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Causal Comparisons

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ROBERT N. STRASSFELD *

Focusing on the multiple meanings of the statement "A was a more important cause of C than was B," Professor Strassfeld considers the feasibility of comparative causation as a means of apportioning legal responsibility for harms. He concludes that by combining two different interpretations of "more important cause"—judgments of comparative counterfactual similarity and the Uniform Comparative Fault Act approach of comparative responsibility—we can effectively make causal comparisons and avoid the effort to compare such incommensurables as the defendant's fault under a strict liability standard and the plaintiff's fault for failure to exercise reasonable care.

I. THE PROBLEM OF COMPARATIVE CAUSATION

IT has long ceased to be timely news that the citadel of contributory negligence has fallen.[1] Comparative negligence or fault has won a crushing victory over the principle of contributory negligence as a complete defense in tort.[2] By the mid-1980s, forty-four states, Puerto Rico, and the Virgin Islands had adopted some form of comparative negligence.[3]

As is often the case, administering the peace has proven to be as hard as winning the battle. Implementation of comparative negligence has forced courts and legislatures to consider a variety of issues and complications.[4] One of these issues is the basis of apportionment, or the "what

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1. *Cf.* Prosser, *The Fall of the Citadel (Strict Liability to the Consumer),* 50 Minn. L. Rev. 791, 794-98 (1966).

2. That victory has left its share of doubters in its wake. *See* Wassell v. Adams, 865 F.2d 849, 854 (7th Cir. 1989) (Posner, J.); Brown, *Toward an Economic Theory of Liability,* 2 J. Legal Stud. 323, 346-47 (1973). For a discussion of the reasons why comparative negligence came to supplant contributory negligence when it did, see Fleming, *Foreward: Comparative Negligence At Last—By Judicial Choice,* 64 Calif. L. Rev. 239, 239-44 (1976); Wade, *Comparative Negligence—Its Development in the United States and Its Present Status in Louisiana,* 40 La. L. Rev. 299, 299-309 (1980). Between 1908 and 1941, there was a mini-boom in legislation establishing comparative negligence, followed by a quiescent period until the 1970s. For a discussion of these earlier periods, see G. White, Tort Law in America: An Intellectual History 164-68 (1980).

3. *See* V. Schwartz, Comparative Negligence 3 (2d ed. 1986 & Supp. 1990). In 1986, Schwartz announced that the "march of comparative negligence" had become "a stampede." *Id.* As he has since noted, that stampede has come to a screeching halt. *See id.* at 1 (Supp. 1990). The holdout states are Alabama, Maryland, North Carolina, South Carolina, Tennessee, and Virginia. *See id.* at 25. The District of Columbia has also retained the contributory negligence rule. *See id.*

4. *See generally id.* (discussing the gamut of comparative negligence issues); H. Woods, Comparative Fault (2d ed. 1987 & Supp. 1991) (same). For a more compressed discussion of some of these issues, see M. Franklin & R. Rabin, Cases and Materials on Tort Law and Alternatives 385-96 (4th ed. 1987).

to compare" question. The usual response has been to compare the tortfeasor's negligence to the plaintiff's fault or misconduct.[5] Where the plaintiff's claim rests on a theory of strict liability, however, the task of comparison creates a dilemma. The Supreme Court of California, for example, acknowledged that: "[t]he task of merging the [concepts of comparative fault and strict products liability] is said to be impossible, that 'apples and oranges' cannot be compared, that 'oil and water' do not mix, and that strict liability, which is not founded on negligence or fault, is inhospitable to comparative principles."[6]

As a solution to this dilemma, some commentators have advocated shifting the focus of the comparison in strict products liability cases, or perhaps in all cases, from the relative fault of the parties to their relative causal contributions.[7] The Uniform Comparative Fault Act ("the Uniform Act") retains an emphasis on the relative fault of the parties, but it also requires the factfinder to consider the causal relationship between each party's conduct and the harm suffered.[8] At least sixteen states have also adopted either a comparative causation rule for some or all cases or the Uniform Act's approach of a blended inquiry into comparative fault

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5. *See* V. Schwartz, *supra* note 3, at 29, 293-94. Similarly in cases involving contribution among multiple tortfeasors, the usual approach is to compare their relative degrees of negligence.

6. Daly v. General Motors Corp., 20 Cal. 3d 725, 734, 575 P.2d 1162, 1167, 144 Cal. Rptr. 380, 385 (1978) (Richardson, J.). Justice Jefferson dissented from the metaphor as well as from the decision to import comparative fault analysis into strict products liability. After all, we can compare apples and oranges, or make them into fruit salad. He suggested that the apportionment task delegated to the jury was closer to that of comparing "a quart of milk . . . and a metal bar three feet in length." *Id.* at 750, 751, 575 P.2d at 1178, 144 Cal. Rptr. at 396 (Jefferson, J., concurring in part, and dissenting in part).

7. *See* Gershonowitz, *Comparative Causation as an Alternative to, Not a Part of, Comparative Fault in Strict Products Liability,* 30 St. Louis U.L.J. 483, 507-15 (1986) [hereinafter Gershonowitz, *Comparative Causation*]; Gershonowitz, *What Must Cause Injury in Products Liability?,* 62 Ind. L.J. 701, 729-32 (1987) [hereinafter Gershonowitz, *Products Liability*]; Jensvold, *A Modern Approach to Loss Allocation Among Tortfeasors in Products Liability Cases,* 58 Minn. L. Rev. 723, 725 (1974). Aaron Twerski also advocates comparative causation, but he does so as a solution to problems of causal uncertainty. *See* Twerski, *The Many Faces of Misuse: An Inquiry Into the Emerging Doctrine of Comparative Causation,* 29 Mercer L. Rev. 403, 413-14 (1978) [hereinafter Twerski, *Many Faces*]; Twerski, *The Use and Abuse of Comparative Negligence in Products Liability,* 10 Ind. L. Rev. 797, 820 (1977). He writes that "[c]omparative fault presents to juries the mechanism for compromising difficult cause-in-fact questions." *Id.* at 828.

8. Section 2(b) of the Uniform Act states: "In determining the percentages of fault, the trier of fact shall consider both the nature of the conduct of each party at fault and the extent of the causal relation between the conduct and the damages claimed." Unif. Comparative Fault Act § 2(b), 12 U.L.A. 41, 48 (Supp. 1991). The comments to section 2(b) indicate that in referring to considerations of the causal relation between the conduct and the harm, the Act contemplates proximate causation. The comment states:

> [T]he fact-finder will also give consideration to the *relative closeness of the causal relationship* of the negligent conduct of the defendants and the harm to the plaintiff. Degrees of fault and *proximity of causation* are inextricably mixed, as a study of last clear chance indicates, and that common law doctrine has been absorbed in this Act.

Id. at 48 comment (emphasis added).

and comparative causation,[9] while the law in four others is unclear but suggests the possibility that the comparison is supposed to be wholly or partly causal.[10]

This Article considers the feasibility of causal comparison.[11] It focuses

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9. These states are: ALASKA: Atwater v. Matanuska Elec. Ass'n, 727 P.2d 774, 777 n.4 (Alaska 1986); IDAHO: Vannoy v. Uniroyal Tire Co., 111 Idaho 536, 540-42, 726 P.2d 648, 652-54 (1986); ILLINOIS: Coney v. J.L.G. Indus., Inc., 97 Ill. 2d 104, 116-19, 454 N.E.2d 197, 202-04 (1983); Erickson v. Muskin Corp., 180 Ill. App. 3d 117, 122-23, 535 N.E.2d 475, 478 (1989); IOWA: Iowa Code § 668.3(3) (1987) (adopting Uniform Comparative Fault Act); KANSAS: Kennedy v. City of Sawyer, 228 Kan. 439, 452-53, 618 P.2d 788, 798 (1980); Sandifer Motors, Inc. v. City of Roeland Park, 6 Kan. App. 2d 308, 316-18, 628 P.2d 239, 246-48 (1981); KENTUCKY: Hilen v. Hays, 673 S.W.2d 713, 720 (Ky. 1984); Ky. Rev. Stat. Ann. § 411.182 (Michie/Bobbs-Merrill Supp. 1991) (adopting Uniform Comparative Fault Act approach); LOUISIANA: Watson v. State Farm Fire & Cas. Ins. Co., 469 So. 2d 967, 973-74 (La. 1985); MICHIGAN: Mich. Comp. Laws § 600.6304(2) (1991) (incorporating Uniform Comparative Fault Act approach); MINNESOTA: Busch v. Busch Constr., Inc., 262 N.W.2d 377, 393-94 (Minn. 1977); Winge v. Minnesota Transfer Ry., 234 Minn. 399, 403, 201 N.W.2d 259, 263 (1972); MONTANA: Cash v. Otis Elevator Co., 210 Mont. 319, 330-32, 684 P.2d 1041, 1047 (1984); NEW HAMPSHIRE: Thibault v. Sears, Roebuck & Co., 118 N.H. 802, 809-14, 395 A.2d 843, 848-50 (1978); NEW YORK: Abergast v. Board of Educ., 65 N.Y.2d 161, 162-69, 480 N.E.2d 365, 366-71, 490 N.Y.S.2d 751, 752-57 (1985); TEXAS: Duncan v. Cessna Aircraft Co., 665 S.W.2d 414, 424-29 (Tex. 1984); General Motors Corp. v. Hopkins, 548 S.W.2d 344, 352 (Tex. 1977); Tex. Civ. Prac. & Rem. Code Ann. § 33.001 (Vernon Supp. 1992) (shifting apportionment inquiry from focus on comparative factual causation to focus on proximate cause notions underlying comparative responsibility); UTAH: Mulherin v. Ingersoll-Rand Co., 628 P.2d 1301, 1303-04 (Utah 1981); WASHINGTON: Wash. Rev. Code Ann. § 4.22.015 (1988) (adopting Uniform Comparative Fault Act); WEST VIRGINIA: Reager v. Anderson, 371 S.E.2d 619, 625 & n.1 (W. Va. 1988) (dictum); cf. Murray v. Fairbanks Morse, 610 F.2d 149, 158-60 (3d Cir. 1979) (adopting comparative causation approach for strict liability claims arising under Virgin Islands law).

10. *See* Jackson v. Frederick's Motor Inn, 418 A.2d 168, 173 & n.1, 174 (Me. 1980) (under Maine Comparative Negligence Act, relative fault of the parties is not the only factor to be considered; court echoed approach to apportionment set forth in the Commissioner's Comment to section 2 of the Uniform Fault Act, but ultimately framed jury's task as that of making an apportionment it deems "just and equitable"); Earll v. Consolidated Aluminum Corp., 714 S.W.2d 932, 936 (Mo. 1986) (speaking in terms of "comparative fault," but stating that "where there is evidence that the conduct of both parties combined and contributed to cause damage, the factfinder should not be precluded from comparing the respective contributions toward such causation made by each"); Suter v. San Angelo Foundry & Mach. Co., 81 N.J. 150, 162-64, 406 A.2d 140, 146-47 (1979) (giving no clear direction on method of apportionment); Dixon v. Four Seasons Bowling Alley, Inc., 176 N.J. Super. 540, 544, 424 A.2d 428, 429 (1980) (noting that jury apportioned damages in negligence claim on basis of percentage of negligence attributable to each party, but determined allocation in strict liability claim on basis of extent that "each party's conduct contributed . . . to the happening of the accident"); Mauch v. Manufacturers Sales & Serv., Inc., 345 N.W.2d 338, 348 (N.D. 1984) (adopting comparative causation in strict liability cases); N.D. Cent. Code § 32-03.2-03 (Supp. 1991) (speaking of comparisons of "amount of contributing fault" and having unclear effect on *Mauch*).

11. This Article assumes that legal doctrines provide a basis for identifying certain conditions as causes, and it considers only ascriptions of weight to such designated causes. The basis for selecting from a set of conditions certain acts or events as causes, either in law, or generally, is beyond the scope of this Article. The literature on the distinction between causes and conditions is vast. A good starting point is H.L.A. Hart & T. Honoré, Causation in the Law 11-13, 33-34 (2d ed. 1985).

on tort law where some courts use causal comparison either to assign shares of responsibility and to apportion damages under a comparative fault regime, or to resolve the related problem of contribution among joint tortfeasors. While the vehicle for this discussion is a problem of apportionment of damages in tort, a practicable system of causal apportionment would benefit other areas of law where rules of contribution require us to apportion responsibility among wrongdoers.[12] The need for a workable method of causal apportionment arises also in the determination of damages in securities fraud cases.[13] Moreover, in such diverse areas of the law as intentional interference with contractual relations, defamation, malicious prosecution, and retaliatory eviction for attempted enforcement of a housing code, courts confronted with defendants who have acted out of a mixture of bad and privileged motives often apply a "dominant" or "primary" motive standard to determine whether the act gives rise to liability.[14]

We cannot assign greater weight to certain causes unless we can meaningfully say that a particular cause of an effect is more important than another cause of the same effect. Yet a widely held view is that such statements of causal weight are meaningless. Part II addresses the primary focus of this Article. It examines the possible meanings of the assertion that A was a more important cause of C than was B. It first considers the argument that statements of relative causal importance are causal nonsense, but it suggests by counterexample the inadequacy of that position. It then examines five possible meanings of claims of greater causal importance.

Talk of causal importance tends to conflate two different legal conceptions of causation: factual causation and proximate cause.[15] Factual causation seeks to describe what actually happened and to fix the causal candidate's role in bringing about a particular harm. The proximate cause inquiry considers the legal consequences of someone having tortiously caused a harm. It asks whether that person should be held legally accountable for the harm.[16] Factual causation purports to be descriptive in the most Rankean sense, while the proximate cause determination is normative or policy-laden.[17] All but the last interpretation of greater

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12. *See* Rizzo & Arnold, *Causal Apportionment in the Law of Torts: An Economic Theory,* 80 Colum. L. Rev. 1399, 1399 & n.4 (1980) [hereinafter Rizzo & Arnold, *Causal Apportionment*].

13. *See* 5C A. Jacobs, Litigation and Practice Under Rule 10b-5 § 260.03[f][i]-[iii] (2d ed. 1991).

14. *See* Weber, *Beyond* Price Waterhouse v. Hopkins: *A New Approach to Mixed Motive Discrimination,* 68 N.C.L. Rev. 495, 507-14 (1990). Weber advocates adoption of a similar approach in employment discrimination cases.

15. *Cf.* Calabresi, *Concerning Cause and the Law of Torts: An Essay for Harry Kalven, Jr.,* 43 U. Chi. L. Rev. 69, 71 (1975) (identifying three concepts of "cause," including factual cause, proximate cause, and "causal link").

16. Factual causation asks "who dunnit?" Proximate cause asks "who cares?"

17. Leopold von Ranke described the historian's task as reconstructing the past *"wie es eigentlich gewesen"* (as it actually was). *See Preface to Histories of Romance and Ger-*

causal importance analyzed in Part II conceive of judgments of causal importance as objective and factual. Whether or not factual causation is really "a factual, empirical inquiry that can be . . . kept distinct from the policy issues in tort adjudication,"[18] the ostensibly factual analyses of causal importance described below tend to shade into normative judgments, and the realms of factual and proximate cause are apt to blend together.

Part III attempts to bring some order to the confusion of these multiple meanings of "more important cause." It argues that unhappily each interpretation is deficient in some manner, but it proposes that in those cases where causal comparison is nonetheless desirable we can achieve our best results by combining two of the approaches described in Part II: the exercise of judgments of comparative counterfactual similarity, and the Uniform Act approach of comparative responsibility.

Finally, I have simplified my task in two ways. First, I do not address the issue of joint and several liability.[19] Second, instead of considering how we might quantify shares of causal responsibility, I consider the simpler question of whether we can make comparisons of relative causal weight at all. I choose the latter question both because our inability even

manic Peoples, in The Varieties of History 57 (F. Stern ed. 1956). Prosser notes that proximate cause "is not a question of causation, or even a question of fact." W. Prosser, Handbook of the Law of Torts 244 (4th ed. 1971). It is, instead, "essentially a question of whether the policy of the law will extend the responsibility for the conduct to the consequences which have in fact occurred." _Id._

18. Wright, _Causation in Tort Law_, 73 Calif. L. Rev. 1735, 1803 (1985) [hereinafter Wright, _Causation_]. _Contra_ Malone, _Ruminations on Cause-in-Fact_, 9 Stan. L. Rev. 60 (1956) (arguing that normative policy considerations permeate factual causation determinations).

19. In other words, in my discussion of apportionment I assume that all relevant actors are amenable to suit and able to pay their share, and I ignore the issue of who should bear the risk that they are not.

Joint and several liability has been one of the primary targets of the so-called tort reform movement. _See_ S. 640, 102d Cong., 1st Sess. § 306 (1991) ("Product Liability Fairness Act"). For an introduction to the debate about joint and several liability, see Kornhauser & Revesz, _Sharing Damages Among Multiple Tortfeasors_, 98 Yale L.J. 831 (1989); Peck, _Washington's Partial Rejection and Modification of the Common Law Rule of Joint and Several Liability_, 62 Wash. L. Rev. 233 (1987); Wright, _Allocating Liability Among Multiple Responsible Causes: A Principled Defense of Joint and Several Liability for Actual Harm and Risk Exposure_, 21 U.C. Davis L. Rev. 1141 (1988) [hereinafter Wright, _Allocating Liability_]; and the debate between Richard Wright and Aaron Twerski in _Colloquy_, 22 U.C. Davis L. Rev. 1125 (1989).

In the context of comparative fault, a number of courts have retained joint and several liability. _See, e.g._, American Motorcycle Ass'n v. Superior Court, 20 Cal. 3d 578, 582-83, 578 P.2d 899, 901, 146 Cal. Rptr. 182, 184 (1978) (holding that adoption of comparative negligence rule does not warrant abolition of joint and several liability doctrine), _overruled by 1986 ballot initiative_, Cal. Civ. Code § 1431-1431.5 (West Supp. 1992); Coney v. J.L.G. Indus., Inc., 97 Ill. 2d 104, 124, 454 N.E.2d 197, 206 (1983) (retaining joint and several liability in comparative negligence cases, in keeping with a majority of jurisdictions). For a discussion of joint and several liability under comparative fault, see V. Schwartz, _supra_ note 3, at § 16.4; H. Woods, _supra_ note 4, at § 13.4; McNichols, _Judicial Elimination of Joint and Several Liability Because of Comparative Negligence—A Puzzling Choice_, 32 Okla. L. Rev. 1 (1979).

to say that A was a more important cause than B would obviate any need for a more sophisticated mechanics of apportionment, and because I believe that no such sophisticated mechanics of apportionment is achievable. While I conclude that it is possible and, in some instances, desirable to make causal comparisons, I am convinced that any system of causal apportionment is bound to be rough and inexact.

Yet for all its imprecision, causal apportionment is our most useful tool for apportioning liability when we otherwise must compare such incommensurables as the defendant's "fault" under a strict liability standard and the plaintiff's "fault" for failure to exercise reasonable self-care. Rough justice may be the best we can aspire to in cases calling for causal apportionment, or indeed in any others.

II. THE MEANINGS OF "MORE IMPORTANT CAUSE"

Comparative causation presumes that talk about one cause being more important than another is meaningful. Yet many commentators dispute that it can be, and when courts and legislatures talk about comparative causation their meanings are obscure.[20] In this section, I will unpack the statement: "A was a more important cause of C than was B." I will show that a difficulty for comparative causation is not that the statement is meaningless, but that it suggests multiple inconsistent meanings.

A. *Causal Nonsense*

Under a widely held understanding of causation, any attribution on causal grounds of greater importance to one necessary cause than to another is nonsensical.[21] According to this view, the distinguishing mark of causes is that they are necessary for the occurrence of a result. Claims of

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20. *See infra* notes 147-49 and accompanying text; *cf.* Nagel, *Some Issues in the Logic of Historical Analysis*, in Theories of History 373, 382-83 (P. Gardiner ed. 1959) ("most historians do not appear to associate any definite meaning with their statements of relative importance, so that the statements often have only a rhetorical intent, from which no clear empirical content can be extracted").

21. *See* Howard v. Allstate Ins. Co., 520 So. 2d 715, 720 (La. 1988) (Dennis, J., concurring in part and dissenting in part); Sandford v. Chevrolet Div. of General Motors, 292 Or. 590, 602-03, 642 P.2d 624, 630-31 (1982); 4 F. Harper, F. James, Jr. & O. Gray, The Law of Torts § 22.16 (2d ed. 1986); J. Fleming, The Law of Torts 247 (6th ed. 1983); W. Prosser, D. Dobbs, R. Keeton & D. Owen, Prosser & Keeton on The Law of Torts § 67, at 474 (5th ed. 1984) [hereinafter Prosser & Keeton]; Aiken, *Proportioning Comparative Negligence-Problems of Theory and Special Verdict Formulation*, 53 Marq. L. Rev. 293, 296-97 (1970); Borgo, *Causal Paradigms in Tort Law*, 8 J. Legal Stud. 419, 450 (1979); Fischer, *Products Liability-Applicability of Comparative Negligence*, 43 Mo. L. Rev. 431, 445 (1978); Honoré, *Causation and Remoteness of Damage*, in 11 International Encyclopedia of Comparative Law, Torts, Pt. 1, § 7-34 (A. Tunc ed. 1983); Kaye & Aickin, *A Comment on Causal Apportionment*, 13 J. Legal Stud. 191, 206 (1984); Kelman, *The Necessary Myth of Objective Causation Judgments in Liberal Political Theory*, 63 Chi.-Kent L. Rev. 579, 579 (1987); Pearson, *Apportionment of Losses Under Comparative Fault Laws-An Analysis of the Alternatives*, 40 La. L. Rev. 343, 345 & n.9, 346 (1980); Twerski, *Many Faces, supra* note 7, at 413; Wright, *Allocating Liability, supra* note 19, at 1146, 1194 (rejecting attribution of greater importance to some causes rather than others

relative causal importance therefore imply that one cause was more necessary than another. But necessity is indivisible. It "does not admit of degree."[22] And those attributes of necessity apply equally to necessary causes. Thus, according to Richard Pearson: "[c]ausation is not a relative concept; it exists or it does not, and if it does exist one does not speak of 'degrees' of causation."[23] Similarly, Jacques Barzun and Henry Graff dismiss attempts to identify a "paramount" cause as "impl[ying] a measurement that we cannot in fact make" and "foolishly ap[ing] the chemical formula by which a compound requires several elements in stated proportions."[24] They approvingly quote Edward Lucas White's statement that "if . . . it took malaria-bearing mosquitoes and the spread of Christianity to undo the Roman Empire, the mosquitoes were as necessary as the Christians and neither is paramount to the other."[25]

This unity theory of causal necessity has intuitive appeal. If we consider, for example, the conception of an embryo, we would accord equal importance to the ovum and sperm. Neither can produce the effect without the other, and, consequently, neither can be assigned greater causal importance. This intuition is also cloaked with philosophical respectability. J.S. Mill wrote that "no 'condition' of a result has a 'closer relation' to that result than another, since each is 'equally indispensable to the production of the consequent.' "[26] J.L. Mackie has given modern expression to this idea in writing that "[i]f two factors are each necessary in the circumstances, they are equally necessary."[27]

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in terms of their contribution to factual causation but advocating causal weighting in terms of the proximate causation notion of comparative responsibility).

22. Martin, *On Weighting Causes,* 9 Am. Phil. Q. 291, 291 (1972) [hereinafter Martin, *On Weighting Causes*].

23. Pearson, *supra* note 21, at 346.

24. J. Barzun & H. Graff, The Modern Researcher 189 (4th ed. 1985).

25. *Id.* (citing E. White, Why Rome Fell (1927)).

26. J.S. Mill, A System of Logic 214 (8th ed. 1874), *quoted in* Martin, *On Weighting Causes, supra* note 22, at 291.

27. J.L. Mackie, The Cement of the Universe: A Study of Causation 128 (paperback ed. 1980) [hereinafter J.L. Mackie, The Cement of the Universe]. Quoting an earlier work, Mackie further states:

> Each of the moments in the minimal sufficient condition, or in each minimal sufficient condition, that was present can equally be regarded as the cause. They may be distinguished as predisposing causes, triggering causes, and so on, but it is quite arbitrary to pick out as "main" and "secondary," different moments which are equally nonredundant items in a minimal sufficient condition, or which are moments in two minimal sufficient conditions each of which makes the other redundant.

Id. n.21 (quoting Mackie, *Causes and Conditions,* 2 Am. Phil. Q. 245, 253 (1965) [hereinafter Mackie, *Causes and Conditions*]); *see also* Nagel, *supra* note 20, at 382 (incorrectly stating that natural scientists do not engage in causal weighting and adding "it is easy to dismiss the question of whether there is any objective basis for such gradations of variables, with a peremptory denial on the ground that, if a phenomenon occurs only when certain conditions are realized, all these conditions are equally essential, and no one of them can intelligibly be regarded as more basic than the others"); *cf.* L. Stone, The Causes of the English Revolution 1529-1642, at 58 (1972) ("The great methodological gain from breaking the problem down into distinct categories of preconditions, precipi-

Yet if we banish all talk of relative causal importance, we deny ourselves the possibility of making many meaningful causal comparisons. We might wish to say, for instance, that Lenin's participation in the Bolshevik Revolution was a more important cause of its success than was Stalin's, or that the absence of a skilled labor force is a more important cause of economic backwardness than is limited natural resources.[28] Or, we might have reason to say that James is happier today than he was last week partly because he earned an A on his torts exam, but more because his love life has improved.[29] Indeed, we often talk as if at least some causal comparisons are meaningful. That we do suggests that we must draw on some intelligible basis for assigning causal weight that looks beyond the equivalence suggested by causal necessity's apparent indivisibility. We must therefore explore further the possible meanings of the phrase that A was a more important cause of C than was B.

B. *Class-Wide Causal Comparisons*

One noncontroversial use of causal comparisons is their application to classes of events. Thus, the assertions that broken homes are a more important cause of juvenile delinquency than is poverty, or that driver negligence is a more important cause of automobile accidents than are mechanical defects are meaningful, and presumably verifiable or falsifiable.[30] This sense of more important cause, however, has little relevance to tort law, which focuses on the causation of singular events, not on classes of events. As Raymond Martin notes:

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tants and triggers is that the historian is relieved of the futile, and intellectually dishonest, task of trying to arrange all the causes in a single rank order."). Nevertheless, Mackie and Nagel each recognize intelligible meanings of the idea that A was a more important cause of C than was B, and Stone makes weighted causal judgments within his three categories of preconditions, precipitants, and triggers, although he declines to make weighted cross-category comparisons. *See* J.L. Mackie, The Cement of the Universe, *supra* note 27, at 128-29; Nagel, *supra* note 20, at 383-84; L. Stone, *supra* note 27, at 58-145.

28. These examples are from Martin, *On Weighting Causes*, *supra* note 22, at 291, and Nagel, *supra* note 20, at 383.

29. This example is based on one from R. Martin, The Past Within Us: An Empirical Approach to Philosophy of History 80 (1989) [hereinafter R. Martin, The Past Within Us].

30. The examples are Nagel's. *See* Nagel, *supra* note 20, at 383-84. As Nagel's discussion indicates, assertions of this type are susceptible to more than one meaning. They might mean that the joint presence of A and B are not necessary for the occurrence of C, although either A or B is a necessary cause in conjunction with certain other conditions and that C is more often caused by A than by B. *See id.* at 383-84. However, they might mean that A and B are not jointly necessary and that the "*relative frequency* with which C occurs when the condition A is realized but B is not is greater than the *relative frequency* of C's occurrence if B is realized but A is not." *Id.* at 384 (emphasis added); *see also* Hook, *Illustrations*, in Social Science Research Council, Theory and Practice in Historical Study: A Report of the Committee on Historiography 108, 114 (Bulletin 54 1946) ("A condition is more decisive than others when events of this type take place more frequently than events of other types in relation to the type of occurrence under investigation.").

It would be curious, if not downright wrong, to claim that driver negligence was a more important cause of some *particular* accident than was mechanical failure, merely because both were a cause of the accident in question and the frequency with which driver negligence has been a cause of automobile accidents is greater than the frequency with which mechanical failure has been a cause of automobile accidents. If there were such a sense of "more important," one could weight the causes of a particular automobile accident, once he knew what they were, without knowing any of the other details of the accident.[31]

Nevertheless, just such an approach has been advocated by various proponents of "probabilistic causation."[32] Primarily, probabilists have focused on the problem of causal uncertainty, which they regard as endemic. They argue that a deterministic approach to causation fails to account for the hard epistemological reality that our evidence of causation is necessarily probabilistic, not absolute. In the place of tort law's traditional tests of causation, they describe causation in terms of the conduct's predicted causal potency, or risk creation.[33]

Probabilistic causation, however, also has importance for comparative causation. Some of its proponents have argued that the causal potency inquiry should be used to apportion damages. This argument was first made by economists Mario Rizzo and Frank Arnold.[34] Like the com-

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31. Martin, *On Weighting Causes, supra* note 22, at 292 (emphasis in original); *see also* Hammond, *Weighting Causes in Historical Explanation,* 43 Theoria 103, 105-06 (1977) ("it is not possible to derive criteria for the weighting of causes of particular events from the weighting of causes of events of that type").

32. *See* Robinson, *Multiple Causation in Tort Law: Reflections on the DES Cases,* 68 Va. L. Rev. 713, 759-69 (1982) [hereinafter Robinson, *Multiple Causation*]; Robinson, *Probabilistic Causation and Compensation for Tortious Risk,* 14 J. Legal Stud. 779 (1985) [hereinafter Robinson, *Probabilistic Causation*]; Robinson, *Risk, Causation, and Harm* in Liability and Responsibility: Essays in Law and Morals 317 (R. Frey & C. Morris eds. 1991) [hereinafter Robinson, *Risk*]; Rosenberg, *The Causal Connection in Mass Exposure Cases: A "Public Law" Vision of the Tort System,* 97 Harv. L. Rev. 851, 851-87 (1984). Probabilistic causation has gained widespread support among the legal economists. *See* Wright, *Causation, Responsibility, Risk, Probability, Naked Statistics, and Proof: Pruning the Bramble Bush by Clarifying the Concepts,* 73 Iowa L. Rev. 1001, 1005 n.17 (1988) [hereinafter Wright, *Causation, Responsibility, Risk*].

33. These arguments are outside of the scope of this Article. Richard Wright has been the principal critic of probabilistic causation. *See* Wright, *Actual Causation vs. Probabilistic Linkage: The Bane of Economic Analysis,* 14 J. Legal Stud. 435 (1985); Wright, *Causation, supra* note 18, at 1813-26; Wright, *Causation, Responsibility, Risk, supra* note 32, at 1042-67; *see also* Kelman, *supra* note 21, at 608-17 (criticizing probabilists' approach); Thomson, *Remarks on Causation and Liability,* 13 Phil. & Pub. Aff. 99 (1984) (critically analyzing decline of actual causation requirement).

34. *See* Rizzo & Arnold, *Causal Apportionment, supra* note 12, at 1402-15; Rizzo & Arnold, *Causal Apportionment: Reply to the Critics,* 15 J. Legal Stud. 219, 220-24 (1986) [hereinafter Rizzo & Arnold, *Reply to Critics*]; Rizzo, *The Imputation Theory of Proximate Cause: An Economic Framework,* 15 Ga. L. Rev. 1007, 1009-20 (1981). For technical and theoretical criticisms of Rizzo and Arnold's apportionment formulas, see Kaye & Aickin, *supra* note 21, at 193-207; Kelman, *supra* note 21, at 608-17; Kruskal, *Terms of Reference: Singular Confusion About Multiple Causation,* 15 J. Legal Stud. 427, 433-35 (1986); Robinson, *Multiple Causation, supra* note 32, at 759-67; Wright, *Allocating Liability, supra* note 19, at 1203-07, 1209-11.

mentators discussed in section A, Rizzo and Arnold begin from the assumption that one cannot weight necessary causes.[35] They instead look to risk creation, or, as they put it, to the "general harm-producing capacities" of different causes to determine their relative importance.[36] In their effort to develop a "technology for the apportionment of tort damages," they generate a series of equations intended to represent the relative risk contribution of multiple causes to the production of a harm.[37]

The total risk produced by the causes (call them A and B)[38] consists of the risk of harm generated by each cause independently of the other and the risk of harm produced by them synergistically.[39] The first component, the independent risk created by A and by B unaffected by the presence or absence of the other cause, can be represented by the following formulas:

$$\alpha = P(H|A) \tag{1}$$
$$\beta = P(H|B) \tag{2}$$

where H stands for the harm that resulted, and $P(H|A)$ stands for the probability of that harm's occurrence given A.[40] The harm, H, may occur either when A or B acts alone, or when they duplicatively, but independently, cause H. The probability of the duplicative independent risk is $\alpha\beta$. Thus the probability of H caused only by A or only by B is:

$$P(H|A\&\overline{B}) = (\alpha - \alpha\beta) \tag{3}$$
$$P(H|B\&\overline{A}) = (\beta - \alpha\beta) \tag{4}$$

where $\overline{A}$ and $\overline{B}$ signify that A or B has not caused H.[41] The sum of equations (3) and (4) is the nonduplicative independent risk. The total probability of H resulting from the independent risk created by A and B can be expressed as:

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35. "[A] deterministic analysis is incapable of disentangling the relative importance of causes. In those contexts in which each wrongful act is a necessary condition of the harm, the marginal product of each would be the entire damage." Rizzo & Arnold, *Causal Apportionment, supra* note 12, at 1408.

36. *Id.* They never, however, offer a justification for using this proxy to measure causal weight in cases of joint causation.

37. *Id.* at 1400.

38. In order to limit the universe of causes Rizzo and Arnold adopt Hart and Honoré's screen to distinguish causes from conditions, and they argue that it has descriptive power under alternative standards to designate certain acts as wrongful, and thus, candidates for causal status. *See id.* at 1406-07. For a discussion of Hart and Honoré's approach, see *infra* notes 89-90 and accompanying text.

39. I will argue below that this first component, independently created risk, should, in turn, be subdivided into two components. *See infra* notes 40-44 and accompanying text.

40. In other words, these equations express conditional probabilities of H. Rizzo and Arnold's version of the equations is somewhat more complicated. *See* Rizzo & Arnold, *Causal Apportionment, supra* note 12, at 1409. I have adopted, instead, the simpler form of these equations used by Wright, *Allocating Liability, supra* note 19, at 1197. *See also* Kaye & Aickin, *supra* note 21, at 193 (equations (1a) and (1b)); Kruskal, *supra* note 34, at 428 (using similar equations).

41. These are essentially the same as Wright's equations (6) and (7). *See* Wright, *Allocating Liability, supra* note 19, at 1198.

$$P(H|A\&B) = (\alpha-\alpha\beta) + (\beta-\alpha\beta) + \alpha\beta \qquad (5).[42]$$

We must still account for the synergistic effect of any interaction between A and B. We can represent the synergistic risk by the term s.[43] If the value of that term is positive, A and B synergistically increase the total risk of harm beyond the independent risk that they create, while a negative value indicates negative synergism. If the value is zero, A and B do not interact synergistically. We can rewrite equation (5) to take account of synergism as follows:

$$P(H|A\&B) = (\alpha-\alpha\beta) + (\beta-\alpha\beta) + \alpha\beta + s \qquad (6)[44]$$

Equation (6) represents the total risk of H created by A and B.

We can divide the total probability of harm H into three components: the nonduplicative independent risk created by A and B, represented by the first two terms of equation (6); the duplicative independent risk created by A and B, represented by the term $\alpha\beta$; and the synergistic risk created by the two causes, represented by the term s. Rizzo and Arnold apportion responsibility for the synergistic risk equally between A and B on the theory that where both causes are necessary causes, and neither is a sufficient cause, neither cause can be assigned greater weight than the other.[45] They apportion the remainder of the risk by the ratio of the independent risks α and β. A's share of the independently caused risk of harm is $\alpha/(\alpha+\beta)$ times the value of that risk of harm, and B's share is $\beta/(\alpha+\beta)$ times the same number.[46] Thus, under their approach we can express the apportionment of risk as follows:

$$A\text{'s share} = (\alpha/(\alpha+\beta)) [(\alpha-\alpha\beta) + (\beta-\alpha\beta) + \alpha\beta] + 0.5s \qquad (7);$$

$$B\text{'s share} = (\beta/(\alpha+\beta)) [(\alpha-\alpha\beta) + (\beta-\alpha\beta) + \alpha\beta] + 0.5s \qquad (8).[47]$$

Rizzo and Arnold's critics have found much to fault in their approach. William Kruskal has noted that they assume the harm and wrongful acts to be dichotomous; either *the* harm occurs or none does. Real harms, however, often are occurrences within a polytomy or a continuum.[48]

42. Equation (5) is the same as Wright's equation (8a). *See id.* Rizzo and Arnold express this total probability of H resulting from the independent risks, or, with the equation $\delta = (\alpha-\alpha\beta) + (\beta-\alpha\beta) + \alpha\beta$, the "definitional joint probability." Rizzo & Arnold, *Causal Apportionment, supra* note 12, at 1410 (equation (3)); Rizzo & Arnold, *Reply to Critics, supra* note 34, at 222 (equation (1)).

43. Rizzo and Arnold represent the synergistic risk by the term $\gamma-\delta$ where γ represents "the actual joint probability" of H. Rizzo & Arnold, *Causal Apportionment, supra* note 12, at 1410-11.

44. This is Wright's equation (9a). *See* Wright, *Allocating Liability, supra* note 19, at 1199.

45. This is the argument discussed *supra* in section A.

46. *See* Rizzo & Arnold, *Causal Apportionment, supra* note 12, at 1409, 1411.

47. Wright, *Allocating Liability, supra* note 19, at 1204 (equations (10) and (11)); *see* Rizzo & Arnold, *Causal Apportionment, supra* note 12, at 1409-11; Kaye & Aickin, *supra* note 21, at 199 (equation (6)).

48. *See* Kruskal, *supra* note 34, at 428. For example, a bullet may harmlessly miss its intended target, miss the target who nevertheless suffers harm due to shock and fright, or hit him causing any manner of injury ranging from a minor flesh wound to death.

Even with these simplifying assumptions, however, we must make the further questionable assumption that we can know the conditional probabilities necessary for the apportionment calculations.[49] Glen Robinson has noted that by failing to account for unknown or natural causes, the Rizzo and Arnold approach may assign responsibility to known causes disproportionate to the marginal increments of risk that they actually caused.[50] Finally, some of their critics have argued that they fail to justify the selection of their particular formula to measure relative responsibility for risk creation rather than some alternative formula, such as Kaye and Aickin's.[51]

Even if we set those criticisms aside, however, and accept equation (6) as an adequate statement of the total risk of H, we cannot make comparative fault and contribution determinations correctly according to the Rizzo and Arnold apportionment formula. The apportionment problems that we wish to resolve involve singular events that we know were caused by both A and B acting either simultaneously or sequentially.[52] Rizzo and Arnold, however, look at the complete range of possible occurrences of H, including those in which *only A* or *only B* caused the harm. When apportioning causal responsibility in joint causation cases, there is no reason to consider the first two terms in equation (6),[53] which represent the independent nonduplicative risk of H caused by A and B respectively. Moreover, as Richard Wright notes, they fail to explain why they apportion both $\alpha - \alpha\beta$ and $\beta - \alpha\beta$ among A and B according to the ratio of independent risks, since the first term represents risk produced only by A and the second represents risk produced only by B. The first term, $\alpha - \alpha\beta$, ought more appropriately to be attributed exclusively to A, and

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49. *See id.* at 429, 430. Rizzo and Arnold contend that they need not know precise conditional probabilities and can, instead, resort to "[r]ough estimates of relative likelihoods." Rizzo & Arnold, *Causal Apportionment, supra* note 12, at 1409 n. 56. *But cf.* Kruskal, *supra* note 34, at 430 (discussing difficulties of making comparisons between two imprecisely estimated numbers between zero and one). Nor do they say how these approximations are to be derived, other than to indicate that they need not always be a matter of mere enumeration of actual frequencies and to refer to "[e]xpert testimony and common sense" regarding "scientific and everyday knowledge." Rizzo & Arnold, *Causal Apportionment, supra* note 12, at 1409 n.56; *see also* Rizzo & Arnold, *Reply to Critics, supra* note 34, at 220 (defending approximations as more than a count of "actual frequencies" and as representing "a degree-of-belief assessment").

50. *See* Robinson, *Multiple Causation, supra* note 32, at 760 n.149, 761-64.

51. Kaye and Aickin's approach is discussed in Kaye & Aickin, *supra* note 21. *See also* Kelman, *supra* note 21, at 611-17 (criticizing Rizzo and Arnold's approach); Kruskal, *supra* note 34, at 430-31 and *passim.* (same); Wright, *Allocating Liability, supra* note 19, at 1203-07 (same). Rizzo and Arnold respond to Kaye and Aickin in Rizzo & Arnold, *Reply to Critics, supra* note 34.

52. We at least believe that A and B caused H with a degree of certainty that permits us to act as if we know that they both caused the harm. The use of an apportionment formula to deal with the problem of causal uncertainty when we know that A and B were present and that either or both sometimes causes H but we do not know the cause(s) of H in a particular instance raises different sorts of questions.

53. $(\alpha - \alpha\beta) + (\beta - \alpha\beta)$. *See supra* note 44 and accompanying text.

$\beta - \alpha\beta$ ought to be attributed exclusively to B.[54]

Rizzo and Arnold apportion the remaining elements of risk—duplicative independently caused risk and synergistic risk—in two different ways. They apportion the term $\alpha\beta$, the duplicative independently caused risk, according to the ratio of the independent risks. They apportion the term s, the synergistic risk, equally between A and B. Here they have things backwards. Of the remaining elements of risk, it is $\alpha\beta$ that cannot be apportioned on any justifiable basis other than equal shares, while the synergistic risk may be apportionable unequally.

Rizzo and Arnold fail to justify their apportionment of $\alpha\beta$.[55] As they acknowledge, $\alpha\beta$ represents those situations "where A caused harm and B did as well."[56] In other words, $\alpha\beta$ represents instances of causal over-determination where both A and B caused the harm and would similarly have done so in the other's absence.[57] Thus their causal contribution is equal, and, since they are duplicative, neither alone made a difference.[58]

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54. *See* Wright, *Allocating Liability*, *supra* note 19, at 1205; *cf.* Restatement (Second) of Torts § 433A(1) (1965) ("Damages for harm are to be apportioned among two or more causes where . . . there are distinct harms.").

55. For their attempted justification, see Rizzo & Arnold, *Reply to Critics*, *supra* note 34, at 222-24. Rizzo and Arnold propose the example of a person who dies after two nonsynergistic gunshot wounds, one to his heart (A) and one to his brain (B). *See* Rizzo & Arnold, *Reply to Critics*, *supra* note 34, at 223. They further propose that, while wounds of type A are more potent than wounds of type B, "ex hypothesi, we cannot determine which actually killed him in this case." *Id.* Yet, while in their example we cannot know whether the cause of death was A alone, or B alone, or A and B acting duplicatively, they acknowledge that the term $\alpha\beta$ represents those instances where A and B independently but duplicatively kill the victim. Thus, their assertion regarding $\alpha\beta$ that "[t]he fact that B also caused harm should not detract from A's causal potency," is correct, but besides the point. *Id.* Let us accept for the moment the validity of their focus on causal potency, as an expression of risk creation attributable to A and to B. As Richard Wright demonstrates, the problem with their approach is that it "ignores the distinct natures of $\alpha - \alpha\beta$, $\beta - \alpha\beta$, and $\alpha\beta$," and it never adequately justifies apportioning each, or for that matter any, of these three elements according to the ratio of the independent risks. Wright, *Allocating Liability*, *supra* note 19, at 1205-06, 1209-10.

But the larger problem is the focus on the *ex parte* causal potency. In real tort actions, other than those where the injury is risk creation, the issue of causal apportionment only arises after the factfinder has concluded that A and B *did* cause the injury. Thus Rizzo and Arnold's example, where "ex hypothesi, we cannot determine" which cause caused the harm, and the analysis that flows from it are inapt.

56. *Id.* at 223. In this and other instances, Rizzo and Arnold slip into deterministic talk about causation. They speak in terms of "A and B simultaneously but independently kill[ing] the victim," not of the creation of overlapping risks. *Id.* Since I am addressing instances where we know, or believe with sufficient certainty to act as if we know, that A and B were causes of a particular harm (rather than causes of the risk of that harm), I am happy to follow them in this direction.

57. There is a large body of literature that discusses causal overdetermination. For an introduction, see H.L.A. Hart & T. Honoré, *supra* note 11, at 122-25, 235-49; J.L. Mackie, The Cement of the Universe, *supra* note 27, at 43-47; Wright, *Causation, supra* note 18, at 1775-81, 1791-98.

58. For a discussion of the difference between the questions "What contribution did A make to event C?" and "What difference did A make in the occurrence of C?", see Sober, *Apportioning Causal Responsibility*, 85 J. Phil. 303, 304-05 (1988). We can see quite clearly that each cause was equally important if we analyze duplicative causation under

There is no sensible way to distinguish between them on causal grounds, and the only rational apportionment that does not appeal to noncausal considerations is one of equal shares.[59]

The synergistic harm, however, need not be apportioned equally. Because often A and B must interact to produce a harm that neither could produce without the other, a flawed approach to apportioning liability for synergistically caused harms will lead to significant misallocations of liability.[60] Rizzo and Arnold's adoption of an "equal shares" approach is compelled by their adherence to the idea that talk of comparative causal weight of necessary causes is causal nonsense. Yet to say that two causes were both necessary does not entail that they made an equal contribution to the occurrence of an effect or that they were equally indispensable to its occurrence. We must consider further whether we can sensibly assign relative causal weights to different necessary causes.

C. *Causes That Occasion Other Causes*

Aaron Gershonowitz has argued that a primary factor in comparing causes should be the relationship between them.[61] He writes that A is a more important cause of C than is B if A and B jointly caused C and A also caused B or increased the likelihood of B's occurrence.[62] He illustrates this interpretation of "more important cause" with a discussion of *General Motors Corp. v. Hopkins,*[63] a case involving the conjunction of defective product design and the plaintiff's product misuse.

In *Hopkins,* the plaintiff was injured when his pick-up truck unexpectedly accelerated and went out of control on a curve. The jury found that the truck's carburetor was defectively designed and that the defect was a "producing cause" of the accident. Prior to the accident, Hopkins had experienced another episode of sudden acceleration caused by the defective carburetor. In response to the earlier incident, he replaced the carburetor with one of a different make, but reinstalled the original when its replacement failed to perform well.[64] Unfortunately, he badly botched

Raymond Martin's second analysis of weighted causal statements. Under Martin's Analysis (D2), we would say that neither A nor B was a more important cause of H than the other because, had either A or B not occurred, the same thing would have occurred (H). *See infra* notes 96-129 and accompanying text.

59. I do not address the question whether liability should be joint and several. *See supra* note 19 and accompanying text.

60. There will likely be many instances where all or most of the risk results from synergistic interaction. *See* Kruskal, *supra* note 34, at 430.

61. *See* Gershonowitz, *Comparative Causation, supra* note 7, at 508-14; Gershonowitz, *Products Liability, supra* note 7, at 729-32. Gershonowitz would couple this approach with a consideration of each cause's relative contribution to the risk of injury. *See* Gershonowitz, *Comparative Causation, supra* note 7, at 511; Gershonowitz, *Products Liability, supra* note 7, at 730.

62. *See* Gershonowitz, *Products Liability, supra* note 7, at 729-30.

63. 548 S.W.2d 344 (Tex. 1977). For Gershonowitz's discussion of this case, see Gershonowitz, *Products Liability, supra* note 7, at 727, 730.

64. Gershonowitz's analysis rests on the assertion that the plaintiff replaced the car-

the job. The defendant argued that Hopkins had altered its design in eleven ways, constituting unforeseeable misuse, and the jury found that the misuse was also a cause of the accident. The Texas Supreme Court stated that if a product defect and unforeseeable consumer misuse are both proximate causes of an accident, the factfinder must determine "the respective percentages (totalling 100 percent) by which these two concurring causes contributed to bring about the event."[65]

Under Gershonowitz's approach, the defect was the more important cause because " 'but for' the defect Mr. Hopkins would not have removed the carburetor."[66] Gershonowitz has not made the case for ascribing causal importance in this manner. He has overstated the responsibility that cause A must bear for cause B when A is a cause of B. His method is also subject to numerous counterexamples.

In Gershonowitz's description of *Hopkins*, the defective carburetor (cause A) is a contingently necessary, but not sufficient, cause of Hopkins' misuse (cause B).[67] Indeed, if it were the sole cause, we would absolve Hopkins of any legal responsibility on the grounds that the butchering of the carburetor was compelled and therefore not his act.[68] Instead, we know that Hopkins also contributed to the mangling of the carburetor. He did so by failing to recognize that the task required the expertise and skill of an automobile mechanic, carelessly using improper materials, failing to make necessary connections or to make them properly, and installing components backwards and otherwise incorrectly. Both the product defect and Hopkins' carelessness were but-for causes of the product misuse and, without knowing more about the events, there is no clear reason to attribute greater causal responsibility to General Mo-

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buretor because of the first episode of sudden acceleration. In his discussion of *Hopkins*, Professor Twerski states that: "The reason for the replacement apparently had nothing to do with the [first] [i]ncident but rather stemmed from Hopkins' desire to increase the speed and efficiency of the truck." Twerski, *Many Faces, supra* note 7, at 408. His description of events follows that of the intermediate appellate court. *See* General Motors Corp. v. Hopkins, 535 S.W.2d 880, 886 (Tex. Civ. App. 1976), *aff'd*, 548 S.W.2d 344 (Tex. 1977).

65. *Hopkins*, 548 S.W.2d at 352. For other reasons, the court affirmed the judgments below in favor of plaintiff. *See id.*

66. Gershonowitz, *Products Liability, supra* note 7, at 730.

67. A contingently necessary cause is necessary under the particular circumstances for the production of a particular effect, although the same effect could occur in its absence under other circumstances.

68. Of course, General Motors' marketing of its pick-up truck with a defective carburetor cannot be the sole cause of the misuse (and of the accident). The misuse resulted from the conjunction of numerous causes, including Hopkins' existence, his purchase of the pick-up truck, the invention of the internal combustion engine, etc. But I am assuming that we have agreed upon some method for distinguishing between causes and conditions in tort law. My point is that, having identified the carburetor and the misuse as the legally relevant causal candidates, we would relieve Hopkins of any responsibility for that misuse if his only causal contributions to it were on the level of his existence and his performing tasks that were completely compelled by the defendant's acts. His responsibility would be akin to that of a sleeping defendant whose causal contribution to an assault was that another defendant heaved his body onto the plaintiff.

tors than to Hopkins. The locus of the causal comparison partly shifts from the causes of C to the causes of B and C, but that alone does not solve the question of relative causal importance.

Further, notwithstanding Gershonowitz's protestations to the contrary,[69] his approach unduly emphasizes chronological priority in weighting causes. While A will not necessarily be a cause of B just because it occurred first, later-in-time causes can never cause their predecessors and, therefore, can never be more important causes under this test of importance. Yet, if the interaction of A and B are necessary for the occurrence of C, it is hardly obvious that an accident of chronology should determine causal ranking. One might as sensibly say that B (the temporally later cause) is more important than A because it completes A, which would otherwise simply be "negligence in the air."[70]

Also, Gershonowitz's interpretation of more important cause cannot deal with numerous counterexamples. For example, the Treaty of Versailles ending World War I, which stoked German despair and resentment while leaving a power vacuum in Europe for Germany to fill, was a but-for cause of Hitler's rise to power and aggressive foreign policy. Yet few historians would argue that the resolution of World War I and the international unbalance left in its wake were more important causes of World War II than was Hitler.[71]

We encounter similar interactions among causes in tort cases involving intervening causes where the first cause occasioned the second's occurrence. For example, in *Hines v. Garrett*,[72] the defendant railroad negligently let the plaintiff off a mile beyond her stop, even though she would have to walk through an area notorious for criminal activity near nightfall, and two men subsequently raped her as she made her way home. In *Brower v. New York Central & Hudson River Railroad*,[73] the defendant's train collided with the plaintiff's wagon, rendering the plaintiff too stunned to protect his cargo from thieves. And in *Watson v. Kentucky & Indiana Bridge & Railroad*,[74] the defendant negligently caused a tank car full of gasoline to derail and spill its contents. Subsequently, Duerr, a

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69. *See* Gershonowitz, *Comparative Causation*, *supra* note 7, at 512.

70. Palsgraf v. Long Island R.R., 248 N.Y. 339, 341, 162 N.E. 99, 99 (1928) (quoting F. Pollock, The Law of Torts 455 (11th ed.)).

71. Few, but not none. *See* A.J.P. Taylor, The Origins of the Second World War (1961). *But see* H. Hughes, Contemporary Europe: A History 295 (3d ed. 1971) ("Contrary to the First World War, whose origins were extremely complex and responsibility for which was spread among a number of nations, the Second World War was the work of one man, Adolf Hitler.").

72. 131 Va. 125, 108 S.E. 690 (1921); *cf.* Central of Ga. Ry. Co. v. Price, 106 Ga. 176, 32 S.E. 77 (1898) (taken beyond her station and brought by defendant to a hotel to spend the night, plaintiff was injured when kerosene lamp in her room exploded).

73. 91 N.J.L. 190, 103 A. 166 (1918); *cf.* Duce v. Rourke, 1 WWR 305 (NS) (Alta., Can. 1951) (posing similar problem to *Brower* and reaching opposite result).

74. 137 Ky. 619, 126 S.W. 146 (1910); *cf.* Stone v. Boston & Albany R.R. Co., 171 Mass. 536, 51 N.E. 1 (1898) (defendant's negligently oil-soaked platform set ablaze when third party lit his pipe and carelessly threw match toward the platform).

third party standing a block away from the tank car, lit a match—either, according to conflicting testimony, to light a cigar or purposely to ignite the gasoline—and caused an explosion that injured the plaintiff.

These cases do not raise the causal apportionment issue, although in their determinations of whether or not defendant's act was a proximate or a remote cause of the harm they do touch upon assessments of causal importance. If we were to bring the rapists, the thieves, and Duerr into the room with the defendants and ask the causal apportionment question, however, we would certainly select them as more important causes of the harms than the defendants in these three cases, even though the defendants occasioned their harmful conduct.[75]

One might explain these counterexamples as instances where we override our usual principles of causal weighting because the second actor intends the resulting harm, or is in some other sense a worse actor than the first. Certainly that explanation fits each of these cases. If so, we have already identified a qualification to Gershonowitz's interpretation of most important cause.

Many other counterexamples, however, cannot be explained away so simply in terms of the different treatment of intentional and merely negligent acts. Often our causal intuition has been to assign greater importance to the later-in-time cause, to designate it as proximate and its predecessor as remote, even though the two cannot be distinguished on some scale of wrongfulness. An example is *Stone v. Boston & Albany Railroad*,[76] a case resembling *Watson* without the insinuation of intentional wrongdoing by the intervening actor, Casserly. The court held that Casserly's careless act of dropping a lit match on the defendant's oil-saturated platform had made the defendant's conduct a remote cause of the plaintiff's injury. While few courts today would decide *Stone* the way the Massachusetts Supreme Court did in 1898, the decision reflected a conventional application of the "last wrongdoer" rule, which treated later-in-time causes as more important than prior occasioning causes.[77]

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75. The one close case would be *Watson*, but not because of the temporal priority of the defendant's actions. One reason that *Watson* presents a close case is our likely judgment that there was a substantial chance that if Duerr had not lit his match someone or something else would have provided the necessary spark. In other words, if Duerr's contribution was easily replaceable, we could say that the defendant was a more important cause. For a discussion of this concept of causal importance, see *infra* notes 146-49 and accompanying text.

The *Watson* court focused on whether or not Duerr's act "was malicious, and done for the purpose of causing the explosion." 137 Ky. at 633, 126 S.W. at 151. *But see Stone*, 171 Mass. at 542, 51 N.E. at 4 (finding defendant's maintenance of oil-soaked platform a remote cause of harm when fire was started by the unintentional carelessness of a third party). In this sense of causal importance Duerr's intent, not the physical character of the act, which is the same regardless of his intent, determines the importance of his act relative to the derailment. For a discussion of this meaning of more important cause, see *infra* notes 138-51 and accompanying text.

76. 171 Mass. 536, 51 N.E. 1 (1898).

77. Notably, the plaintiff unsuccessfully argued that the defendant's negligence was

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Although the last wrongdoer rule fell into disrepute and twentieth century commentators questioned its causal basis, nineteenth century lawyers understood it as an expression of causal weighting.[78]

The "last clear chance" rule, which negates the bar to recovery that would result from the plaintiff's contributory negligence if the defendant had the last clear chance to avoid the harm, similarly reflects an intuition about causal importance that contradicts Gershonowitz's interpretation. Like the related last wrongdoer rule, last clear chance has been fiercely criticized by modern scholars, who have also challenged the causal underpinnings of the rule.[79] Yet the late nineteenth century treatise writers who named and articulated the rule clearly understood it as a rule of causal weighting that assigned greater importance to last-in-time causes.[80]

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concurrent with that of Casserly in an effort to avoid application of the last wrongdoer rule. *See id.* at 543-44, 51 N.E. at 4.

78. *See* F. Wharton, A Treatise on the Law of Negligence §§ 134-55 (1874). Wharton wrote that: "[T]he spontaneous action of an independent will . . . cannot be said to have been caused by us . . . . [S]o far as concerns my fellow-beings, their acts cannot be said to have been *caused* by me, unless they are imbecile, or act under compulsion, or under circumstances produced by me which give them no opportunity for volition." *Id.* § 138 (emphasis in original). Thus, in his search for "the" cause of a tortious harm, Wharton made the categorical judgment that except in a few specified categories of cases the most important cause of a later-in-time cause of a harm was the person whose action constituted that cause and not some prior occasioning cause. In other words, he assumed that if A and B jointly caused C and A also was a necessary condition for the occurrence of B, the cause of B was nevertheless the person whose conduct we describe as B. He further assumed that the last wrongful act, B, was the cause of the harm in question. He wrote that the first wrongdoer should not be liable to third parties for "negligence which [the second wrongdoer] alone was *the cause* of making operative." *Id.* § 134 (emphasis added).

That Wharton's categorical judgments of causal importance were freighted with concerns about protecting "m[e]n of means" from indefinite liability does not diminish the potency of the last wrongdoer rule as a counterexample, albeit one with little extant doctrinal weight. *Id.* § 139. Wharton certainly was influenced by classical liberal notions of individual responsibility, and one cannot gainsay that he feared that an expansive understanding of causation would lead to the plunder of capital. *See id.* §§ 139, 155. Whatever the contribution of Wharton's world view and politics to his understanding of the last wrongdoer rule, he understood the rule as a principle of causation, not as a policy choice, although he also perceived policy benefits in the rule.

For twentieth century criticism of the rule, see 4 Harper, James & Gray, *supra* note 21, § 20.6, at 176-80; Eldredge, *Culpable Intervention as Superseding Cause,* 86 U. Pa. L. Rev. 121, 124-25 (1937).

79. *See, e.g.,* 4 Harper, James & Gray, *supra* note 21, at § 22.14; Prosser & Keeton, *supra* note 21, at 462-64, 468 (stating that "[n]o very satisfactory reason for the rule ever has been suggested"); G. Williams, Joint Torts and Contributory Negligence: A Study of Concurrent Fault 236-55 (1951) (criticizing judges' application of last-opportunity rule on ground that the doctrine does not rest on law of causation or remoteness of damage).

80. For example, in an unsigned review of the Shearman and Redfield treatise, William Wills explained the rule in terms of proximate causation principles, stating that "the law . . . holds that person liable who was *in the main* the cause of the injury." Book Review, 5 L.Q. Rev. 85, 87 (1889) (emphasis in original), *quoted in* G. White, *supra* note 2, at 47. In the fifth edition of their treatise, Shearman and Redfield explained the doctrine by stating that the person with the last clear opportunity to avoid the accident "is the sole proximate cause of the injury." 1 T. Shearman & A. Redfield, A Treatise on the

The point is not that we ought to substitute a last wrongdoer rule for Gershonowitz's *de facto* first wrongdoer rule.[81] It is, instead, that the case has not been made on purely causal grounds for assigning greater causal weight categorically either to occasioning causes or to later-in-time causes that actualize the risk inherent in the circumstances created by the earlier ones. The choice must rest on normative extracausal notions of causal importance.

D. *Judgments of Indispensability*

Raymond Martin describes two other, related, interpretations of "more important cause" in his work on causal weighting.[82] The first of these involves judgments of indispensability or recognition of substitutes. It applies to some cases of causal overdetermination. Specifically, it applies where A and B were both insufficient causes of C and B was either duplicative of D, which was also present and active and could have done the work of B in its absence, or preempted the occurrence of D, which was waiting in the wings to act and could have accomplished the same effect as B.

Martin gives the following analysis of relative causal importance, which he labels "(D1)":

(D1)   *A* was a more important cause of *P* relative to $\emptyset$ than was *B* if

    (1)   *A* and *B* were each a cause of *P* relative to $\emptyset$, and

    (2)   *A* was necessary for *P,* and

    (3)   *B* was not necessary for *P*.[83]

Martin's analysis requires some explication, and we need to define his terms. His terms *A, B,* and *P* are "placeholders for expressions of the form 'the fact that *p,*' where *p* is replaced by a full sentence in the indica-

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Law of Negligence 154-55 (5th ed. 1898), *quoted in* G. White, *supra* note 2, at 47. Similarly, Lord Denman explained the basis for the rule in causal terms in his dissenting opinion in Radley v. London & N.W. Ry., 10 L.R.-Ex. 100, 108-09 (1875), *quoted in* G. Williams, *supra* note 81, at 236. This justification for the rule soon provoked criticism. *See generally* Schofield, Davies v. Mann: *Theory of Contributory Negligence,* 3 Harv. L. Rev. 263 (1889) (rejecting understanding of the rule grounded in terms of proximate causation and explaining it instead in terms of public policy of creating proper incentives for care). For discussions of the history of the last clear chance rule and its origins in causal concepts, see generally 4 Harper, James & Gray, *supra* note 21, at § 22.12; G. White, *supra* note 2, at 45-50. As Professors Harper, James and Gray point out, the concept of contributory negligence also seems to have originally been grounded in similar causal notions. *See* 4 Harper, James & Gray, *supra* note 21, at § 22.1.

    81. In its treatment of the proximate cause questions raised by such cases as *Watson* and *Stone,* the Second Restatement of Torts embraces neither a categorical last wrongdoer nor first wrongdoer rule. *See* Restatement (Second) of Torts §§ 447-49, 452 (1965).

    82. *See* R. Martin, The Past Within Us, *supra* note 29, at 53-84; Martin, *Causes, Conditions and Causal Importance,* 21 Hist. & Theory 53, 53 (1982); Martin, *On Weighting Causes, supra* note 22, at 291. For discussions of Martin and elaborations of his interpretations of causal importance, see Hammond, *supra* note 31; Pork, *Assessing Relative Causal Importance in History,* 24 Hist. & Theory 62, 63-65 (1985).

    83. R. Martin, The Past Within Us, *supra* note 29, at 77.

tive mood."[84] To take the example of our law student James,[85] we could use (D1) to describe his situation as follows: The fact that James' love life has improved (*A*) is a more important cause of the fact that James is happier today (*P*), than is the fact that he earned an A on his torts exam (*B*).

But what of the term $\emptyset$? Martin inserts it as a placeholder for a statement expressing a "comparison-situation."[86] The comparison situation is a situation resembling in most respects the one in which the event that is to be explained (Martin's *P*) occurred, but in which *P* has not occurred. It is a device through which we distinguish between mere conditions, which exist under both situations, and causes, which are absent from the comparison situation.[87] We can make various comparisons to the situation in which *P* has occurred. Probably the most common such comparison that we make is a comparison of the state of affairs before and after the occurrence of our suspected cause.[88] In the example above, the comparison situation is James' state of mind a week earlier, and adding the term we might say: James is happier today than he was a week ago, partly because he earned an A on his torts exam, but more because his love life has improved.

Martin's notion of the comparison situation as a screen to separate causes from conditions closely resembles H.L.A. Hart and Tony Honoré's abnormalist account of the cause/condition distinction.[89] Like

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84. *Id.*

85. *See supra* text accompanying note 29.

86. R. Martin, The Past Within Us, *supra* note 29, at 77.

87. For a discussion of the distinction between causes and conditions, see *infra* note 89 and accompanying text.

88. Martin's comparison situation resembles J.L. Mackie's "control case" or "negative instance." J.L. Mackie, The Cement of the Universe, *supra* note 27, at 56. Mackie writes of the method of before-after comparison:

> In an otherwise apparently static situation, one striking change (*X*) occurs, followed shortly afterwards by another (*Y*). The situation before *X* occurred, when equally *Y* did not occur, provides the control case or negative instance, while the later situation, in which both *X* and *Y* occurred, provides the experimental case or positive instance. And in a quite primitive and unsophisticated way we can transfer the nonoccurrence of *Y* from the before situation to a *supposed* later situation in which, similarly, *X* did not occur, and form the thought which is expressed by the statement 'If *X* had not occurred, *Y* would not have occurred', or, in other words, '*X* was necessary in the circumstances for *Y*'.

Id. (emphasis in original).

89. *See* H.L.A. Hart & T. Honoré, *supra* note 11, at 33-41. Martin credits several philosophers in addition to Hart and Honoré, with this "consensus account" of the cause/condition distinction: C.J. Ducasse, J. Feinberg, S. Gorovitz, M. Scriven, R. Shope, and M. White. R. Martin, The Past Within Us, *supra* note 29, at 59. To Martin's list we can add J.L. Mackie. *See* J.L. Mackie, The Cement of the Universe, *supra* note 27, at 118-20.

Hart and Honoré include an alternative screen in their discussion of causes and conditions: "voluntary action intended to bring about what in fact has occurred." H.L.A. Hart & T. Honoré, *supra* note 11, at 41. For an analysis criticizing Hart and Honoré's treatment of the cause/condition distinction for failing to assimilate strict liability torts to causal analysis and for importing noncausal normative analysis of the tortious conduct

Hart and Honoré, Martin recognizes that the identification of a condition as abnormal, and hence its selection as a cause, is context dependent. Different conditions may be abnormal depending on the choice of comparison situation. Thus we may identify different causes of his current happiness if we compare James' state of mind with Jenny's or with James' state of mind a year or a decade ago.[90] In tort law our choice of comparison situation is norm dependent.

As an example of (D1), we can imagine a forty-member faculty voting on some matter at a faculty meeting. Professors X and Y vote in favor of the proposal, which receives exactly the twenty-one votes necessary for approval. Professor Z, who always votes converse to Professor Y, votes against the proposal.[91] He would have voted for it had Professor Y voted against it, but a change in Professor X's vote would not have influenced Professor Z's vote. Under this scenario we can say that Professor X's vote for the proposal (A) was necessary for approval of the measure (P), but that Professor Y's vote (B) was not. Therefore, A meets Martin's criteria under (D1) for being a more important cause of P than is B.[92]

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and proximate cause aspects of a tort action into the causal inquiry, see Wright, *Causation, supra* note 18, at 1745-50; *see also* W. Dray, Philosophy of History 55-58 (1964) [hereinafter W. Dray, Philosophy] (similarly identifying normative character of Hart and Honoré's approach); Dray, *Causal Judgment in Attributive and Explanatory Contexts,* 49 Law & Contemp. Probs., Summer 1986, at 13 (same).

90. *See* R. Martin, The Past Within Us, *supra* note 29, at 60. Hart and Honoré make this point with their example of the man with a stomach ulcer who experiences a bout of indigestion. The man's wife may blame his indigestion on his having eaten parsnips, while his doctor would blame his stomach condition and relegate the parsnips to the status of mere triggering cause. They attribute the difference to the wife's and doctor's different formulations of the causal question. They write:

> When things go wrong and we then ask for the cause, we ask this on the assumption that the environment persists unchanged, and something has 'made the difference' between what normally happens in it and what has happened in it on this occasion. So the wife . . . in asking what has given [her husband] indigestion is in fact asking: 'What has given this man in his condition indigestion when usually he gets by without it?' The doctor who gives the man's ulcerated condition as the cause approaches the case with a wider outlook and a different set of assumptions; . . . . His question . . . is: 'What gave *this* man indigestion when other men do not get it?'; for him what the man ate . . . is a mere occasion-part of the normal conditions of most men's lives . . . .
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> . . . Thus, it is natural and correct, according to the context, to speak of the eating of the parsnips, the ulcerated condition of the man's stomach, and his failure to take a prescribed drug as the cause of his indigestion on a given occasion.

H.L.A. Hart & T. Honoré, *supra* note 11, at 36-37 (emphasis in original). For similar statements of "the relativity of causes," see R.G. Collingwood, An Essay on Metaphysics 304-06 (1940); Malone, *supra* note 18, at 62-63.

91. This example is a variant of one used by Martin. *See* R. Martin, The Past Within Us, *supra* note 29, at 77-78. He uses senators in his illustration. I have changed the setting to a faculty meeting in the interest of believability.

92. Strictly speaking, neither Professor X's nor Y's vote was necessary for the proposal to pass. Some faculty opponents of the proposal could have changed their minds and votes. Depending on the faculty's by-laws passage might have required more yeas than nays, but not an absolute majority of the full faculty, in which case the proposal might have gained approval by the abstention or absence of some opponents. Martin states that

We still need to modify (D1) slightly. First, *A* and *B* will only matter for causal apportionment purposes if they describe "tortious conduct" (broadly defined to include the plaintiff's fault). The question of apportionment does not arise until we have identified two or more legally responsible actors under the normal tort rules defining the plaintiff's *prima facie* case and the defendant's defenses.[93] Second, we need not know with certainty that *A* was contingently necessary and that *B* was not. As elsewhere in the tort action, we will only require proof by a preponderance of the evidence.

We can see an illustration of Martin's (D1) in a legal context in a variation of a hypothetical first described by Leon Green.[94] Imagine that a driver, *B*, runs into the plaintiff, *A*, without trying to use his brakes. *B* was also driving too fast to stop. The brakes could not have stopped the car under those circumstances anyway, since unbeknownst to *B*, they were defective. *C*, who knew of the defect, had sold the car to *B* without telling him of the defect. To convert the hypothetical into an example of Martin's (D1) we need only make *A* a pedestrian who was carelessly dashing across the intersection against the light when *B* hit him. We can then say that *A*'s careless conduct was a necessary cause under the circumstances of his injury, but that *B*'s negligent acts, though causes of the accident, were not necessary under the circumstances, since the accident would still have occurred in their absence due to *C*'s tortious conduct. Thus, under Martin's interpretation of "more important cause" expressed by (D1), *A*'s contributorily negligent act was a more important cause of the accident than was *B*'s speeding and failure to brake. My examples of (D1) are, however, necessarily contrived. Although real cases that fit this analysis undoubtedly do arise, it is hard to imagine that (D1) would resolve many real cases.

E. *Judgments of Comparative Counterfactual Similarity*

Because the universe of instances of (D1) is likely to be small,[95] Martin

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in speaking of causal necessity he intends the historian's concept of contingent necessity or "necess[ity] under the circumstances." R. Martin, The Past Within Us, *supra* note 29, at 77; *see also* W. Dray, Laws and Explanation in History 103-04 (1957) [hereinafter W. Dray, Laws and Explanation] (historian's question is not whether a cause "was a *generally* necessary one for the events of the type to be explained," but rather whether it was necessary to cause this event "in a determinate situation") (emphasis in original); Marc-Wogau, *On Historical Explanation,* 28 Theoria 213, 226 (1962) (historical explanation identifies "necessary condition[s] *post factum*").

93. *See* Wright, *Causation, supra* note 18, at 1741-58 (describing "tortious-conduct" determination as a prerequisite for liability and as a screen for causal candidates). *But see* Robinson, *Multiple Causation, supra* note 32, at 760 n.149, 761-64 (arguing that apportionment must take account of nontortious environmental causes).

94. *See* Green, *The Causal Relation Issue in Negligence Law,* 60 Mich. L. Rev. 543, 569 n. 77 (1962). Green, in turn, credits the hypothetical to E. Wayne Thode.

95. Martin sees it as a description of most important cause that has limited use for historians. *See* R. Martin, The Past Within Us, *supra* note 29, at 78.

offers a second interpretation of most important cause, which he describes as follows:

(D2)   *A* was a more important cause of *P* relative to ∅ than was *B* if
   (1)   *A* and *B* were each a cause of *P* relative to ∅, and
   (2)   either *A* was necessary for *P* or *B* was not necessary for *P*, and
   (3)   had *B* not occurred, something would have occurred which more closely approximates *P* than had *A* not occurred.[96]

The interpretation of Martin's terms remains the same as in (D1), and our modifications of (D1) also apply to (D2).[97]

Analysis (D2)'s greater power as a means of ascribing causal weight comes from its inquiry into counterfactual possibilities—imaginative alternatives to the actual course of events—and the judgments of comparative similarity that it requires. The concept of comparative similarity unmoors the analysis of relative causal importance from a dichotomous approach toward outcomes in which either the actual harm occurs or none does.[98] It enables the analysis to accommodate a range of counterfactual alternatives in measuring the difference that each cause made.

The pitfalls and terrors of Analysis (D2) also stem from its reliance on counterfactual inquiry and comparative similarity judgments. Counterfactuals are notoriously difficult and perplexing because we cannot verify or falsify our counterfactual assertions.[99] We cannot test them by undoing the past and rolling the tape over again. As shown below, comparisons of relative similarity are also difficult and ambiguous.[100] Yet the difficulties of the analysis are not insurmountable.

I propose to offer only an abbreviated defense of counterfactual inquiry and discussion of how we might evaluate competing counterfactual claims.[101] First, one should not assume that we could avoid the problem

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96. *Id.*

97. Here, as there, the usual rules for tort liability apply and modify the analysis. Tortious conduct is a prerequisite for a share of liability, and our conclusions must be sustained by a preponderance of the evidence. *See supra* note 93 and accompanying text.

98. For a criticism of this dichotomous approach, see *supra* note 48 and accompanying text.

99. *See, e.g.,* N. Goodman, Fact, Fiction, and Forecast 4 (4th ed. 1983) [hereinafter N. Goodman, Fact, Fiction] ("a counterfactual by its nature can never be subjected to any direct empirical test by realizing its antecedent"); Redlich, *"New" and Traditional Approaches to Economic History and Their Interdependence,* 25 J. Econ. Hist. 480, 484 (1965) (counterfactuals "are neither verifiable nor falsifiable").

100. *See infra* notes 127-30 and accompanying text.

101. I have discussed these issues more completely in Strassfeld, *If . . .: Counterfactuals in the Law,* 60 Geo. Wash. L. Rev. 339 (1992). My understanding of counterfactuals draws heavily on J.L. Mackie's analysis of conditionals, including counterfactual conditionals. *See* J.L. Mackie, The Cement of the Universe, *supra* note 27, at 29-58; J.L. Mackie, Truth, Probability and Paradox: Studies in Philosophical Logic 64-117 (1973) [hereinafter J.L. Mackie, Truth]; Mackie, *Causes and Conditions, supra* note 27. For a

of counterfactuals if only we banished Analysis (D2). Steps (2) and (3) of Analysis (D1) also involve counterfactuals, as does any understanding of causation that is grounded in a concept of causal necessity, since ascription of causal status to event *A* implies the counterfactual that but for *A*, events would have turned out differently.[102]

How, then, do we decide what would have occurred absent *A* or *B*? Philosophers have offered various accounts of counterfactuals.[103] Of these, the analysis that most nearly conforms to the law's use of counterfactuals is J.L. Mackie's condensed argument or suppositional account.[104] Mackie argues that a counterfactual introduces a supposition[105] and then asserts something within the scope of the supposition.[106] Assertible counterfactuals rest on generalizations that we have confidence are extendible to unrealized cases.[107] They rely on "good inductive evidence" that permits our inference drawing from the known onto unrealized events.[108]

The kinds of evidence that will support the counterfactual statements that are necessary for Analysis (D2) will vary with the facts of specific cases. The possibilities include scientific laws, statistical, historical, sociological, or psychological generalizations, and knowledge of an individual's dispositions and temperament, but a discussion of the kinds of evidence and arguments that will support legal counterfactuals generally is beyond the scope of this Article.[109] Instead, I wish to focus on the question: evidence of what? The answer, I think, is that Analysis (D2)

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different approach to counterfactuals in the law that draws on the work of David Lewis, see L. Katz, Bad Acts and Guilty Minds: Conundrums of the Criminal Law 223-36 (1987).

102. *See* R. Martin, The Past Within Us, *supra* note 29, at 78-79; *cf.* W. Dray, Laws and Explanations, *supra* note 92, at 104 (historical explanation requires " 'think[ing] away' the suggested cause in order to *judge* what difference its non-occurrence would have made") (emphasis in original); Flew, *History: Fact and Contrary-to-Fact,* 56 Phil. 578, 578-79 (1981) ("The inescapable consequence is that every historian who wants to say anything at all about what was or was not the cause or part cause of what . . . cannot but make assertions which carry contrary-to-fact implications.").

103. The philosophical literature on counterfactuals, and on conditionals more generally, is extensive. For two differing approaches that also contain critical surveys of the literature, see D. Lewis, Counterfactuals (1973) [hereinafter D. Lewis, Counterfactuals] (especially Chapter 3); J.L. Mackie, *Truth, supra* note 101, at 64-117. For a somewhat dated, but helpful, survey, see Walters, *Contrary-to-Fact Conditionals,* in 2 Encyclopedia of Philosophy 212 (1967).

104. *See* J.L. Mackie, The Cement of the Universe, *supra* note 27, at 53-56, 199-203; J.L. Mackie, Truth, *supra* note 101, at 92-119.

105. For example, I struck the match.

106. For example, the match lit. Translated to everyday language our counterfactual statement would be: If I had struck the match, it would have lit.

107. To borrow an example from Nelson Goodman: "If that piece of butter had been heated to 150 degrees F., it would have melted." N. Goodman, Fact, Fiction, *supra* note 99, at 4.

108. J.L. Mackie, Truth, *supra* note 101, at 118.

109. I discuss the kinds of evidence that legal factfinders might draw upon to frame and evaluate counterfactuals in Strassfeld, *supra* note 101, at 407-15.

requires evidence regarding either the divisibility of the harm suffered, or the availability of substitutes for one or more causes.

In the simplest instances of divisible harm we have no need for Analysis (D2). If ballistics tests tell us that Jones' bullet struck the plaintiff's left ankle and Brown's bullet struck his right arm (and if the two injuries do not cause additional synergistic harms), we simply assign the costs of the distinct injuries to their respective causes. Similarly, where the causes are fungible and the harm is cumulative, we can apportion liability on the basis of the relative amount of force, pollution, or whatever contributed by each cause. For example, if Acme Chemical dumped 200 gallons of magnesium sludge in a cave where Toxcorp dumped 800 gallons of the same grade of magnesium sludge, we should assign 80% of cleanup costs to Toxcorp and the rest to Acme.[110]

In other instances, however, consequences are not so distinct or precisely apportionable, and divisibility is not so immediately apparent. Recall our law student, James. We say that the happy turn of events in his love life is a more important cause of his current happiness than is his A in torts. In other words, his improved love life produced a greater quantum of his overall happiness than did his torts grade. His happiness is a single intangible thing, a state of mind. We cannot identify that portion of it that is attributable to each cause, as we can distinguish the ankle wound from the arm wound in the shooters example above. Nor is it the product of two causes that are fungible in all respects except amount. Yet, a highly plausible example of (D2) is: the change in James' love life was a more important cause of his current happiness than was his torts grade, since had James not earned an A on his torts exam, his mood would more closely approximate his current level of happiness than it would had his love life not improved.[111] We can assert this confidently not because we can point to the portions of his happiness assignable to each cause, or because we have some quantified sense of each cause's potency, but because our self-knowledge and knowledge about others tells us that it is so. We know this because we have learned to recognize the sparkle in the eye, the lilt in the step, and the dreamy vacant look that accompany the first rush of love, but so seldom follow a final grade of A in a course.

The second sort of evidence relevant to Analysis (D2) is evidence of available near substitutes for one of the causes. We have seen an illustration of this in the faculty vote example in the discussion of Analysis (D1). There we said that Professor X's vote in favor of a proposal was a more

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110. This example assumes either that there are no economies of scale or diminishing returns in the cleanup of additional units of magnesium sludge, or, more realistically, that those savings or costs will be apportioned according to our 80/20 formula as part of the overall cost.

111. This works for weighting the causes of harms as well as the causes of benefits. Consider: Fred is more unhappy today than he was a week ago, partly because he earned a C- on his torts exam, but more because he discovered that his wife was having an affair with their neighbor.

important cause of its adoption than was Professor Y's vote, since there was no substitute for Professor X's vote, but Professor Z would have cast the vote necessary for the proposal's adoption had Professor Y opposed it.

To identify A and B as causes of P is to say that A and B are each necessary but insufficient members of a set of factors $(A, B, . . .)$ that was sufficient to cause P.[112] Usually, however, there will be more than one set of factors capable of producing the event P and even more sets of factors capable of producing events that bear some resemblance to P. Under Analysis (D2), A is a more important cause than B either if under the circumstances the set $(A, \overline{B}, . . .)$ is more likely to produce P than the set $(B, \overline{A}, . . .)$, or if the set containing A is likely to produce an effect, P_1, that more closely approximates P than does P_2, the effect produced by the set containing B.[113] Thus, this analysis of more important cause considers how much of a difference A and B made in light of available substitutes for one or both causes to accomplish P or something partly resembling it.

A familiar example of this sort of causal weighting is the distinction that historians draw between underlying or fundamental causes and triggering causes. When an historian says, for example, that the assassination of Archduke Ferdinand at Sarajevo was not the "real" cause of World War I, or that the shooting of demonstrators on the streets of Paris was merely the triggering cause of the 1848 French Revolution, she is saying that something very like these events would have occurred without these immediate causes, and that other underlying causes were more important.[114]

Stone v. Boston & Albany Railroad,[115] in which the defendant's maintenance of an oil-saturated platform at its railroad depot was deemed to be a remote cause of a fire because of the intervening act of Casserly, who lit his pipe and dropped the match on the platform, provides an apt illustration of how we could apply Analysis (D2) in a legal context to identify the most important cause of an injury.[116] We can say that the defendant's maintenance of an oil-saturated platform *(A)* was a more important

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112. *See* Martin, *On Weighting Causes, supra* note 22, at 297-98; *see also* Wright, *Causation, supra* note 18, at 1788-91 (describing and defending necessary element of a sufficient set (NESS) test of causation).

113. *Cf.* Martin, *On Weighting Causes, supra* note 22, at 298 (If $(A, \overline{B}, . . .)$ were more likely to cause a P-type result than $(B, A, . . .)$, then A is a more important cause of P than is B.). The analysis presupposes that A is a necessary element of all sufficient sets containing A and B is a necessary element of all sufficient sets containing B. Where A or B belong to a set that is sufficient to cause P without them they are no longer contingently necessary causes of P.

114. *See* P. Gardiner, The Nature of Historical Explanation 103-08 (1961) [hereinafter P. Gardiner, Historical Explanation] (quoting R. Aron, Introduction à la Philosophie de l'Histoire 165); Martin, *On Weighting Causes, supra* note 22, at 298-99.

115. 171 Mass. 536, 51 N.E. 1 (1898).

116. For a discussion of *Stone* as an illustration of the last wrongdoer rule, see *supra* notes 76-78 and accompanying text.

cause of the fire damage to the plaintiff's property *(P)* than was Casserly's discarding of a lit match *(B)* because the odds were greater that what would have occurred absent *B* would have approximated *P* more closely than what would have occurred absent *A*. The likelihood of a substitute for *B* completing the set *(A, . . .)* was high relative to the likelihood that a substitute for *A* would appear to complete the set *(B, . . .)*. The risk of fire created by the oil-soaked platform could have been realized by many potential causes, including lightning, vandals, another person's match or cigarette, sparks from a locomotive, or, perhaps, even a package of fireworks dropped by a passenger leaping to board a train. Absent the conditions created by the defendant, however, it is most likely that Casserly's match would have burned out harmlessly, or that any fire that it caused could have been extinguished easily before it spread to the plaintiff's property.

By focusing on evidence of divisibility or likely substitutes, we have partly rehabilitated Rizzo and Arnold's intuition that causal potency matters. In making judgments about what would have happened absent one or another cause we draw on our knowledge of what generally occurs under similar circumstances. While Rizzo and Arnold do not explain their understanding of risk fully, their notion of the probabilistic marginal product[117] of a cause, A, seems to measure the probability that given a set $(A, \overline{B}, . . .)$ some factor will occur to complete the set and cause harm *P*.

Nevertheless, Analysis (D2) is not simply a looser, less disciplined, nonquantified version of the Rizzo and Arnold analysis. There are three important differences between the two approaches besides Rizzo and Arnold's assumption that relative causal weight can be quantified with sufficient precision, albeit still roughly, to justify their apparatus. First, Analysis (D2) deals with singular causal statements, not with class-wide judgments about risk creation. Our observations and knowledge of psychology will lead us to believe, for instance, that falling in love has a greater happiness-generating potency than does earning an A in a course.[118] Nonetheless, we might credit the analysis that Scott is happier today than he was last week partly because his love life improved, but more because he earned an A on his torts exam. We might believe this particular causal weighting for a number of reasons. Perhaps Scott told us so himself, and we believe that Scott is keenly self-aware of his feelings and their causes, or at least we have no strong reason to doubt him. Alternatively, on the basis of a single prior observation of Scott, his re-

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117. Rizzo and Arnold define a probabilistic marginal product as "the increase in the *probability* of a particular event (e.g., output or harm) brought about by either an additional unit of some input or the addition of an event or an act to a given situation." Rizzo & Arnold, *Causal Apportionment*, supra note 12, at 1406 n.39; *see also* Rizzo & Arnold, *Reply to Critics*, supra note 34, at 220 (offering similar definition).

118. Rizzo and Arnold are careful to state that their probability statements are not derived merely by a count of actual frequencies. *See* Rizzo & Arnold, *Reply to Critics*, supra note 34, at 220 & n.6; Rizzo, *supra* note 34, at 1013 & n.31.

sponse to an A in contracts, we might believe that Scott defies the norm typified by James. Finally, we might know that Scott perceives his father as a larger-than-life figure who withholds his love and approval when his son fails to live up to the near-impossible standards that he had set by his own achievements—his father was first in his law school class and editor-in-chief of the law review. For Scott, earning A's in his courses fulfills a neurotic need to please his father and to compete successfully with him that is greater than Scott's need for a happy love life.

Rizzo attempts to meet the objection that his probabilistic approach is inapplicable to singular causal explanations in an article discussing his "imputation theory of proximate cause."[119] There he argues that singular causal explanations, like probability statements, require a combination of universal generalizations, or general laws, and singular factual statements.[120] He then invokes the covering-law model of explanation, without calling it such, which he refers to as "the canonical form of causal explanation."[121] According to the covering-law model, "the force of any explanation consists in showing that the occurrence of the event to be explained can be deduced and therefore could be predicted from our knowledge of general laws and antecedent conditions."[122]

The defect in this argument is its assumption that the covering-law model indeed states the consensus canonical form of causal explanation. There is no such consensus among philosophers of history that historians ought to adhere to the covering-law model in explaining events in the past.[123] Historians, who actually engage in the trade of explaining the

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119. Rizzo, *supra* note 34, at 1007.

120. *See id.* at 1012-13.

121. *Id.* at 1013 (citing K. Popper, The Logic of Scientific Discovery 60 (1958)).

122. L. Mink, *Philosophical Analysis and Historical Understanding*, in Historical Understanding 118, 120 (B. Fay, E. Golob & R. Vann eds. 1987). Rizzo similarly writes: "Finally, from the conjunction of universal and singular statements we can deduce the particular event." Rizzo, *supra* note 34, at 1013.

123. The classic statement of the covering-law model is Carl G. Hempel's *The Function of General Laws in History*, 39 J. Phil. 36 (1942), *reprinted in* Theories of History 344 (P. Gardiner ed. 1959), although Karl Popper claims to be the model's originator. *See* W. Dray, Philosophy, *supra* note 89, at 1-3. As Raymond Martin notes, the Hempel essay "launched a debate that lasted over thirty years," and that "[d]uring this time philosophy of history became virtually a one-issue field." R. Martin, The Past Within Us, *supra* note 29, at 16. Important participants in the debate include: A. Danto, Analytical Philosophy of History (1965); W. Dray, Philosophy, *supra* note 89; W.B. Gallie, Philosophy and the Historical Understanding (1964); P. Gardiner, Historical Explanation, *supra* note 114; M. Mandelbaum, The Anatomy of Historical Knowledge (1977); M. Murphey, Our Knowledge of the Historical Past (1973); W.H. Walsh, An Introduction to Philosophy of History (3d ed. 1967); M. White, Foundations of Historical Knowledge (1965); Brodbeck, *Explanation, Prediction, and "Imperfect" Knowledge*, in 3 Minnesota Studies in the Philosophy of Science 231 (H. Fiegl & G. Maxwell eds. 1962); Degler, *Do Historians Use Covering Laws?*, in Philosophy and History: A Symposium 205 (S. Hook ed. 1963); Donagan, *Historical Explanation: The Popper-Hempel Theory Reconsidered*, 4 Hist. & Theory 3 (1965); Hempel, *Explanation in Science and in History*, in Frontiers of Science and Philosophy 7 (R. Colodny ed. 1962); L. Mink, *The Autonomy of Historical Understanding*, in Historical Understanding 61 (B. Fay, E. Golob & R. Vann eds. 1987) [hereinafter L. Mink, *Autonomy*]; Nagel, *supra* note 20.

past, have greeted the debate over the covering-law model and the assimilation of historical explanation to scientific explanation with a collective shrug as they continue to write history without reference to the covering-law apparatus. Certainly, we refer to scientific laws and to generalizations of human behavior when we talk about the causes of an event and try to assess their importance, but we neither do so in the manner described by Rizzo nor do we rely on such causal generalizations exclusively. We may draw from a limited range of analogical instances, as we did when we relied on Scott's response to his contracts grade.[124] We will also look less to whether our explanations fulfill the requirements of scientific explanation than to whether they help us to construct a coherent and credible narrative.[125]

Analysis (D2) also differs from the Rizzo and Arnold approach because, like the normal causation inquiry in tort, it is completely *ex post*. In thinking about the counterfactual possibilities had one of the causes not occurred, we must consider causal potency, but we do so with knowledge of how events unfolded. Rizzo and Arnold, on the other hand, calculate their probabilities on the basis of facts existing at the time of the wrong in conjunction with the general laws or theories prevailing at the time of trial.[126] This seems appropriate for the measurement of causal potency at some point in time, but less helpful for unraveling the relative importance of causes for the occurrence of a particular event. Rizzo and Arnold's approach misses those instances where one cause proves to be unexpectedly redundant, for example, where a repair shop's negligence in fixing a car's brakes does not matter because of the driver's excessive speed and failure to attempt to brake.

Finally, as noted above, Rizzo and Arnold conceive of harms as dichotomous. Either the harm in question occurs, or no harm occurs. Martin's analysis, by contrast, allows us to consider what impact short of the actual harm each cause would have had singly. In so doing, it requires us to make comparative similarity judgments.

As if counterfactuals were not difficult enough, similarity is an especially elusive and troublesome concept.[127] Does Los Angeles "more

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124. *Cf.* Pork, *supra* note 82, at 66-67 (drawing on single or limited number of analogous events to justify claims modeled on analysis (D2)).

125. There is a considerable body of literature on historical narrative. A good place to start is L. Mink, *Autonomy, supra* note 123, at 61.

126. *See* Rizzo & Arnold, *Causal Apportionment, supra* note 12, at 1408. In their description of the facts existing at the time, they do consider, however, the high probability of certain subsequent events. *See id.*

127. Nelson Goodman has hardly a good word to say for similarity. He writes:
> Similarity, I submit, is insidious. And if the association here with invidious comparison is itself invidious, so much the better. Similarity, ever ready to solve philosophical problems and overcome obstacles, is a pretender, an impostor, a quack. It has, indeed, its place and its uses, but is more often found where it does not belong, professing powers it does not possess.
> . . . [O]nly recently have I come to realize how often I have encountered this false friend and had to undo his work.

closely approximate" New York City or San Diego?[128] One's answer will depend on the points of resemblance that are deemed to matter. Los Angeles and New York City both have populations numbering in the millions, both have black mayors, and both are centers of finance and the entertainment industry. But if we make climate, history, culture, and ethnic composition the basis of comparison, we would probably conclude that Los Angeles more closely resembles San Diego. The grounds for comparison might be individual and personal: "I met the (momentary) love of my life when I lived in Los Angeles, as I did again when I later lived in San Diego, but in New York I was alone and despondent." Or they may be ineffable, similarity determinations based on the feel or rhythm of the cities, for example.

Similarity judgments, in other words, are contextual. They depend on one's point of view and purpose. An illustration of Nelson Goodman's demonstrates this well:

> [S]uppose we have three glasses, the first two filled with colorless liq-
> uid, the third with a bright red liquid. I might be likely to say the first
> two are more like each other than either is like the third. But it hap-
> pens that the first glass is filled with water and the third with water
> colored by a drop of vegetable dye, while the second is filled with hy-
> drochloric acid—and I am thirsty.[129]

Law gives a context and a purpose to the comparative similarity judg-ments required by Analysis (D2). We are not asked to compare every-thing about our hypothetical A-less or B-less worlds with everything about the actual world. Our inquiry is focused, instead, on a comparison of the harm actually suffered and the harms, if any, that would have been suffered in our imaginatively constructed alternative histories.

Even given a focus by law, comparative similarity judgments will often be vague and imprecise. Often cognizable harms are composites of many separate harms. Thus, our analysis will sometimes involve comparisons of complex pictures in which each hypothetical outcome resembles differ-ent aspects of the actual outcome. In such cases, subjective judgments regarding selection and weighting can lead different decisionmakers to dissimilar similarity judgments.[130] Nevertheless, we can and do make such judgments. Indeed, we must. Even Goodman, while characterizing similarity as "undependable," acknowledges also that it is "indispensable."[131]

How would we go about applying step (3) of Analysis (D2)—"had B

Goodman, *Seven Strictures on Similarity*, in Experience & Theory 19, 19 (L. Foster & J. Swanson eds. 1970) [hereinafter Goodman, *Strictures*].

128. For a similar example, see D. Lewis, Counterfactuals, *supra* note 103, at 92.

129. Goodman, *Strictures, supra* note 127, at 28.

130. *But see* Martin, The Past Within Us, *supra* note 29, at 81 (claiming that determi-nations of closer approximation are based purely on factual considerations).

131. Goodman, *Strictures, supra* note 127, at 27; *see also* D. Lewis, *Counterfactuals and Comparative Possibility* in 2 Philosophical Papers 3, 6 (1986) [hereinafter D. Lewis, *Counterfactuals and Comparative Possibility*].

not occurred, something would have occurred which more closely ap-
proximates P than had A not occurred"?[132] Martin begins with the sim-
plest case, Analysis (D1), which is merely a special case of (D2).[133]
Recall that in the example of the faculty vote, had Professor Y not voted
for the proposal, something would have occurred which more closely ap-
proximates P, passage of the proposal by a bare majority of twenty-one
votes, than had Professor X not voted for the proposal. In fact, virtually
the same thing would have occurred, passage of the proposal by a bare
majority of twenty-one votes, albeit with the support of Professor Z in-
stead of Professor Y. Had Professor X not voted for the proposal, how-
ever, something that less closely approximates P would have occurred,
namely, a vote one short of the majority needed for adoption of the
proposal.

Some comparisons for Analysis (D2) may be quantitative. To borrow
another example from Martin, we might suppose that Professor X con-
trols a block of five votes (she holds four proxies or exerts great influence
among her colleagues), while Professor Y controls only her own vote.[134]
Had either professor not voted for the proposal, it would not have been
adopted. However, we can also say that had Professor Y not voted for
the proposal, something that more closely approximates P would have
occurred—the measure would have received twenty votes—than had
Professor X not voted for the proposal, in which case it would have re-
ceived only sixteen votes. Thus Professor X's vote was a more important
cause of the faculty's adoption of the proposal than was Professor Y's
vote.

Typically, however, we will not be able to resolve our relative similar-
ity comparisons quantitatively. The causal comparison problems that we
are likely to encounter will usually bear a closer resemblance to the prob-
lem of weighting the causes of James' happiness. Such judgments are
doubtless more subjective and vague than simple vote counts. Yet, it is a
subjectivity and vagueness that we can cope with reasonably well. Cer-
tainly lawyers, for whom the business of applying and distinguishing pre-
cedent is part of their stock in trade, should see an old friend, not a
"pretender, an impostor, [or] a quack" in the notion of similarity.[135]
Similarity is ultimately only so vague, and we can often overcome its
imprecision sufficiently to talk intelligibly.[136] David Lewis, who unlike
Goodman is a friend of comparative similarity, reminds us that there are
boundaries to the imprecision of similarity and that "[n]ot anything

132. R. Martin, The Past Within Us, *supra* note 29, at 78.
133. *See id.* at 79.
134. *See id.* at 80. For purposes of this example, Professor Z does not automatically
vote the converse of Professor Y. For a somewhat different treatment, see Martin, *On
Weighting Causes*, *supra* note 22, at 293-94.
135. Goodman, *Strictures*, *supra* note 127, at 19. For a critical discussion of "similar-
ity" in a legal context, see Moore, *Precedent, Induction, and Ethical Generalization* in
Precedent in Law 183 (L. Goldstein ed. 1987).
136. *See* D. Lewis, *Counterfactuals and Comparative Possibility*, *supra* note 131, at 6.

goes."[137]

Martin's Analysis (D2) provides a coherent interpretation of relative causal importance. It appeals to our intuition that a cause's importance is related to the contribution or the difference that it made. Yet, it requires a difficult inquiry into counterfactual possibilities and comparative similarity. Moreover, the subjective judgments of comparative similarity that it requires belie Analysis (D2)'s pretensions of providing a purely factual analysis of causal weight. Finally, it fails to capture another meaning that we sometimes intend when we speak of more important causes: that of greater responsibility.

F. *Judgments of Relative Responsibility or Proximate Cause*

Finally, we might say that the more important of two causes is the one that was more responsible for their effect. Here the term "responsible" means something other than "important" in the factual sense of making the largest contribution or making the biggest difference toward the occurrence of the event. It is instead the statement of a moral and legal conclusion that a particular cause ought to be held more accountable than other causes for the effect.[138] It is an unabashedly normative interpretation of more important cause, and it bears a close kinship to traditional notions of proximate cause.

Like traditional proximate cause analysis, this approach states no precise rule for weighting responsibility, but instead identifies several factors to be considered.[139] And as in traditional proximate cause analysis, the formulations of factors to be weighed and the emphasis to be placed on particular factors will vary and shift depending on who is framing the analysis, on community mores, and on the context of the inquiry. "There is in truth little to guide us other than common sense."[140]

We have come a long way to be told that these judgments are a matter of common sense. Moreover, due to its circularity, such an approach risks relinquishing any critical or evaluative stance regarding the factfinders' performance. If we tell factfinders to apply common sense and community norms in assigning causal weight, then their assignments are at once a response to their charge and data that reveal the norms and sense of the community. How, then, are we to criticize the factfinders' choices? Can we do any better? We can, at any rate, take note of various

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137. D. Lewis, Counterfactuals, *supra* note 103, at 93.

138. *Cf.* C.B. McCullagh, Justifying Historical Descriptions 216-25 (1984) (describing historians' use of similar understanding of most important cause).

139. As Judge Andrews wrote in his *Palsgraf* dissent, "[t]here are no fixed rules to govern our judgment. There are simply matters of which we may take account." Palsgraf v. Long Island R.R., 248 N.Y. 339, 347, 354, 162 N.E. 99, 101, 104 (1928) (Andrews, J., dissenting). Some commentators have attempted to create a precise system of rules to govern proximate cause analysis, but the consensus view is that those attempts all failed. *See* Prosser & Keeton, *supra* note 21, at 279 (focusing especially on the writings of Joseph Beale and Charles Carpenter); G. White, *supra* note 2, at 92-102.

140. *Palsgraf*, 248 N.Y. at 354, 162 N.E. at 104 (Andrews, J., dissenting).

formulations of this multifactor analysis. The Uniform Act instructs the
factfinder to consider both the nature of each party's conduct and the
causal relationship between their conduct and the harm.[141] The com-
ment to Section 2 of the Act, which addresses the method of apportion-
ment, counsels consideration of such matters as: whether the conduct
involved knowing or inadvertent risk-taking; the "magnitude of the risk
created;" the purpose and value of the conduct; "the actor's superior or
inferior capacities, and . . . the particular circumstances;" as well as the
relative remoteness of the conduct from the harm.[142] Richard Wright,
who is a proponent of comparative responsibility, offers a similar list of
factors to which he adds "the objective foreseeability and reasonableness
of the risk, . . . and the policies that underlie the various categories of
tortious behavior."[143]

To these formulations we should add Judge Andrews' classic descrip-
tion of proximate cause analysis in *Palsgraf*:

> There are some hints that may help us. The proximate cause, involved
> as it may be with many other causes, must be, at the least, something
> without which the event would not happen. The court must ask itself
> whether there was a natural and continuous sequence between cause
> and effect. Was the one a substantial factor in producing the other?
> Was there a direct connection between them, without too many inter-
> vening causes? Is the effect of cause on result not too attentuated [sic]?
> Is the cause likely, in the usual judgment of mankind, to produce the
> result? Or by the exercise of prudent foresight could the result be fore-
> seen? Is the result too remote from the cause, and here we consider
> remoteness in time and space.[144]

Unlike the other interpretations of more important cause, this ap-
proach is expressly normative. It evaluates causes and determines their
importance by extracausal criteria. These criteria include value judg-
ments about the merits and demerits of the actors, their conduct, and the
purposes sought thereby, as well as of the adversely affected interest.
More fundamentally, however, our selection of the more accountable
cause may serve any number of ends and reflect a variety of assumptions
about the legitimacy or illegitimacy of different sorts of conduct.[145] For

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141. Unif. Comparative Fault Act § 2(b), 12 U.L.A. 41, 48 (Supp. 1991).
142. *Id.* at 48 comment. Section 2(b) itself states that the factfinder "shall consider
both the nature of the conduct of each party at fault and the extent of the causal relation
between the conduct and the damages claimed." *Id.* § 2(b).
143. Wright, *Allocating Liability, supra* note 19, at 1144.
144. *Palsgraf*, 248 N.Y. at 354, 162 N.E. at 104 (Andrews, J., dissenting).
145. The most notable discussion of the normative character of judgments of causal
responsibility is William Dray's essay on A.J.P. Taylor's revisionist account of the causes
of World War II and the debate that Taylor's book sparked. Dray identifies five causal
paradigms that are used in the debate. *See* W. Dray, Perspectives on History 69-96
(1980) (chapter 4 *A Controversy over Causes: A.J.P. Taylor and the Origins of the Second
World War;* essay originally published as Dray, *Concepts of Causation in A.J.P. Taylor's
Account of the Origins of the Second World War,* 17 Hist. & Theory 149 (1978)) [hereinaf-
ter W. Dray, Perspectives]. According to Dray, historians accord special status to a par-

example, in deciding whether a wrongful intervening act supersedes a prior act of negligence, we might focus on the state of mind of the actor in saying that the deliberate harmdoing by the rapists in *Hines v. Garrett,*[146] or the thieves in *Brower v. New York Central & Hudson River Railroad,*[147] was a more important cause. We might make this causal apportionment either because we believe that the intention to bring about the result is a marker of more important causes,[148] or because we believe that intentional harmdoing is generally riskier, and therefore more unreasonable, than mere negligence.[149] Or we might, instead, focus on our judgments of what behaviors are normal or abnormal under the circumstances and ask whether the criminal acts were so abnormal as to identify them as the most important cause or so expected and foreseeable as to relegate them to the status of mere condition and to designate the failure to anticipate the crimes and safeguard against them as the more important cause.[150] Or, more probably, we might combine several notions of accountability in determining which was the more responsible cause.

We can articulate our paradigms and norms more clearly, but in the end we take a leap of faith and make our judgment of responsibility. The last word in this regard is Judge Andrews' who wrote that our notion of proximate cause is grounded in "convenience," "public policy," and "a rough sense of justice," and that ultimately the issue was a matter of "practical politics."[151]

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ticular cause for any of the following five reasons: (1) because the actor intended the result, *see id.* at 71; (2) because it interfered with the settled state of affairs, or disrupted ongoing processes (it was, in other words, abnormal), *see id.* at 80; (3) because it was active and made things happen, or compelled other people's responses, rather than being a response to others' acts, *see id.* at 82; (4) because it made it possible for things to happen, either by creating an opportunity or by failing to constrain some other actor, *see id.* at 85; or (5) because it made the result inevitable, *see id.* at 88, 92-93. Dray persuasively argues that at least the first four paradigms are "value-impregnated." *Id.* at 94 and *passim.*

Hugh Stretton has also discussed the value-laden nature of this process of selecting certain causes for emphasis out of a lacework of causal candidates. He notes that often one set of causes is identified as most important not merely because of the perceived relationship between the causes and the thing to be explained, but because of the importance the historian places on the other "by-products" of those causes. H. Stretton, The Political Sciences 52-80 (1969).

146. 131 Va. 125, 108 S.E. 690 (1921). This case is described *supra* at text accompanying note 72.

147. 91 N.J.L. 190, 103 A. 166 (1918). This case is described *supra* at text accompanying note 73.

148. For instance, Hart and Honoré observe that "intended consequences can never be too remote." H.L.A. Hart & T. Honoré, *supra* note 11, at 43; *cf.* W. Dray, Perspectives, *supra* note 145, at 71-78 (similarly describing first causal paradigm).

149. I owe this point to Ronald Coffey, Professor of Law, Case Western Reserve University School of Law.

150. *See* H.L.A. Hart & T. Honoré, *supra* note 11, at 33-41; *cf.* W. Dray, Perspectives, *supra* note 145, at 80-81 (abnormalist paradigm of causal importance), 85-86 (more important causes " 'let' . . . things happen," or fail to stop destructive forces).

151. Palsgraf v. Long Island R.R., 248 N.Y. 339, 352, 162 N.E. 99, 103 (1928) (Andrews, J., dissenting).

III.   THE POTENTIAL OF COMPARATIVE CAUSATION

A.   *Where We Are Now*

Currently, the concept of comparative causation is underdeveloped. Many courts discuss the question offhandedly. They note that causal comparison is called for in a particular case, but they fail to articulate their understanding of what the comparison entails. They simply instruct that the damages be apportioned according to the relative causal effects or contributions of the various acts.[152] The notable exceptions are courts in those states which apply all or part of the Uniform Act, but even these courts do little more than quote or paraphrase the language of the Act or its comment on apportionment.[153] The typical pattern jury instructions for comparative causation jurisdictions are similarly unhelpful.[154]

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152. *See, e.g.,* Atwater v. Matanuska Elec. Ass'n, Inc., 727 P.2d 774, 777 (Alaska 1986) ("liability should be apportioned to the violator in proportion to the extent which his violation caused the accident"); Auton v. Logan Landfill, Inc., 105 Ill. 2d 537, 546, 475 N.E.2d 817, 820 (1984) ("the comparative-fault principle will operate to reduce plaintiff's recovery in the amount of the damages which the trier of fact determines the plaintiff has caused by his conduct"); Sandifer Motors, Inc. v. City of Roeland Park, 6 Kan. App. 2d 308, 318, 628 P.2d 239, 248 (1981) ("where tort liability is predicated on conduct less culpable than 'intentional' the general rule is to compare fault and causation"); Winge v. Minnesota Transfer Ry., 294 Minn. 399, 403, 201 N.W.2d 259, 263 (1972) ("[O]ur comparative negligence statute . . . now requires a comparison of relative fault. While the statute speaks of a comparison of negligence, in application what is really compared . . . is the relative contribution of each party's negligence to the damage in a causal sense."); Cash v. Otis Elevator Co., 210 Mont. 319, 330-31, 684 P.2d 1041, 1047 (1984) ("The jury is properly charged to find . . . the percentage that the conduct of each negligent party contributed to the cause."); Thibault v. Sears, Roebuck & Co., 118 N.H. 802, 813, 395 A.2d 843, 850 (1978) ("jury must weigh the plaintiff's misconduct, if any, and reduce the amount of damages by the percentage that the plaintiff's misconduct contributed to cause his loss or injury"); Duncan v. Cessna Aircraft Co., 665 S.W.2d 414, 427 (Tex. 1984) ("The trier of fact is to compare the harm caused by the defective product with the harm caused by the negligence of other defendants, any settling tortfeasors and the plaintiff."), *quoted and followed in* Vannoy v. Uniroyal Tire Co., 111 Idaho 536, 540, 726 P.2d 648, 652 (1985); Mulherin v. Ingersoll-Rand Co., 628 P.2d 1301, 1303-04 (Utah 1981) ("The defense in a products liability case, where both defect and misuse contribute to cause the damaging event, will limit the plaintiff's recovery to that portion of his damages equal to the percentage of the cause contributed by the product defect.").

153. *See, e.g.,* Hilen v. Hays, 673 S.W.2d 713, 721 (Ky. 1984) (judicially adopting section 2 of the Uniform Act); Watson v. State Farm Fire & Cas. Ins. Co., 469 So. 2d 967, 973-74 (La. 1985) (looking to section 2 of the Uniform Act and its comment in the absence of state statutory guidance and applying that analysis to the case; one of the more thoughtful decisions).

154. Like the court decisions, the jury instructions direct that the factfinder compare causal contribution, but they typically give no guidance as to how to make such a comparison or address the intended meaning of relative causal importance.

A typical example is Illinois pattern jury instruction 400.11, entitled "Products Liability—Modified General Verdict Form—Assumption of Risk—Verdict for Plaintiff." Ill. Sup. Ct. Comm. on Jury Instructions in Civ. Cases, Pattern Jury Instructions: Civil [IPI]: "A" Series Instructions on Comparative Negligence, Strict Liability in Tort 400.11 (2d ed. Special Supp. 1986). After asking the jury to specify the plaintiff's total amount of damages, the verdict form states: "[s]econd: Assuming that 100% represents the total combined responsibility of the plaintiff and of the defendant[s] [and of other persons] for

Even if courts gave clear and precise guidance to factfinders charged with making causal apportionments, we would have reason to doubt that we actually knew what those factfinders did in determining relative causal responsibility. One problem is simply a question of what jurors understand when instructed to make such comparisons. The more serious problem is our need to understand more about the psychology of causal attribution. Are jurors prone, for instance, to fall prey to what Richard Nisbett and Lee Ross call the "resemblance criterion," which leads to the ascription of causal significance to causes that resemble their effects?[155] When they ascribe relative causal responsibility, do they assume, for instance, that big harms result from causes that similarly appear big relative to other causes? Is an apportionment method that focuses on some other factor, such as negligence or fault, any less prone to this attributive fallacy? Until we know more about how factfinders reason to these decisions, any effort to describe the current practice or to improve it will be seriously hampered.

B. *Where We Should Be: A Modest Proposal*

This Article is hardly an unqualified brief for comparative causation.

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plaintiff's damages, we find that the percentage attributable solely to plaintiff's assumption of risk that was a proximate cause of plaintiff's [injury] [or] [damage] is — percent (%)." *Id.*

Texas instructions speak instead of "percentage[s] of causation," and its verdict forms ask jurors to apportion such percentages of causation to the various parties or products that have contributed to the accident. State Bar of Tex., Jury Charges Under Amended Rule 277 PJC 71.09 (1989).

Iowa juries receive similarly vague guidance. Iowa Civil Jury Instruction 400.2 follows the blended approach of the Uniform Act, but assumes that the meaning of causal comparison is self-evident. The instruction simply states:

COMPARATIVE FAULT. Damages may be the fault of more than one person. In comparing fault, you should consider all of the surrounding circumstances as shown by the evidence, together with the conduct of the [plaintiff] [defendant(s)] [third party defendant(s)] [persons who have been released], and the extent of the causal relation between their conduct and the damages claimed. You should then determine what percentage, if any, each person's fault contributed to the damages.

Iowa State Bar Ass'n, Special Comm. on Unif. Ct. Instructions, Iowa Civil Jury Instructions 400.2 (1991).

In Kentucky, which also follows the Uniform Act, jurors are instructed to allocate percentages of total fault and are simply told that, in making those allocations, "you shall consider both the nature of the conduct of each party at fault and the extent of the causal relation between his [or her] conduct and the damages claimed." J. Palmore, Kentucky Instructions to Juries §§ 14.08, 14.09, 49.02, 49.03 (4th ed. 1989).

Washington, which similarly has adopted the Uniform Act, neglects to include in its pattern jury instructions a definition of "fault" that encompasses both fault and causation concepts. *See* Wash. Sup. Ct. Comm. on Jury Instructions, Washington Pattern Jury Instructions, Civil [WPI 3d] WPI 45.22 (Question No. 6); WPI 45.23 (Question No. 7); WPI 110.31 (Question No. 6) (3d ed. 1989). Its only reference to comparative causation is buried in the comment to its contributory negligence instruction. *See id.* at WPI 11.01 comment.

155. R. Nisbett & L. Ross, Human Inference: Strategies and Shortcomings of Social Judgment 115-18 (1980).

While the criticism that we cannot talk meaningfully about more and less important causes is wrong—clearly we can and we do make such statements, and they are understood as more than gibberish—such talk is fraught with difficulty. Because of the multiple meanings of the notion of greater causal importance, such talk is likely ambiguous unless we make explicit our grounds for comparison. Even if we do, however, as the foregoing analysis demonstrates, the determination of relative causal importance can be cumbersome, unpredictable, and subjective.

We should, therefore, use comparative causation sparingly. Where we can base apportionment of damages on judgments of comparative negligence without reference to causation, there is no need to substitute the complicated task of causal comparison.[156] Where, however, the standard of liability denies us commensurable faults to compare, as in strict products liability cases,[157] we ought to apportion on the basis of causal weight.

What approach should we use? Each approach is deficient. The probabilistic causation approach distracts our attention from the causes of the singular event at issue viewed *ex post* and, instead, unjustifiably shifts it toward an analysis of *ex ante* causal potency and the causes of classes of events. The search for occasioning causes relies on assumed but unexamined extracausal notions of causal importance, and it unduly weights first-in-time causes. Martin's Analysis (D1), or indispensability analysis, is relatively simple, but it is not likely to fit many real cases. His Analysis (D2), or comparative counterfactual similarity analysis, has greater real-world application than Analysis (D1), but it is hardly simple. It requires that we use two difficult and vague concepts—counterfactuals and comparative similarity. Finally, the relative responsibility, or proximate cause, approach enables us to draw on normative intuitions about causal importance, but it tends to leave those norms unidentified and is unpredictable and undisciplined.

Nevertheless, the last two approaches, Martin's Analysis (D2) and the comparative responsibility or accountability approach, both capture important aspects of what we ordinarily mean when we talk about causal weight. There are problems with the use of either approach, and many of those problems remain if we use them in tandem, but their problems are not so grave as to outweigh the value of causal comparisons in some cases, or their value as the best means to make those comparisons.

Martin's Analysis (D2) of most important cause reflects an important element of our understanding of causation: that we measure the importance of a cause by the contribution or difference that it made. Clearly,

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156. Of course, comparative negligence may suffer from many of the same infirmities or from different, but equally troubling, ones. For one discussion of problems of apportionment under comparative negligence, see Pearson, *supra* note 21.

157. I refer, at any rate, to those cases, such as manufacturing defect cases, where the standard truly is strict.

in everyday life we judge acts by the difference that they made, and we should in applying our liability rules, also.

As described above, however, Analysis (D2) depends on two difficult concepts—counterfactuals and comparative similarity. Counterfactuals are difficult and vague. They are no better than our knowledge about the world, from which we must draw our counterfactual inferences. Many multiple cause cases are difficult because our knowledge is so limited. We are hampered by the problem of causal uncertainty or "irresolution."[158] Where the plaintiff's alcohol-impaired reflexes and the defendant's defective steering column combine to cause a collision, how sure can we be about whether the plaintiff would have arrived home safely absent the one or the other cause, or about what manner of harm he would have suffered because of the remaining cause? Further, we couple our imprecise counterfactuals with vague and subjective similarity judgments. Nevertheless, the process will often give us a good sense of relative causal weight.

It will also often give us equally weighted causes because, in many cases, each cause will have made all the difference between the harm that occurred and no harm occurring at all. That is not a failing of the analysis. Under its terms, there is simply no basis for distinguishing between causes in those cases. In other instances, Analysis (D2) will weight one cause more heavily than another not because of the greater contribution to harm made by that cause, but because of the accident of overdetermination or a near substitute for the second cause. These instances raise the problem of "moral luck."[159] Thomas Nagel describes moral luck as that element of our moral assessment of someone's conduct that depends on chance circumstances beyond the actor's control.[160] The differential treatment given by Analysis (D2) to causes that have near or complete substitutes and causes that do not forces us to consider what role accidental factors that are extrinsic either to the purpose or the conduct of a particular actor should play in our evaluation and treatment of that conduct under our liability rules.

An analysis that emphasizes the difference that a particular cause made may overemphasize the effect of moral luck and ignore other normative grounds for ascribing greater responsibility to one cause instead of another. The Uniform Act approach, in turn, misses the emphasis on how much contribution or difference a cause made, unless we couple it with an analysis like (D2). Consequently, we need to combine Analysis

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158. The latter term is Mark Kelman's. *See* Kelman, *supra* note 21, at 606.

159. For an examination of the concept of "moral luck," see T. Nagel, *Moral Luck*, in Mortal Questions 24 (1979) [hereinafter T. Nagel, *Moral Luck*]. For discussions of Nagel's essay in the context of causation in law, see Robinson, *Probabilistic Causation*, *supra* note 32, at 789-90; Thomson, *The Decline of Cause*, 76 Geo. L.J. 137, 139-50 (1987).

160. "Where a significant aspect of what someone does depends on factors beyond his control, yet we continue to treat him in that respect as an object of moral judgment, it can be called moral luck." T. Nagel, *Moral Luck*, *supra* note 159, at 26.

(D2) with the comparative responsibility approach exemplified in the Uniform Act. How much emphasis we place on each approach will depend on the facts and circumstances of each particular case and cannot be reduced to a simple algebraic formula.

The strengths and weaknesses of the comparative responsibility approach both flow from its use of a multifactor test. Multifactor analysis of this sort is inherently vague and imprecise. Compared to it, our judgments of comparative similarity under Martin's Analysis (D2) seem relatively bounded, directed, and objective. The comparative responsibility approach is often unpredictable since it is dependent on subjective choices of selection and weight. Worse still, such multifactor analysis is remarkably manipulable. An array of factors to be weighed and balanced can hide a multitude of normative judgments, prejudices, or sins.

Yet, we have considerable experience with multifactor approaches to problems in law and to other judgments that we make in everyday life.[161] Moreover, its open-endedness is at least as much a boon as a detriment. The comparative responsibility approach conforms to our experience that we have a variety of grounds on which to ascribe causal importance. What we sacrifice in predictability and precision we gain in pragmatic flexibility and the ability to give expression to multiple understandings of causal importance.

When we combine the two approaches we achieve an imperfect but serviceable test of causal importance that allows us to do rough justice in apportioning liability and captures most of what we mean in saying that one cause was more important than another.

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161. As described above, the proximate cause inquiry involves a multifactor analysis. *See supra* notes 139-44 and accompanying text; *see also* Restatement (Second) of Torts § 442 (1965) ("Considerations Important in Determining Whether an Intervening Force is a Superseding Cause"). Those commentators who have reframed the proximate cause analysis as one involving duty retain the multifactor character of the analysis. *See, e.g.,* Green, *Duties, Risks, Causation Doctrines,* 41 Tex. L. Rev. 42, 58 (1962); Thode, *The Indefensible Use of the Hypothetical Case to Determine Cause in Fact,* 46 Tex. L. Rev. 423, 429-30 (1968); Thode, *Tort Analysis: Duty-Risk v. Proximate Cause and the Rational Allocation of Functions Between Judge and Jury,* 1977 Utah L. Rev. 1, 26-30. The negligence standard of reasonable care is similarly "open-ended" and requires consideration of multiple factors. Ehrlich & Posner, *An Economic Analysis of Legal Rulemaking,* 3 J. Legal Stud. 257, 258 (1974). In tort law alone, we see several other examples of such multifactor analysis. *See, e.g.,* Restatement (Second) of Torts § 433 (1965) ("Considerations Important in Determining Whether Negligent Conduct is Substantial Factor in Producing Harm"); *id.* § 520 ("Abnormally Dangerous Activities"); *id.* § 767 ("Factors in Determining Whether Interference [With a Contract] is Improper"); *id.* §§ 826-28 (factors in determining liability for private nuisance).