

THE MYTH OF THE FORD PINTO CASE*

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The Ford Pinto case—*Grimshaw v. Ford Motor Company*—was decided by an Orange County jury in February 1978; the jury's verdict was affirmed by a California appellate court in May 1981.¹ Last summer, more than nine years after this affirmation, as I traveled from professional meeting to social occasion I realized that the case was still being mentioned with a surprising frequency² and discussed with a surprising intensity.³ Indeed, last summer the California legislature explicitly relied on the example of the case as it considered a major new proposal.⁴

Having reflected on these invocations of the Ford Pinto case, I have arrived at two general observations. One is that several significant factual misconceptions surround the public's understanding of the case. Given the cumulative force of these misconceptions, the case can be properly referred to as "mythical." Secondly—and quite apart from these misconceptions—there is something about the basic narrative of the case that has captured

* This Article formed the basis of the Third Annual Lecture in the Pfizer Distinguished Visitors' series, sponsored by Rutgers School of Law—Newark, with the support of Pfizer, Inc., delivered by the author on November 14, 1990.

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The author is grateful for the comments of Rutgers faculty and others who attended the Pfizer Lecture. Thanks also to Mark Ramseyer and Richard Sander.

1. 119 Cal. App. 3d 757, 174 Cal. Rptr. 348 (1981).

2. The social talk I then heard included indications that the case was being turned into a motion picture. As I complete the revision of this manuscript in April 1991, *Class Action* (Twentieth Century Fox) has just opened; the lawsuit portrayed in this movie borrows significantly from the Ford Pinto case.

3. At a Brookings Institution conference on tort law in mid-June 1990, the Pinto case was discussed by Professor John Graham. See Graham, *Does Liability Promote the Safety of Motor Vehicles?*, in *THE LIABILITY MAZE: THE IMPACT OF LIABILITY RULES ON INNOVATION AND SAFETY* 120, 128-37 (P. Huber & R. Litan eds. 1991). Two weeks earlier, at an American Assembly conference on tort law, the case was the subject of a heated exchange between Joan Claybrook and Peter Huber.

4. The proposal was signed into law in September 1990. CAL. PENAL CODE § 387 (West Supp. 1991). See *infra* notes 24, 128, 133, 140 & 151. The Los Angeles County District Attorney sponsored this legislation, and in doing so relied very heavily on the Pinto case. See letters from Los Angeles District Attorney's Office to all Assembly members (Jan. 16, 1990); to all Senators (Aug. 20, 1990); and to the Governor (Sept. 4, 1990) (copies on file with author).

the public's attention: the narrative includes features that are evidently elemental or essential. In this quite different sense, then, we can also talk about the case as entailing "myth."

This Article deals with the case in each of its mythical dimensions. One of my goals is to identify, and clear away, the misunderstandings that burden the case. My other goal is to explore those elements of the case that provide its mythical quality. In considering possible misunderstandings, I am in a position to clarify the specifics relating to the Pinto and to consider how awful a car it was (or wasn't). In pondering more basic issues, I can point out that the standard public policy analysis of products liability calls on manufacturers, first of all, to design products in risk-beneficial ways, and secondly to advise consumers of non-obvious hazards that remain in products' designs once those risk-benefit decisions are rendered.

The Ford Pinto case reveals, however, that in important ways things are not as they seem in the law books. First of all, the case shows how disturbed the public can be by corporate decisions that balance life and safety against monetary cost. This disturbance suggests an apparent mismatch between public opinion and the assumptions underlying the risk-benefit test for design liability. Given the role of the jury as the vehicle for public opinion in design defect cases, this mismatch may well be undermining that doctrine's objections: manufacturers may be routinely losing design cases which in theory they ought to win. In any event, the public's dissatisfaction with the practice of confidential corporate risk-benefit balancing highlights the appropriateness of thinking about the Pinto case in terms of the manufacturer's duty to warn. However, a review of the case law inspired by the Pinto case uncovers the practical point that the current version of the informed-choice warning doctrine renders that doctrine inapplicable to many products, including automobiles.

As implemented, then, current design defect practices may go too far, and warning practices may not go far enough. It is possible that these tendencies offset one another in an awkward, but still roughly satisfactory way. While recognizing that possibility, this Article will generally give separate consideration to manufacturers' design liability and their liability for inadequate warnings. The Article shows how current design liability practices can easily be evaluated as troubling, if not incoherent; it then goes on to suggest, however, that when examined from a certain perspective

those practices may produce results that are not all that unacceptable. As far as the law of informed-choice warnings is concerned, the practical problems that have led to the current limitations on the warning obligation do seem insurmountable. Having acknowledged this, the Article advances for discussion's sake a regulatory proposal that could provide the proper sort of disclosure.

I. THE FACTS

The Pinto was one of the second generation of subcompact cars designed by the American auto industry.⁵ (The Ford Falcon and the Chevrolet Corvair were part of the first generation.) Ford began planning the Pinto in the summer of 1967. A design decision was made to place the fuel tank behind the rear axle rather than above that axle. A primary reason for this decision was that if the fuel tank were located above the axle the Pinto would have been left with a very small trunk. The key problem, however, with the behind-the-axle location was that it rendered the gas tank more vulnerable in the event of a rear-end collision. The vulnerability of the gas tank was increased by other design features. One problem was that only nine inches of "crush space" separated the gas tank and the rear axle. The Pinto's bumper, moreover, was essentially ornamental.⁶ The rear structure of the Pinto was without the reinforcement provided to many cars by horizontal cross-members and longitudinal side members known as "hat sections."⁷ Several bolts protruded out of the differential housing in

5. My account of the Pinto and the Pinto case is drawn from several sources. One is the transcript of the case itself. The second is the court of appeal opinion. *Grimshaw v. Ford Motor Co.*, 119 Cal. App. 3d 757, 174 Cal. Rptr. 348 (1981). A third is telephone conversations with Mark Robinson, Jr., co-counsel for the plaintiffs; Richard Foxx, chief counsel for Ford at trial; and Malcolm Wheeler, who was a member of Ford's trial team in the Pinto criminal case. See *infra* note 11 and accompanying text. Secondary sources include L. STROBEL, *RECKLESS HOMICIDE?* (1980) and Graham, *supra* note 3.

These various sources do not always agree. When they do not, I have done my best to resolve the differences intelligently; or, I have simply set forth the relevant difference in views.

6. The court of appeal opinion referred to the Pinto's bumper as the flimsiest of any American car. *Grimshaw*, 119 Cal. App. 3d at 774, 174 Cal. Rptr. at 360. Mark Robinson, Jr., co-counsel for the plaintiffs, is emphatic that this reference is correct. Telephone interview with Mark Robinson, Jr. (Sept. 12, 1990) [hereinafter Robinson Interview]. In the later criminal case, however, Byron Bloch, a prosecution witness, stated in cross-examination that the Pinto's bumper was about the same as those of the Gremlin, Vega, and Dodge Colt. See L. STROBEL, *supra* note 5, at 157 ("I would say they were all bad.").

7. Evidence in the later criminal case indicated that the Pinto did have metal supports

a way that threatened the gas tank in the event of a collision. Finally, the fuel filler pipe was designed in a way that entailed a chance of disconnecting from the gas tank in the event of rear-end collision, resulting in the spillage of gasoline.⁸

In May 1972, Lily Gray began a trip in her 1972 Pinto with her Orange County neighbor, 13-year-old Richard Grimshaw. On account of a carburetor problem, the Pinto stalled and rolled to a halt in the middle lane of a freeway. The Pinto was then struck by a car, which had originally been traveling at about fifty miles per hour but which had braked down to a speed of perhaps thirty miles per hour at the point of impact.⁹ The impact resulted in a

within its trunk. See L. STROBEL, *supra* note 5, at 195. Ford has stressed to me that these metal supports were equivalent to hat sections in the reinforcement they provided. Also, Ford has provided me with photographs of these supports, which I have shown to Mark Robinson. He claims that these supports consisted of thin sheet metal, geared more to preventing flutter than to absorbing energy. There are engineering issues here that are beyond my ken. In *Grimshaw* itself, a Ford engineer was grilled extensively by plaintiffs on the lack of reinforcements in the Pinto rear end. Transcript at PG 2200-04. This witness, though trying to defend the Pinto, did not mention the metal supports. (Nor were they mentioned elsewhere in the *Grimshaw* litigation.) Professor Graham's recent article was prepared after consultation with Ford; in considering the absence of hat sections, he does not refer to the metal supports. Graham, *supra* note 3, at 130. It should be noted that metal supports and hat sections are not a matter of either/or: hat sections were added to the Pinto in 1973 and 1974.

The superior court filing numbers for the two claims joined in *Grimshaw* were 197 761 and 199 397. Three court reporters prepared the transcript at various times during the six-month *Grimshaw* trial: Evelyn Barnett, Ronald Gerritsen, and Patricia Graham. Each of these three independently paginated the transcript that he or she prepared. References to the transcript will therefore begin with the initials of the reporter: "EB," "RG," or "PG."

8. The fuel filler pipe did not, however, disconnect in the *Grimshaw* collision. Hence the adequacy of its design was not an issue in *Grimshaw*. Other subcompacts also had problems with their filler pipes.

9. See *Grimshaw*, 119 Cal. App. 3d at 774, 174 Cal. Rptr. at 359.

For reasons quite beyond the court's control, its opinion must be treated cautiously as a source of actual facts. Because the defendant was appealing a jury verdict in favor of the plaintiffs, the court was under an obligation to view all the evidence in a way most favorable to the plaintiffs and essentially to ignore evidence in the record that might be favorable to the defendant. See *id.* at 773, 820, 174 Cal. Rptr. at 359, 388.

In fact, Ford's basic position at trial—which the court's opinion at no point mentions—was that the approaching car (a Ford Galaxie) had not slowed down at all, and had struck the Gray car at a speed in excess of 50 miles per hour. There was an enormous amount of evidence at trial supporting each of the parties' factual claims as to the Galaxie's closing speed. Had the jury accepted Ford's speed estimate, there would not have been much of an issue of crashworthiness: for the plaintiffs' position throughout trial was that even a state-of-the-art fuel system could not maintain integrity in a 50 mile-per-hour collision.

Having focused my attention on other parts of the transcript, I have no clear views on the question of the Galaxie's closing speed. But I can at least say that there was nothing obviously improper in the jury's rejection of Ford's factual claim.

rear-end fire that killed Mrs. Gray and left Richard Grimshaw with disastrous injuries. In the resulting suits against Ford, the jury—after deliberating for eight hours—awarded the Gray family wrongful death damages of \$560,000; Grimshaw was awarded over \$2.5 million in compensatory damages and \$125 million in punitive damages as well. The trial judge reduced the punitive damage award to \$3.5 million as a condition for denying a new trial. Two years later the court of appeal affirmed these results in all respects; the state supreme court then denied a hearing.

This limited story should be promptly supplemented in three ways. First, in August 1977, as the *Grimshaw* case was beginning trial, *Mother Jones* magazine published an ambitious article, titled "Pinto Madness," that condemned the Pinto.¹⁰ In order to draw attention to the publication of a story that it believed was a political blockbuster, *Mother Jones*, which is edited in San Francisco, held a press conference in Washington, D.C., at which Mark Dowie, the article's author, was accompanied by Ralph Nader. The *Mother Jones* article was later awarded a Pulitzer Prize.

Second, it should be noted that there was an additional major Ford Pinto case.¹¹ In August 1978—half a year after the verdict in the tort case—a 1973 Pinto was involved in a fatal crash in Ulrich, Indiana. Indiana public officials decided to prosecute Ford for the crime of reckless homicide. Because the reckless homicide statute had been enacted only in 1977, Ford could not be prosecuted for the reckless design of the Pinto; rather, the prosecution needed to show a reckless post-1977 failure by Ford to repair or warn. Largely because of the narrowness of the resulting issue, at trial the prosecution was not able to secure the admission of internal Ford documents on which it had hoped to build its case. Ford's defense effort in this criminal case was vastly more ambitious than the effort the company had previously mounted in defending itself against Grimshaw's tort claim. In March 1980 the Indiana jury found Ford not guilty. The jury seemed ambivalent about the Pinto, but concluded that Ford had

10. Dowie, *Pinto Madness*, MOTHER JONES 18 (Sept./Oct. 1977).

11. This criminal prosecution, by the State of Indiana, *State v. Ford Motor Co.*, Cause No. 11-431 (1980), is described in F. CULLEN, W. MAAKESTAD, & G. CAVENDAR, *CORPORATE CRIME UNDER ATTACK: THE FORD PINTO CASE AND BEYOND* (1987); L. STROBEL, *supra* note 5.

Other tort actions against Ford—none of which led to appellate opinions—are referred to in *infra* note 66.

avoided recklessness in the conduct of its recall program.

Third, I should describe the regulatory activities that surrounded the Pinto. The company began planning the Pinto in June 1967. Its basic design concept was approved by Ford's Product Planning Committee in December 1968; a month later, program approval was conferred by Ford's Board of Directors. In that same month, the National Highway Transportation Safety Bureau ("NHTSA") proposed a new set of regulations for fuel-system integrity. Not long afterwards, Ford began crash-testing Pinto prototypes (actually, modified Mavericks).¹² One purpose of these tests was to enable Ford to develop its response to the NHTSA proposal. In August 1970, 1971 model-year Pintos began coming off the assembly line. Just a few days later, NHTSA—which had never acted on its earlier proposal—advanced a more demanding set of proposed regulations. Three months later, Ford officials decided that for purposes of the 1973 model year, Ford would adopt, as its own internal objective, the regulations that NHTSA had suggested in 1969. In order to respond to NHTSA's more recent proposal, Ford engineers, with actual Pintos now available, stepped up the crash-testing process, and identified a number of design modifications that might improve the Pinto's performance. In October 1971, Ford officials decided against incorporating any of these modifications into current Pintos; rather, it would wait until NHTSA clarified its position. In 1973, NHTSA promulgated its fuel-tank standard¹³ but ruled that this standard would apply only to 1977 models. Ford eventually complied with the rear-end feature of the 1977 standard by installing a plastic shield in front of the fuel

12. The Pinto performed badly in these initial crash tests. Ford responded to these tests by somewhat modifying the Pinto's rear design before production began. See NHTSA OFFICE OF DEFECTS INVESTIGATION, INVESTIGATION REPORT: PHASE I C7-38 at 7 [hereinafter NHTSA INVESTIGATION REPORT]. However, the next round of crash-testing, conducted after the Pinto had been introduced, continued to provide troubling results. See Graham, *supra* note 3, at 131; NHTSA INVESTIGATION REPORT, *supra*. Yet these results are somewhat difficult to interpret, since no clear performance standard was then in effect. To be sure, the crash tests do confirm that Ford was generally aware of the Pinto's rear-end performance characteristics.

13. An earlier NHTSA standard had addressed fuel-system integrity in the event of a front-end collision. The new, expanded standard not only strengthened the front-end requirements but added provisions relating to rear-end collisions, lateral collisions, and vehicle rollovers. As subsequently amended, the fuel-system integrity standard can be found at 49 C.F.R. § 571.301 (1990).

tank and by lengthening the filler pipe.¹⁴

The *Mother Jones* article had encouraged consumers to write to NHTSA and demand a recall of earlier Pintos.¹⁵ Responding to the wave of consumer complaints it received, NHTSA began a recall proceeding relating to 1971-1976 Pintos.¹⁶ NHTSA announced its proceeding on September 13, 1977, not long after the *Grimshaw* trial had begun. In May 1978, NHTSA issued an initial determination that the Pinto's fuel system was defective, and scheduled a hearing for June 14 to enable Ford to reply. By early June, the verdict in the Ford Pinto case was in, the NHTSA hearing was pending, and a segment about the Pinto on the CBS television show, *60 Minutes*, was imminent. At this point, Ford decided to undertake a "voluntary" recall.¹⁷ During this recall, earlier Pintos were modified along the lines of the 1977 design changes: dealers altered the filler pipes and inserted plastic shields. In explaining its recall, Ford took the position that it could successfully resist the NHTSA "defect" initiative, but that the public relations losses it was incurring made a recall advisable. I agree that reputational considerations are sufficient to explain the Ford decision. Given, however, what I learn about the NHTSA program from Mashaw and Harfst's fascinating book,¹⁸ I assume that even absent Ford's consent NHTSA ultimately would have issued a recall order, and that a federal court would have been willing to enforce that order.

14. In 1983, NHTSA reviewed its fuel-tank integrity standard and concluded that it had been a major safety success. G. PARSONS, EVALUATION OF FEDERAL MOTOR VEHICLE SAFETY STANDARD 301-75, FUEL SYSTEM INTEGRITY: PASSENGER CARS (1983) [hereinafter 1983 NHTSA EVALUATION]. However, a new study of this standard, just released by NHTSA, is far more guarded in its overall evaluation. G. PARSONS, MOTOR VEHICLE FIRES IN TRAFFIC CRASHES AND THE EFFECTS OF THE FUEL SYSTEM INTEGRITY STANDARD (1990) [hereinafter 1990 NHTSA EVALUATION].

15. The article included a "coupon" for readers to clip out and mail to NHTSA. Dowie, *supra* note 10, at 32.

16. Information about the NHTSA proceeding can be found in Graham, *supra* note 3; NHTSA INVESTIGATION REPORT, *supra* note 12.

17. Like the Pinto case generally, this recall has acquired a symbolic life of its own. Jeffrey Masson is a leading critic of the practice of psychoanalysis. He claims that given its flaws many of the patients treated by Freud and later analysts should be "recalled": "it reminds me of the Pinto." J. MASSON, FINAL ANALYSIS 191 (1990).

18. See J. MASHAW & D. HARFST, THE STRUGGLE FOR AUTO SAFETY 149-56, 164-65 (1990) (describing the "heyday of recalls" within NHTSA during the Carter Administration, and the leniency of the courts in approving NHTSA's recall proposals).

II. MYTH: MISCONCEPTIONS

I have suggested that the Ford Pinto case is mythical in the sense that several misconceptions burden the public's understanding of the case. What, then, are those misconceptions? One of them—indeed, a set of misconceptions—concerns the significance of what has become a much-publicized Ford report. In pre-trial discovery in *Grimshaw*, the plaintiffs secured from Ford what Stuart Speiser calls “possibly the most remarkable document ever produced in an American lawsuit.”¹⁹ In this report, Ford compared the “costs and benefits” of reducing the chances of certain fuel-tank fires. The safety device considered by the document would have cost \$11 per vehicle; multiplied by 12.5 million vehicles, the total cost would thus have been \$137 million. According to the document, the added safety provided by the device would have resulted in the avoidance of 180 deaths and another 180 serious burn injuries. Setting \$200,000 as the value of life and \$67,000 as the value of injury avoidance, the document calculated the total safety benefit at \$49.5 million, much less than its \$137 million cost.

As described by Speiser, this document specifically dealt with the problem of fuel tank integrity in the event of rear-end impact,²⁰ and hence was quite relevant to the accident in *Grimshaw*. The description is, however, inaccurate. When the document was prepared, NHTSA was considering a combination of regulations that related to the problem of fuel-system fires. One of these proposed regulations concerned the rear-end-impact problem; another such regulation related to lateral collisions; yet another proposal concerned the problem of fuel leakage in the event of a vehicle rollover. It was the rollover situation, and not the rear-end-impact situation, that was the subject of the Ford document.²¹ To be sure, the document added the thought that “analyses of other portions of the proposed regulation would also be ex-

19. S. SPEISER, LAWSUIT 357 (1980). (Speiser is a well-known trial lawyer.)

The authors of this document were Ford engineers E.S. Grush and C.S. Saunby; hence, it is often referred to as the “Grush-Saunby Report.” An adaptation of this report plays a key role in the plot of the movie *Class Action*.

20. *Id.* at 357, 358.

21. The Ford report took the form of an attachment to a submission by Ford to NHTSA, dated September 19, 1973, captioned a Petition for Reconsideration of Federal Motor Vehicle Safety Standard No. 301 [hereinafter “Attachment II”] (copy on file with author).

pected to yield poor benefit-to-cost ratios.”²² Given, however, the document’s focus on rollover, the *Grimshaw* plaintiffs did not even claim that the document was relevant to the issue of liability; rather, they attempted to introduce it on the issue of punitive damages, as indicative of Ford’s corporate mentality.²³ After considering the matter over a period of several weeks, the trial judge ruled against admissibility.

A second common understanding of the Ford document is that it put on display Ford’s consideration of its tort liability;²⁴ the document is said to show Ford officials internally reaching the conclusion that it would be less expensive to absorb the cost of tort judgments than to incorporate safety modifications into the Pinto.²⁵ Yet, as suggested above, this document was not prepared with tort liability in mind, but rather for purposes of submission to NHTSA.²⁶ Specifically, this Ford report was part of a petition that Ford filed in September 1973, urging NHTSA to reconsider the rollover portion of its recently promulgated standard.²⁷ Contrary to the common understanding,²⁸ the report was not really

22. Attachment II, *supra* note 21, at 1. See also *id.* at 7. In fact, a follow-up report, prepared by Grush for Ford, focused on the lateral and rear-impact portions of the new NHTSA standard. It found compliance costs of \$100 million annually and safety benefits “as much as \$102 million.” Hence those portions of the standard, unlike the rollover portion, might show “marginal cost-effectiveness.” A copy of this report is in my files.

23. *Grimshaw* transcript, *supra* note 7, at RG 2121-23.

24. This is, for example, the mischaracterization of the Ford document that was relied on by the California legislature in adopting its 1990 statute. See *supra* note 4 and accompanying text. See Scholl, *Giving Business the Business*, BARRON’S, Mar. 25, 1991, at 18. Scholl interviewed me in preparing her article.

25. Of course, even if the document had shown Ford reasoning in this way, it can be asked why this should be regarded as morally offensive. See *infra* notes 96-101 and accompanying text. One answer to this question could focus on various ways in which common law damages do not take account of all the harm that a defendant’s torts can inflict. See Schwartz, *Deterrence and Punishment in the Common Law of Punitive Damages: A Comment*, 56 S. CAL. L. REV. 133, 138-40, 142-43 (1982). Another and more important answer relates to the public’s doubts about manufacturers’ reliance on risk-benefit analysis and their use of the tort system as a mechanism for “buying deaths.” The question of public attitudes is dealt with in *infra* Part III.

26. Mark Robinson agrees with this characterization. He reports, however, that he knows of a memorandum prepared about this time by an auto manufacturer other than Ford, in which the manufacturer did compare the costs of tort liability to the costs of design improvements. Robinson Interview, *supra* note 6.

27. The report was submitted three years after production of the Pinto had begun.

28. See, e.g., Pildes & Anderson, *Slinging Arrows at Democracy: Social Choice Theory, Value Pluralism, and Democratic Politics*, 90 COLUM. L. REV. 2121, 2150-51 (1990); White, *Risk-Utility Analysis and the Learned Hand Formula: A Hand That Helps Or a Hand That Hides?*, 32 ARIZ. L. REV. 77, 131 n.279 (1990).

"about" the Pinto. Its calculations—12.5 million vehicles, 180 deaths—referred not to Pintos, but rather to all cars (as well as light trucks) sold by manufacturers in America in a typical year; the \$137 million figure concerned the annual cost to be borne not by Ford alone, but by the entire auto industry.²⁹

An additional point frequently heard about the Ford report is that its \$200,000 life-valuation figure was so deplorably low as to justify our condemnation of Ford.³⁰ The NHTSA context of the report, however, helps show why this point is somewhat unfair: \$200,000 is the value-of-life that NHTSA itself had developed in a 1972 study calculating the social cost of motor-vehicle accidents.³¹ Indeed, a 1972 article by William Greider reported that \$200,000 was the life-value figure upon which NHTSA was then

29. If, then, the report does *not* reveal Ford mapping out its Pinto-related tort exposure, what expectations did Ford have at the time it began production of the Pinto concerning the Pinto's potential for tort liability? At the trial in *Grimshaw*, Harley Copp, a Ford engineering executive, testified that just after production of the Pinto had begun, he discussed with Ford's Chief Chassis Engineer the prospect that the Pinto would lead to "more darn lawsuits . . . than you can shake a stick at." *Grimshaw* transcript, *supra* note 7, at PG 2691. Aside from this testimony, however, the *Grimshaw* record provided little insight into Ford's perception of its liability situation. It is worth noting here that as of 1970 the doctrine of "crashworthiness" liability was still in a very primitive form, having been rejected in *Evans v. General Motors Corp.*, 359 F.2d 822 (7th Cir.), *cert. denied*, 385 U.S. 836 (1966), but then accepted in *Larsen v. General Motors Corp.*, 391 F.2d 495 (8th Cir. 1968). Nevertheless, all the attention that was immediately lavished on *Larsen* could have been expected to focus manufacturers' attention on their possible liability exposure for uncrashworthy cars. See Rossman & Bramnick, *The Crashworthiness Doctrine—a Search for a Rational Answer in Florida*, 29 U. MIAMI L. REV. 70, 70 (1974) ("Rarely have so many jurisdictions become so divided on a particular issue in so short a time."). Indeed, Ford itself was the defendant in uncrashworthiness suits resulting from a January 1966 accident involving a Mustang and an October 1967 accident involving a Maverick. See *McClung v. Ford Motor Co.*, 333 F. Supp. 17 (S.D. W. Va. 1971), *aff'd*, 472 F.2d 240 (4th Cir.), *cert. denied*, 412 U.S. 940 (1973); *Polk v. Ford Motor Co.*, 529 F.2d 259 (8th Cir. 1976).

As will be shown below, in terms of the number of potential victims, the problem raised by the Pinto's design was in a sense ordinary rather than exceptional: the number of lawsuits that Ford might have anticipated was perhaps 40, rather than 400 or 4000. Moreover, I have seen no evidence indicating that Ford's top officers ever acknowledged that the company would lose these lawsuits—that the Pinto's design was in fact defective. In these circumstances, it would not be all that surprising if these officers never specifically considered the question of the liability exposure entailed by the Pinto. But I am not able to make an actual finding as to whether such consideration was given or was not.

30. "Ever wonder what your life is worth in dollars? Perhaps \$10 million? Ford has a better idea: \$200,000." Dowie, *supra* note 10, at 24.

31. NHTSA, SOCIETAL COSTS OF MOTOR VEHICLE ACCIDENTS: PRELIMINARY REPORT 1, 2 (1972) [hereinafter NHTSA, SOCIETAL COSTS]. To be sure, this explanation for the Ford figure goes so far and no further. See the further discussion of the NHTSA study in *infra* note 41.

relying in setting vehicle standards.³² That article identified a proposed standard, relating to rear under-ride bumpers on trucks, that NHTSA “killed” because the monitorized safety benefits of the proposed regulation were significantly lower than its associated costs.³³

What I had learned from the Greider article was in harmony with what I knew of the 1966 Motor Vehicle Safety Act.³⁴ Accordingly, in last summer’s discussions I expressed the view that Ford’s invocation of the \$200,000 figure in its presentation to NHTSA was clearly proper, since it employed the same datum that NHTSA would be utilizing in deciding whether to promulgate the standard.³⁵ Having now done further homework, however, I find that the Greider article does not quite have its story right. While NHTSA has long accepted the idea that it must give serious consideration to costs, the agency has always resisted the notion that it must employ anything resembling a formal cost-benefit analysis; and it has definitely rejected the claim that, in issuing standards, it should place an explicit value on life and serious injury.³⁶ In interpreting its obligations under the Act,

32. Greider, *Your Life May Not Be Worth Saving*, Wash. Post, Apr. 9, 1972, at B1, col. 1.

33. *Id.*

34. That Act, in authorizing NHTSA to issue “motor vehicle safety standards,” instructs NHTSA to “consider” whether such standards are “reasonable” and “practicable.” 15 U.S.C. §§ 1391(2), 1392(f) (1988). Moreover, the Act explains “motor vehicle safety standards” in terms of “meet[ing] the need for motor vehicle safety.” *Id.* § 1391(2). In turn, “motor vehicle safety” is defined as signifying the “performance” of motor vehicles that protects the public from the “unreasonable risk of accidents” and the “unreasonable risk of death or injury” when accidents do occur. *Id.* § 1391(1). Torts professors like myself are of course inclined to assume that a doctrine of “unreasonable risk” calls for the comparison of costs to safety benefits.

35. Indeed, a primary reason given by the trial judge in ruling against the admissibility of the Ford report was that Ford was using the figure that NHTSA itself preferred. *Grimshaw* transcript, *supra* note 7, at RG 2122, 2124.

36. I draw here on interviews with two senior NHTSA officials: telephone interviews with Barry Felrice (Oct. 1, 1990) and Jim Hofferberth (Oct. 2, 1990). Eighteen years earlier, Hofferberth had himself been a major source of information for Greider. Greider, *supra* note 32, at B1.

NHTSA’s position is at least partially supported by one portion of the legislative history of the Safety Act. When that Act was being considered in the House of Representatives, the House rejected an amendment supported by the American Manufacturers’ Association that would have conditioned the Administrator’s approval of a standard on his finding that the standard would provide safety “at costs commensurate with the benefits.” See FEDERAL REGULATION AND REGULATORY REFORM, REPORT BY THE SUBCOMM. ON OVERSIGHT AND INVESTIGATIONS, COMM. OF INTERSTATE AND FOREIGN COMMERCE, HOUSE OF REPRESENTATIVES, 94th Cong., 2d. Sess. 176 (1977) [hereinafter FEDERAL REGULATION AND REGULATORY

NHTSA has taken the position that while it should gather and consider all information relevant to the safety benefits and the likely costs of a proposed standard, the decision whether to adopt a standard is then a judgment call on the part of the NHTSA Administrator.³⁷ In the early 1970's, NHTSA did indefinitely table the rear under-ride guard truck proposal³⁸ on grounds that compliance costs would plainly be disproportionate to safety benefits.³⁹ Nevertheless, this was an exercise of judgment rather than an arithmetic calculation; and the NHTSA Administrator reached this decision only after agonizing with an associate as to what a proper result would be.⁴⁰

Contrary, then, to my earlier understanding, in its standard-setting NHTSA was not, in the early 1970's, relying on a \$200,000 life-value figure. In setting standards, however, NHTSA was indeed taking both monetary costs and safety benefits into account; in doing so, the agency was essentially finessing the question of the monetary value of life, while at the same time releasing documents that set forth a \$200,000 life-value datum.⁴¹ Given these

REFORM]. However, that amendment also included language prohibiting NHTSA from relying on the strategy of technology-forcing in promulgating regulations. Therefore, the meaning of its rejection by the House is unclear. The amendment is discussed in *Chrysler Corp. v. Department of Transp.*, 472 F.2d 659, 672 n.16 (6th Cir. 1972).

37. The 1983 NHTSA study evaluating the agency's fuel-integrity standard calculated the monetary costs incurred by manufacturers in complying with that standard and set forth the number of fatalities and injuries apparently avoided by the standard. The study then indicated that "with respect to the cost-effectiveness of the standard, no specific conclusion is drawn, but it would seem that the costs of the standard do not represent an undue investment when weighed against the estimated benefits." 1983 NHTSA EVALUATION, *supra* note 14, at 104.

38. See 36 Fed. Reg. 11,750 (1971).

39. See *FEDERAL REGULATION AND REGULATORY REFORM*, *supra* note 36, at 176.

40. Telephone interview with Jim Hofferberth (Oct. 2, 1990), who was the associate in question.

41. The 1972 NHTSA report made clear, however, that its \$200,000 figure did not reflect full life-value, since the figure did not include many of life's personal benefits. Accordingly, the report indicated that its \$200,000 figure represented the minimum but not the maximum that society should spend in preventing highway fatalities. NHTSA, *SOCIAL COSTS*, *supra* note 31, at A-1, A-3. The report did not suggest what methodology the Administrator should employ in passing on regulatory proposals.

The 1973 Ford report can fairly be faulted for not taking account of NHTSA's explanation of the implications of its own figure. Ford did indicate, however, that it was utilizing the NHTSA figure in part because it was *higher* than other life-value estimates known to the company. Therefore, Ford stated, its use in the Ford report would avoid any understatement of safety benefits. See Attachment II, *supra* note 21, at 4.

How accurate was Ford's claim about other life-value estimates? According to the Greider article, previous estimates had ranged from \$40,000 to \$450,000. Greider, *supra*

circumstances, it is proper to conclude that Ford's utilization of this figure in its submission to NHTSA was not deplorable, but was within the range of expected and acceptable advocacy.

It is helpful to comment here on the evolution of techniques for measuring life value. The \$200,000 figure resulted from a methodology that focused on the decedent's loss of earnings. This methodology can easily be regarded as crude: while taking account of the victim's ability to contribute to the national economy, it essentially ignores the intangible value that the victim places on his own life. Nevertheless, in the 1960's the literature on life valuation was still in a very preliminary form. As Professor Stephen Rhoads points out, until about 1970 "all those who placed a dollar value on human life used some variant of the discounted future earnings (DFE), or human capital, approach."⁴² A more sophisticated willingness-to-pay approach was first suggested by Thomas Schelling in 1966.⁴³ This approach has subsequently been implemented by scholars who have considered what consumers are willing to pay for various safety measures and what the relationship is between wages and inherent employment hazards. By 1980, these studies were yielding findings suggesting that people value their lives at figures ranging from \$400,000 to \$3 million.⁴⁴ Earlier findings had been more modest. What Martin Bailey calls "one of the earliest and most meticulous attempts to relate wage differentials to risk"⁴⁵ was a study undertaken by Thaler and Rosen, based on 1967 national wage data. Their conclusion was that employees were then valuing their lives at something close to \$200,000.⁴⁶ While the Thaler-Rosen study was not published until

note 32, at B3. A White House committee on auto regulation had recommended in 1971 that NHTSA use a life-value figure of \$140,000. *Id.* Both the White House figure and the NHTSA figure evidently took into account that the average victim of an auto fatality has a life expectancy of 37 years. *Id.* In this regard, neither figure undertook to express full life value.

42. Rhoads, *Introduction*, in *VALUING LIFE: PUBLIC POLICY DILEMMAS* 11 (S. Rhoads ed. 1980).

43. Schelling, *The Life You Save May Be Your Own*, in *PROBLEMS IN PUBLIC EXPENDITURE ANALYSIS* 148 (S. Chase ed. 1966).

44. See M. BAILEY, *REDUCING RISKS TO LIFE: MEASUREMENT OF THE BENEFITS* 39-45 (1980).

45. *Id.* at 36.

46. Thaler & Rosen, *The Value of Saving a Life: Evidence from the Labor Market*, in *HOUSEHOLD PRODUCTION AND CONSUMPTION* 265 (N. Terleckjy ed. 1978).

Bailey makes a number of "adjustments" in the Thaler-Rosen estimate, including an upward adjustment to take account of inflation between 1967 and 1978. Accordingly, Bailey treats the Thaler-Rosen study as suggesting a life value of \$303,000. M. BAILEY, *supra*

1976, early versions of their study were in circulation as early as 1973. To be sure, this circulation was essentially among academics; there is no reason to believe that the study was available to Ford. Nevertheless, it remains appropriate to say that the \$200,000 life-value figure relied on by Ford, while in hindsight much too low, was in line not only with the figure justified by the prevailing methodology but also with the first preliminary results yielded by a significantly improved methodology.

To sum up, the Ford document has been assigned an operational significance that it never possessed, and has been condemned as unethical on account of characterizations of the document that are in significant part unwarranted. Of course, the condemnation of Ford's report is linked to the condemnation imposed by the public on the Pinto itself. The common belief is that the Pinto, on account of its fuel-tank design, was a "firetrap." The *Mother Jones* article derived emotional power from its presentation of the Pinto as a "firetrap," a "death trap," and a "lethal car."⁴⁷ The combination of that article, the verdict in the Ford Pinto case, the NHTSA initial determination, and the Pinto recall clearly conveyed this sense of the Pinto-as-firetrap to the general public. For quite a while thereafter, for example, the Pinto was the target of many jokes in Johnny Carson monologues and in newspaper editorial-page cartoons.⁴⁸ In 1979, *American Lawyer* reported that the "Pinto is commonly referred to in automotive engineering circles as the worst American car ever made."⁴⁹ A year later, in his book *Lawsuit*, Stuart Speiser described Pintos as "firetraps."⁵⁰ In doing so, he undoubtedly thought he was safely taking advantage of the received wisdom.

Is that received wisdom correct, however? What is generally described as the basic design deficiency of the Pinto was its behind-

note 44, at 38-39. Writing in 1980, Bailey regarded this estimate as respectable, but as identifying the lower bounds of life valuation.

Studies completed subsequent to the Bailey monograph have supported much higher estimates of life value. The most recent work of Moore and Viscusi, for example, suggests a figure of \$6.2 million. See M. MOORE & K. VISCUSI, *COMPENSATION MECHANISMS FOR JOB RISKS: WAGES, WORKERS' COMPENSATION, AND PRODUCTS LIABILITY* 96 (1990).

47. Dowie, *supra* note 10, at 18, 20, 32.

48. One cartoon, published during the Iranian hostage crisis, showed an American fighter plane dropping on Iran a weapon more "horrible" than bombs: twelve "fully gassed Pintos." F. CULLEN, W. MAAKESTAD, & G. CAVENDAR, *supra* note 11, at 168.

49. Burch, *How Ford Stalled the Pinto Litigation*, AM. LAW., June 1979, at 23, 24.

50. S. SPEISER, *supra* note 19, at 357.

the-axle fuel-tank location.⁵¹ This location, however, was by no means unique to the Pinto; rather, it was a commonplace at the time in American cars.⁵² (A number of compacts produced in Europe and Japan utilized the above-the-axle location.) The plaintiffs' principal witness in the Ford Pinto case (and the state's key witness in the later criminal prosecution) was Harley Copp, a former Ford executive who had been in charge of Ford's crash-testing program.⁵³ While his testimony in both cases was strongly hostile to the behind-the-axle location, he conceded in the latter case that he himself had not actually concluded that the above-the-axle gas tank location was the safer choice until sometime in 1977.⁵⁴ There were, moreover, possible safety advantages in the Pinto's gas tank location: for example, it prevented the gas tank from breaking into the passenger compartment in a major crash. In addition, the above-the-axle gas-tank location, while fine for sedans, is simply not feasible for hatchbacks;⁵⁵ and Mrs. Gray's Pinto was indeed a hatchback.⁵⁶

To be sure, the Pinto combined the behind-the-axle fuel-tank location with other design features or omissions that enhanced its danger. There was real power in the plaintiff's closing argument in *Grimshaw*, identifying the unnecessary bolts as "can openers"

51. See, e.g., D. LUBAN, *LAWYERS AND JUSTICE* 212 (1988).

52. See Graham, *supra* note 3.

53. Copp was also a major source of information for the *Mother Jones* story. Telephone interview with Mark Dowie (Feb. 7, 1991).

54. L. STROBEL, *supra* note 5, at 183.

Wondering about what has happened in the gas tank location debate since the Ford Pinto case, I have checked in with NHTSA, which has specification sheets on 83 current car models. Among these 83, nine have gas tanks located behind the axle. Most of these nine are full-size cars; one, however, is the Mustang. A large number of cars now place the gas tank in *front* of the rear axle, a location facilitated by the widespread movement towards front-wheel drive in cars.

55. This was conceded at trial by Harley Copp. *Grimshaw* transcript, *supra* note 7, at RG 165. In a hatchback an above-the-axle gas tank would obtrude into the cargo area. It might have been possible to have located the gas tank in front of the axle of the Pinto hatchback. But this would have entailed a considerable redesign; and it probably would have added significantly to the wheelbase of the car. A 1976 English Rover was the first hatchback not to locate the gas tank behind the axle. *Id.* at RG 191-95.

Hatchbacks comprised over 40% of all Pintos sold during the 1972 model year. See NHTSA INVESTIGATION REPORT, *supra* note 12, at 5. But during the first half-year of production all Pintos produced were two-door sedans. And evidence in *Grimshaw* suggested that Ford had decided to locate Pinto gas tanks above the axle before company officials focused on the special problem of hatchbacks. See *Grimshaw* transcript, *supra* note 7, at RG 2493.

56. *Grimshaw*, 119 Cal. App. 3d. at 773, 174 Cal. Rptr. at 359.

that in a routine accident could easily split open the car's gas tank, and describing the Pinto as the first modern car ever to be "stripped" of the protection ordinarily afforded by an adequate bumper, hat sections, and horizontal cross-members.⁵⁷ Each of the other compact cars then on the road, however, contained its own dangers. The American Motors Gremlin, for example, may have had less crush space than the Pinto.⁵⁸ The Gremlin and the Chevrolet Vega were, in the early 1970s, the chief American-made competitors of the Pinto in the subcompact market. Mark Robinson, Jr., co-counsel for the plaintiffs in *Grimshaw*, remains committed to the view that the Pinto was badly defective in design; yet he also observes that the Gremlin and the Chevrolet Vega were "defective in spades."⁵⁹ In the Pinto criminal case, the evidence introduced as to the safety characteristics of each of a considerable number of subcompacts was sufficient to induce one reporter to say that "the only thing I can figure out from all of this is to buy a van, not a subcompact."⁶⁰ While the reporter's sense of the balance in this case's evidence can be attributed in part to the performance of Ford's defense team, that balance does suggest that it is difficult to reason in any a priori way from the character of the Pinto's basic design to any conclusion that the Pinto was inordinately dangerous.

Evidence that does count against the Pinto was compiled by NHTSA in considering the recall. In crash-testing, NHTSA compared the Pinto to the Chevrolet Vega, often regarded (along with the Gremlin) as having the least safe gas tank of the other subcompacts for sale in America. In this process, the Pinto consistently flunked tests that the Vega was able to pass.⁶¹ Yet, even if this comparative crash-testing is acknowledged, the question of the flammability of the Pinto remains ultimately empirical.⁶² Ac-

57. *Grimshaw* transcript, *supra* note 7, at RG 3113-14.

58. Professor Graham reports that the Gremlin's crush space was less than the Pinto's. Graham, *supra* note 3. In the Pinto criminal case, however, an expert testifying on behalf of Ford indicated that the Gremlin had slightly more crush space than the Pinto. See L. STROBEL, *supra* note 5, at 195. The *Grimshaw* appellate opinion described the Pinto as having "far less [crush space] than . . . any other American automobile . . ." *Grimshaw*, 119 Cal. App. 3d at 779, 174 Cal. Rptr. at 360. At trial, Harley Copp testified that the Pinto ranked last in crush space at the time of its introduction. *Grimshaw* transcript, *supra* note 7, at PG 2800. The Gremlin, however, reached the market after the Pinto.

59. Robinson Interview, *supra* note 6.

60. L. STROBEL, *supra* note 5, at 196.

61. NHTSA INVESTIGATION REPORT, *supra* note 12, at 11-12.

62. Fires—and especially rear-end fires—form only a small portion of the overall prob-

cording to the *Mother Jones* article, as of 1977, somewhere between 500 and 900 persons had been killed in fires attributable to the Pinto's unique design features;⁶³ Jack Anderson, in a column about the Pinto that had appeared several months before the *Mother Jones* story, had referred to "thousands of people" either killed or "horribly disfigured."⁶⁴ In the *60 Minutes* segment on the Pinto, Mike Wallace expressed the view that he found 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.'"⁶⁵ These are, indeed, numerical estimates that give statistical substance to the claim that the Pinto was a "firetrap." The NHTSA investigation, however, lent no

lem of auto safety and auto fatalities. See 1990 NHTSA EVALUATION, *supra* note 14, at xvii-iii, 3-23. Only one percent of all traffic crashes result in fires; only four percent of all occupant fatalities occur in fire crashes; only 15% of all fatal fire crashes result from rear-end collisions. Still, in light of claims that the Pinto was a "lethal car," "the worst American car ever made," it makes sense to present information on the Pinto's overall fatality rate. In general, subcompact cars are more dangerous than mid-size cars, and much more dangerous than full-size cars. See *infra* note 70. So as to compare the Pinto to its competitors, I have compiled the following table of fatality rates, expressed in terms of occupant fatalities during 1975 and 1976 per million cars in operation. Vehicle fatality data are available through NHTSA (beginning with 1975); car registration data are available through other sources.

CAR MODEL	FATALITIES	
	1975	1976
AMC Gremlin	274	315
Chevrolet Vega	288	310
Datsun 1200/210	392	418
Datsun 510	294	340
Ford Pinto	298	322
Toyota Corolla	333	293
VW Beetle	378	370

This table suggests that for overall safety purposes the Pinto's record was quite respectable. The Datsun 510 was a compact rather than a subcompact; its record is included here because the numbers for the Datsun subcompacts seemed so oddly high.

63. Dowie, *supra* note 10, at 18.

64. Anderson & Whitten, *Auto Maker Shuns Safer Gas Tank*, Wash. Post, Dec. 30, 1976, at B7.

In the *Grimshaw* record, there was almost no evidence about the actual safety performance of the Pinto in the field. The defense successfully resisted the plaintiffs' efforts to bring in evidence relating to other Pinto fires and Pinto lawsuits. See *Grimshaw*, 119 Cal. App. 3d at 793, 174 Cal. Rptr. at 371. In turn, the plaintiffs successfully resisted the defendant's attempt to introduce a study of auto accidents compiled by the State of Washington. See *id.*

65. *60 Minutes: Is Your Car Safe?* (CBS television broadcast, June 11, 1978) (Transcript at 7, copy on file with author) [hereinafter *60 Minutes* transcript].

support to such estimates. Relying on a variety of external sources (including Ford), NHTSA indicated that it was aware of thirty-eight instances in which rear-end impact on Pintos had resulted in fuel-tank leakage or fire; these instances, in turn, resulted in twenty-seven deaths and twenty-four nonfatal burn injuries.⁶⁶ The NHTSA report also incorporated the data internally provided by NHTSA's own Fatal Accident Reporting System ("FARS"), which had begun operation in 1975. FARS data showed that from January 1975 through the middle of 1977, seventeen people had died in accidents in which Pinto rear-end collisions resulted in fires.⁶⁷ In comparing NHTSA's figure of twenty-seven deaths for 1971-77 with the FARS figure of seventeen for 1975-77,⁶⁸ one should keep in mind that the number of Pintos on the road was increasing every year in a cumulative way.

The NHTSA figure of twenty-seven fatalities hence seems roughly in the ballpark by way of suggesting the number of people who had died in Pinto rear-end fires. In setting forth this number, however, NHTSA made no effort to estimate how many of these deaths were caused by the Pinto's specific design features. Many fire deaths undeniably result from high-speed collisions that would induce leakage even in state-of-the-art fuel sys-

66. NHTSA INVESTIGATION REPORT, *supra* note 12, at 3. Given the publicity that surrounded the NHTSA recall proceeding and the large number of consumer groups and consumers who ended up contacting NHTSA, it seems unlikely that there were many instances of rear-end injury-producing Pinto fires that escaped NHTSA's attention.

The accidents identified by NHTSA had led to 29 lawsuits against Ford. Ford had lost or settled eight of these and had prevailed in one or two; the remainder were pending. *Id.* at 3-4.

67. *Id.* at 9. These NHTSA and FARS data concern only the Pinto. The Mercury Bobcat was recalled along with the Pinto, since their designs were about the same. The Bobcat, however, did not come out until 1975; and in 1975 and 1976 Pintos outsold Bobcats by more than six-to-one.

68. In one way such FARS numbers are too high. In counting people who die in collisions that result in fires, FARS makes no effort to distinguish between those who die on account of the fire and those who die because of the collision itself. *Id.* at 10. Those high-speed collisions that are most likely to produce vehicle fires are also quite capable of producing deaths without regard to fire. In two other ways, however, the FARS numbers—which are based on police reports—can be too low. The police officer, in preparing his report, might neglect to mention a vehicle fire; and the officer might be unaware of resulting deaths that occur at some time after the accident itself. *Id.* For whatever reason, the 1978 Indiana collision that gave rise to the Pinto criminal case was evidently not reported to FARS.

Lacking further information, I assume here that these plus and minus factors roughly cancel out, and that the FARS datum is therefore a reasonably good indicator of the number of vehicle occupants killed by rear-end-collision fires.

tems;⁶⁹ moreover, cars in the subcompact class generally entail a relatively high fatality risk.⁷⁰ Yet the NHTSA report did not compare the performance results of the Pinto to the results of other cars then on the road, including other subcompacts.

Data on comparative results were, however, considered in the later Pinto criminal trial. In this trial, Ford introduced two exhibits that it had prepared by accessing the FARS data base. One exhibit showed that 1.9% of all cars on the road in the United States in 1975-76 were Pintos, and that Pintos were involved in 1.9% of all "fatal accidents accompanied by some fire."⁷¹ The second Ford exhibit, comparing the Pinto's rate of "fatal accidents with fire" with the rates for other subcompact cars, indicated that the Pinto was involved in such accidents less frequently than the average subcompact.⁷²

These Ford exhibits were not contested by the prosecution, whose own expert indeed confirmed Ford's data.⁷³ The controversy about the Pinto, however, essentially concerned rear-end fatal fires, which comprise only a limited fraction of all fatal vehicle fires. And when the prosecution's expert utilized FARS data to focus on rear-end fire fatalities, the results no longer cast the Pinto in a favorable light. These data showed that Pintos, while comprising 1.9% of the auto population, were responsible for

69. Consider the plaintiff's state-of-the-art position in *Grimshaw*. See *supra* note 9.

NHTSA's current evaluation of its fuel-integrity standard reports that the standard had reduced vehicle crash-fires by 14%, but is not able to find any reduction in fatalities. The explanation offered by the NHTSA is that fire fatalities typically result from high-speed collisions that the standard is unable to protect against. 1990 NHTSA EVALUATION, *supra* note 14, at xix-xx. The NHTSA's earlier evaluation of that standard claimed that the standard was reducing the crash fire fatality rate by 27%. 1983 NHTSA EVALUATION, *supra* note 14, at 103-05. It may be fair to estimate that the actual reduction in fatalities is somewhere in the middle of the range between zero and 27%.

70. Indeed, in the late 1970's the fatality rate for subcompacts was twice that of full-sized cars. Buss, *Small Cars May Save Fuel But Cost Lives, Safety Experts Think*, Wall St. J., Apr. 27, 1982, at 1, col. 6.

71. Exhibit Y, *State v. Ford Motor Co.*, Cause No. 11-431. See L. STROBEL, *supra* note 5, at 206.

72. Exhibit EE, *State v. Ford Motor Co.* The admission of this exhibit is described in L. STROBEL, *supra* note 5, at 216-17. According to the exhibit, the annual number of such fatal accidents for "all compacts and subcompacts" was 7.3 for every million cars in operation. The Pinto's rate was 7.0. That rate was the same as the Vega, lower than Volkswagen and Datsun, and higher than Toyota and the Dodge Colt. Surprisingly, the compact-subcompact average of 7.3 was only slightly higher than the all-vehicle average of 6.8.

73. Telephone interview with Professor Thomas Kiely (Feb. 6, 1991). Professor Kiely was part of the prosecution team.

4.1% of all such fatalities.⁷⁴

The prosecution's expert, however, made no effort here to compare the Pinto's performance with that of other subcompact cars; this is a comparison which, in light of the high fatality rate generally associated with subcompacts,⁷⁵ should play a key role in any evaluation of the Pinto's rear-end integrity. Ford itself, in preparing its criminal defense, did gather comparative data. One Ford memorandum, derived from FARS data, looked at 1973 cars during the 1975-78 period. The memorandum indicated that the rear-fire fatality numbers for all subcompacts were rather low. It further showed, however, that the Pinto's rear-fire fatality rate, while considerably below the Gremlin's, was considerably above the respective rates of the Vega, Toyota, Mazda, and Datsun.⁷⁶ While this memorandum hardly supported any claim that the Pinto was a major highway hazard, it did suggest that the Pinto's record in this particular class of accidents was worse than the relevant industry average; perhaps for this reason, Ford did not introduce the memorandum during the criminal trial.⁷⁷

74. See L. STROBEL, *supra* note 5, at 210, 218. The prosecution did not actually introduce these data; rather, the state's attorney relied on them in cross-examining Ford's witnesses.

A memorandum prepared by Ford as background for this case comes close to confirming the prosecution's data. Looking at 1976 and 1977, this memorandum shows that for Pintos (and Mercury Bobcats) 1.3% of all occupant fatalities were associated with rear-end fires. For all other cars, that figure was 0.7%. This undated memorandum bears the number "30" (copy on file with author).

75. See *supra* note 70.

76. According to the memorandum, during these years four 1973 Pintos were involved in rear-fire accidents that produced fatalities. The Pinto's annual rear-fire fatal accident rate was hence 4.4 per million cars in operation. For other 1973 subcompacts, that rate was 2.2. As the memorandum notes, if the Indiana accident—which somehow had not been counted by FARS—is added in, the Pinto's rate goes up to 5.5. This memorandum does not deal with the unimproved 1971-72 Pintos; however, it does have the advantage of focusing on "sedans." Almost one-third of all Pintos sold were station wagons, whose rear ends included protections that were lacking in sedans. See NHTSA INVESTIGATION REPORT, *supra* note 12, at 5 & figure 1. Ford's memorandum, which is undated, bears the number "24."

77. Further comparative information can be presented here. NHTSA has provided me with rear-end fire-fatality data for certain subcompacts for 1975 and 1976. These data show the Pinto performing better than the Gremlin, about the same as the Vega, and worse than the Toyota Corolla, the Datsun 1200/210, and the VW Beetle. Ford itself, in notifying NHTSA that it was recalling the Pinto, included a chart using 1975-77 FARS data which showed the Pinto performing worse than the Vega but better than Gremlin and Datsun. As a document submitted in an advocacy setting, this chart did not mention other subcompacts such as the Corolla; and it is possible that its category of "Datsun" included the very popular but probably higher-risk Datsun sports car. A November 1981

It is now time to sum up. The strong claim that the Pinto was a firetrap entails a misconception. To be sure, the Pinto did contain a design problem that was non-trivial and to some extent distinctive. Even so, the number of fatalities that resulted from that design problem is a minor fraction of the fatality estimates relied on by those who present the "firetrap" characterization.⁷⁸ Moreover, when all vehicle fire fatalities are considered, the Pinto turns out to have been less dangerous than the average subcompact and only slightly more dangerous than the average car. Indeed, when occupant fatalities from all highway causes are considered, the Pinto performed respectably.⁷⁹ Yet even if the general portrayal of the Pinto as a firetrap should be rejected as false, a limited core of the firetrap myth seems fair enough: the Pinto's record in rear-end fire fatalities was not only much worse than the all-car average but was apparently somewhat worse than the record of most (though not all) of its subcompact competitors.

Given this description of the Pinto's design problem, some comments can be offered on the decision-making process within Ford that resulted in the Pinto. As shown above, a famous Ford report cannot be interpreted as showing Ford balancing lives against dollars in designing the Pinto. To state that the report does not itself reveal such a process does not mean, however, that such a process did not take place. Accordingly, I have consulted the *Grimshaw* record to learn what light it sheds on this question.⁸⁰ As far as basic gas tank location is concerned, I am per-

Ford memorandum looked at subcompact fatality rates during 1975-80. It found that the rear-fire fatal accident rate for Pintos was 2.74 annually per million cars in operation; for other subcompacts, the rate was 2.24. This study of course included recalled Pintos and Pintos produced in compliance with NHTSA's 1977 standard.

In the aggregate, and in conjunction with NHTSA's crash-testing, these various sources suggest that for rear-end fire purposes the early 1970s Pinto was better than the Gremlin, worse than the Vega, worse than the all-subcompact average, quite possibly worse than the Datsun 1200/210, and clearly worse than the Toyota Corolla (which can be identified as a car with a successful rear-end design). It should be noted that the rear-end fire-fatality rate for the "average subcompact" in the mid-1970s was significantly lowered by the VW Beetle, whose front-end fuel tank location held down the number of its rear-end fires. On the other hand, that average figure was significantly increased by the quite poor performance of the Gremlin.

78. See *supra* notes 47-50, 63-65 and accompanying text.

79. See *supra* note 62.

80. An April 1971 memorandum (copy on file with author), apparently prepared by Ford middle managers, provided a "financial review" of Ford's "fuel system integrity program" for the 1973-76 period. This memorandum recommended that Ford defer from 1974 to 1976 the adoption of several design changes relating to rollovers and rear-end impacts.

suaed that the trunk capacity problem, in conjunction with American auto custom, provides the best explanation for Ford's choice to place the Pinto gas tank behind the axle.⁸¹ As for additional design proposals brought forward by the plaintiffs, several of them—for example, a bladder within the gas tank, and a “tank within the tank”—concerned somewhat innovative technology that had never been utilized in actual auto production. At trial, there was testimony that a bladder would have been feasible in the early 1970's,⁸² but also rebuttal testimony that a bladder was at this time beyond the bounds of feasibility.⁸³ The jury's general verdict does not reveal whether and how the jury resolved such conflicts in the evidence,⁸⁴ and I am in no position to resolve them here. Consider now, however, the combination of a stronger bumper, a smooth (bolt-free) differential, and the addition of both hat sections and horizontal cross-members. This combination of design changes clearly would have improved the Pinto's safety to some appreciable extent. According to the evidence, the overall cost of this combination would have been \$9;⁸⁵ and it makes sense to assume that these items were turned down by Ford in planning the Pinto primarily on account of their monetary costs. It is plausible to believe, then, that because of these costs, Ford decided not to improve the Pinto's design, knowing

According to the memorandum, these deferrals would “realize a design cost savings” of \$31.6 million in 1974 and 1975. (The recommended deferrals related to several Ford models, not simply the Pinto.) This memorandum was introduced as evidence in *Grimshaw*, 119 Cal. App. 3d at 791, 174 Cal. Rptr. at 369-70. There is room for debate as to how much circumstantial evidence the memorandum provides about the thinking of Ford's top officials in approving the Pinto's design for the original 1971 and 1972 model years.

81. Also, there was at least some uncertainty among Ford officials about that location's relative unsafety; and the hatchback in *Grimshaw* could not have accepted an above-the-axle location.

82. *Grimshaw* transcript, *supra* note 7, at PG 2802-10.

83. *Id.* at RG 188-89, 2199-2201.

84. The shields inserted in Pintos beginning in 1978 were composed of high-density polyethylene. This was an advanced product that was made possible by the general improvement in plastics between 1970 and 1977. The *Grimshaw* record did not make clear whether an adequate plastic shield would have been feasible in 1970.

At trial, Harley Copp testified that eight inches could have been added to the Pinto's rear-end crush space—both by shortening the front end by two inches and also by adding six inches to the car's overall length. *Id.* at RG 182-83. The monetary cost allegedly associated with these changes was \$6.40. *See Grimshaw*, 119 Cal. App. 3d at 777, 174 Cal. Rptr. at 361. However, a cost estimate this low for a change so substantial seems a little hard to believe. Similarly, it is difficult to accept Copp's suggestion that this proposed redesign would have had no effect on the performance or handling of the car.

85. *See Grimshaw*, 119 Cal. App. 3d at 777, 174 Cal. Rptr. at 361.

that its decision would increase the chances of the loss of consumer life. Once a variety of misconceptions are stripped away, this limited core of the Pinto story remains.⁸⁶ And this is a core that may well be strong enough to support the "myth" of the Ford Pinto case in the second of the meanings described above.⁸⁷ What follows is my effort to explicate the elements of that myth.

III. MYTH: BASIC PUBLIC BELIEFS

This core of the Ford Pinto case enables us to identify those features in the case that have tended to prompt the public's fascination. 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. This basic belief provided much of the animus for the *Mother Jones* article, and much of the motivation for the *Grimshaw* jury's decision to supplement its award of compensatory damages with a massive measure of punitive damages.⁸⁸ This belief also pervaded the *60 Minutes* episode that ran shortly after the *Grimshaw* verdict and the Pinto recall. Mike Wallace characterized the Pinto plaintiff as making "one extraordinary allegation": that Ford officials "deliberately and intentionally . . . made a high-level corporate decision which they knew would kill or maim a known and finite number of people."⁸⁹ In the *60 Minutes* episode, Ford was represented by Herbert Misch, its Vice President for Safety Engineering. Misch attempted to defend

86. This is an evaluation that I can personally support. The *Grimshaw* evidence relating to other design options was, as noted, in conflict in ways that leave me uncertain about the reasons for Ford's design choices. Nevertheless, I acknowledge that the jury, in resolving these conflicts, could permissibly have found that monetary cost was the real reason that Ford did not install a bladder in the Pinto's gas tank, did not utilize a plastic shield, and did not lengthen the Pinto's crush space. The limited core of the Pinto case as set forth in the text can thus be expanded by supplementing my own evaluation with those findings that the jury could reasonably have rendered.

87. That is, while some of the public's fascination with the case relates to the false image of the Pinto as an extreme highway hazard, much of the public's interest results from the way in which the case reveals a corporation trading off consumer safety against reductions in corporate costs. This is the basic evil that prompted the California Court of Appeal to condemn Ford. See *infra* notes 92-93 and accompanying text. Nothing in that court's opinion suggests that the court was accepting the kind of Pinto fatality estimates put forward by *Mother Jones*.

88. See the discussion of the evidence relied on by the jury in Harris, *Why the Pinto Jury Felt Ford Deserved \$125 Million Penalty*, Wall St. J., Feb. 14, 1978, at 1, col. 4.

89. *60 Minutes* transcript, *supra* note 65, at 2.

Ford in a way that avoided challenging the basic public belief—and indeed tended to confirm that belief: “I’d like to say this and say it right now: in the twenty-two . . . years I’ve been at Ford Motor Company, . . . I have never known a decision to be made to build an unsafe product or an unsafe characteristic of a product because of cost.”⁹⁰ While Misch’s concept of “unsafe” introduces a fudge factor into his locution, the locution still is noteworthy in its unwillingness to suggest the legitimacy of manufacturer design decisions that include trade-offs between safety and cost.⁹¹

Moreover, the basic belief that I have identified extends beyond laypersons who serve on juries and watch television shows. It is also the belief relied on by the judges on the *Grimshaw* appellate court in rejecting Ford’s challenge to the *Grimshaw* punitive damage award.

[Ford] decided to defer correction of the [Pinto’s] shortcomings by engaging in a cost-benefit analysis balancing human lives and limbs against corporate profits. Ford’s institutional mentality was shown to be one of callous indifference to public safety. There was substantial evidence that Ford’s conduct constituted “conscious disregard” of the probability of injury to members of the consuming public.⁹²

[T]he conduct of Ford’s management was reprehensible in the extreme. It exhibited a conscious and callous disregard of public safety in order to maximize corporate profits.⁹³

The basic belief in question is certainly held by many academics as well; scholarly works about the Pinto cases prepared by professors of religion, law, sociology, criminology, and business have agreed that there was something dramatically offensive in Ford’s willingness to rank “profits over lives.”⁹⁴ For that matter, the be-

90. *Id.* at 5.

91. See also Lee Iacocca’s discussion of the Pinto in his autobiography: “There’s absolutely no truth to the charge that we tried to save a few bucks and knowingly made a dangerous car.” L. IACOCCA, *IACOCCA: AN AUTOBIOGRAPHY* 172 (1984).

92. *Grimshaw*, 119 Cal. App. 3d at 813, 174 Cal. Rptr. at 384.

93. *Id.* at 819, 174 Cal. Rptr. at 388.

94. See F. CULLEN, W. MAAKESTAD, & G. CAVENDAR, *supra* note 11, at 245; Schmitt & May, *Beyond Products Liability: The Legal, Social, and Ethical Problems Facing the Automobile Industry in Producing Safe Products*, 56 U. DET. J. URB. L. 1021 (1979). Technically, the book by Cullen and co-authors hedges its bets by stating that it is leaving to the reader the question of Ford’s culpability. F. CULLEN, W. MAAKESTAD & G. CAVENDAR, *supra* note 11, at x. But taken as a whole, the book undeniably conveys the authors’ sense

lief is entertained by large numbers of law students as well: Professor Simons refers to the "outrage" that many of his students express when his torts class, in dealing with tort law's calculus of interests, discusses "businesses [that] deliberately weight lives against cost."⁹⁵

In considering this widespread belief, a law professor like myself can begin by noting an apparent paradox. Just two weeks before the *Grimshaw* case was sent to the jury, the California Supreme Court issued its opinion in *Barker v. Lull Engineering Co.*,⁹⁶ clarifying the standards of liability in products liability design defect cases. Under the first of these standards, the manufacturer is liable if the safety risks in the product's design exceed all the benefits of that design—benefits that explicitly include the monetary costs of alternative designs.⁹⁷ Not only does this risk-benefit liability standard *tolerate* situations in which the manufacturer trades off safety for the sake of cost, but the standard rests, as I understand it, on a philosophy which actually *encourages* manufacturers to consider such trade-offs, a philosophy that specifies that the welfare of society is generally enhanced when the manufacturer chooses a design that strikes the right balance between advantages and disadvantages. The *Barker* products liability ruling, moreover, is by no means limited to California; rather, the risk-benefit test seems to be the primary theme in design defect law nationwide.⁹⁸ Nor, for that matter, is the risk-benefit test in any way limited to the contemporary law of products liability. Rather, the process of balancing the magnitude of the risk against the cost of risk prevention has been embedded in negligence law since the nineteenth century, and was rendered official by the *First Restatement of Torts*⁹⁹ and Learned Hand's

that Ford's behavior was seriously improper and that the criminal prosecution was amply warranted. See Bennett, *Developments in the Movement Against Corporate Crime* (Book Review), 65 N.Y.U. L. Rev. 871, 874 (1990).

95. K. Simons, *Rethinking Mental States* (unpublished manuscript) (copy on file with author). Simons describes as "surprising" the extent of his students' outrage.

96. 20 Cal. 3d 413, 573 P.2d 443, 143 Cal. Rptr. 225 (1978).

97. Under *Barker*, the "factors" that a jury should weigh against the magnitude of the risk include "the mechanical feasibility of a safer alternative design, the financial cost of an improved design, and the adverse consequences to the product and to the consumer that would result from an alternative design." *Id.* at 431, 573 P.2d at 455, 143 Cal. Rptr. at 237.

98. See Henderson & Twerski, *Doctrinal Collapse in Products Liability: The Empty Shell of Failure to Warn*, 65 N.Y.U. L. Rev. 265, 271-72 & n.23 (1990).

99. RESTATEMENT OF TORTS §§ 291-93 (1934); see also RESTATEMENT (SECOND) OF TORTS

opinion in *United States v. Carroll Towing Co.*¹⁰⁰ Indeed, many scholars have interpreted the products liability risk-benefit standard precisely as a very modern manifestation of very traditional negligence reasoning.¹⁰¹

An earlier article of mine referred to the essential conflict between this basic standard of manufacturer design liability and the public's basic attitude, which seems so strongly opposed to such a process of corporate risk-utility balancing.¹⁰² Both the *Grimshaw* jury verdict and its affirmance by the court of appeals seem to dramatize this conflict.¹⁰³ Subsequent to that article's publication, I have had conversations with several lawyers who defend manufacturers at trial in design defect cases. What follows is a composite of their observations.

There are several kinds of arguments that defense counsel can make which juries are willing to take seriously. One argument is that the design itself is not really improper, in that an alternative design would significantly impair the usefulness of the product itself. In addition, "state of the art" is a liability-limiting idea that adequately appeals to the jury's common sense. You can also argue that the accident was *really* caused by the victim's own faulty conduct, or the faulty conduct of some third party. Here your argument can be strengthened by showing that the product was being misused or used in an abnormal way. When the facts are right, it can also make sense to argue that the victim assumed the risk—that the victim knew what he was getting. However, one argument that you should almost never make is that the manufacturer deliberately included a dangerous feature in the product's design because of the high monetary cost that the manufacturer would have incurred in choosing another design. If you do argue this, you're almost certain to lose on liability, and you can expose yourself to punitive damages as well.

In assessing the relevance of this defense-counsel evaluation to the Ford Pinto case, three points can be brought forward. The

§§ 291-93 (1965).

100. 159 F.2d 169 (2d Cir. 1947).

101. See, e.g., Henderson & Twerski, *supra* note 98, at 271-72; Schwartz, *Foreword: Understanding Products Liability*, 67 CALIF. L. REV. 435, 449-51, 462-63 (1979).

102. Schwartz, *supra* note 25, at 150-53. This Article continues the inquiry begun in my earlier article.

103. For consideration, however, of certain complicating features in *Grimshaw*, see *infra* notes 106-09 and accompanying text.

first is that, as an explanation for the result in the Pinto case, the evaluation may be somewhat circular: the outcome of the Pinto case may well supply at least part of the reason for lawyers' current reluctance to present risk-benefit arguments to juries. If so, then this certainly should be regarded as an important part of the significance and legacy of the Pinto case. The second point is that the evaluation can help us understand why Ford—at least at first—was not all that worried about the Pinto litigation and was evidently quite willing to have Pinto cases submitted to juries:¹⁰⁴ not only do auto crashes rarely involve normal uses of cars, but such crashes are usually due to the clear fault of the driver of one of the cars.¹⁰⁵ The third point concerns an irony. The cost and safety numbers relating to the Pinto suggest that the Pinto case is quite useful in documenting how the risk-benefit liability criterion operates. Even so, it turns out that this criterion was not in fact explicitly considered by the *Grimshaw* jury.¹⁰⁶ Rather, that jury was instructed primarily along the lines of the “consumer expectations” liability standard.¹⁰⁷ *Barker* was decided just two

104. See Dowie, *supra* note 10; at 31. Indeed, in *Grimshaw* itself, the formal request for trial by jury came from the defendant. *Grimshaw* transcript, *supra* note 7, at PG 1445. Ford's trial counsel tells me that he regards a jury trial as frequently advantageous to defendants in personal injury cases. Telephone interview with Richard Foxx (Jan. 6, 1991).

105. In this regard, *Grimshaw* can be seen as somewhat atypical. The approaching Galaxie may well have slowed down properly; and Lily Gray's Pinto had stalled on the freeway through no obvious fault of her own. Indeed, the stalling may well have been due to a defect in the Pinto's carburetor—a defect for which Ford could be held responsible. In fact, a substantial amount of evidence in the case referred to possible causes of the car's stalling. Insofar as a carburetor defect was the cause, Ford could be held liable for all the consequences of the crash without all that much regard for the niceties of crashworthiness law. Indeed, pursuing an analysis such as this, the court of appeal in *Grimshaw* ruled that the trial judge had properly refrained from giving a “superseding cause” instruction relating to the speed at which the Galaxie had crashed into the Pinto. *Grimshaw*, 119 Cal. App. 3d at 804-05, 174 Cal. Rptr. at 378-79.

106. As it happens, the jury was given a negligence instruction. However, that instruction was expressed in a way that did not encourage the jury to go through a risk-benefit balancing process. Most of this instruction relied on such generalities as “ordinary or reasonable care,” “what a reasonable, prudent person would do.” *Grimshaw* transcript, *supra* note 7, at RG 3201. And at one point the instruction seemed to deny the appropriateness of risk-benefit balancing. If “a person of ordinary prudence . . . would have foreseen or anticipated that someone might have been injured by or as a result of his action or inaction, then not to avert [that risk of injury] would be negligence.” *Id.* at RG 3202. This portion of the instruction makes negligence sound like strict design liability. See *infra* notes 189-95 and accompanying text.

107. *Grimshaw*, 119 Cal. App. 3d at 802, 174 Cal. Rptr. at 377. In light of the general verdict, one cannot tell whether the jury found that the Pinto's gas tank was tortious for consumer expectation reasons or negligence reasons.

weeks before *Grimshaw* was sent to the jury. What *Barker* set forth was a two-pronged test for design defect: the risk-benefit test and a consumer expectations test. When *Grimshaw* was ready to go to the jury, Ford proposed both risk-benefit and consumer expectations instructions. Somewhat surprisingly, the plaintiffs acceded to the latter but challenged the former, a challenge the trial judge upheld. As the court of appeal explained in affirming the judge's ruling, the *Barker* opinion indicates that under the risk-benefit test the burden of proof shifts to the defendant once the plaintiff shows that the product's design has proximately caused his injury.¹⁰⁸ In *Grimshaw*, however, the defendant's proposed risk-benefit instruction did not incorporate this shift in the burden of proof. Moreover, as the court of appeal noted, such a shift could not have been anticipated by Ford prior to *Barker*; and to reallocate the burden of proof so late in the *Grimshaw* trial would, the court thought, have been inappropriate.¹⁰⁹

But having digressed somewhat into the details of *Grimshaw*, let me now return to the basic public beliefs that make those details relevant. In my view, when there are widely held public beliefs, the process of formulating tort doctrine should take them significantly into account. This is partly because the public's beliefs are entitled to ample respect in their own right as a possible source of liability rules. To be sure, it may be that the public's views should ultimately be rejected; they may, for example, turn out to be ethically unenlightened or economically misguided. But such rejections should occur only after these views have been given careful consideration. An additional point is more practical. Insofar as tort liability rules are administered by lay juries, those rules cannot achieve their desired results if juries reject the ideas behind the rules. The composite lawyers' statement reveals that manufacturers feel required to waive a key defense, or liability limitation, that the *Barker* risk-benefit doctrine affords them. This waiver, induced by the lawyers' sense of public opinion, can be seen as creating a real predicament for those judges and scholars who have supported that liability doctrine; I will return to this predicament.¹¹⁰

108. *Barker v. Lull Eng'g Co.*, 20 Cal. 3d 413, 432, 573 P.2d 433, 456, 143 Cal. Rptr. 225, 238 (1978).

109. *Grimshaw*, 119 Cal. App. 3d at 803-04, 174 Cal. Rptr. at 378.

110. See *infra* notes 184-88 and accompanying text.

For now, however, let me more carefully consider the public's basic belief, so as to identify its underlying components and figure out how liability rules might possibly be reformulated in order to accommodate it. What my earlier article suggested, in a Calabresian way,¹¹¹ is that the public subscribes to the idea of the pricelessness of life, and therefore is firmly opposed to processes of risk-benefit balancing.¹¹² Now I should make clear that this is an opposition which I myself do not share. For over twenty years now I have been immersed in the academic literature on the negligence standard, and more generally in the public policy literature on the management of risk. Given this experience, I am convinced that risk-benefit analysis is not only proper, but just about essential.¹¹³ I am aware, however, that my own understanding is at least to some extent a function of my own professional situation. Accordingly, I would distance myself from economists who dismissively claim that ordinary people behave "sanctimonious[ly]" when they deny the appropriateness of quantifying the value of life.¹¹⁴ Rather, it seems sensible to recognize in all of this an instance of a "two cultures" problem.¹¹⁵ A culture has developed around public policy analysts that sees the risk-benefit criterion as obviously acceptable,¹¹⁶ but the culture of public opinion itself tends to regard that criterion as distressing.

In giving further consideration to my earlier assessment of public opinion, I am inclined to say that this assessment went some-

111. On Calabresian "tragic choices," see *infra* note 203 and accompanying text.

112. Schwartz, *supra* note 25, at 133, 152-53.

113. To be more precise, I regard it as clear that products should be designed in accordance with risk-benefit criteria. It does not automatically follow, however, that the risk-benefit test is the best test for manufacturers' design liability. For comments on alternative tests, see *infra* notes 168-74, 189-99, and accompanying text.

114. See, e.g., W.K. VISCUSI, *RISK BY CHOICE* 94 (1983).

115. For discussions of such problems, see B. ACKERMAN, *PRIVATE PROPERTY AND THE CONSTITUTION* (1977) (distinguishing between scientific policymaking and ordinary observing); Gillette & Krier, *Risk, Courts, and Agencies*, 138 U. PA. L. REV. 1027, 1070-85 (1990) (distinguishing between expert and lay attitudes towards risk regulation).

116. A useful current example of this public policy genre is H. LEWIS, *TECHNOLOGICAL RISK* (1990). On the life valuation issue, Lewis is well aware that decision-makers who agree with him and who therefore publicly acknowledge that they are placing a monetary value on human life are likely to be vilified by important segments of public opinion. *Id.* at 16-17 (discussing the Ford Pinto); *id.* at 91.

Professor Rhoads concludes that risk-benefit analysis is necessary in public decision-making, yet appreciates that the public finds that analysis distasteful. He therefore suggests that public officials practice "a little dissembling" as they present their positions to the public. Rhoads, *How Much Should We Spend to Save a Life*, in *VALUING LIFE: PUBLIC POLICY DILEMMAS*, *supra* note 42, at 285, 305.

what too far in declaring that public opinion is flatly opposed to risk-benefit analysis. I would now suggest that most people harbor some considerable degree of ambivalence about the public policy implications of the prospect of death. On the one hand, people sense that death is something that is extraordinarily extraordinary. It is an event which, for any one person, marks the end of time; indeed, it is out of time altogether. On the other hand, people do realize that death is an event that is, in a way, completely routine. On any given day, it is statistically certain that at least x Americans will die; and each of us knows that if there is anything that is entirely inevitable, it is that each of us will eventually encounter death.¹¹⁷ Moreover, people are, I think, at least roughly aware that they themselves regularly choose to engage in various benefit-producing courses of conduct that expose them to some risk to life and limb. In deciding whether to respond to an automobile recall, the burden that the consumer faces concerns losing the use of his car for the day. In fact, according to a NHTSA official only fifty-three percent of Pinto owners responded to the recall offer extended by Ford in 1978.¹¹⁸

If there is a real ambivalence in the public's sense of the acceptability of decisions that rest on a risk-benefit analysis, we can notice how the structure of a tort action affects that ambivalence. As Schelling has pointed out, our ambivalence is such that we are most likely to support such an analysis when we consider programs that will reduce the number of anonymous statistical deaths, while we are most willing to call for essentially indefinite and open-ended expenditures in order, say, to save the specific life of a trapped miner.¹¹⁹ A tort suit is unlike the trapped miner situation in the sense that in the former the loss of life has already occurred in an irretrievable way. Like the trapped miner situation, however, the tort suit focuses on and dramatizes the individual victim with all his personal attributes. It is that victim's fatal injury which is the focus of all the evidence; it is his

117. While the participation rates are much less than 100%, many bread-earners do voluntarily buy life insurance, and many people with some wealth do prepare wills. I am told that life insurance salesmen and probate lawyers have developed a nuanced vocabulary that is effective in gently reminding their clients of the inevitability of death.

118. Telephone interview with George Chiang (Oct. 1, 1990). Such a response rate is about average for NHTSA recalls. See J. MASHAW & D. HARFST, *supra* note 18, at 168. Of course, by the time of the recall the earliest Pintos were more than seven years old. Recalls encounter difficulties in reaching the owners of such vehicles. *Id.* at 115.

119. Schelling, *supra* note 43, at 129-30.

family who are the plaintiffs in the wrongful death action. In all, then, the tort suit sufficiently resembles the trapped miner situation as to incline the jury to resolve its basic ambivalence in favor of the unacceptability of cost-benefit balancing.

This understanding of the implications of a tort suit is amply supported by the rhetoric that Stuart Speiser employs in justifying the *Grimshaw* punitive damage award. As Speiser phrases it, that award was the best way for the jury to "teach Ford the lesson that the American people would not permit [Ford] to treat the face of a teenage boy or the life of a 52-year-old mother as 'cost-benefit statistics.'"¹²⁰ I have read the record of the Ford Pinto case, including the testimony of Richard Grimshaw himself and that of his family and doctors. This testimony narrates the sixty-eight instances of surgery that the boy had undergone prior to trial and describes the deformities he will carry with him for the rest of his life, including a face so badly scarred as to resemble a patchwork quilt. I find it all but impossible to imagine that any jury comprised of ordinary people could have returned from its deliberations to tell Richard that his injuries were rendered lawful and indeed socially appropriate because of the costs that Ford would have needed to incur in order to have avoided his accident.

In any event, as we turn from the particular situation of the tort jury to the somewhat more general situation of public opinion, we should note that the public's ambivalent disapproval of risk-benefit balancing is not the only attitude that contributes to its response to the Ford Pinto case. For that response includes another component. Much of the literature on the ethics of cost-benefit analysis as applied to problems of life and death has focused on the situation of the government as decision-maker: the government that builds a public hospital, constructs a dam, and considers the level of funding for a safety regulatory program. An obvious point about the Ford Pinto case, however, is that the balance had been struck not by a public agency, but by a major private corporation. Moreover, the motive for, and consequence of, Ford's decision was to reduce that company's expenses. In the minds of many it is especially offensive for a corporation to render risk-benefit decisions of this sort. This sense is clearly reflected in the court of appeal's reference to Ford's "callous disre-

120. S. SPEISER, *supra* note 19, at 359.

gard of public safety in order to maximize corporate profits."¹²¹ It is embodied in Mike Wallace's sense that it would be awful for "the top management [of Ford] to say, 'Oh, we'll buy 2000 deaths . . . because we want to make some money . . .'"¹²² The *Mother Jones* article is suffused with an outrage at companies that apply a pernicious cost-benefit analysis in order to achieve "corporate profits."¹²³ And, as noted, many academics have been offended by Ford's willingness to value "profits over lives."¹²⁴ There is, by now, a considerable literature on those psychological factors that the public relies on in assessing which risks are socially acceptable;¹²⁵ what I suggest is that this list be supplemented by recognizing the public's frequent hostility to safety risks that are seen as being directly undertaken for the sake of corporate profit.

This point, however, should not be overstated. In discussing the public's general attitudes toward risk-benefit analysis, I suggested that the public harbors a considerable degree of ambivalence. There is also a strong element of ambivalence in the public's attitude towards major American corporations. Most people clearly appreciate the basics of a market analysis and the contributions of those corporations to the national economy and welfare. At the same time, however, many harbor a real distrust of fairly normal assertions of corporate authority. Distrust such as this can be quite appropriately referred to as "populist."¹²⁶ The distrust, however, has even earlier roots in the American experience, going back to the early decades of the nineteenth century, in which the "soulless corporation" was an idea very much in the public mind.¹²⁷

121. *Grimshaw*, 119 Cal. App. 3d at 819, 174 Cal. Rptr. at 388. For a characterization of the court's attitude, see White, *supra* note 28, at 129.

The wife of a colleague of mine—herself a lawyer—refers to the planning of the Pinto as an instance of "corporate murder," and is reluctant even now to buy a Ford car.

122. *60 Minutes* Transcript, *supra* note 65, at 7.

123. Dowie, *supra* note 10, at 24.

124. See, e.g., F. CULLEN, W. MAAKESTAD, & G. CAVENDAR, *supra* note 11 at 265.

125. See, e.g., Slovic, Fischhoff, & Lichtenstein, *Facts Versus Fears: Understanding Perceived Risk*, in JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES 465 (D. Kahneman, P. Slovic, & A. Tversky eds. 1982).

126. It should be noted, however, that the *Mother Jones* article occasionally sounds a neo-Marxist theme. See Dowie, *supra* note 10, at 32.

127. See L. FRIEDMAN, A HISTORY OF AMERICAN LAW 194 (2d ed. 1985).

The public's ambivalence towards corporate authority can be illustrated by one feature of the Ford Pinto case. The public tends to see the Pinto as a prime example of corporate

I should, however, be careful to avoid overstating the extent to which a basic market analysis necessarily endorses the process by which manufacturers make design decisions that trade off safety against cost and other values. That analysis rests on the premise that consumers, in deciding what products to buy, can and do make their own choices about appropriate levels of safety. The myth of the Ford Pinto case, however, incorporates the image of Ford executives, in the privacy of their corporate offices, making decisions that would result in the loss of consumer lives.¹²⁸ In this regard, the presence of the NHTSA as the public's representative suggests that there is at least a slight misconception in this

irresponsibility. Yet if Ford was the corporate villain, the chief human villain was Lee Iacocca (at least according to *Mother Jones*. See Dowie, *supra* note 10, at 21-23). The Pinto was generally referred to as "Lee's car." It was Iacocca who fought long and hard to persuade the Ford Board of Directors that Ford should develop the Pinto. In the course of winning that fight, Iacocca moved up from Executive Vice President to the position as Ford's President. It was Iacocca who established for the Pinto the "limits of 2000" (that the Pinto weigh no more than 2000 pounds and cost no more than \$2000); having announced his belief that "safety doesn't sell," Iacocca authorized a set of criteria for the Pinto that included no reference to safety.

While there was no direct evidence in the Ford Pinto case that Iacocca actually knew of the Pinto's fuel-tank specifics, the general impression conveyed by the plaintiffs' evidence was that he must have known. Indeed, in his closing argument, plaintiffs' counsel paraphrased Iacocca as saying "\$2000 and 2000 pounds. Tear it out. Let them die." *Grimshaw* transcript, *supra* note 7, at RG 3183.

About a month after the Pinto recall, Iacocca was fired by Ford; and his autobiography implies that the mess associated with the recall contributed to Ford's decision. L. Iacocca, *supra* note 91, at 172. Henry Ford had originally recommended the discharge of Iacocca to the Ford Board on June 12, 1978. *Id.* at 132. This was the Monday following the Friday on which Ford had announced the recall.

In any event, Iacocca was quickly hired by Chrysler as its President. Iacocca was hence solidly ensconced at Chrysler by the time that the *Grimshaw* verdict was affirmed by the court of appeal. Ironically, then, that affirmance imposed a significant cost on a company that by then was one of Iacocca's major competitors. Moreover, despite his deep involvement in that "conduct of Ford's management," which the appellate court described as "reprehensible in the extreme" (see *supra* note 91 and accompanying text), at Chrysler Iacocca soon emerged as something of a folk hero: the "CEO of the common man." Ingrassia & Stertz, *With Chrysler Ailing, Lee Iacocca Concedes Mistakes in Managing*, Wall St. J., Sept. 17, 1990, at A1, col. 6. Iacocca's 1984 autobiography turned into the best-selling autobiography in the history of American publishing. See F. CULLEN, W. MAAKESTAD, & G. CAVENDAR, *supra* note 11, at 297.

128. That Ford had "concealed from the public" the Pinto's design problem was the claim that led to last year's California statute. (This claim is emphasized in the letters cited in *supra* note 4). The statute itself imposes criminal sanctions on the corporation or corporate manager who acquires "actual knowledge of a serious concealed danger" in a product which the company sells and then fails to notify appropriate regulatory authorities. CAL. PENAL CODE § 387 (West Supp. 1991). The idea that such concealment is offensive was so widely shared that the legislation in its final form was acceded to by the California Manufacturers' Association and signed by a conservative Governor.

myth.¹²⁹ Even so, in a basic sense the myth holds up. Consumers who bought early Pintos undoubtedly knew that the light weight of subcompact cars necessarily rendered them somewhat more vulnerable in the event of a two-car collision. Those consumers, however, had no knowledge at all of the particular combination of design features—most of them unrelated to light weight as such—that resulted in the Pinto's specific hazards. Given that lack of knowledge, a market analysis is not able firmly to endorse the decisions made by consumers in purchasing Pintos,¹³⁰ to this extent the public beliefs implicit in the myth of the Ford Pinto case are not really in conflict with a conventional economic analysis.

Moreover, if consumers' lack of knowledge affects the "efficiency" issue, it likewise affects the issue of the "distribution" of benefits between consumers and manufacturers in the sale of products like the Pinto. Had car buyers known of the Pinto's design problems, then any savings Ford achieved in underdesigning the Pinto might well have been passed forward to buyers by way of a lower purchase price. If, however, consumers were unaware of these hazards, it becomes easier to see how these cost savings could be retained by Ford in the form of larger profits.¹³¹ Consumer ignorance thus provides important support for the public's perception that the Pinto provides an instance of "profit over lives." And that ignorance affects public attitudes in an even more general way. Many writers have concluded that the public, in considering the acceptability of risk, recognizes a strong distinction between those risks that are seen as being imposed on potential victims and risks that potential victims consent to or voluntarily assume.¹³² Clearly, the public is most likely to per-

129. There is no evidence, however, that the NHTSA had any knowledge of the Pinto's special design features at the time that the Pinto was first marketed.

130. Economists generally recognize that there are imperfections in the market for information that inhibit competitors from adequately informing consumers of the safety hazards in particular products that consumers may be considering buying.

131. For a more extensive discussion of the incidence of these design savings, see *infra* note 178. On the ironies of incidence analysis, see Craswell, *Passing on the Costs of Legal Rules: Efficiency and Distribution in Buyer-Seller Relationships*, 43 STAN. L. REV. 361 (1991).

132. See, e.g., Gillette & Krier, *supra* note 115, at 1076 & n.40; Starr, *Social Benefit versus Technological Risk*, 165 SCIENCE 1232, 1233-34 (1969).

A basic distinction between imposed and assumed risks has likewise been affirmed by many of the ethical philosophers who have addressed the question of the acceptability of various kinds of risks. See, e.g., Teuber, *Justifying Risk*, DAEDALUS 235 (Fall 1990).

ceive a risk as "imposed" on consumers by manufacturers if those consumers are unaware of the risk in buying the manufacturer's product.

IV. THE RELEVANCE OF PRODUCTS LIABILITY DOCTRINE

A. *Warning Liability*

Given the evaluation developed above, it is appropriate to consider how the law does, or could, respond to the lack of consumer knowledge that significantly contributes to the public's perception of the Ford Pinto problem. One response can be here identified: in a case like *Grimshaw*, Ford could perhaps be held liable under a products liability theory of failure to warn.¹³³ The Ford Pinto case myth portrays Ford as secretly making fatal choices for some number of its consumers. A warning, if given, would eliminate this secrecy, and would enable consumers, at least to some extent, to make their own choices; it would move the Pinto's hazards at least part of the way from the status of imposed risks towards the status of consented-to risks.¹³⁴ A warning likewise plays a key role in economic logic in helping to assure the efficiency of consumers' purchases. Under the law's primary rule for

133. In his account of the Pinto case, David Luban emphasizes the ignorance of consumers in buying Pintos. D. LUBAN, *supra* note 51, at 213. He also advances the idea that Ford executives and lawyers might have had a moral obligation to notify the public of the Pinto's hazards. *Id.* at 209-10, 213-17. Curiously, he seems not to recognize the extent to which this moral obligation could be given legal recognition within the framework of products liability warning doctrine. Nor does the new California statute consider how its disclosure requirement relates to the manufacturer's products liability obligation. See *supra* note 128.

134. Products liability doctrine could more fully acknowledge the value of consumer consent in Pinto-like cases if it permitted manufacturers to offer consumers safely options at fair prices: for example, a gas-tank bladder for \$8. I recognize, however, that this proposal cuts rather sharply against the grain of modern products liability doctrine, which tends to stipulate that the manufacturer has design obligations that cannot be "delegated" to the product buyer. Indeed, the manufacturer who offers a safety device as an option is likely to find that fact used against him in later litigation, insofar as his offering of the option may be used as proof of his awareness of an underlying safety problem. See *Marchant v. Lorain Division of Koehring*, 272 S.C. 243, 251 S.E. 2d 189 (1979).

To be sure, it may be that I am overemphasizing the rigidity in modern doctrine. For example, when the eventual victim is the same person who in buying the product chose to omit the safety option, the defense of assumption of risk might be available as a limitation on liability. See Schwartz, *supra* note 101, at 457 & n.147; Simons, *Assumption of Risk and Consent in the Law of Torts: A Theory of Full Preference*, 67 B.U.L. REV. 213 (1987). Nissan is currently offering anti-lock brakes on the Sentra GXE as a \$700 option. *Four Little Gas Savers*, CONSUMER REPS. 152 (March 1991).

design liability, a manufacturer can escape liability for a risky design if the design's benefits are sufficiently weighty; but explanations for this rule often rest on the premise that consumers will at least be advised of those risky features.¹³⁵

As it happens, failure to warn formed almost no part of the arguments explicitly advanced by the *Grimshaw* plaintiffs. Failure to warn was, however, the major part of the prosecutor's argument in the Indiana criminal case.¹³⁶ And as for *Grimshaw* itself, consideration can be given to the relationship between the failure to warn idea and the consumer expectation standard on which the *Grimshaw* jury may have relied in imposing liability on Ford. An earlier article of mine indicated that this standard, while unsatisfactory in important ways, is nevertheless appealing at a theoretical level, insofar as it responds to the basic point that consumers are typically unaware of the design hazards in particular products.¹³⁷ This point was driven home by plaintiffs' counsel in *Grimshaw*, who stressed in closing argument that the "American public" had no idea of the Pinto's design problems.¹³⁸ Notice, however, that if a manufacturer does warn of a product's design hazard, the consumer is no longer in a position to complain that the hazard defeats his reasonable expectations.¹³⁹ Accordingly, insofar as the jury found that the Pinto did not comply with Lily Gray's expectations, it was at least implicitly holding Ford liable on account of its failure to warn.

What can be said, then, about the warning analysis that may be implicit in *Grimshaw*?¹⁴⁰ Products liability doctrine contains an obligation to warn that is generally regarded as far-reaching. Accordingly, imposing Pinto liability on Ford on the basis of its failure to warn might seem at first like a modest suggestion. For several reasons, however, it would be quite wrong to classify this suggestion as modest. An initial point is that the far-reaching

135. See, e.g., II A.L.I. REPORTERS' STUDY, ENTERPRISE RESPONSIBILITY FOR PERSONAL INQUIRY 70 (1991).

136. See text accompanying *supra* note 10.

137. Schwartz, *supra* note 101, at 471. On the consumer expectation test in *Grimshaw*, see *infra* notes 169-73 and accompanying text.

138. See *Grimshaw* transcript, *supra* note 7, at RG 2885.

139. See Schwartz, *supra* note 101, at 476.

140. The new California statute, CAL. PENAL CODE § 387 (West Supp. 1991), requires that disclosure be made to regulators rather than to consumers. See *supra* note 128. The apparent goal of this statute is not informed consumer choice but rather improved regulatory protection of consumers.

warning obligation that modern law is thought to impose is itself increasingly deplored by many scholars and some judges. This is partly because of a growing skepticism about the ability of warnings to actually affect consumers' behavior.¹⁴¹ But it is also due to the perception that the current full-blown warning obligation is in fact overblown in a way that actually contributes to the inefficacy of warnings. As Professor Twerski and his co-authors pointed out over fifteen years ago, "warnings, in order to be effective, must be selective."¹⁴² Recently, a few courts have begun to appreciate the power of Twerski's insight: consider Judge Williams' reasoning that the common idea that additional warnings are "virtually cost free . . . completely disregards the problem of information costs"; "the inclusion of each extra [warning] item dilutes the punch of every other item."¹⁴³

Unfortunately, as sound as this basic perception seems to be, it is difficult to see how it can be taken advantage of by way of the reform of products liability doctrine. Individual courts can certainly refuse to rule that the manufacturer should be held liable for not having included some marginal bit of additional information within the warning that it provides.¹⁴⁴ But there is no way that courts can achieve the more significant result of requiring no more than an appropriately "selective" warning. For in no one case—concerned as it is with a single injury—is a court realistically able to review evidence about all the hazards associated with the product in order to determine which hazards should be in-

141. Grounds for skepticism are discussed in Latin & Cowling, *Reliance on "Good" Product Warnings* (unpublished manuscript, copy on file with author).

142. Twerski, Weinstein, Donaher, and Piehler, *The Use and Abuse of Warnings in Product Liability—Design Defect Litigation Comes of Age*, 61 CORNELL L. REV. 495, 514 (1976). Empirical studies relating to "information overload" are discussed in Lehto & Miller, *The Effectiveness of Warning Labels*, 11 J. PROD. LIAB. 225, 232-34 (1988).

143. *Cotton v. Buckeye Gas Prods. Co.*, 840 F.2d 935, 938 (D.C. Cir. 1988).

At worst, information overload results in consumers tuning out and reading few if any warnings. See *Broussard v. Continental Oil Co.*, 433 So. 2d 354, 358 (La. Ct. App.), *cert. denied*, 440 So. 2d 726 (La. 1983). At the least, information overload results in consumers reading warnings selectively, as they implicitly balance the benefits of information against the costs of processing information. See Grether, Schwartz, & Wilde, *The Irrelevance of Information Overload: An Analysis of Search and Disclosure*, 59 S. CAL. L. REV. 277 (1986). If this is what happens, then courts clearly err when they ignore information costs in expanding manufacturers' warning obligations. Moreover, when consumers *do* read selectively, there is inadequate reason to believe that they are shrewd enough to identify the warnings that are most relevant to their safety. This concern is expressed in II A.L.I. REPORTERS' STUDY, *supra* note 135, at 64-65.

144. See Henderson & Twerski, *supra* note 98, at 313-19.

cluded within such a warning.¹⁴⁵ On account of this, the law seems fated to perpetuate a warning obligation that currently is excessive and even counterproductive.

Yet if this branch of the law's warning obligation goes too far, another branch sometimes does not go far at all. It is often noted that the law requires two kinds of warnings: instructions for the safe use of the product, and informed-choice warnings relating to the product's inherent hazards. Statements made about the abundant nature of current warning obligations often refer to instructions for safe use. Auto manufacturers are in fact frequently sued for not providing appropriate instructions, or for not setting forth those instructions in a sufficiently effective way.¹⁴⁶ A substantial effort to provide the kinds of instructions required by products liability doctrine is obviously made by auto manufacturers. Much of the information contained in owners' manuals is safety related; and some cars carry interior labels that convey instructions in an even more immediate way.

The evaluation of informed-choice warnings, however, needs to proceed in a quite different way. Indeed, it turns out that the law has tended to require such warnings only for a limited number of products: for example, medications, cosmetics, and asbestos.¹⁴⁷ That is, for many other products, including cars, the obligation to give such warnings has, at least so far, gone largely unimplemented in the case law. In fact, these are informed-choice warnings that car manufacturers do not in fact provide: no auto salesman has ever interrupted his sales pitch to advise the customer as to non-apparent hazards in the car's design.

Why does this obligation remain unimplemented? One possible response relates to an ambiguity in formal products liability doctrine. To explain that ambiguity, let me hypothesize that a car manufacturer develops a device that significantly increases a car's gas mileage while also creating a quite small risk (known to the manufacturer) of a probably non-fatal gas tank fire; assume, further, that this device's fuel-conservation benefits sufficiently outweigh the risk as to justify the conclusion that the device does not

145. See *id.* at 300-01.

146. See, e.g., *Dalton v. Toyota Motor Sales, Inc.*, 703 F.2d 137 (5th Cir. 1983); *La Coste v. Ford Motor Co.*, 322 N.W.2d 898 (Iowa Ct. App. 1982); *Krueger v. General Motors Corp.*, 240 Mont. 266, 783 P.2d 1340 (1989); *Wood v. Ford Motor Co.*, 71 Or. App. 87, 691 P.2d 495 (1984).

147. See *Henderson & Twerski*, *supra* note 98, at 286.

itself entail a design defect.¹⁴⁸ Section 388 of the *Second Restatement of Torts*¹⁴⁹ suggests that a manufacturer has an obligation to warn of design hazards that consumers otherwise would not appreciate—such as the risk that inheres in this device. In modern products cases, however, section 388 is cited much less frequently than section 402; and section 402A can be read as imposing a much narrower obligation. Under this reading, a manufacturer is obliged to give informed-choice warnings only of those hazards that render the product “unavoidably unsafe”;¹⁵⁰ that is, those hazards that inhere in the very nature of the product itself (for example, a prescription drug). Under this latter formulation, the informed-choice warning obligation would not affect the manufacturer whose car includes the fuel-conservation device: for that device does not render automobiles unavoidably unsafe. Indeed, almost all those dangers that are “unavoidable” in cars are well enough known to car buyers to effectively eliminate the warning duty of car manufacturers.

This doctrinal analysis might explain why, as a practical matter, auto manufacturers have been free of informed-choice warning obligations. The obvious problem with the analysis, however, is that it is essentially unconvincing. As a matter of both principle and policy the section 402A version of the warning obligation seems clearly inferior to the section 388 version; if nonapparent hazards do inhere in the design of a particular product, then both the ethical notion of consumer consent and the economic notion of consumer sovereignty call for the recognition of a duty to warn.

There is, however, a second explanation that can be given for the fact that the informed-choice warning obligation has frequently gone unimplemented. Many products come in small packages and are bought by consumers after brief consideration in very rapid sales transactions. For such products, there is simply no feasible way for the manufacturer to provide the consumer

148. Another example is closer to reality. The VW Beetle was designed in a way that increased the chances of a vehicle rollover. Despite this risk, a federal-court jury concluded that the design was not defective. See *Greiner v. Volkswagenwerk Aktiengesellschaft*, 540 F.2d 85, 92 (3d Cir. 1976). The Third Circuit ruled that the issue of Volkswagen's failure to warn of this (nondefective) design hazard should have been submitted to the jury, and remanded the case for a new trial. *Id.* The result of the new trial is described at *infra* notes 158-59 and accompanying text.

149. RESTATEMENT (SECOND) OF TORTS § 388 (1965). While the language of § 388 is broad, its illustrations tend to be narrow.

150. *Id.* § 402A comment k.

with all the risk-related information that he might need to make a fully intelligent purchase decision. This concern for practicality helps explain why the obligation to give informed-choice warnings *has* been imposed on the manufacturers of prescription drugs, for such manufacturers can conveniently provide doctors with the hazard information that enables them to prescribe appropriate drugs for their patients. The feasibility criterion, however, cannot itself explain why the obligation to give informed-choice warnings should not be imposed on auto manufacturers. A car is a product that a typical consumer buys only once every several years. Because of the cost of that purchase and the importance of the choice, consumers typically spend many hours visiting car dealers, gathering information, comparing products, and making up their minds. In this sales setting, the feasibility criterion provides no reason for withholding from car manufacturers, or dealers, an obligation to provide informed-choice warnings.

A third problem, however, relates back to the recognition by some courts, in safe-use instruction cases, that an overly abundant warning is likely to be counterproductive. This insight certainly applies to informed-choice warnings as well. Dozens of decisions trading off safety against cost and other values go into the design of a product such as an automobile.¹⁵¹ It would undeniably be a bad idea to require auto manufacturers to notify consumers of all these design decisions; no more than an appropriately "selective" warning could make sense. But, once again, there is no way in which a tort court, in a single lawsuit, could gather all the information necessary to determine which items should belong in an informed-choice warning that is sensibly selective. The same problem that gives the law little choice but to tolerate an excessive safe-use instructions obligation may also be inhibiting the law from implementing an informed-choice warning obligation for many products, such as cars.

A final problem concerns the doctrine of causation. Once the plaintiff has shown an actionable failure to warn, to complete his cause of action legal convention requires him to show that the absence of the warning was the cause of his injury. The failure to give a safe-use instruction is causally relevant to the consumer's

151. This is a point that the drafters of the new California statute, CAL. PENAL CODE § 387 (West Supp. 1991), may not have recognized. *See supra* note 128. The statute seems to require that regulators be notified whenever a design feature of a mass-produced product is likely over time to result in a single serious consumer injury.

injury insofar as the consumer would have heeded the instruction had it been given. There may be elements of glibness in the assumption that consumers generally do comply with safe-use instructions. Nonetheless, this is an assumption that juries can—and do—make with a straight face. As a result, in safe-use instruction cases the causation requirement rarely burdens the plaintiff's ability to prove his case to the satisfaction of the jury.

No such assumption is possible, however, with respect to informed-choice warnings. Such a warning can result in the avoidance of injury only if the customer, provided with the warning, decides not to buy the product itself. If it is convenient to assume that consumers comply with instructions for safe use, it will often be quite difficult to assume that the consumer would have reversed her purchase decision had she been provided with one additional item of risk information.¹⁵² To be sure, the plaintiff is free to testify that she would not have purchased the product had she been warned of the inherent hazard in question. But given the obvious ways in which such testimony is marred by the perspective of hindsight and the prospect of self-interest, courts would be on solid ground in declining to attach much weight to that testimony.¹⁵³

The causation problem has indeed played a prominent role in the handful of cases in which auto manufacturers have been sued under a theory of the failure to give informed-choice warnings. I have been able to find half a dozen cases in which such arguments have been advanced. In three of them, courts affirmed verdicts or rulings against auto manufacturers at least partly on grounds of their failure to warn. In fact, in all three cases the manufacturer was Ford, and the design hazard related to fuel-tank integrity. In one of them, the car was a 1967 Mustang.¹⁵⁴ The other two involved the Mustang II¹⁵⁵—a car whose gas tank considerably re-

152. This comparative point is effectively made in *Greiner v. Volkswagenwerk Aktiengesellschaft*, 429 F. Supp. 495, 497-99 (E.D. Pa. 1977).

153. In medical informed-consent cases, many courts have been unwilling to rely on such testimony, and have instead restated the causation issue in terms of whether a reasonable patient, armed with appropriate information, would have accepted the medical intervention. See, e.g., *Canterberry v. Spence*, 464 F.2d 772, 791 (D.C. Cir. 1972). This "objective" test for causation is, however, clearly unsatisfactory. See Twerski & Cohen, *Informed Decision Making and the Law of Torts: The Myth of Justiciable Causation*, 1988 U. ILL. L. REV. 607.

154. *Wangen v. Ford Motor Co.*, 97 Wis. 2d 260, 294 N.W.2d 437 (1980).

155. *Ford Motor Co. v. Durrill*, 714 S.W.2d 329 (Tex. Ct. App. 1986); *Ford Motor Co. v. Stubblefield*, 171 Ga. App. 331, 319 S.E.2d 470 (1984).

sembled that of the Pinto. In all three cases, however, the courts primarily affirmed Ford's liability under the theory of design defect. The cases' design defect holdings render their failure-to-warn discussions somewhat superfluous; moreover, in light of these holdings the cases can tell us little about the manufacturer's obligation to inform customers of design hazards that are not independently defective. In three other cases—two involving problems of car crashworthiness and one the instability of the VW Beetle—courts have denied recoveries to plaintiffs who were proceeding under a theory of a failure to give an informed-choice warning.¹⁵⁶ Only one of these courts, however, questioned in the abstract the existence of a warning obligation.¹⁵⁷ Rather, all three courts focused on the inadequacy of the plaintiff's argument on the issue of causation,¹⁵⁸ dismissing as speculative the idea that the provision of a warning would have resulted in a decision not to buy the car.¹⁵⁹ In certain informed-choice warning cases, involving products such as vaccines, courts have responded to causation uncertainties by invoking a presumption of causation on behalf of the plaintiff.¹⁶⁰ By contrast, in these auto cases courts have shown no willingness to resolve doubtful causation claims in favor of plaintiffs. Since such presumptions of causation seem difficult to defend,¹⁶¹ it is hard to complain of the way in which the courts in auto cases have relied on the causation requirement by

156. *Krein v. Raudabough*, 406 N.W.2d 315 (Minn. Ct. App. 1987); *American Motors Corp. v. Ellis*, 403 So. 2d 459, 466 (Fla. Dist. Ct. App. 1981); *Greiner*, 429 F. Supp. at 497.

157. In *Ellis*, the Florida court opined that a manufacturer is obliged to warn of a hazard only if that hazard is itself defective. *Ellis*, 403 So.2d at 466. This analysis would, of course, render the warning obligation essentially redundant as a source of liability.

158. See *Krein*, 406 N.W.2d at 320; *Ellis*, 403 So. 2d at 466; *Greiner*, 429 F. Supp. at 497-98.

159. See *Ellis*, 403 So. 2d at 466, and *Greiner*, 429 F. Supp. at 498. In none of these cases, however, did the purchaser actually testify that he would not have selected the car had he known of its hazard. Rather, in *Ellis* and *Greiner* the plaintiffs merely raised this possibility at the time of appellate review. Yet consider *Kloepfer v. Honda Motor Co.*, 898 F.2d 1452 (10th Cir. 1990), involving a suit against the manufacturer of an all-terrain vehicle. In this case, the victim's mother offered to testify that she would not have allowed her six-year-old son to ride the vehicle had she been warned of its design hazards. The Tenth Circuit, regarding such testimony as "speculative and self-serving," affirmed the trial judge's ruling that the testimony was inadmissible. *Id.* at 1459.

160. See, e.g., *Reyes v. Wyatt Laboratories*, 498 F.2d 1264, 1281 (5th Cir.), *cert. denied*, 419 U.S. 1096 (1974).

161. See *Henderson & Twerski*, *supra* note 98, at 278-79, 325-26. In fact, *Henderson & Twerski* conclude that a presumption of causation makes somewhat more sense in informed-choice warning cases than in safe-use instruction cases. *Id.* at 288. My own assessment is the opposite.

way of denying the plaintiff's claim.

I began this section by provisionally suggesting that the law could invoke warning doctrine in order to respond to the myth of the Ford Pinto case. I now conclude that such a doctrinal response would not be administratable. A warning obligation, once initiated, could not be appropriately limited; and the causation problem resists solution. Even if, however, formal warning doctrine cannot be relied on to provide a response to the Pinto case myth, let me return to the general norm of informed consumer choice that underlies that doctrine in order to advance a certain regulatory proposal. Currently, federal regulations require that auto manufacturers place stickers on new cars offered for sale that convey information about the particular model's expected energy consumption. It might well be a wise reform to similarly require car dealers to post stickers setting forth basic data as to the safety performance of the car model. To be sure, federal regulators can develop fuel consumption data by test-driving the particular model; it might be thought that there is no way of gathering data as to model safety. In fact, however, such data are available. NHTSA itself compiles, through FARS, annual data on overall car-model fatalities; fatality *rates* for each car model can be easily developed by combining these data with available data on car-model registrations. In addition, the Highway Loss Data Institute ("HLDI"), relying on information generated by auto no-fault plans, currently publishes on an annual basis a chart that ranks each car model in terms of the rates of "overall injury" and "severe injury."¹⁶² The 1990 chart, for example, gives the four-door Ford Taurus an 82 for overall injury and an 84 for severe injury; for the Chevrolet Cavalier, however, these ratings are 125 and 122.¹⁶³ The sticker requirement that I propose here could rely

162. HIGHWAY LOSS DATA INSTITUTE, INJURY AND COLLISION LOSS EXPERIENCE BY MAKE AND MODEL (1990).

There are two problems with the data provided by FARS and HLDI. One is that, given the method of data collection, the numbers are not available for newer models. The second is that the numbers are somewhat affected by processes of self-selection. Volvo's numbers are as good as they are partly because careful, safety-conscious drivers buy Volvos in the first place.

Currently, NHTSA subjects new car models to front-end crash testing and makes the results available on at least a limited basis. These results, however, relate to car safety in only one category of accidents. Moreover, there apparently are some doubts about the reliability of NHTSA's simulations.

163. *Id.* The all-car average is 100. I deliberately limit myself here to midsize four-door cars. For such cars, the Cavalier is the worst, while the Taurus is among the best. For all

on either the NHTSA-based fatality rates or the HLDI numbers.

This proposal would achieve the basic purpose of the informed-choice warning obligation, and would do so in a way that avoids many of the problems ordinarily associated with that obligation. Such a sticker can present its information in a simple, straightforward way; there would be no problem of information overload. Moreover, it can provide aggregate information in a way that eliminates the problem of consumer underreaction (or overreaction) to various specific low-probability contingencies.¹⁶⁴ While there is considerable skepticism about the ability of product warnings to influence consumer behavior, the social science literature makes clear that the effectiveness of such communications depends on how they "frame" the relevant information and how well they make the risks in question "available" to the consumer.¹⁶⁵ Taking account of such variables as framing and availability, I find it very easy to believe that potential car buyers would be strongly affected by the stark difference between the Taurus's 82 and the Cavalier's 125.¹⁶⁶ Advancing this proposal as a regulation rather than a liability standard can eliminate the problems that surround the causation requirement in tort suits.

four-door cars, the best is the full-size Ford Crown Victoria (57, 51); the worst is the compact Chevrolet Spectrum (185, 197).

It is frequently suggested that consumers, for the sake of economy, are quite willing to accept the greater hazards entailed by subcompact cars. See, e.g., P. HUBER, *LIABILITY* 42 (1988). I see no reason why society should not make sure that consumers who buy subcompacts are fully aware of what they are getting.

164. It might be said that this proposal lets Ford off the hook. The disclosure that it calls for would not have required Ford to identify the specific hazards in the Pinto's gas tank; and the Pinto's overall fatality rate makes the Pinto look all right, at least relative to other subcompacts. But while my consideration of the Pinto case has led me to emphasize the manufacturer's warning obligation, I have ended up realizing that an obligation to inform consumers of specific hazards would not be administratable, and that the information which consumers would find most valuable concerns the overall level of the product's danger rather than the individual items that contribute to that overall figure.

Of course, some ways of dying are more painful—and more dreadful to consider—than others; these are deaths that consumers should, perhaps, be especially eager to avoid. See Gillette & Krier, *supra* note 115, at 1070-99; Leebron, *Final Moments: Damages for Pain and Suffering Prior to Death*, 64 N.Y.U. L. REV. 256 (1989). But it is far from clear that death on account of a fuel tank fire is more awful than death on account of a dramatic head-on collision.

165. See Slovic, Fischhoff, & Lichtenstein, *supra* note 125.

166. Indeed, the interesting question might be whether consumers would overreact to the safety information such stickers would provide—whether in selecting cars they would overestimate the risk of highway accidents. Of course, to whatever extent consumers do react to the posted information, then consumer demand, operating through the market, would strengthen manufacturers' incentives to improve car safety.

Moreover, any instances of dealer noncompliance with the regulatory requirement would be quite conspicuous; hence something close to full compliance should be achievable even with a low-cost enforcement effort.¹⁶⁷

B. *Design Liability*

The myth of the Ford Pinto case thus invites a broad reconsideration of warning issues in products liability law. It is now worth considering what light the case sheds on products liability doctrines relating to design defect. My assumption here is that a properly structured design defect doctrine plays a key role in modern products liability law. In setting forth this assumption, I acknowledge various arguments to the effect that a full warning obligation could eliminate the need for design defect review.¹⁶⁸ A sufficient response to such arguments is that, as shown above, modern products law does not impose a full obligation of this sort: for manufacturers of many products (including automobiles) are not currently obliged to give the kind of informed-choice warnings that might render design defect requirements less essential. The arguments against the design defect concept can be responded to in additional ways. One response points to what may be the inevitable fallibility in the processes of consumer choice.¹⁶⁹ Another response would acknowledge the need to afford protection to a variety of nonpurchasers—including auto passengers such as Richard Grimshaw and the employees of those who acquire industrial products.

In fact, in *Grimshaw* itself the design defect issue was submitted to the jury primarily under the consumer expectations stan-

167. A committee of the American Law Institute has recently suggested that consideration be given to requiring manufacturers to provide information about the overall "risk levels" of the products they offer for sale. See II A.L.I. REPORTERS' STUDY, *supra* note 135, at 36, 72. My recommendation here can be seen as one specification of this committee's suggestion. The Reporters' Study does not discuss, however, how manufacturers would secure the information necessary to provide such warnings; I present my proposed regulation in a product context in which substantial information is available. Also, the Reporters' Study seems to anticipate implementing its suggestion by way of a liability rule. My regulatory proposal would escape the causation problems that would encumber such a method of implementation.

168. See Henderson, *Judicial Review of Manufacturers' Conscious Design Choices: The Limits of Adjudication*, 73 COLUM. L. REV. 1531 (1973); A. Schwartz, *Proposals for Products Liability Reform: A Theoretical Synthesis*, 97 YALE L.J. 353, 399 (1988).

169. That fallibility is described, from quite different perspectives, in G. CALABRESI, *THE COSTS OF ACCIDENTS* 55-58 (1970) and M. KELMAN, *CRITICAL LEGAL STUDIES* 127-41 (1987).

dard.¹⁷⁰ A previous article of mine has argued that this standard is amorphous and impressionistic in a way that renders it unsatisfactory.¹⁷¹ This argument is strengthened by the way in which that standard was applied in *Grimshaw*. The question that plaintiffs' counsel posed to the jury in closing argument was whether an ordinary consumer would expect a gas tank to catch fire when his car is hit by another car travelling at twenty-one miles-per-hour.¹⁷² *Grimshaw* was evidently the longest trial in Orange County history; yet in the entire *Grimshaw* record there is not a shred of evidence that directly deals with the question of what ordinary consumers expect about their gas tanks.¹⁷³ My estimate, based on my own experience, is that most people simply had not considered the gas tank issue until all the publicity surrounding the Pinto dramatically brought that issue to their attention.

In any event, the consumer expectations theme in product liability currently seems to be somewhat on the wane.¹⁷⁴ In most cases, design defect liability hinges on the risk-benefit standard.¹⁷⁵ This standard, while frequently presented as an aspect of strict liability, is now commonly understood as an application of ideas that are essentially drawn from the law and jurisprudence of negligence;¹⁷⁶ and I will refer to that standard hereinafter as a negligence standard of manufacturer design liability.

In considering how that standard might play out in *Grimshaw*, one can take note of a point repeatedly made by the court of appeal: that the Pinto's safety could have been improved for a per-car cost that would have been "inexpensive," "minimal," and even "nominal."¹⁷⁷ Indeed, Ford's willingness to tolerate a design hazard when the hazard could have been eliminated in such an inexpensive way is clearly part of the overall myth of the Pinto

170. See *supra* note 106 for discussion of the additional negligence count.

171. See Schwartz, *supra* note 101, at 471-81.

172. *Grimshaw* transcript, *supra* note 7, at RG 2885.

173. Neither at trial nor on appeal did the defendant raise any issue as to the sufficiency of the evidence to support a jury finding of a violation of the consumer expectations standard. Of course, there was plenty of evidence at trial about design alternatives, evidence that was highlighted in the plaintiffs' closing arguments. This evidence was relevant both to the negligence count and to punitive damages.

174. It was rejected, for example, in *Turner v. General Motors Corp.*, 584 S.W. 2d 844, 850-51 (Tex. 1979). Its general rejection is urged in II A.L.I. REPORTERS' STUDY, *supra* note 135, at 81.

175. See Henderson & Twerski, *supra* note 98, at 271-72.

176. See *supra* notes 99-101 and accompanying text.

177. *Grimshaw*, 119 Cal. App. 3d at 775, 778, 814, 174 Cal. Rptr. at 361, 370, 384.

case. But what is the actual analytic significance of say a \$10 safety figure? In ascertaining its significance, a relevant issue relates to the incidence of the costs of safety modifications. The court of appeal's rhetoric about Ford "balancing human lives and limbs against corporate profits" tends to presuppose that these costs, had they been incurred, would have remained with Ford rather than been passed forward to consumers. On this issue of incidence the *Grimshaw* jury may have been enticed by the evidence into making somewhat inconsistent assumptions.¹⁷⁸

If, for one reason or another, the costs of safety modifications would have been borne by Ford, then the fact that these costs can be expressed in terms of a low per-car figure would seem largely irrelevant; for risk-benefit purposes, the meaningful data would remain the overall cost to Ford and the number of lives that would have been saved if those costs had been incurred. If, however, consumers would have borne the incidence of the costs of safety improvements, then there is some appeal in the idea that

178. The jury's \$125 million punitive damage award seems to have been based on somewhat confusing evidence to the effect that over the years Ford had avoided \$100 million in expenses by omitting safety features from the Pinto and other Ford cars. *Id.* at 791, 174 Cal. Rptr. at 370. These savings were evidently interpreted by the jury as entailing profits to Ford—profits that the jury should now require Ford to disgorge. On the other hand, the jury also accepted the idea that Ford's neglect of safety precautions was due to its desire to enable the Pinto to satisfy the "limits of 2000": that is, that the Pinto would weigh no more than 2000 pounds and cost no more than \$2000. *Id.* at 775, 174 Cal. Rptr. at 360. Indeed, Ford's rigidity in adhering to these limits may have been seen as part of the overall offensiveness in its conduct. Given this line of reasoning, the effect of Ford's avoidance of those safety precautions was to enable Ford to lower the Pinto's sales price. The cost savings, then, were essentially passed on to consumers.

The economics relating to incidence seems somewhat tricky. An incidence analysis can begin with the (correct) assumption that consumers were unaware of the Pinto's possible design problems; therefore, improving the Pinto's design so as to eliminate those problems would not have affected consumers' demand for the Pinto. What the "limits of 2000" evidence implies is that in deciding whether to produce the Pinto, Ford officials assumed that demand for cars becomes highly inelastic when car prices reach \$2000, and that in offering a car for less than \$2000, Ford could make an adequate profit only if it economized on all non-essential design features. Under these assumptions, the absence of certain safety features would have been a precondition for Ford's decision to bring to market the low-priced Pinto. The immediate benefit of their absence was hence received by consumers by way of a lower price, and Ford's benefit was merely a consequence of the profits it was able to realize by selling a sufficiently large number of Pintos.

However, much of the evidence in the Pinto case related to Ford's decision not to improve the Pinto's design once the Pinto had already been introduced. At this point, the costs incurred by Ford in developing the Pinto were sunk. Accordingly, so long as Ford remained worried about price elasticity, Ford might have been inhibited from raising the Pinto's price if such improvements had been made. The cost of those improvements hence would have directly reduced Ford's profit margin on each Pinto.

all consumers would or should be willing to spend \$10 each so that death to a few consumers might be avoided. Indeed, this idea seems to be part of the larger set of public beliefs that surrounds the Pinto case.¹⁷⁹

On closer inspection, however, this turns out to be one instance in which the public's basic attitude seems analytically weak. About ten million cars are sold in the United States each year; an added \$10 per car would hence cost consumers \$100 million per year. If the safety improvements from this expenditure save 500 lives over the duration of the cars' lives, then it can easily be said that almost all consumers would be delighted with the \$10 expenditure. If, however, only five lives are saved by that design improvement, then that improvement is worthwhile only if life can be valued at more than \$20 million. This figure is, however, much in excess of the highest current estimate of life value.¹⁸⁰ Accordingly, unless consumers are extremely risk averse, one would expect them to be unhappy with that expenditure.

Expressing the cost of safety improvements in a "nominal" per-car way does not rescue us, therefore, from the need to consider the magnitude of the safety gain. And even the analysis set forth above is, in a basic way, too simple. For it can be assumed that the \$10 cost for improving fuel-tank safety is only one of a large number of individually low cost design modifications that could improve the safety of a car such as the Pinto; and at some point, the aggregate of these \$10 items can no longer be downplayed as "minimal." Consider, for example, all those auto design improvements that have been required by the NHTSA program. While no one of these is especially expensive, in their aggregate by 1984 they had added \$491 to the price of the average car.¹⁸¹ Of course, these price increases might well be justified. But the justification in question comes from the very substantial safety benefits that the NHTSA standards actually provide,¹⁸² and not from any mere claim that the overall cost of all of these standards can be depre-

179. Consider a question asked by Mike Wallace: "Don't [Ford officials] do surveys asking whether or not a consumer would pay an extra five or ten dollars for a properly designed fuel tank just to make sure that it's going to be safe?" 60 *Minutes* transcript, *supra* note 65, at 9.

180. *See supra* note 46.

181. R. CRANDALL, H. GRUENSPECHT, T. KEELER & L. LAVE, *REGULATING THE AUTOMOBILE* 38 (1986).

182. *See id.* at 84. For NHTSA's various evaluations of its fuel-system integrity standard, see *supra* note 14.

cated as minimal.

The ability, therefore, to characterize the cost of individual design improvements as "nominal" does not enable us to escape from the rigors of a full risk-benefit analysis in order to determine design defectiveness. The Ford Pinto case can now be reconsidered from the perspective of Ford's liability under the negligence-oriented risk-benefit liability standards. As noted, a \$9 package of design changes could have somewhat improved the safety of the Pinto. Over 2,200,000 Pintos were sold during the 1971-1976 model years.¹⁸³ The aggregate cost that Ford would therefore have incurred had it incorporated these design changes would have been almost \$20 million. In order to determine whether the absence of these design features rendered the Pinto defective, a jury, considering all the evidence, would need to render correct judgments as to the number of the casualties that these design changes would have averted and the appropriate monetary valuation for injuries and loss of life.

At this point in the assessment, however, we re-encounter the apparent crisis in the administration of the risk-benefit test. So long as my composite lawyers' statement is assumed correct,¹⁸⁴ the typical jury's distrust of corporate risk-benefit analysis¹⁸⁵ will lead that jury to neglect correct judgments and instead rule almost automatically in the plaintiff's favor whenever the manufacturer argues that its design was justified by the monetary costs of a design alternative.¹⁸⁶ In these cases, therefore, the limitation on liability that seems like an essential part of the risk-benefit test is being disregarded. For that matter, as that test is applied, there

183. See NHTSA INVESTIGATION REPORT, *supra* note 12, at 5.

184. See *supra* notes 103-04 and accompanying text.

185. In a way, the Ford Pinto case may not completely "prove" this point, since the jury did not receive a full *Barker* instruction. Rather, it was instructed along the lines of consumer expectations and general negligence. See *supra* notes 106-09 and accompanying text. In defending against liability, Ford never claimed that its design choices were rendered nonnegligent by the costs of the alternative designs. Nevertheless, the jury's willingness to award punitive damages largely on the basis of a showing that Ford balanced lives against design costs surely suggests that the jury would have responded with hostility had Ford marshaled those design costs in support of an effort to deny liability. Consider, also, the opinion of the court of appeal. That court was fully aware of the risk-benefit standard that *Barker* had endorsed. Even so, the court concluded that Ford's willingness to balance "human lives" against "profits" was so inherently callous as to warrant punitive damages. See *supra* notes 92-93 and accompanying text.

186. Moreover, when the safety cost per product unit is low but the number of units high, the jury is also likely to indulge in the "\$10 a car doesn't matter" fallacy that has been described above.

are additional factors that might well bias the jury in the plaintiff's favor. The test apparently calls on the jury to appraise the risk entailed by the product's design in an *ex ante* way: the smaller the *ex ante* possibility of an accident, the more likely should be a jury's finding that the manufacturer's design indeed satisfies the risk-benefit test. In any tort case, however, the accident has indeed happened, and the victim is sitting there in the courtroom, his injuries apparent to all. Given the way in which the victim's presence vividly dramatizes whatever risks may have inhered in the product's design, any fact-finder, whether judge or jury, is likely to lack the discipline that would prevent it from overestimating the *ex ante* possibility of injury.¹⁸⁷ In addition, even if affording compensation to accident victims is assumed not to be an actual purpose of tort liability rules, the presence in the courtroom of the badly injured and financially strapped victim might well incline the fact-finder—even a judge, and especially a lay jury—to resolve doubts in a way that would provide compensation to the victim.

In many cases, then, the risk-benefit standard is apparently applied in a way that highlights and even enlarges the relevant risk while all but excluding consideration of one quite relevant benefit. In these applications, a standard that is justified in negligence terms devolves into something like strict liability.¹⁸⁸

This is an administrative reality that defenders of the risk-benefit standard are likely to find seriously disturbing. In further assessing, however, exactly how disturbing this *de facto* practice of strict liability is, it is worth noting that over the years scholarly attention has frequently been given to the strict design liability idea; I myself looked at that idea in a 1979 article.¹⁸⁹ A rule of strict design liability would render manufacturers liable, without regard to any showing of defect, for all harms resulting from their products' use. Such a rule would, among other things, give manufacturers the most ample incentives to consider all possible risk-reducing design alternatives and to adopt whichever of those al-

187. See *Carroll v. Otis Elevator Co.*, 896 F.2d 210, 216 (7th Cir. 1990) (Easterbrook, J.).

188. In fact, in products liability cases juries rule in favor of plaintiffs only about half the time. See M. PETERSON, *CIVIL JURIES IN THE 1980s* 17 (1987). My text suggests, however, a strict liability tendency in some design defect cases but by no means all. Moreover, only a fraction of all cases that are originally filed are finally sent to trial; and lawyers presumably settle cases with their knowledge of juries' basic tendencies in mind. See Priest & Klein, *The Selection of Disputes for Litigation*, 13 J. LEGAL STUD. 1 (1984).

189. See Schwartz, *supra* note 101, at 441-48.

ternatives seem, on balance, intelligent; and this objective could be achieved without the need for any intervention by an expensive trial and an ad hoc amateur jury.¹⁹⁰ My 1979 article in no way endorsed strict design liability, but did suggest that the idea was useful, at least as a heuristic.

In the last several years, strict design liability has been conspicuously endorsed as a proposed actual rule of law first by Professor Latin,¹⁹¹ then by Professor Alan Schwartz,¹⁹² and most recently by Hanson and Logue.¹⁹³ In supporting strict design liability, all of these writers, in one way or another, rely on the idea that manufacturers can do a much better job than ad hoc juries in determining appropriate product designs. In other ways, however, these writers rely on quite different sets of assumptions, which lead them to adopt very different positions as to the range of available affirmative defenses. Schwartz, for example, would condition his rule of strict liability on the recognition of full defenses relating to consumer contributory negligence and assumption of risk.¹⁹⁴ By contrast, Latin, and now Hanson and Logue, would disallow these defenses in almost all cases.¹⁹⁵

A new rule of strict design liability would of course confirm the liability of Ford in the likes of the Ford Pinto cases; indeed, under such a rule, Ford's liability would be essentially routine. For that matter, such a rule would also render auto manufacturers automatically liable for all highway injuries suffered by pedestrians.¹⁹⁶ It would likewise render manufacturers of power

190. Observe that the argument here focuses not on the substantive biases of the jury but rather on the incompetence of the jury (and the process of adjudication generally) to reach appropriate results on questions of proper product design. These concerns were originally expressed in Henderson, *supra* note 168.

191. See Latin, *Problem-Solving Behavior and Theories of Tort Liability*, 73 CALIF. L. REV. 677 (1985). To be sure, there is ambiguity in Latin's proposal. Most of the time he seems to favor a general rule of manufacturers' strict liability—and I will here accept this interpretation of his position. On occasion, however, he can be read as favoring strict liability only for specific manufacturers and specific forms of harm.

192. A. Schwartz, *supra* note 168.

193. Hanson & Logue, *The First-Party Insurance Externality: An Economic Justification for Enterprise Liability*, 76 CORNELL L. REV. 129 (1991). For a trace of strict design liability in the jury instruction in *Grimshaw*, see *supra* note 106.

194. See A. Schwartz, *supra* note 168, at 392-98.

195. See Latin, *supra* note 191, at 730 and Hanson & Logue, *supra* note 193, at 172-74.

196. The contributory negligence defense recommended by Alan Schwartz would deny a recovery to the pedestrian who crosses a street carelessly. Assume, however, that an innocent pedestrian is injured on account of the car driver's negligence. In such a case, Schwartz evidently favors holding the manufacturer and the driver liable on the basis of

lawn mowers liable for all injuries resulting from these products' use, and airplane manufacturers responsible for the consequences of all airplane crashes. The list could be extended: ladder manufacturers would be automatically liable to all persons who fall off ladders; knife manufacturers would be subject to liability for all knives that accidentally cut; drug manufacturers would bear liability for all side effects of drugs, no matter how adequate their warnings;¹⁹⁷ and distillers and breweries would bear liability for all injuries attributable to the consumption of alcohol.¹⁹⁸

In considering all these applications of such a rule of strict design liability, I find that I remain of the view that it goes much too far. Granted, strict liability would provide the best way of insuring that products liability is not underinclusive in achieving its goal of inducing product designs that are appropriately safe. Nevertheless, that rule is drastically overinclusive, insofar as it would impose liability on manufacturers (by way of costly lawsuits) in huge numbers of cases in which there is little or no specific reason to believe that the manufacturer could have sensibly redesigned its product in a way that would have avoided the accident.¹⁹⁹

What we have learned so far can be summarized as follows: The current negligence-oriented risk-benefit standard for design liability runs into trouble insofar as its application by the jury in many cases prevents it from reaching the results that the standard itself deems appropriate. Indeed, in these cases the jury may well be applying a *de facto* test of strict design liability. Now the concept of strict design liability is interesting enough to merit some consideration. That consideration reveals, however, that

joint liability. A. Schwartz, *supra* note 168, at 403.

197. Adequate warnings would, of course, exculpate the manufacturer under Alan Schwartz's test. In prescription drug cases, the doctor intervenes between the manufacturer and the consumer. In these circumstances, Latin would apparently adhere to his proposal of manufacturer strict liability. Whether he would also hold the doctor liable on a strict liability basis would evidently depend on whether he classifies the medication-prescribing doctor as a "high-attention" or "low-attention" party. See Latin, *supra* note 191, at 697, 716.

198. Over 100,000 Americans die each year on account of injuries and diseases that are causally related to alcoholic beverages. See *Alcohol Tied to the Deaths of 105,095 in U.S. in '87*, N.Y. Times, Mar. 27, 1990, at C10, col. 4.

199. The extent of this overinclusiveness would, of course, vary from product to product. Let me hypothesize, for example, that 50% of all power-mower injuries and 40% of all commercial airplane crashes are due to product defects. Given these (perhaps unrealistic) assumptions, a rule of strict liability might here make sense. However, it may be that only 20% of ladder injuries, 5% of drug side-effects, and 1% of knife wounds and inebriation-induced injuries are due to any defects in the design of the underlying products.

such a standard would produce results that are plainly excessive and unacceptable.

At this point, things look quite bleak. But having acknowledged this bleakness, let me now give further consideration to the particular way in which current arrangements bring together elements of negligence and strict liability. The negligence-oriented risk-benefit test remains the official test of liability. Accordingly, the plaintiff has the burden of producing substantial evidence identifying an alternative design, showing that this design would have been, on balance, a good idea, and confirming that this design, had it been incorporated, would have averted the plaintiff's injury.²⁰⁰ The recent proposals for strict design liability would of course relieve the plaintiff of this entire burden. It may be that current practices end up subjecting defendants to a de facto practice of strict liability in a significant number of cases; but in order to get the case to the jury, the plaintiff must at least discharge a substantial negligence-oriented burden of proof.

This combination of a formal initial negligence standard and (in many cases) an effective eventual standard of strict liability might be the last possible arrangement any analyst would think of were he designing design defect practices from scratch. Indeed, it is a combination that seems at first incoherent. Let me suggest in closing, however, that this combination may not be all that awful; indeed, it may possess a considerable measure of unexpected ingenuity. The combination relies on negligence principles to in essence filter those cases that eventually go to the jury. Given this negligence filter, cases reach the jury only after the plaintiff introduces enough evidence to raise a genuine question as to whether the manufacturer's own design choice was itself proper, and whether an alternative design would have avoided the plaintiff's injury. This is a filter that would not exist under any formal regime of strict design liability; and as a filter, it succeeds in eliminating a huge proportion of those unjustified suits that a formal strict liability rule would occasion. It precludes, for example, almost all claims against knife manufacturers, drug manufacturers, and distillers; likewise, it knocks out the vast majority of claims that pedestrians might bring against auto manufacturers or that

200. This description may not be apt in California, given the way in which the burden of proof is dealt with in *Barker v. Lull Eng'g Co.*, 20 Cal.3d 413, 573 P.2d 443, 143 Cal. Rptr. 225 (1978). The confusions in *Barker* are discussed in Schwartz, *supra* note 101, at 465-70. My text here assumes a jurisdiction whose burden of proof is more conventional.

might be asserted by people who fall off ladders.

In turn, suits that survive the negligence filter are those in which there is real uncertainty about whether the manufacturer should indeed have adopted an alternative design. And in cases involving such uncertainty, the rationale offered on behalf of strict liability does acquire considerable appeal; these are uncertainties that can perhaps be better resolved by manufacturers themselves than by lay juries after awkward courtroom trials. Current arrangements are thus at least intriguing in the way in which they may achieve a key advantage associated with strict design liability while sharply reducing the disadvantages that would otherwise accompany strict liability.

The effect of these arrangements can be illustrated by considering the current situation of a defendant such as Ford. The vast majority of occupants of Ford cars who suffer highway injuries have no plausible risk-benefit claims against Ford,²⁰¹ and do not bring suit. Consider, however, the liability position that Ford currently faces in those cases in which the evidence does show that a \$10 per-car design change might well have avoided the passenger's injury. The risk-benefit test assumes that the jury will reach a balanced, intelligent judgment as to whether the safety benefits entailed by this design alternative justify the aggregate cost. Yet in fact these may be judgment calls that juries routinely and predictably resolve in favor of plaintiffs. If, however, such consequences can be predicted by legal commentators, they likewise can be anticipated by manufacturers such as Ford. If so, then within this somewhat limited category of cases, the relevant choices—whether to spend for safety or instead bear liability—ultimately belong to Ford. And this evaluation suggests that the current situation, while far from the ideal associated with the risk-benefit test, is at least close to the range of the socially acceptable.

V. CONCLUSION

From what I have been able to learn, as for safety the Pinto was a car that was neither admirable nor despicable. Its overall fatality rate was roughly in the middle of the subcompact range;

201. Claims relating to the absence of airbags are, of course, preempted by federal law. See *Wood v. General Motors Corp.*, 865 F.2d 395 (1st Cir. 1988), *cert. denied*, 110 S. Ct. 1781 (1990).

its record was better than the subcompact average with respect to fatalities-with-fire; yet for the quite small category of fatalities-with-rear-end-fire, its design features apparently gave it a worse-than-average record. Hence, there was nothing clearly wrong in subjecting Ford to liability for harms resulting from that latter category of fires. The punitive damage award in the Ford Pinto case is, however, much more difficult to justify. To a large extent it rested on the premise that Ford had behaved reprehensibly when it balanced safety against cost in designing the Pinto. However, the process by which manufacturers render such trade-off design decisions seems not only to be anticipated but endorsed by the prevailing risk-benefit standard for design liability. Accordingly, the Pinto jury's decision that punitive damages were appropriate—a decision that was affirmed by the trial judge and the court of appeal—raises serious questions about the operational viability of the risk-benefit standard itself.²⁰²

The questions relate to the way in which that standard requires that a monetary value be placed on life itself. More precisely, it requires the jury to review the adequacy of the valuation that was implicit in the defendant's design decisions. For Calabresi, a tragic choice is one that requires that "we put a price on things we desperately would like to treat as priceless."²⁰³ The problem of manufacturers' design liability is not, as a matter of first-order determinations, inherently tragic. Tort law could endorse a rule of no design liability (so long as proper warnings are given) or even a rule of strict design liability (as several scholars have recently recommended).²⁰⁴ Neither of these rules would raise any issue of life value. It is only because tort law has chosen a negligence-oriented risk-benefit test for design liability that the law seemingly requires the jury to place a monetary value on life.

Of course, as a practical matter the jury can avoid this tragic choice: it can neglect the manufacturer's defense of monetary-cost justification and rule that the manufacturer's design is in fact de-

202. *Grimshaw's* punitive damage holdings are what most frequently bring that opinion to scholars' attention. I have, however, discussed punitive damage problems (and possible solutions) in previous articles. See Schwartz, *supra* note 25; Schwartz, *Afterword—Browning-Ferris: The Supreme Court's Emerging Majorities*, 40 ALA. L. REV. 1237 (1989). This Article therefore focuses on what the *Grimshaw* jury's ruling on punitive damages implies about the issue of liability that logically and dynamically precedes the issue of damages.

203. G. CALABRESI & P. BOBBITT, *TRAGIC CHOICES* 144 (1978).

204. See *supra* text accompanying and notes 191-95.

fective. The prospect of such rulings builds a strict liability tilt into what is otherwise a negligence liability standard. At first, this tilt seems so inconsistent with the theory behind that standard as to suggest a crisis of sorts within the administration of design defect law. It proves possible, however, to characterize that administration in a somewhat more charitable way—as an implicit technique for combining certain advantages of negligence liability with certain advantages of strict liability. The current situation, then, is not especially satisfactory; neither, however, is it necessarily deplorable.

In further considering the jury's response to the liability issue in cases like *Grimshaw*, it is tempting—and not necessarily wrong—to interpret that response as embodying in part a populist (or pre-populist) public distrust of major corporations. In fact, however, the jury's instinct in favor of liability is in a way consistent with a basic market analysis, which indicates that the sale of products like the Pinto does not fully comply with economic norms, inasmuch as purchasers generally lack knowledge of specific hazards that inhere in the products' designs. Furthermore, the confidentiality of Ford's life-affecting design choices is an important part of the ethical dimension of the Pinto case myth. This assessment suggests approaching the case from the perspective of the products liability doctrine of failure to warn. Indeed, the warning idea seems implicit in the consumer expectations standard that the *Grimshaw* jury applied. It turns out, however, that under current products liability practices many manufacturers are not obliged to give informed-choice warnings. This Article therefore advances for purposes of discussion a regulatory proposal that could provide auto consumers with the aggregate safety information they most clearly need while avoiding the practical problems that have understandably discouraged implementation of a tort-oriented warning duty.

To wrap up, it makes sense to say if the Ford Pinto case did not exist, law professors would need to invent it: for the case raises essential issues about both the form and the substance of modern products liability doctrine.