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# The Schizophrenia of Risk-Benefit Analysis in Design Defect Litigation

Michael D. Green\*

*A Knight there was, and that a worthy man  
That fro the tyme that he first began  
To riden out, he loved chivalrie,  
Trouthe and honour, fredon and curteisie. . . .  
And though that he was worthy, he was wys,  
And of his port as meeke as is a mayde.  
He never yet no vileynye ne sayde  
In al his lyf unto no manner wight.  
He was a verray, parfit gentil knyght.*

Chaucer, *The Canterbury Tales*, Prologue ll. 43-46, 68-72.

To employ a well-worn, but nevertheless appropriate cliché, it is a genuine honor to participate in the Vanderbilt Law Review's memorial to Dean John Wade. Wade stands tall as a leading figure of legal academe in the twentieth century.

While I have profited from many illuminating hours with his scholarship, I regret that my association with him personally was limited to one lengthy luncheon meeting, still vivid, despite the passage of many years. I still recall his kindness and gentility, his dry, but very real sense of humor, his humility and vigilance in avoiding taking himself too seriously, his thoughtfulness and deliberation in making judgments, his care and rigor in the process, but always accompanied by an overarching civility. When I discovered the epigraph above—in a tribute penned by Wade himself<sup>1</sup>—it reflected the impression I had formed of this great man. He loved trouthe, honour, fredon, and curteisie. Worthy and wys, yet meeke as a mayde seem to capture exactly the right image. Dean John Wade was a verray, parfit gentil knyght.

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1. John W. Wade, *EEC*, 22 Vand. L. Rev. 21 (1968).

Dean Wade is best known for his contributions to tort law, but his contributions in other fields should not go unmentioned. His text on restitution and scholarship in that area are still widely read and influential. His scholarly work included oil and gas law, statutory interpretation, consumer protection, domestic relations, and military law.

But I and most others know John Wade for his work in tort law. He touched many facets of tort law during his long career. His casebook is the leading one on torts, has reached an unprecedented ninth edition,<sup>2</sup> and has introduced nearly one million law students to the intrigue, dilemmas, human tragedy, stimulation, and values of tort law. He served on the advisory committee for portions of the Restatement (Second) of Torts and as co-reporter for the final portions, published in 1977 and 1979.<sup>3</sup> Wade was the author of the Uniform Comparative Fault Act,<sup>4</sup> a model statute that contains so much wisdom that it borders on criminal that more states have not adopted it as their own. I am proud that my home state, Iowa, is one of two states that had the good sense to employ the act as the basis for its comparative fault statute.

Having been provided the freedom to choose one aspect of Dean Wade's work on which to focus by the editors of this Review, I selected the issue of design defect standards in products liability. There were two reasons for this choice. First, Wade's contribution in this area were well ahead of his time; in 1973, he addressed this matter in an article that predicted, with uncanny accuracy, the future course of design defect law.<sup>5</sup> Second, the question of appropriate standards for design defect cases is currently being addressed by the American Law Institute ("ALI") in the drafting of the Restatement (Third) of Torts: Products Liability.<sup>6</sup> The influence of Wade's work

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2. John W. Wade, Victor E. Schwartz, Kathryn Kelly, and David F. Partlett, *Prosser, Wade and Schwartz's Cases and Materials on Torts* (Foundation, 9th ed. 1994).

3. 3 Restatement (Second) of the Law: Torts (1977) and 4 Restatement (Second) of the Law: Torts (1979).

4. Uniform Comparative Fault Act, 12 U.L.A. 42 (West Supp. 1994).

5. John W. Wade, *On the Nature of Strict Tort Liability for Products*, 44 Miss. L. J. 825 (1973).

6. The American Law Institute has begun preparing the Restatement (Third) of Torts. The first piece of the third Restatement, begun in 1992, is the Restatement (Third) of Torts: Products Liability ("the Products Liability Restatement"). The most recent version of the Products Liability Restatement, as this essay was written, is Tentative Draft No. 2, which bears a date of March 13, 1995. A substantial body of that draft likely will obtain final approval by the membership of the ALI in May, 1995.

The Products Liability Restatement has already been the subject of extensive commentary. See generally *A Symposium on the ALI's Proposed Restatement (Third) of Torts: Products Liability*, 61 Tenn. L. Rev. 1043 (1994); Symposium, *The Revision of Section 402A of the*

continues today in the effort to restate the past thirty years of products liability decisions.

The genesis for strict products liability, Section 402A of the Restatement (Second) of Torts was published in 1965. Section 402A employed the now-familiar "defective condition unreasonably dangerous" language to identify the circumstances in which sellers would be held strictly liable. Of course, "strict liability" was something of a misnomer. Liability was not to be imposed for all harm caused by a product—only for harm that was the result of a defective condition unreasonably dangerous.<sup>7</sup>

Section 402A overlooked any differentiation among the various types of defects that might occur in a product.<sup>8</sup> The blackletter language provided no elaboration on what a "defective condition unreasonably dangerous" might mean. But in comments, the contracts heritage of Section 402A provided some explication: a product was defective when its condition was one "not contemplated by the ultimate consumer" and posed unreasonable dangers.<sup>9</sup> Not quite equivalently, another comment stated that a product was defective when "dangerous to an extent beyond that which would be contemplated by the ordinary consumer who purchases it."<sup>10</sup> Thus, protecting "expectations," very much the concern of contract law, was the guidance offered by Section 402A for those courts that were convinced that the day had come to hold product sellers to a higher standard and that looked to the Restatement for the appropriate standards to apply.

While most of the courts and commentators were attempting to understand and unravel the vagaries of this new world of liability, Dean Wade published an article about strict liability that was a tour de force.<sup>11</sup> Before courts appreciated the need to distinguish among different kinds of defects, Wade carefully elaborated the three types of defects that might make a product unreasonably dangerous: manufacturing defects, design defects, and warnings defects. In the same

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*Restatement (Second) of Torts: Occasion for Reform of Products Liability Law?*, 10 *Touro L. Rev.* 1 (1993).

7. For a cogent explanation of what true strict liability might entail, see Wade, 44 *Miss. L. J.* at 828 (cited in note 5).

8. See generally George L. Priest, *Strict Products Liability: The Original Intent*, 10 *Cardozo L. Rev.* 2301 (1989) (arguing that the drafters of Section 402A were considering only manufacturing defects, not warning or design defects).

9. Restatement (Second) § 402A, comment g.

10. *Id.*, comment i.

11. See generally Wade, 44 *Miss. L. J.* 825 (cited in note 5).

article, Wade identified and explained a host of products liability issues with which the courts nevertheless spent the next several decades attempting to come to grips. The number of controversial products liability issues and Wade's prescience in addressing them can be fully appreciated only by one familiar with the development of strict products liability law over the past twenty years who examines Wade's work in this Article.

Over twenty-six pithy pages, Wade argued that the jury should be provided with guidance about the meaning of the phrase "defective condition unreasonably dangerous,"<sup>12</sup> that the phrase was an infelicitous one to serve as the standard for strict liability;<sup>13</sup> that the best reason for employing strict liability was the difficulty of proving negligence;<sup>14</sup> that while tort liability for damages could be a powerful deterrent force for enterprises, the consequences of personal injury, not whether the tort system will compensate them for their damages, provides incentives for most individuals to exercise care;<sup>15</sup> that the consumer expectations test was inappropriate for determining design defects because consumers in many design situations lack any real or informed expectation;<sup>16</sup> that true strict liability should be applied to manufacturing defects;<sup>17</sup> and, as a corollary, that a negligence standard should govern design and warnings defects;<sup>18</sup> that the appropriate relationship between a manufacturer's warning and design obligations required that certain risks be obviated by design changes even if a warning was provided;<sup>19</sup> that misuse primarily implicates the question of whether the product is defective;<sup>20</sup> that bystanders should be afforded the same protection that Section 402A offers users or consumers;<sup>21</sup> that crashworthiness is merely a stylized form of design defect litigation and that automobile accidents are sufficiently foreseeable that manufacturers should have such a design obligation;<sup>22</sup>

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12. Id. at 832, 839.

13. Id. at 832-33.

14. Id. at 826.

15. Id.

16. Id. at 829. Twenty-one years later, the California Supreme Court, which deserves much of the credit for the development of strict products liability, reached a similar conclusion. See *Soule v. General Motors Corp.*, 8 Cal. 4th 548, 882 P.2d 298, 308-09 (1994).

17. Wade, 44 Miss. L. J. at 837.

18. Id. at 841-42.

19. Id. at 842. See *Uloth v. City Tank Corp.*, 376 Mass. 874, 384 N.E.2d 1188, 1192 (1978) (adopting a standard equivalent to that advocated by Wade). *Uloth* is the case adopted in a number of products liability textbooks to address the question of the intersection between warning and design obligations.

20. Wade, 44 Miss. L. J. at 846.

21. Id. at 835.

22. Id. at 847-48.

and that whether an injured claimant sues in negligence or strict liability, comparative fault concepts should govern affirmative defenses based on the claimant's conduct.<sup>23</sup>

For those familiar with the contemporary products liability scene and the current version of the Products Liability Restatement, these ideas will not be earth shattering. Virtually every one of Dean Wade's prescriptions can be found in the currently proposed Restatement (Third) of Torts: Products Liability. However, in 1973, when Wade first surfaced these ideas, they were apostasy, rejecting central tenets of the strict liability canon crafted by Section 402A, with the collaboration of the California Supreme Court.

Most significantly, both in terms of the controversy it has generated and what I would like to focus on in the remainder of this essay, is the use of risk-benefit analysis as the appropriate standard for determining design defect claims. Well before its time, while courts were still struggling to understand what strict liability meant in the design defect context, John Wade urged rejection of the consumer expectations test and adoption of a risk-benefit test by which to judge design claims: "Another way of saying this is to ask whether the magnitude of the risk created by the dangerous condition of the product was outweighed by the social utility attained by putting it out in this fashion."<sup>24</sup> As Wade recognized, he was advocating a return to the now-familiar calculus of risk first adumbrated by Learned Hand in *United States v. Carroll Towing Co.*,<sup>25</sup> and reflected in the Restatement (Second) of Torts.<sup>26</sup> In *Carroll Towing*, Judge Hand adopted the formula of  $PL > B$  to express when an actor should be found negligent. Thus, a person is negligent when the magnitude of the foreseeable danger (L) discounted by the probability (P) that it will occur is greater than the burden (B) of taking precaution to prevent the harm from occurring.<sup>27</sup> Such a standard requires a balancing of risks against benefits; when the risks of a given design outweigh its benefits, the design is unreasonable. Wade provided a list of seven factors to be employed in conducting the balancing he advocated.<sup>28</sup>

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23. *Id.* at 850-51.

24. *Id.* at 835.

25. 159 F.2d 169 (2d Cir. 1947).

26. Restatement (Second) § 291. See also Restatement of Torts § 291 (1934).

27. See *Carroll Towing*, 159 F.2d at 173.

28. Those factors are:

(1) The usefulness and desirability of the product—its utility to the user and to the public as a whole.

Wade's advocacy of a risk-benefit standard has had a powerful impact on design defect law over the past twenty years.<sup>29</sup> The leading common law decisions adopting a risk-benefit analysis cite Wade's article and quote his list of seven factors.<sup>30</sup> Today, it appears that risk benefit has largely won the design defect day; Professors Henderson and Twerski, the reporters for the Products Liability Restatement, have exhaustively catalogued the law of each state and concluded that the consumer expectations standard contained in the comments to Section 402A survives as the governing rule in only a small minority of jurisdictions.<sup>31</sup> The current version of the Restatement of Products

(2) The safety aspects of the product—the likelihood that it will cause injury, and the probable seriousness of the injury.

(3) The availability of a substitute product which would meet the same need and not be as unsafe.

(4) The manufacturer's ability to eliminate the unsafe character of the product without impairing its usefulness or making it too expensive to maintain its utility.

(5) The user's ability to avoid danger by the exercise of care in the use of the product.

(6) The user's anticipated awareness of the dangers inherent in the product and their avoidability, because of general public knowledge of the obvious condition of the product, or of the existence of suitable warnings or instructions.

(7) The feasibility, on the part of the manufacturer, of spreading the loss by setting the price of the product or carrying liability insurance.

Wade, 44 Miss. L. J. at 837-38 (cited in note 5) (footnote omitted). See also John W. Wade, *Strict Tort Liability of Manufacturers*, 19 Sw. U. L. Rev. 5, 17 (1965) (providing a similar list of factors to be employed in a risk-benefit balancing).

29. The article in which Wade advocated a risk-benefit standard by which to judge design defects has been described by others as "[t]he single most influential piece of guiding scholarship' in the period when product defect was being defined and expanded." Louis R. Frumer and Melvin I. Friedman, *Products Liability* § 1.02 at 1-38 n.26 (Matthew Bender, 1994) (quoting, in part, David G. Owen, *Rethinking the Policies of Strict Products Liability*, 33 Vand. L. Rev. 681, 682 (1980)). See also W. Kip Viscusi, *Wading Through the Muddle of Risk-Utility Analysis*, 39 Am. U. L. Rev. 573, 578 (1990) (stating that "Wade's seven factors have played . . . a dominant role in the liability literature").

30. See *Troja v. Black & Decker Mfg. Co.*, 62 Md. App. 101, 488 A.2d 516, 519 (1985) (reproduced in James A. Henderson, Jr. and Aaron D. Twerski, *Products Liability: Problems and Process* 497 (Little, Brown, 2d ed. 1992)); *Phillips v. Kimwood Machine Company*, 269 Ore. 485, 525 P.2d 1033, 1039 n.13 (1974) (reproduced in David A. Fischer and William Powers, Jr., *Products Liability: Cases and Materials* 177 (2d ed. 1994) and W. Page Keeton, et al., *Products Liability and Safety: Cases and Materials* 210 (Foundation, 2d ed. 1989) (reproducing Wade's seven factors at 215)); Jerry J. Phillips, et al., *Products Liability: Cases, Materials, Problems* 174 (Michie, 1994); *Cepeda v. Cumberland Engineering Co., Inc.*, 76 N.J. 152, 386 A.2d 816, 826-27 (1978); *Roach v. Kononen*, 269 Ore. 457, 525 P.2d 125, 128-29 (1974); *Dawson v. Chrysler Corp.*, 630 F.2d 950, 957 (3d Cir. 1980). See also Richard A. Epstein, *The Risks of Risk/Utility*, 48 Ohio St. L. J. 469, 475 n.19 (1987) (claiming that "[t]he influence of [the Wade factors] have [sic] been enormous"); *Prentis v. Yale Mfg. Co.*, 421 Mich. 670, 365 N.W.2d 176, 183-84 & n.18 (1984) (citing to Wade's article and his risk-utility test for design defects); *O'Brien v. Muskin Corp.*, 94 N.J. 169, 463 A.2d 298, 304-05 (1983); *Barker v. Lull Engineering Co.*, 20 Cal. 3d 413, 573 P.2d 443, 454 (1978); Marshall S. Shapo, *Products Liability: Cases and Materials* 97-98 (Foundation, 1980) (quoting Wade's list of seven factors).

31. Restatement (Third) of the Law, Torts: Products Liability, Tentative Draft No. 2, § 2, Reporters' Note, comment c, at 51-53 (March 13, 1995) ("Tentative Draft No. 2"). The Supreme Court of California in *Soule*, 882 P.2d at 308-10, delivered one of the final nails in the consumer

Liability adopts a risk-benefit standard for determining design defects.<sup>32</sup>

Having traced the triumph of risk benefit (and negligence) over consumer expectations for design defect litigation, what is there left to say? Quite a bit, I think. The schism in risk-benefit analysis between, first, the rigorous, precise, green-eyeshade version provided by welfare economics and, second, the softer, reasonableness version deserves some explication, if for no other reason than to reduce confusion among those confronting the divide. Both of these competing visions of risk-benefit analysis can be found in existing products liability jurisprudence, often without appreciation of the conflict.<sup>33</sup>

The hard-edged, implicit wealth-maximizing, version of risk-benefit analysis is the contribution of economic theory and has found its way into the legal landscape through the law and economics movement. Economists begin with the proposition that scarcity is a universal condition and that the production of all goods (including such intangibles as safety) involves a trade-off among different goods.<sup>34</sup> Safety (in the form of fewer or less serious accidents) can be obtained, but only by foregoing some other goods (or benefits) such as faster cars or more productive punch presses. In 1972, Richard Posner explained this economic version of risk-benefit analysis as

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expectations coffin. The court, which had earlier adopted an alternative risk-benefit or consumer expectations test for design defect claims, observed that the consumer expectations test should be invoked only in those situations in which their ordinary experience would provide them with an understanding of the minimum degree of safety the product should provide. In other instances in which the product or context were too complex, only a risk-benefit test should be employed to determine if the product is designed defectively.

32. Tentative Draft No. 2 § 2(b).

33. Another major issue the risk-benefit standard implicates is the time at which risks should be evaluated: when the product is manufactured or at the time of trial. Dean Wade was at the forefront of that matter, which appears pretty well resolved on the contemporary products liability scene, in the fashion Dean Wade ultimately suggested. See John W. Wade, *On the Effect in Product Liability of Knowledge Unavailable Prior to Marketing*, 58 N.Y.U. L. Rev. 734, 761-64 (1983) (describing Dean Wade's position). I put aside that question and its resolution; risk-benefit analysis nevertheless confronts the conflict and difficulties discussed in the remainder of this essay.

34. See, for example, Armen Alchian and William R. Allen, *Exchange & Production: Competition, Coordination, & Control* 2-4 (Wadsworth, 3d ed. 1983). The more generalized version of risk-benefit analysis is cost-benefit analysis, which balances all costs, not merely injuries and hazards, against benefits. See E. J. Mishan, *Cost-Benefit Analysis: An Informal Introduction* 22-24 (Unwin Hyman, 4th ed. 1988). Cost-benefit analysis is frequently employed to evaluate governmental programs or regulations and does not account for distributional effects and their fairness. Advisory Committee on the Biological Effects of Ionizing Radiations, *Considerations of Health Benefit-Cost Analysis for Activities Involving Ionizing Radiation Exposure and Alternatives* 68-70 (E.P.A., 1977). For purposes of this essay, we can limit our concerns to risk-benefit analysis in the private context of designing a product that satisfies tort law standards.



applied to liability for accidental injury, employing Learned Hand's algebraic formulation of negligence:

Discounting (multiplying) the cost of an accident if it occurs by the probability of occurrence yields a measure of the economic benefit to be anticipated from incurring the costs necessary to prevent the accident. The cost of prevention is what Hand meant by the burden of taking precautions against the accident. It may be the cost of installing safety equipment . . . or eliminating the activity. If the cost of safety measures or of curtailment—whichever cost is lower—exceeds the benefit in accident avoidance to be gained by incurring that cost, society would be better off, in economic terms, to forgo accident prevention.<sup>35</sup>

We should be clear: safety is a commodity that can be purchased, but only at a cost. Any marginal safety (i.e., reduction of injuries) that might be obtained must be compared to the marginal costs of obtaining it. When those costs are greater, we should forego the additional safety and accept instead the accident toll.<sup>36</sup> Of course, "cost" is not limited to dollars, but includes all activities or resources that are scarce, including, for example, time, leisure, and esthetics.

Translating this analytical framework to design defect law requires recognition of a point Professor Gary Schwartz brought home forcefully. We cannot meaningfully apply a risk-benefit test to a design without having an alternative design by which to make the comparison and conduct the analysis.<sup>37</sup> The alternative design must be on balance a safer one that provides greater safety (less risk) than the challenged, existing design. At the same time, we must compare the costs of the two designs, to compare the additional costs of the alternative design with the additional safety it provides (or equivalently, the risk of the existing design compared to its benefits). We simply

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35. Richard A. Posner, *A Theory of Negligence*, 1 J. Legal Stud. 29, 32 (1972).

36. This version of risk-benefit analysis does not necessarily speak to the appropriate liability standard, as strict liability may also produce the same incentives for safety, albeit with different distributional effects. See, for example, Richard A. Posner, *Economic Analysis of Law* § 6.5 at 175-80 (Little, Brown, 4th ed. 1992).

Implicit in the adoption of a risk-benefit test, however, is the norm of wealth maximization, although there are many reasons why such a test is neither a necessary nor sufficient condition for such an outcome. As many readers are aware, wealth maximization (or economic efficiency) as a legal norm (especially as a sole norm) is a controversial issue. See generally, for example, *Symposium on Efficiency as a Legal Concern*, 8 Hofstra L. Rev. 485 (1980).

37. "The heart of the problem is this: one simply cannot talk meaningfully about a risk-benefit defect in a product design until and unless one has identified some design alternative (including any design omission) that can serve as the basis for a risk-benefit analysis." Gary T. Schwartz, *Foreword: Understanding Products Liability*, 67 Cal. L. Rev. 435, 468 (1979).

cannot identify and make a comparison of the risks of the existing design and its benefits without an alternative design.<sup>38</sup>

But what currency shall we (or the jury) use to measure and compare the intangibles that might be implicated in a design choice? To be sure, some aspects may have a market value: the price for an airbag or a radon detector. But how shall we value an esthetically pleasing design that if we eschewed would avoid an element of risk? How shall we value the unpleasantness of the piercing screech of a back-up warning device on earth-moving equipment? How much is a broken arm, shattered brain, or a life worth?<sup>39</sup> The market in these items is quite thin, even nonexistent for some,<sup>40</sup> which poses an incommensurability difficulty—the need to make comparisons between items that do not align on any common scale or measure.<sup>41</sup> Indeed, the problem is more serious than that: the stark balancing of lives and limbs with money strikes many as jarring, inappropriate, even absurd.<sup>42</sup>

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38. The one exception to this statement is to consider the benefits and costs of the entire product. This entails a comparison of the state of the world with and without the product. In essence, an absence of the product becomes the alternative design. For the most part, courts have eschewed permitting juries to make that type of risk-benefit comparison for products that are sold legally. See, for example, Tentative Draft No. 2 § 2, Reporter's Note, comment c, at 94-97 (cited in note 31).

39. A distinct problem is obtaining the relevant data about the frequency and seriousness of injury due to the challenged design. The practical difficulties that stand in the way of such an empirical inquiry led Learned Hand to later characterize his PL>B formula for negligence as "illusory." *Moisan v. Loftus*, 178 F.2d 148, 149 (1st Cir. 1949).

40. Ideally, in conducting an economic risk-benefit analysis, the value of avoiding risks of death or injury would be measured by what consumers were willing to pay for such additional safety. See note 42.

41. See Cass R. Sunstein, *Incommensurability and Valuation in Law*, 92 Mich. L. Rev. 779, 796 (1994) (stating that "[i]ncommensurability occurs when the relevant goods cannot be aligned along a single metric without doing violence to our considered judgments about how these goods are best characterized" (emphasis omitted)); Stephen Breyer, *Regulation and Its Reform* 149 (Harvard U., 1982) (noting that "monetization as an effort to fund commensurability faces intractable difficulties").

42. See text accompanying notes 81-88. Despite public reaction to valuing life, economists have employed a variety of methods to address this matter, and regulators frequently employ dollar values for premature death and other injuries. Professor Viscusi reports that employees in the United States are paid an additional \$500 per year for assuming a risk of 1/10,000 of premature death during that year, from which economists would extrapolate linearly to a value of \$5 million for a premature death. W. Kip Viscusi, et al., *Deterring Inefficient Pharmaceutical Litigation: An Economic Rationale for the FDA Regulatory Compliance Defense*, 24 Seton Hall L. Rev. 1437, 1450-52 (1994). For a survey of the methodology and literature in the value-of-life field, see W. Kip Viscusi, *Fatal Tradeoffs: Public and Private Responsibilities for Risk* ch. 4 (Oxford U., 1992) (finding value of life in the range of \$3 million to \$7 million, id. at 73); Stephen E. Rhoads, ed., *Valuing Life: Public Policy Dilemmas* (Westview, 1980); Breyer, *Regulation* at 150-51.

By comparison, many, including Dean Wade, employed risk-benefit balancing in a considerably looser, multi-factorial, reasonableness inquiry that departs significantly from the account-ledger comparison of costs in the economic version.<sup>43</sup> Outside the products liability context, this was in part due to the difficulty of applying a risk-benefit standard to momentary individual inadvertence. Many accidents due to individuals' acts occur, as Professor William Rodgers explains, "not as a result of the conscious implementation of a calculus of costs and benefits, but because of the boredom, fatigue, anger or other influences that regularly encroach upon human behavior."<sup>44</sup> Thus, the Restatement (Second) of Torts, which adopts a risk-benefit standard for determining negligence, carefully qualifies the benefits to be considered as those "that the law regards as the utility"<sup>45</sup> of the defendant's activity, which includes a policy judgment about the social benefits of the activity. We should not forget that the care taken by a reasonably prudent person is the prime standard for negligence expressed in the Restatement<sup>46</sup> and by most courts.<sup>47</sup>

A very good, but by no means isolated, example of this laxer version of risk-benefit analysis for design defects is reflected in *Thibault v. Sears, Roebuck & Company*.<sup>48</sup> The plaintiff had been injured when he fell while using a power mower on a hill. During the fall, his foot was caught in the blade of the mower. He alleged that the mower was designed defectively because it lacked a guard on the rear of the mower housing. The court, after citing Dean Wade's article and factors, articulated the considerations that bore on defectiveness: the social utility of the product, the presence or absence of warnings, the risk of danger, how significant the impact would be on product effectiveness and product cost of employing risk reducing measures, and the obviousness of any dangers.<sup>49</sup> At the

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43. For an economist's critique of Wade's seven factors, see Viscusi, 39 Am. U. L. Rev. at 580-91 (cited in note 29).

44. William H. Rodgers, Jr., *Negligence Reconsidered: The Role of Rationality in Tort Theory*, 54 S. Cal. L. Rev. 1, 16 (1980).

45. Restatement (Second) § 291. See also id. § 291, comment d; id. § 292(a).

46. Restatement (Second) §§ 282-283.

47. By contrast with the economic version of risk-benefit analysis, one commentator has observed: "Tort Law is law with a human face. . ." Peter H. Schuck, *Introduction: The Context of the Controversy*, in Peter H. Schuck, ed., *Tort Law and the Public Interest* 17, 21 (W.W. Norton, 1991).

48. 395 A.2d 843 (N.H. 1978).

49. Id. at 846-48. Another, more recent, example is *Banks v. ICI Americas, Inc.*, 264 Ga. 732, 450 S.E.2d 671 (1994), in which the court adopted a risk-benefit standard for design defects. The court included such "diverse matters" as "tactical market decisions, . . . the idiosyncrasies of individual corporate management styles, and federal and other regulatory restrictions" as relevant to "the reasonableness of a manufacturer's decision-making process." Id. at 675. Those

same time, the court rejected risk-spreading as a factor to be employed, thereby diverging from Dean Wade and his seventh factor.<sup>50</sup>

How might these factors be employed in the more rigorous, economic version of risk-benefit analysis? Which ones would be relevant and which irrelevant if we take the economists and their version of risk-benefit analysis seriously?

First, let us acknowledge the considerations that are directly relevant. Surely the risk of danger is one item. But, we must be careful. The additional accidents, their severity and any greater severity of accidents that would occur in any event due to the absence of a rear guard is the "risk of danger" that comprises one side of the Hand formula—PL.<sup>51</sup> Any diminution in product effectiveness that might result from employing the rear guard comprises a portion of the burden of precaution, or to put it another way, the benefit of the existing design. Thus, if the rear guard increased the circumference of the mower, making it less nimble and reducing its ability to mow in tight quarters, we would balance that against the risks that could be avoided. Similarly, any additional cost to produce and add a rear guard constitutes an additional aspect of the burden of precaution.<sup>52</sup>

What of the utility of the product? Irrelevant to the analysis. What we are interested in is the marginal utility of the existing design, not the overall societal benefits of the product. To put the point another way, imagine that we have identified a one hundred percent effective vaccine for AIDS. Suppose the vaccine causes a mild autoimmune reaction—a rash that lasts for a week—in one out of a million persons who take the vaccine. The side effect can be eliminated by changing one of the inert ingredients with which the vaccine is coated to another inert ingredient, no more expensive and equally adept at serving its purpose. The vaccine is defectively designed despite its enormous social utility. Risk-benefit analysis operates at the margin—the utility of the existing design compared to the alternative—not at the level of the entire product.

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factors would plainly play no role in an economic risk-benefit analysis, as the discussion in the text demonstrates.

50. *Thibault v. Sears Roebuck & Co.*, 395 A.2d at 845-46. See note 28 (listing the seven factors).

51. *Carroll Towing*, 159 F.2d at 173.

52. A careful economist would insist that we discount all aspects of these risks and benefits incurred at different times to their present values. See Viscusi, 39 Am. L. Rev. at 594-95 (cited in note 29).

Suppose the alternative design would increase the price of the product by fifty percent? One hundred percent? A thousand percent? Similarly irrelevant. The comparison is not with the existing cost of the product, but with the safety benefits that can be obtained. That is, if a moderately priced product entails substantial risks of personal injury, we should be willing to spend up to the amount of those risks to avoid them, and not be concerned by the relationship between the costs of safety features and the other costs of producing the product. Safety is a separate component of the cost of a product and the relevant comparison is the risk to be avoided, not its relationship to the other costs.

The analysis becomes a little more complicated with the remaining two factors cited by the *Thibault* court: the obviousness of the danger and any warnings that were provided. Neither directly bears on the magnitude of harm, the probability of an accident, or the burden of precaution. Yet, when a danger has been warned about (along with, where appropriate, an explanation about how and why to avoid the danger) or when the danger is sufficiently obvious that a warning would add little to a user's knowledge of the risks and how to avoid them, the consumer is in a position to minimize the possibility of injury with her own risk-reducing behavior. Thus, if a lawn chair is manufactured with a sharp aluminum edge underneath the armrest, a warning about the existence of that danger may substantially reduce the risk that it poses.<sup>53</sup> Warnings and obviousness thus can be seen for their appropriate role in an economic risk-benefit analysis; they are not of concern in and of themselves, but because of their impact on the parameters of concern: the probability of an accident and its severity. These might be characterized as "second tier" concerns, important because of their impact on the first tier matters of risk and cost.

Let us contrast *Thibault* and its reasonableness version of risk-benefit analysis with *Cipollone v. Liggett Group, Inc.*<sup>54</sup> Brought on behalf of a cigarette victim, the case alleged that cigarettes were a defective product. Thus, the alternative design was not some change in how cigarettes were made, but no cigarettes. Plaintiff's claim was that the overall adverse health effects of cigarettes outweighed any

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53. See *Matthews v. Lawnlite Company*, 88 S.2d 299 (Fla. 1956). Of course, despite the warning, a lawn chair with a sharp edge that severed the finger of a user, as the chair in *Matthews* did, *id.* at 300, might still be defective, given the ease with which an alternative design could be employed to obviate the danger.

54. 644 F. Supp. 283 (D. N.J. 1986).

social benefits that they provided.<sup>55</sup> One defendant asserted that the benefits of cigarettes included the jobs it provided to those employed in the production, marketing, and sales of cigarettes, the favorable contribution to the country's trade balance through their export, and the taxes paid by the industry to all levels of government in this country.<sup>56</sup> Plaintiff, contending that those contributions were irrelevant to a risk-benefit analysis of cigarettes, moved in limine to exclude any evidence about those benefits.<sup>57</sup>

Surely the defendant had a point. Balance of trade, unemployment, and the coffers of government are important considerations that might sway a fact finder making a comparative judgment about the world with and without cigarettes. Not surprisingly, the defendant found support in Dean Wade's risk-benefit test and the first of his factors, the benefit of the product to society.<sup>58</sup>

Rejecting this reasonableness assessment of the costs and benefits of cigarettes, the court held that the defendant could not introduce evidence about employment, exports, or taxes.<sup>59</sup> Economists serious about risk-benefit analysis would have applauded the court's decision.<sup>60</sup> The labor that the industry employs to produce and sell its goods is not an economic "benefit" of cigarettes, rather it reflects a cost of production. Those human resources expended in the production of cigarettes, like the farmland devoted to growing tobacco, could be employed for other productive purposes. Of course, in a slack economy, there may be temporary dislocation until tobacco industry employees find alternative employment, but that only addresses the true opportunity cost of the employees' labors; it does not transform them from a cost to a benefit.<sup>61</sup> To dramatize the point, cigarettes also provide employment for the physicians who treat smoking victims and

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55. Id. at 285.

56. Id.

57. Id. at 284-86.

58. Id. at 288 & n.2. Indeed, the defendant might also have found succor in other areas of tort law. For example, the importance of an activity to the community and its economy is explicitly considered in determining whether the activity is abnormally dangerous and, therefore, subject to strict liability. Restatement (Second) § 520(f), comment k. Dean Wade joined Dean Prosser as a reporter for this portion of the Torts Restatement.

59. *Cipollone*, 644 F. Supp. at 290.

60. For an excellent analysis, see Mary Griffin, Note, *The Smoldering Issue in Cipollone v. Liggett Group, Inc.: Process Concerns in Determining Whether Cigarettes Are a Defectively Designed Product*, 73 Cornell L. Rev. 606, 616-19 (1988). Portions of this essay draw on the discussion in Griffin's article.

61. See Mishan, *Cost-Benefit Analysis* at 67-69 (cited in note 34).

the morticians who bury them, yet we would not count that as a "benefit" of the cigarette industry.<sup>62</sup>

Payment of taxes or charitable contributions by the tobacco industry are neither costs nor benefits of cigarettes. Rather these are merely transfer payments from one entity to another that neither consume resources nor produce them, but instead have distributional consequences and provide consumption decisions to others.<sup>63</sup> While as a society we might believe that contributions to a shelter that provides housing for homeless persons are a preferable expenditure to an increase in the compensation for the chief executive officer of a tobacco company, economists, with their unwillingness to make interpersonal comparisons of utility, eschew such judgments.<sup>64</sup> Similarly, any benefits to the country's foreign trade balance are already reflected in the price paid by those to whom cigarettes are exported. Including foreign trade effects results in a form of "double-counting" the benefits of cigarettes.<sup>65</sup>

The true "benefit" of cigarettes in this welfare economics version of risk-benefit analysis is the pleasure or utility that it provides to smokers. This enjoyment is reflected in the price that consumers pay plus the additional amounts that they would be willing to pay if cigarettes were priced higher.<sup>66</sup> That is precisely what Judge Sarokin permitted the defendant to introduce in the *Cipollone* case. *Cipollone* thus stands in sharp contrast to the *Thibault* approach.

In the face of this schizophrenia, where does the current draft of the Restatement of Products Liability stand? It could, after all, make a contribution to resolving this significant breach in products liability law. The answer, I think, is that the Restatement stands right about in the middle, unwilling to make an explicit choice between the two.

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62. See Keeton, et al., *Products Liability* at 886 (cited in note 30).

63. See Mishan, *Cost-Benefit Analysis* at 74 (cited in note 34). For an economist-commentator who nevertheless accepted the arguments of the tobacco industry, see Viscusi, 39 *Am. L. Rev.* at 596 & n.112 (cited in note 29).

Wade's seventh factor, the ability of the manufacturer to spread the loss by purchasing insurance or by increasing the price of the products, similarly involves a transfer payment that has distributional consequences but no relevance to a strict risk-benefit analysis.

64. See generally Herbert Hovenkamp, *The Marginalist Revolution in Legal Thought*, 46 *Vand. L. Rev.* 305 (1993).

65. Lyn Squire and Herman G. van der Tak, *Economic Analysis of Projects* 24-25 (Johns Hopkins U., 1975). Moreover, if we limit benefits to those enjoyed only by United States residents, we should exclude any consumer surplus that foreign purchaser of cigarettes obtain. Mishan, *Cost-Benefit Analysis* at 74 (cited in note 34).

66. The latter aspect is known as consumer surplus. See Alchian and Allen, *Exchange & Production* at 17-18 (cited in note 34); Mishan, *Cost-Benefit Analysis* at 22-24.

The current version of the Restatement of Products Liability requires that a plaintiff alleging a design defect introduce evidence of a "reasonable alternative design."<sup>67</sup> By requiring an alternative design, the Restatement recognizes that the economic version of risk-benefit analysis cannot be undertaken without a basis for comparison. By using "reasonable" to modify "alternative design," and explicitly invoking the reasonable person standard of the Restatement (Second),<sup>68</sup> the Products Liability Restatement takes a significant step toward the softer version.

Comment d to Section 2 of the Restatement elaborates on those factors to be considered in the risk-benefit assessment. These factors include items that were identified previously as directly relevant to the economic version of risk-benefit analysis: the magnitude of foreseeable risks; the additional cost of the alternative design; and the impact of the alternative design on the product's function, longevity, maintenance, and esthetics. The same comment cautions that it is inappropriate to consider the impact on corporate earnings or employment, thereby endorsing the *Cipollone* court's adherence to the economic version of risk-benefit analysis. Moreover, the Reporters' Note identifies a careful comparison of the added safety of the alternative design with the adverse consequences of adopting it.<sup>69</sup> Significantly, the current version of the Products Liability Restatement omits a sentence contained in an earlier draft: "The monetary cost of the alternative design may put it outside of the price range of a significant portion of the market."<sup>70</sup> The omission of that consideration, only applicable in the reasonableness version of risk-benefit, similarly signals an adherence to the economic approach.

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67. Tentative Draft No. 2 § 2(b) & comments c, at 19, e, at 24 (cited in note 31).

68. *Id.* § 2, comment c, at 19 provides:

Assessment of a product design requires a comparison between an alternative design and the product design that caused the injury, undertaken from the viewpoint of a reasonable person. That standard is also used in administering the traditional reasonableness standard in negligence. See also Restatement (Second) of Torts, § 283, Comment c. The policy reasons that support use of a reasonable person perspective in connection with the general negligence standard also support its use in the products liability context.

69. *Id.* § 2, Reporters' Note, comment e(1), at 99 (stating that "[t]he monetary cost of the alternative design may exceed the safety benefits to be derived from it. Furthermore, an alternative design may impose significant nonmonetary costs on product users and consumers. It may deprive a product of important features which make it desirable and attractive to many users and consumers").

70. Restatement (Third) of the Law, Torts: Products Liability, Tentative Draft No. 1 § 2, Reporters' Note, comment d(2), at 62 (April 12, 1994) ("Tentative Draft No. 1").



The mixed message, however, continues. A second tier concern, warnings and instructions, is included without differentiation in the list of factors.<sup>71</sup> The impact of the alternative design on the product's marketability, which sounds suspiciously like the increase in the price of the product, and its impact on demand is included in the factors to be considered.<sup>72</sup> Consumer expectations are also included as a relevant consideration for evaluating the design.<sup>73</sup> We are instructed that "although consumer expectations are not determinative of whether a product is defectively designed, they constitute an important factor in determining the necessity for, or the adequacy of, a proposed alternative design."<sup>74</sup> Consumer expectations are not, like the frequency of injury, directly relevant to an economic risk-benefit analysis. They may be a worthy norm, as Professor Shapo argues,<sup>75</sup> or deserve consideration in an assessment of the reasonableness of a design, but they are not a first tier concern. The way in which consumer expectations may be relevant to a risk-benefit test is, like the obvious aspect of dangers, through their impact on the frequency and severity of injury and, therefore, constitute a relevant second tier concern, but that point is only made once and somewhat obscurely in the commentary to the Products Liability Restatement.<sup>76</sup>

Aside from ambiguous signals, the Products Liability Restatement fails to address the most difficult, perhaps intractable, problem posed by the economic version of risk-benefit analysis. That conundrum, identified earlier, is making comparisons between incommensurables. Specifically, risk-benefit analysis entails comparing

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71. Tentative Draft No. 2 § 2, comment e, at 24 (cited in note 31).

72. Alternatively, this item might be understood to adopt a consumer-willingness-to-pay standard to value items such as esthetics, reduced functionality of the alternative design, and similar benefits of the existing design. This approach would be consistent with an economic risk-benefit test, but would be quite unfamiliar to most courts that leave valuation matters to the jury rather than instructing it to ascertain consumers' willingness to pay.

73. Tentative Draft No. 2 § 2, comment e, at 24 (cited in note 31).

74. *Id.* § 2, comment f, at 29.

75. Marshall S. Shapo, *In Search of the Law of Products Liability: The ALI Restatement Project*, 48 Vand. L. Rev. 631, 665-68 (1995).

76. Commentary in the proposed Restatement provides that "consumer expectations about product performance and the dangers attendant to product use affect how risks are perceived and relate to foreseeability and frequency of the risk of harm, both of which are factors in [risk-utility balancing]." Tentative Draft No. 2 § 2(b), comment f, at 29 (cited in note 31). So far, so good in terms of consistency with the economic version. The comment continues: "Such expectations are often influenced by how products are portrayed and marketed and can have a significant impact on consumer behavior. Furthermore, products liability law derives in part from the law of warranty where consumer expectations have special significance." *Id.* The way in which consumer expectations are formed, even if a result of misrepresentations by the manufacturer, would not bear on a strict risk-benefit analysis, and the second quoted sentence implies there is something independently relevant to consumer expectations, aside from their effect on the frequency and severity of accidents, also inconsistent with the strict version.

injuries and death, on the one hand, and the costs—often in dollars—of additional safety features on the other.

The difficulty implicated for design defect litigation was prominently illuminated in the Ford Pinto case, *Grimshaw v. Ford Motor Company*.<sup>77</sup> The case involved a rear-end collision of a Ford Pinto, in which a thirteen year old passenger suffered devastating burns when the Pinto's gas tank ruptured and the leaking gasoline caught fire.<sup>78</sup> The location of the gas tank, behind the rear axle, its construction, and the strength of the rear structure of the Pinto were alleged to constitute design defects that resulted in the fire.<sup>79</sup> The question of a risk-benefit analysis of the gas tank and rear structure design played a central role in the case, in the jury's award of \$125 million in punitive damages against Ford,<sup>80</sup> and in the public outrage that the case engendered.

During discovery, plaintiffs obtained a document that one prominent trial lawyer has described as "possibly the most remarkable document ever produced in an American lawsuit."<sup>81</sup> The document, prepared for submission to the National Highway Traffic Safety Administration ("NHTSA"), contained a risk-benefit analysis of proposed fuel tank safety regulations designed to reduce injury and death due to fires in automobile accidents.<sup>82</sup> The risk-benefit analysis concluded that 180 burn deaths could be avoided with a design change and assigned a value of \$200,000 for each life saved. Compared with these deaths was a cost of \$11 per car for 12.5 million vehicles that amounted to \$137 million.<sup>83</sup> Even with burn injuries and property

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77. 119 Cal. App. 3d 757, 174 Cal. Rptr. 348 (1981). Professor Gary Schwartz, in a careful and meticulously researched article, has provided a wealth of information about the *Grimshaw* case and the details of the Ford Pinto design, from which I have borrowed in the account that follows. See Gary T. Schwartz, *The Myth of the Ford Pinto Case*, 43 Rutgers L. Rev. 1013 (1991). Schwartz concludes that the outcome in the *Grimshaw* case "raises serious questions about the operational viability of the risk-benefit standard itself." *Id.* at 1067.

78. *Grimshaw*, 174 Cal. Rptr. at 359.

79. *Id.* at 359-62.

80. See Roy J. Harris Jr., *Why the Pinto Jury Felt Ford Deserved \$125 Million Penalty*, Wall St. J. 1, 1 (Feb. 14, 1978) (reporting that Ford knew of risks of gas tanks leaking in crashes and balanced those risks against the \$20.9 million it could save if improvements were delayed for 2 years).

81. Stuart M. Speiser, *Lawsuit* 357 (Horizon, 1980).

82. Professor Schwartz has explained why the popular perception of Ford's risk-benefit memorandum is inaccurate. See Schwartz, 43 Rutgers L. Rev. at 1020-25 (cited in note 77). But the erroneous conception need not detain us; indeed it seems likely that the misperceptions were facilitated by the issue of concern, the strength of the lay public reaction to the memorandum.

83. Speiser, *Lawsuit* at 357 (cited in note 81).

damage added to the deaths caused by the existing design, the costs of changing the fuel tank design to conform with the NHTSA standard exceeded the value of the risk by almost \$90 million.<sup>84</sup>

Although the report was not introduced at trial, it became the subject of a public outcry. On a 60 Minutes program devoted to the Ford Pinto, Mike Wallace grilled a Ford vice-president about the report: "I find it difficult to believe that top management of the Ford Motor Company is going to sit there and say, 'Oh, we'll buy 2,000 deaths, 10,000 injuries, because we want to make some money or we want to bring in a cheaper car.'" <sup>85</sup> An article in *Mother Jones*, entitled *Pinto Madness*, excoriated the Pinto, to a large extent because Ford was trading lives against the costs of a safety improvement.<sup>86</sup>

Professor Gary Schwartz, after surveying the reaction to *Grimshaw*, concludes: "What seems obvious enough is that there exists a basic belief held by many (indeed most) of the public that it is wrong for a corporation to make decisions that sacrifice the lives of its customers in order to reduce the corporation's costs, to increase its profits."<sup>87</sup> Or even, he might have added, to produce a lower-cost product. Public attitudes about environmental choices reflect this same dynamic: Those who insist that pollution cannot be traded for other values or that it should be eliminated without regard to the expense involved demonstrate the aversion to risk-benefit analysis involving incommensurables such as environmental cleanliness and dollars. Similarly, some individuals refuse to negotiate over the payment they would accept in exchange for an increase in pollution, often evoking outrage at this form of "bribery."<sup>88</sup>

With this attitude widespread among the public who make up juries, how can trial lawyers defend a design case by pointing to a risk-benefit analysis performed by the manufacturer? The short answer is that they can't and don't. Rather, lawyers will argue that the alternative design would compromise the product's function or create

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84. The relevant portion of the document is reproduced in Keeton, et al., *Products Liability* at 841 (cited in note 30).

85. *Id.* at 841 (quoting *Is Your Car Safe*, 60 Minutes, vol. 10, no. 40, at 7 (June 11, 1978)).

86. Schwartz, 43 Rutgers L. Rev. at 1017, 1035 (cited in note 77).

87. *Id.* at 1035. Schwartz also identified an array of academics, from a variety of disciplines, including religion, sociology, criminology, and business, who have condemned Ford for its trading of lives for dollars. *Id.* at 1036-37 & n.94. Professor Barbara White has demonstrated the stark dichotomy in judicial attitudes over risk-benefit analysis in this context. See generally Barbara Ann White, *Risk-Utility Analysis and the Learned Hand Formula: A Hand that Helps or a Hand that Hides?*, 32 Ariz. L. Rev. 77 (1990).

88. Sunstein, 92 Mich. L. Rev. at 834-36 (cited in note 41).

different risks in the product, but not that the costs of the alternative design outweigh the injury or death toll that might be avoided.<sup>89</sup>

The tension between widespread public beliefs and an economic risk-benefit test may be even greater than revealed above and pose yet additional difficulties for employment of an economic risk-benefit test for design defect litigation. Public attitudes toward identifiable individuals whose lives are at stake are unique. They are also quite anomalous when compared with attitudes toward risks posed to an anonymous population ("statistical lives"). The anomaly reflects a deep-seated intuition that prefers efforts (and expenditures) to save specific identifiable lives at risk as compared with statistical lives that might be saved through prevention measures.<sup>90</sup> The most common example of this, though it exists in a wide variety of situations, is in the rescue efforts devoted to those trapped in a mine, compared with our complacency about the resources devoted to mine safety that might save lives through prevention. In the former situation, no one asks whether the victims' lives are "worth" the cost of the rescue efforts, while relatively modest sums by comparison are spent to protect the lives of those who work in mines, without apparent protest. No one objects that the resources devoted to rescue the trapped miner might be better spent to prevent mine accidents and save more lives.

The trial of a case does not present precisely the same choice between prevention and rescue, but it is similar.<sup>91</sup> In any lawsuit, there is no injury or death that can be avoided, but an identifiable plaintiff has been injured or a specific person has been killed, and the jury must confront the individuality of that person and the harm she suffered. The strong preference for identifiable individuals exacerbates the difficulty of asking a jury to perform a risk-benefit balance that already is intuitively repugnant. The presence of an identifiable plaintiff also tends to distract from the relevant concern: balancing *risk* (magnitude multiplied by probability), rather than the death or injury involved in the case, with the entire benefits of the existing design.<sup>92</sup>

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89. Schwartz, 43 Rutgers L. Rev. at 1038 (cited in note 77).

90. For an excellent essay identifying the paradox and addressing various arguments to rationalize it, see Charles Fried, *The Value of Life*, 82 Harv. L. Rev. 1415 (1969).

91. See Schwartz, 43 Rutgers L. Rev. at 1042-43 (cited in note 77).

92. *Id.* at 1062.

## CONCLUSION

To be sure, all design defect cases do not require balancing dollars with lives. Often the balance only entails a comparison of greater productivity or improved functionality with risk. Even then, the economic version of risk-benefit analysis is conceptually confusing and often counterintuitive. I've observed a generation of bright, motivated law students struggle to understand what counts as a benefit that gets traded for what risks. If we are going to ask juries to perform this analysis, we should give them all of the help—through instructions—that we can.

When we do face incommensurability, solutions to the dissonance between public and jury attitudes and the reality of economic risk-benefit analyses are not easy to imagine. One response, which may explain its endurance, is a retreat to the reasonableness standard, in which a variety of loosely defined factors are identified, but without confronting the stark reality that lives are to be balanced with dollars. That is, in essence, what courts like *Thibault* have adopted. That may be the result of the Restatement (Third) of Torts: Products Liability, which contains its mixed message and omits even a hint of the incommensurability problem. Another possibility might be to provide that manufacturers who explicitly reveal to purchasers the risk-benefit trade-offs employed in designing a product cannot be held liable for a defective design based on the values assigned to injuries and deaths that are disclosed to those who purchase the product. At the very least, this would avoid the objection that manufacturers are secretly making decisions to impose risks on consumers, an important factor in most individuals' assessments of the acceptability of risk.<sup>93</sup> It would also obviate the objection that the values assigned to death and injuries by the manufacturer are too low. The idea requires further development and consideration, but this is not the appropriate place to begin another article. Perhaps it is misguided to try to facilitate a jury reviewing or conducting a serious risk-benefit analysis, and we should leave that function to the courts, only asking juries to resolve disputes about the underlying facts required for a risk-benefit analysis.<sup>94</sup> Perhaps we should leave such questions to

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93. See Breyer, *Regulation* at 151 (cited in note 41) (suggesting that individuals are less concerned with risks that are voluntarily assumed than those imposed involuntarily).

94. Ironically, one of the most criticized products liability decisions, *Azzarello v. Black Bros. Co.*, 480 Pa. 547, 391 A.2d 1020 (1978), contemplates precisely this division of labor between judge and jury. See 391 A.2d at 1026 (holding that the question of whether a product's utility outweighs the danger it poses is one of law). See also *Jordan v. K-Mart Corp.*, 417 Pa. Super. 186, 611 A.2d 1328, 1330 (1992) (stating that the trial judge "meticulously weighed the

regulatory agencies, which regularly employ risk-benefit analyses, and consider those judgments dispositive in tort cases requiring risk-benefit analyses.<sup>95</sup>

I'm not sure that Dean Wade would agree with all of the foregoing. Yet I am quite certain that he would have read (or listened) respectfully and with an open mind. He would have valued the effort to explicate these ideas and the tensions that they identify in an area of the law to which he devoted his considerable energy and wisdom. He would have responded with civility, grace, and wisdom. I regret that I will not have the benefit of his thoughtful criticism, but take a small measure of solace that these thoughts, imperfect as they are, stand as a memorial to a veray, parfit gentil knyght: Dean John Wade.

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relative risks and utility of the sled in question . . . to determine whether liability should be imposed").

95. See, for example, W. Kip Viscusi, et al., 24 Seton Hall L. Rev. at 1442-46 (cited in note 42) (describing the risk-benefit analysis undertaken by the FDA in the drug approval process). But see Clayton P. Gillette and James E. Krier, *Risk, Courts and Agencies*, 138 U. Pa. L. Rev. 1027, 1031 (1990) (arguing that "[p]roposals to increase the scope of agency authority at the expense of judicial scrutiny are remarkably premature").

