.

²¹¹ Rizzo & Arnold, *Causal Apportionment*, *supra* note 7, at 1406 & nn.39 & 41, 1408-09 & n.57. Others have cogently criticized Rizzo and Arnold’s assumptions that the independent risk is a unique or even meaningful “probabilistic marginal product” or that it can be used to allocate liability in a way that is fair or efficient. Kaye & Aickin, *supra* note 4, at 200-08; Kruskal, *supra* note 4, at 430-31, 433, 436; *see supra* note 203. Rizzo and Arnold do not respond to the substance of these criticisms, but rather sidestep them by treating them as mere technical disputes over what should be included in Ann’s and Bob’s independent risks. Rizzo & Arnold, *Reply*, *supra* note 7, at 224-25.

²¹² Rizzo & Arnold, *Reply*, *supra* note 7, at 223-25.

²¹³ *See supra* text accompanying note 185.

$$\text{Ann's share} = \alpha - \frac{\alpha}{\alpha + \beta} \alpha\beta + 0.5s \quad (12)$$

$$\text{Bob's share} = \beta - \frac{\beta}{\alpha + \beta} \alpha\beta + 0.5s \quad (13)$$

Since α and β are each positive, Ann's liability is less than $\alpha + s$ and Bob's is less than $\beta + s$ if s is positive, and Ann's liability is less than α and Bob's is less than β if s is zero or negative. Thus neither Ann nor Bob is ever liable for the full amount of the risk that was caused by her or his tortious behavior.

This incomplete potential liability will prevent the efficient result from being attained even in a hypothetical, static, semi-ideal world, no matter what liability rule is used.²¹⁴ Ideally, this allocation method would result in full but not excessive compensation of Vic, since, by design, the sum of Ann's share and Bob's share (that is, the sum of formulas 12 and 13) is equal to the total risk, which is $\alpha + \beta - \alpha\beta + s$ (formula 9b). However, if either Ann or Bob fails to pay all of her or his allocated share, Vic will be undercompensated. Vic's prospect of obtaining full compensation has been substantially reduced by eliminating his right to sue each of Ann and Bob for the full amount of the risk that was caused by her or his tortious behavior. Thus, this allocation method also fails to comply with the requirements of corrective justice.²¹⁵

F. *Apportioning the Total Risk in Accordance with the Ratio of the Incremental Risks*

Another allocation method which has been mentioned apportions the total risk between Ann and Bob in accordance with the ratio of the incremental risks that they create.²¹⁶ As was discussed above, the incre-

²¹⁴ See *supra* text accompanying notes 103, 112-14.

²¹⁵ See *supra* text accompanying notes 136-44.

²¹⁶ Kaye & Aickin, *supra* note 4, at 202; Kelman, *supra* note 4, at 611-12. Kaye and Aickin express considerable doubt about the conceptual cogency, fairness, or efficiency of this or any other method for allocating liability for risks. Kaye & Aickin, *supra*, at 202-08. Kelman, however, seems to believe that the incremental approach is conceptually more compelling, and that it would be efficient in a hypothetical semi-ideal world of perfect information (he does not analyze the justice issue). Kelman, *supra*, at 612-15. As I indicate in the text, this is not true. For example, in Kelman's primary example, the incremental-risk-ratio method would also fail to achieve the efficient result if D1's precaution costs were \$13,000 rather than \$15,000. See *id.* at 612-

mental risks attributable to Ann and Bob are $(\alpha - \alpha\beta) + s$ and $(\beta - \alpha\beta) + s$, respectively.²¹⁷ Thus, this allocation method would result in the following shares:

$$\text{Ann's share} = \frac{\alpha - \alpha\beta + s}{\alpha + \beta - 2\alpha\beta + 2s} [(\alpha - \alpha\beta) + (\beta - \alpha\beta) + \alpha\beta + s] \quad (14)$$

$$\text{Bob's share} = \frac{\beta - \alpha\beta + s}{\alpha + \beta - 2\alpha\beta + 2s} [(\alpha - \alpha\beta) + (\beta - \alpha\beta) + \alpha\beta + s] \quad (15)$$

If there is no synergism, formulas 14 and 15 can be rewritten as follows:

$$\text{Ann's share} = \alpha - \alpha\beta + \frac{\alpha - \alpha\beta}{\alpha + \beta - 2\alpha\beta} \alpha\beta \quad (16)$$

$$\text{Bob's share} = \beta - \alpha\beta + \frac{\beta - \alpha\beta}{\alpha + \beta - 2\alpha\beta} \alpha\beta \quad (17)$$

As can be seen from formulas 16 and 17, when there is no synergism this allocation method correctly allocates the risk of H 's being caused solely by Ann ($\alpha - \alpha\beta$: formula 6) solely and fully to Ann and the risk of H 's being caused solely by Bob ($\beta - \alpha\beta$: formula 7) solely and fully to Bob. Otherwise, however, the method suffers from the same problems as the independent-risk-ratio allocation method, even when there is no synergism.

The duplicative portion of the risk ($\alpha\beta$: formula 5) is allocated unequally between Ann and Bob, although each is an independent, equal, duplicative cause of this portion of the total risk. Vic will receive full compensation only if Ann and Bob each pays all of her or his allocated share. Vic's prospect of obtaining full compensation is substantially reduced by depriving him of his corrective justice right to sue each of Ann and Bob for the full amount of the risk that was caused by her or his tortious behavior. Ann's and Bob's incomplete potential liability will prevent the efficient result from being attained even in a hypothetical,

13. In general, Kelman asserts that there is no allocation method which is conceptually compelling, rights-respecting, or efficient. *Id.* at 611.

²¹⁷ The duplicative-risk element, $\alpha\beta$, in each tortfeasor's independently created risk is excluded by the definition of incremental risk. *See supra* text accompanying note 199.

static, semi-ideal world, no matter what liability rule is used.²¹⁸ The situation worsens when synergism exists and is included in the apportionment formulas.

G. The Traditional Allocation Method: Sole Liability for Separable Injuries, Joint and Several Liability for Injuries with Multiple Responsible Causes, and Contribution Among the Jointly Liable Tortfeasors Based on Their Comparative Responsibility

None of the previously discussed allocation methods is conceptually plausible, efficient, or just. Indeed, the emerging consensus among academic theorists seems to be that there is no conceptually plausible, efficient, or just method for allocating liability for risk exposure.²¹⁹ However, the theorists have overlooked an allocation method which, although not efficient, is both conceptually compelling and just. This method, of course, is tort law's traditional method for allocating liability for tortiously caused injuries: hold each tortious cause of an injury fully liable for that injury, apply joint and several liability when there are multiple responsible causes of the same injury, and allow jointly liable tortfeasors to apportion liability among themselves based on their comparative responsibility.²²⁰

As applied to the injury of risk exposure, this allocation method requires that portions of the overall risk which are tortiously caused by only one tortfeasor be allocated solely to that tortfeasor and that portions of the total risk which are caused by more than one tortfeasor be allocated to each such tortfeasor according to the rule of joint and several liability.²²¹

In our model, the total risk of H , when both Ann and Bob behave tortiously by engaging in tortious behavior A and B , respectively, is composed of four elements: the risk of H 's being caused solely by A ($\alpha - \alpha\beta$: formula 6), the risk of H 's being caused solely by B ($\beta - \alpha\beta$: formula 7), the risk of H 's being caused independently but duplicatively by both A and B ($\alpha\beta$: formula 5), and a possible synergistic effect due to the causal interaction of A and B (s : formula 9), which therefore also

²¹⁸ See *supra* text accompanying notes 103, 112-14, 136-44, 214-15.

²¹⁹ See sources cited *supra* note 4.

²²⁰ See *supra* text accompanying notes 150-72.

²²¹ As with actual-harm injuries, the responsible defendants should bear the burden of proof on the risk-allocation issue when it is difficult to distinguish the portions of the risk solely attributable to one party from the duplicative and synergistic portions. See *supra* note 158.

is attributable to both *A* and *B*.²²²

According to the traditional allocation method, the risk of *H*'s being caused solely by *A* ($\alpha - \alpha\beta$) should be allocated solely to Ann, the risk of *H*'s being caused solely by *B* ($\beta - \alpha\beta$) should be allocated solely to Bob, the risk of *H*'s being caused independently but duplicatively by both *A* and *B* ($\alpha\beta$) should be allocated to both Ann and Bob under the rule of joint and several liability, and the synergistic effect (*s*) created by the causal interaction of *A* and *B* should be allocated to both Ann and Bob under the rule of joint and several liability. In sum:

Ann's sole liability:	$\alpha - \alpha\beta$	
Bob's sole liability:		$\beta - \alpha\beta$
Ann & Bob's joint and several liability:		$\alpha\beta + s$

Vic's maximum recovery:	$\alpha - \alpha\beta + \beta - \alpha\beta + \alpha\beta + s$
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Positive synergism

Ann's maximum liability:	$\alpha - \alpha\beta$	$+ \alpha\beta + s$
Bob's maximum liability:		$\beta - \alpha\beta + \alpha\beta + s$

*Zero or negative synergism*²²³

Ann's maximum liability:	$\alpha - \alpha\beta$	$+ \alpha\beta$
Bob's maximum liability:		$\beta - \alpha\beta + \alpha\beta$

The traditional allocation method when applied to the legal injury of risk exposure is as conceptually compelling and just as when it is applied to the legal injury of actual harm. The only thing new is the type of injury. Each of Ann and Bob is liable to the victim, Vic, for the full amount of risk exposure that was caused by her or his tortious behavior, but Vic's aggregate recovery is limited to the total amount of the tortiously caused risk exposure. Ann and Bob are separately liable for the separable portions of the risk (those caused solely by one or the other of them). They are jointly and severally liable for those portions of the risk attributable to both of them. The portions for which they are jointly and severally liable can be apportioned among them, in an action for contribution or indemnity, based on their comparative responsibility.²²⁴

²²² See *supra* text accompanying note 185.

²²³ The synergistic effect should not be included in either Ann's or Bob's maximum liability if it is negative. However, it should be included in Vic's maximum recovery and in Ann and Bob's joint and several liability for purposes of contribution or indemnity. See *supra* text accompanying note 185.

²²⁴ See *supra* text accompanying notes 8-14, 145, 161, 167-72, 176-77.

²²⁵ See *supra* note 118 and text accompanying notes 101-14, 118-19.

Unlike any of the previously discussed allocation methods, the traditional allocation method will achieve the efficient result under a negligence rule in a hypothetical, static, semi-ideal world, since each of Ann and Bob is potentially liable for the full amount of the risk to which her or his negligence contributed. Neither the traditional allocation method nor any other allocation method will achieve the efficient result in a dynamic semi-ideal world or in the real world.²²⁵ However, this is hardly a mark against the traditional allocation method, since, as was noted above, efficiency is a morally unattractive and hence inappropriate goal.²²⁶

For risk exposure as well as for actual harm, the traditional allocation method, including joint and several liability for tortfeasors who contribute to the same injury, is the clearly preferred allocation method. It is an elaboration of the deeply felt principles of justice, embodied in the corrective justice theory, which have served as the foundation of civil liability from time immemorial in countries around the world.

²²⁶ See sources cited *supra* note 96.

