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I. INTRODUCTION

The doctrine of strict products liability is grounded in social and economic policy considerations that were inadequately served under traditional negligence and warranty concepts.[1] In 1916, in the watershed decision of *MacPherson v. Buick Motor Co.*,[2] Judge Cardozo announced the philosophical point of departure out of which products liability law was to emerge:

> If the nature of a thing is such that it is reasonably certain to place life and limb in peril when negligently made, it is then a thing of danger. Its nature gives warning of the consequences to be expected. If to the element of danger there is added knowledge that the thing will be used by persons other than the purchaser, and used without new tests, then, irrespective of contract, the manufacturer of this thing of danger is under a duty to make it carefully. . . . We have put aside the notion that the duty to safeguard life and limb, when the consequences of negligence may be foreseen, grows out of contract and nothing else. We have put the source of the obligation where it ought to be. We have put its source in the law.[3]

With one deft stroke, Judge Cardozo tore down the privity barrier to recovery in a negligence action. The *MacPherson* decision, however, did a great deal more than simply remove a legal technicality. Judge Cardozo focused the inquiry on what is the wellspring of all tort law—defining the nature and extent of the duty owed.[4]

The privity doctrine dictated that the manufacturer's duty extended only to the immediate purchaser.[5] As one could see even as

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1. *See* Greenman v. Yuba Power Prods., Inc., 59 Cal. 2d 57, 377 P.2d 897, 27 Cal. Rptr. 697 (1963); Henningsen v. Bloomfield Motors, Inc., 32 N.J. 358, 161 A.2d 69 (1960); Prosser, *The Assault Upon the Citadel (Strict Liability to the Consumer)*, 69 YALE L.J. 1099 (1960).

2. 217 N.Y. 382, 111 N.E. 1050 (1916).

3. *Id.* at 389-90, 111 N.E. at 1053.

4. At the very outset of the decision, Judge Cardozo concisely stated the issue: "The question to be determined is whether the defendant owed a duty of care and vigilance to any one but the immediate purchaser." *Id.* at 385, 111 N.E. at 1051.

5. Winterbottom v. Wright, 10 M. & W. 109, 152 Eng. Rep. 402 (1842).

early as 1916, however, the developing industrial and technological revolution necessarily distanced the manufacturer from the consumer, placing various intermediaries in the chain of distribution between them. In *MacPherson*, for example, the defendant manufacturer had sold an automobile to a dealer, who in turn sold it to plaintiff, whose wife was injured when one of the wheels, made of defective wood, crumbled into fragments, causing the vehicle to collapse.[6] Linking the duty of due care to the contract doctrine of privity made the responsibility of the manufacturer to the user of the product essentially illusory. As Judge Cardozo observed,

> The dealer was indeed the one person of whom it might be said with some approach to certainty that by him the car would not be used. Yet the defendant would have us say that he was the one person whom it was under a legal duty to protect. The law does not lead us to so inconsequent a conclusion.[7]

Indeed, Judge Cardozo refused to allow the intricacies of contract law to abrogate the manufacturer's duty of care. When the societal goal of holding a manufacturer accountable for the safety of his products was threatened by the interposition of a technical rule of law, it was the rule that had to give way. Thus, in *MacPherson* Judge Cardozo affirmed the overriding societal imperative that manufacturers be held to owe a duty of due care directly to users of their products.

It was to take almost half a century, however, for the privity barrier to be completely eliminated from products liability litigation. An injured plaintiff, in order to avoid the substantial burden of proving negligence, often relied on warranty concepts to establish that a product was not of merchantable quality. The doctrine of implied warranty provided a distinctly advantageous approach for a plaintiff, since it was essentially a strict liability concept.[8] An injured plaintiff, however, even after *MacPherson*, could not recover for breach of warranty unless he was in contractual privity with the seller.[9] Although the social policy considerations favoring

6. 217 N.Y. at 384-85, 111 N.E. at 1051.

7. *Id.* at 391, 111 N.E. at 1053.

8. Implied warranty may be viewed as strict liability in the sense that the plaintiff need not prove that a seller was negligent in the manufacture or sale of the product in order to state a cause of action. Plaintiff need only prove that the product was of unmerchantahle quality—i.e., not fit for the ordinary purpose for which it was sold. U.C.C. § 2-314 (1978 version). *See also* J. WHITE & R. SUMMERS, HANDBOOK OF THE LAW UNDER THE UNIFORM COMMERCIAL CODE § 9-6 (1972).

9. There were notable exceptions to the privity requirement. For example, courts eliminated the privity requirement in cases involving adulterated food and drink, thereby giving rise to a notion of "implied" strict liability. "[T]he warranty to the consumer was not the one made on the original sale to the dealer, and did not run with the goods, but was a new

elimination of privity were clearly established by *MacPherson* and its progeny, the fact that warranty concepts were grounded in contract law inhibited any parallel liberalization of the privity requirement in a cause of action based on a claim of unmerchantability. Finally, in 1960, in the leading case of *Henningsen v. Bloomfield Motors, Inc.*,[10] the New Jersey Supreme Court dispensed with the privity requirement in an action based on breach of implied warranty, holding that the obligation of the manufacturer is not grounded in the law of sales, but upon the "demands of social justice."[11] The court found that under modern marketing conditions products carry an implied warranty of reasonable suitability, which accompanies the product into the hands of the ultimate consumer.[12]

The fall of what Dean Prosser has called "the citadel of privity,"[13] certainly eased the way for the injured consumer to bring a cause of action against the manufacturer of a defective product. Still, many difficult hurdles remained for the plaintiff. If the suit was based on a warranty claim, courts required strict compliance with the technicalities of sales law. Thus, for example, proper notice had to be given by an injured consumer within a reasonable time after breach of the warranty as a prerequisite to maintaining a claim.[14] All too often, the untutored consumer would find himself barred from bringing the action in warranty for failure to satisfy the stringent requirements imposed by the Uniform Sales Act, or later, the Uniform Commercial Code.

Similarly, a cause of action in negligence did not suddenly become a route without burdens simply by the abandonment of the privity requirement. The injured plaintiff still had the considerable evidentiary problem of proving that the manufacturer was, in fact, negligent. The doctrine of *res ipsa loquitur*, where applicable, offered some help, but the manufacturer could dispel the inference of negligence by advancing sufficient evidence to show that he exercised due care in the manufacture of the product and in the adoption of quality control measures. As Judge Traynor noted, "[a]n

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and independent one made directly to the consumer; and . . . it did not arise out of or depend upon any contract, but was imposed by law in tort, as a matter of policy." W. PROSSER, LAW OF TORTS § 97, at 654 (4th ed. 1971).

10. 32 N.J. 358, 161 A.2d 69 (1960).

11. *Id.* at 384, 161 A.2d at 83 (quoting Mazetti v. Armour & Co., 75 Wash. 622, 135 P. 633 (1913)).

12. 32 N.J. at 384, 161 A.2d at 84.

13. Prosser, *The Fall of the Citadel (Strict Liability to the Consumer)*, 50 MINN. L. REV. 791 (1966).

14. *See* U.C.C. § 2-607.

injured person, however, is not ordinarily in a position to refute such evidence or identify the cause of the defect, for he can hardly he familiar with the manufacturing process as the manufacturer himself is."[15]

Clearly, traditional negligence and warranty causes of action posed serious impediments to the injured consumer's ability to recover. Perhaps more importantly, the public policy goals undergirding the societal commitment to a notion of expansive manufacturer liability for defective products could not be effectively realized in view of the limitations inherent in the traditional causes of action.

By the 1950s and early 1960s, it was becoming increasingly clear that considerations of public policy would yield a sufficient rationale for adopting a strict liability cause of action for claims based on defective products.[16] Holding a manufacturer liable for product-related injuries without a showing of negligence can reasonably be justified on two grounds, both of which may be deemed socially valuable. First, since manufacturers are in the best position to control and eliminate the risks posed by defective products that might roll off the assembly line, it does not seem unreasonable or unfair to impose on them an economic incentive to develop the most effective quality control systems attainable.[17] Any departure from best efforts in this area can justifiably be made extremely costly for the manufacturer. Second, even when an occasional defect does slip through, the burden of a resulting injury can be shouldered better by the manufacturer than by the consumer. While it would be irrational to say that society expects defect-free production runs, it is not unreasonable to require that the manufacturer foot the bill for injuries that result when an inadvertently defective product causes harm, notwithstanding his due care efforts. The manufacturer can spread the risk through insurance and price adjustments, whereas the injured individual might suffer a crushing financial blow underwriting the loss himself.[18]

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15. Escola v. Coca-Cola Bottling Co., 24 Cal. 2d 453, 150 P.2d 436 (1944) (Traynor, J., concurring).

16. *See* James, *Products Liability*, 34 TEX. L. REV. 192 (1955); Noel, *Manufacturers of Products—The Drift Toward Strict Liability*, 24 TENN. L. REV. 963 (1957); Prosser, *The Assault Upon the Citadel, supra* note 1; Roberts, *Implied Warranties—The Privity Rule and Strict Liability—The Non-Food Cases*, 27 MO. L. REV. 194 (1962); Wilson, *Products Liability*, 43 CALIF. L. REV. 614 (1955).

17. Phillips v. Kimwood Mach. Co., 269 Or. 485, 503-04, 525 P.2d 1033, 1041-42 (1974) ("We suspect that, in the final analysis, the imposition of liability has a beneficial effect on manufacturers of defective products both in the care they take and the warning they give.").

18. Most courts tend to pay rather uncritical judicial lip service to one or more variations of the safety-incentive/risk-spreading rationales justifying the imposition of strict liabil-

In 1963, in the landmark case of *Greenman v. Yuba Power Products, Inc.*,[19] the California Supreme Court relied on this dual rationale in adopting a strict liability in tort cause of action, independent of both negligence and warranty. Sweeping away all the warranty obstacles theretofore facing injured users and consumers, the court simply and succinctly held: "[a] manufacturer is strictly liable in tort when an article he places on the market, knowing that it is to be used without inspection for defects, proves to have a defect that causes injury to a human being."[20]

Courts and commentators after *Greenman* have recognized that the central issue in a strict products liability action is the definition to be given to the term "defect," which is the very essence of strict liability. Courts could certainly look to the policy rationale underlying *Greenman* as a sufficient basis upon which to establish a cause of action grounded in strict products liability: "[t]he purpose of such liability is to insure that the costs of injuries resulting from defective products are borne by the manufacturers that put such products on the market rather than by the injured persons who are powerless to protect themselves."[21] Neither this reasoning, however, nor the holding in *Greenman* provided any external standard or criteria for making the initial determination that a particular product is, in fact, defective. As Professor Twerski has noted: "[i]t may now be true that defect, like obscenity in Justice Stewart's definition, will be discovered by sense impression. Unfortunately, 'I know it when I see it' will not suffice as a judicial stan-

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ity. This general agreement about the policies underlying strict liability, however, should not belie the enormous complexity of the economic and jurisprudential issues involved. An examination of some of the more searching analyses by leading commentators raises significant doubts about the utility and basic validity of these rationales as a foundation for a doctrine of what has been called "social engineering." *See generally* Calabresi, *Optimal Deterrence and Accidents*, 84 YALE L.J. 656 (1975); Calabresi & Hirschoff, *Toward a Test for Strict Liability in Torts*, 81 YALE L.J. 1055 (1972); Epstein, *Products Liability: The Search for the Middle Ground*, 56 N.C. L. REV. 643 (1978); Hoenig, *Product Designs and Strict Tort Liability: Is There a Better Approach?* 8 SW. U.L. REV. 109 (1976); Kalven, *Torts: The Quest for Appropriate Standards*, 53 CALIF. L. REV. 189 (1965); Klemme, *The Enterprise Liability Theory of Torts*, 74 U. COLO. L. REV. 153 (1976); Lang, *Compensation of Victims—A Pious and Misleading Platitude*, 54 CALIF. L. REV. 1559 (1966); Montgomery & Owen, *Reflections on the Theory and Administration of Strict Tort Liability for Defective Products*, 27 S.C. L. REV. 803 (1976); Plant, *Strict Liability of Manufacturers for Injuries Caused by Defects in Products—An Opposing View*, 24 TENN. L. REV. 938 (1957); Posner, *Strict Liability: A Comment*, 2 J. LEG. STUD. 205 (1973); Prosser, *supra* note 1; Raleigh, *The "State of the Art" in Product Liability: A New Look at an Old "Defense,"* 4 OHIO N.L. REV. 249 (1977); Sachs, *Negligence or Strict Product Liability: Is There Really a Difference in Law or Economics?* 8 GA. J. INT'L & COMP. L. 259 (1978); Wade, *On the Nature of Strict Tort Liability for Products*, 44 MISS. L.J. 825 (1973); Wilson, *Products Liability*, 43 CALIF. L. REV. 809 (1955).

19. 59 Cal. 2d 57, 377 P.2d 897, 27 Cal. Rptr. 697 (1963).

20. *Id.* at 62, 377 P.2d at 900, 27 Cal. Rptr. at 700.

21. *Id.* at 63, 377 P.2d at 901, 27 Cal. Rptr. at 701.

dard for products liability."[22]

When the final version of section 402A of the *Restatement (Second) of Torts* was published two years after *Greenman*, the drafters sought to put a substantive gloss on the term defect. Section 402A provided that sellers of products "in a defective condition unreasonably dangerous" are strictly liable for harm caused to the ultimate consumer or user.[23] As comment i made clear, the addition of the term "unreasonably dangerous" was intended to qualify the notion of defect and to preclude the possibility that manufacturers would be held liable for any and all injuries caused by the use or consumption of their products.[24] There probably is no absolutely safe product; all products have inherent potential to cause harm if overused or misused. Even a seemingly innocuous product like butter has the inherent danger of depositing cholesterol in the arteries, which leads to heart attacks; but this does not make butter unreasonably dangerous. "Many products cannot possibly be made entirely safe for all consumption, and any food or drug necessarily involves some risk of harm, if only from overconsumption."[25] Butter that is contaminated with poisonous fish oil would, however, in the language of section 402A, be considered to be in a de-

22. Twerski, *From Defect to Cause to Comparative Fault—Rethinking Some Product Liability Concepts*, 60 MARQ. L. REV. 297, 304-05 (1977)(referring to Justice Stewart's concurrence in Jacobellis v. Ohio, 378 U.S. 184, 197 (1964)).

23. When § 402A of the *Restatement (Second) of Torts* was drafted in 1965, it suggested the following formulation as a basis for strict products liability:

§ 402A. Special Liability of Seller of Product for Physical Harm to User or Consumer

(1) One who sells any product in a *defective condition unreasonably dangerous* to the user or consumer or to his property is subject to liability for physical harm thereby caused to the ultimate user or consumer, or to his property, if

(a) the seller is engaged in the business of selling such a product, and

(b) it is expected to and does reach the user or consumer without substantial change in the condition in which it is sold.

(2) The rule stated in Subsection (1) applies although

(a) the seller has exercised all possible care in the preparation and sale of his product, and

(b) the user or consumer has not bought the product from or entered into any contractual relation with the seller. (Emphasis added).

Comment g to § 402A explains and qualifies the application of strict products liability: The rule stated in this Section applies only where the product is, at the time it leaves the seller's hands, in a condition not contemplated by the ultimate consumer, which will be unreasonably dangerous to him. The seller is not liable when he delivers the product in a safe condition, and subsequent mishandling or other causes make it harmful by the time it is consumed. The burden of proof that the product was in a defective condition at the time it left the hands of the particular seller is upon the injured plaintiff; and unless evidence can be produced which will support the conclusion that it was then defective, the burden is not sustained.

24. Prosser, *Strict Liability to the Consumer in California*, 18 HASTINGS L.J. 9, 23 (1966).

25. RESTATEMENT (SECOND) OF TORTS § 402A, comment i (1965).

fective condition unreasonably dangerous.[26]

Greenman cleared the way and set the groundwork for creating an independent cause of action in strict products liability, but courts have traditionally looked to section 402A for guidance in imposing liability on sellers of defective products. Much of the confusion that continues to plague courts in applying the doctrine of strict products liability can be traced to this dual legacy of *Greenman* on the one hand, with its singularly bald notion of product defect, and section 402A on the other, with its amorphous terminology, "defective condition unreasonably dangerous."

The problems of defining defect are further complicated because the same linguistic formulation is used to describe two entirely distinct factual clusters. The term defect is used to apply to product flaws that result from unintentional mishaps in manufacturing as well as to fiaws that arise from intentional design decisions.[27] In the case of a manufacturing defect, the meaning of defect creates no difficulty:[28] the product at issue may be evaluated against the manufacturer's own production standards, as manifested by other like products that roll off the assembly line.[29] Conscious design defect cases,[30] however, provide no such simple test.

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26. *Id.*

27. Analytically, it is essential to distinguish unintended manufacturing defects, wherein the court has at hand a huilt-in and dispositive test for determining whether a defect exists, from design defects, wherein the very question of whether a defect in fact exists is central to the court's inquiry. It is only in design defect cases that the court is called upon to supply the standard for defectiveness.

28. Not all courts would agree. In Cronin v. J.B.E. Olson Corp., 8 Cal. 3d 121, 501 P.2d 1153, 104 Cal. Rptr. 433 (1972), the California Supreme Court was reluctant to distinguish between manufacturing and desigu defects for the purpose of imposing liability based on different standards.

> The most obvious problem we perceive in creating any such distinction is that thereafter it would be advantageous to characterize a defect in one rather than the other category. It is difficult to prove that a product ultimately caused injury because a widget was poorly welded—a defect in manufacture—rather than because it was made of inexpensive metal difficult to weld, chosen by a designer concerned with economy—a defect in design.

Id. at 134, 501 P.2d at 1163, 104 Cal. Rptr. at 443.

29. Traynor calls this the "deviation-from-the-norm test." Traynor, *The Ways and Meanings of Defective Products and Strict Liability*, 32 TENN. L. REV. 363, 367 (1965).

30. Professor Henderson has pointed out that a distinction should be drawn between inadvertent design errors and conscious design choices.

> At one end of the spectrum are risks of harm which originate in tbe inadvertent failure of tbe design engineer to appreciate adequately the implications of the various elements of his design, or to employ commonly understood and universally accepted engineering tecbniques to achieve the ends intended with regard to the product.

Henderson, *Judicial Review of Manufacturers' Conscious Design Choices: The Limits of Adjudication*, 73 COLUM. L. REV. 1531, 1548 (1973). As in cases involving manufacturing flaws, the court need not develop its own legal standards of defectiveness for cases involving inadvertent desigu error, since recourse can readily be had to established extrajudicial, engineer-

Plaintiff is attacking the intended design itself, arguing that the design created unreasonable risks of harm. In attacking the product's design, the plaintiff is not impugning the manufacturer's product as much as the manufacturer's choice of design. The use of the term "defective condition unreasonably dangerous," therefore, creates serious analytic problems.

In adjusting to a theory of liability and recovery based on defect rather than fault,[31] courts have made the uneasy journey from negligence to warranty to strict products liability without fashioning a uniform set of definitions and rules that can be relied on with any consistency by consumers and users of products as injured plaintiffs, by manufacturers and retailers as besieged defendants, and by lay jurors as arbiters of the conflict. The problem inheres not so much in the conceptual subtleties of the notion of strict liability, as it does in creating a uniform approach to the issue of defectiveness that will rationally accommodate the interests of both injured consumers and product sellers.

On the one hand, courts have accepted the social policy rationale that those injured by defective products should be compensated for their injuries without being subject to the contractual intricacies of the law of sales and without having to face the onerous evidentiary burdens inherent in negligence cases. On the other hand, even though courts agree that manufacturers can most effectively distribute the costs of injuries, they recoil at the prospect of making sellers insurers of their products and thus absolutely liable[32] for any and all injuries sustained from the use of those

ing safety standards. *Id.* at 1550-51. "At the other end of the spectrum are risks of harm which originate in the conscious decision of the design engineer to accept the risks associated with the intended design in exchange for increased benefits or reduced costs which tbe designer believes justify conscious acceptance of the risks." *Id.* at 1548. It is in this area of conscious design choices that courts bave been called upon to develop and apply legal standards of defectiveness for the purpose of imposing liability on manufacturers of unsafe products that cause injury.

31. Dean Keeton bas noted, "[t]he change in the substantive law as regards the liability of makers of products and other sellers in the marketing chain has been from fault to defect. The plaintiff is no longer required to impugn the maker, but he is required to impugn the product." Keeton, *Product Liability and the Meaning of Defect*, 5 ST. MARY'S L.J. 30, 33 (1973).

32. From the time of its early application, strict products liability bas been viewed as a tort doctrine, which the courts urge should not be confused with the imposition of absolute liability.

> Some quibbler may allege that this is liability without fault. It is not. . . . A plaintiff relying upon the rule must prove a defect attributable to the manufacturer and causal connection between tbat defect and the injury or damage of which he complains. When able to do that, then and only then may he recover against the manufacturer of the defective product.

Piercefield v. Remington Arms Co., 375 Mich. 85, 98-99, 133 N.W.2d 129, 135 (1965). *See also* Dippel v. Sciano, 37 Wis. 2d 443, 459-60, 155 N.W.2d 55, 63 (1967).

products.

> Underlying the whole body of tort law is an awareness that the need for compensation, alone, is not a sufficient basis for an award. . . . An award is not to be made unless there exists some reason other than the mere need of the victim for compensation. Otherwise, the award will be an arbitrary shifting of loss from one person to another at a net loss to society due to the economic and sociological costs of adjudication.[33]

The courts, in attempting to avoid both the notion of fault implicit in negligence and the harshness of no-fault implicit in absolute liability, have focused the jury's attention on the condition of the product rather than on the manufacturer's conduct. By so doing, some courts have engaged in semantic gymnastics that confuse juries, who must ultimately apply understandable guidelines if they are justly to adjudicate the rights and duties of all parties. Other courts have attempted to remove the critical issue of defectiveness from the jury's consideration altogether, thus allowing the court to make the ultimate determination of whether to shift the loss from the injured plaintiff to the manufacturer. In all, after fifteen years of decisionmaking in the products liability area, courts have not only failed to fashion a legally sound definition of defect in design cases but have also failed in practice to separate conceptually the notions of strict liability, negligence, warranty, and absolute liability.

The California Supreme Court, in the recent decision of *Barker v. Lull Engineering Co.*,[34] has reexamined the concept of defect in design defect cases and, in so doing, has further confused the delineation between strict liability and negligence concepts. Since California has long been an innovator in products liability law, the holding of the court has, and will continue to have, a substantial impact on how other courts approach the problem of defining defect.

Since the *Barker* decision was reported in January 1978, seventeen state supreme courts and at least as many state and federal appellate courts have already been called upon to reconsider the interpretation to be given the terminology "defective condition unreasonably dangerous." Generally, courts have declined to follow California's lead.[35] Nevertheless, it is revealing to examine the rationale courts have offered for either expressly refusing to follow *Barker* or for impliedly doing so by reaffirming or redefining their

33. P. KEETON & J. O'CONNELL, BASIC PROTECTION FOR THE TRAFFIC VICTIM, 242 (1965).

34. 20 Cal. 3d 413, 573 P.2d 443, 143 Cal. Rptr. 225 (1978).

35. At this writing, only the Supreme Court of Alaska, in Caterpillar Tractor Co. v. Beck, 593 P.2d 871 (Alaska 1979), has expressly adopted the two-pronged *Barker* test for product defect.

own brand of defect test. A brief critical analysis of *Barker* and a survey of the decisions that have been reported in its wake expose some of the more troubling issues that arise in strict products liability design cases, which still must be addressed.

This Article will consider the problems engendered by imprecise judicial analysis of the notion of design defect. The central issues informing this investigation are as follows: (1) Can the notion of manufacturer fault or negligence be rationally eliminated in a design defect case? and (2) Should the term "unreasonably dangerous" be retained in the definition of defect in a design case, and if so, how should it be defined?

II. THE *Barker* TEST

The plaintiff in *Barker* was injured while oporating a high-lift loader at a construction site. He contended that the loader was defective as designed for want of outriggers, a roll bar, and seat belts.[36] The defendant denied the loader was defective and ascribed the accident to the plaintiff's inexperience and lack of skill[37] in operating the machine or to the misuse of the loader.[38] There was sharply confiicting expert testimony on the issue of design defect. The jury returned a verdict for the defendant, and the plaintiff appealed on the ground that the trial court erroneously charged the jury by instructing it "that strict liability for a defect in design of a product is based on a finding that the product was unreasonably dangerous for its intended use."[39]

The Supreme Court of California agreed with the plaintiff and seized this opportunity to deal with some of the serious confusion that had been created by the court's earlier holding in *Cronin v. J.B.E. Olson Corp.*[40] In *Cronin*, the court rejected the "unreasonably dangerous" terminology advanced in section 402A of the *Restatement (Second) of Torts*, but failed to provide any substantive definition for the term. The court's primary motivation for rejecting "unreasonably dangerous" was that it "burdened the injured plaintiff with proof of an element which rings of negli-

36. 20 Cal. 3d at 419-21, 573 P.2d at 447-48, 143 Cal. Rptr. at 229-30.

37. On the day of the accident, the regular operator of the loader failed to appear for work and the plaintiff was assigned to fill in for him. Barker had received only limited instruction in the operation of the loader and had operated it on only a few occasions prior to the accident. *Id.* at 419, 573 P.2d at 447, 143 Cal. Rptr. at 229.

38. Defendant's expert claimed that at the time of the accident the loader was being used on steep terrain for which the equipment was unsuited. *Id.* at 421, 573 P.2d at 448, 143 Cal. Rptr. at 230.

39. *Id.* at 417, 573 P.2d at 446, 143 Cal. Rptr. at 228.

40. 8 Cal. 3d 121, 501 P.2d 1153, 104 Cal. Rptr. 433 (1972).

gence. . . . Yet the very purpose of our pioneering efforts in this field was to relieve the plaintiff from problems of proof inherent in pursuing negligence."[41]

Simply as a linguistic matter, however, the term "defect" has implicit within it the notion of comparison—something can be defective only if viewed against something else, which embodies a standard for evaluation. By eliminating "unreasonably dangerous" and providing no substitute concept, the California Supreme Court essentially left the term "defect" without any substantive content.[42] Not surprisingly, the *Cronin* decision caused considerable confusion in California's intermediate courts. Analysis of post-*Cronin* lower court decisions shows, ironically enough, a return to the familiar terminology of negligence.[43]

Against this backdrop, the *Barker* court attempted to reverse the post-*Cronin* trend, clarify the meaning of defect, and define a test for the jury to apply specifically in design defect cases. Reaffirming its "continued adherence to the principle that, in a product liability action, the trier of fact must focus on the *product*, not on the *manufacturer's conduct*, and that the plaintiff need not prove that the manufacturer acted unreasonably or negligently in order to prevail,"[44] the court proposed the following dual-standard test:

41. *Id.* at 132-33, 501 P.2d at 1162, 104 Cal. Rptr. at 442.

42. *See* Keeton, *supra* note 31, at 32; Twerski, *supra* note 22, at 304-05.

43. In Balido v. Improved Mach., Inc., 29 Cal. App. 3d 633, 105 Cal. Rptr. 890 (1973), the court noted, "[s]ince the issue is whether [the defendant] designed and put into circulation a product unreasonably dangerous for use and since the unreasonableness of the danger must be determined by the potential available to the designer at the time of design, it is apparent that the strict liability and negligence claims merge." *Id.* at 640, 105 Cal. Rptr. at 895. In Culpepper v. Volkswagen of America, Inc., 33 Cal. App. 3d 510, 109 Cal. Rptr. 110 (1973), the court brought a negligence test of foreseeability to bear in imposing strict liability on a car manufacturer. The case turned on this observation by the court: "[p]laintiff may or may not have turned 18 degrees, but her act in turning the wheel sharply to avoid a perilous situation was not an uncommon occurrence and the jury could certainly have determined that it was a foreseeable factor the VW designers should have considered in designing the car." *Id.* at 518, 109 Cal. Rptr. at 115. In Self v. General Motors Corp., 42 Cal. App. 3d 1, 116 Cal. Rptr. 575 (1974), the court followed *Cronin* and avoided using the term "unreasonably dangerous." In its stead, the court posed a standard of "excessive preventable danger." The trier of fact was asked to consider the manufacturer's reasonableness in taking precautions to prevent such excessive preventable danger. "[The manufacturer] is required to design his vehicle to minimize unreasonable risks of injury and death." *Id.* at 6-7, 116 Cal. Rptr. at 578-79 (1974). Finally, in Buccery v. General Motors Corp., 60 Cal. App. 3d 533, 132 Cal. Rptr. 605 (1976), the court reviewed prior decisions but because it could find no comprehensive test for defectiveness, it gleaned what it could from the earlier cases and set forth the following: "any product so designed that it causes injury when used or misused in a foreseeable fashion is defective if the design features which caused the injury created a danger which was readily preventable through the employment of existing technology at a cost consonant with the economical use of the product." *Id.* at 547, 132 Cal. Rptr. at 614.

44. 20 Cal. 3d at 418, 573 P.2d at 447, 143 Cal. Rptr. at 229.

> [I]n design defect cases, a court may properly instruct a jury that a product is defective in design if (1) the plaintiff proves that the product failed to perform as safely as an ordinary consumer would expect when used in an intended or reasonably foreseeable manner, or (2) the plaintiff proves that the product's design proximately caused injury and the defendant fails to prove, in light of the relevant factors, that on balance the benefits of the challenged design outweigh the risk of danger inherent in such design.[45]

The first prong of the dual standard is drawn from the consumer expectations test of the *Restatement (Second) of Torts*, section 402A, which is based on a warranty of fitness and merchantability approach to liability for defective products. Although the court claimed to reject use of the term "unreasonably dangerous," its test is taken from comment i of section 402A, which is the very comment that defines unreasonably dangerous:

> *Comment i: Unreasonably dangerous.* The rule stated in this Section applies only where the defective condition of the product makes it unreasonably dangerous to the user or consumer. . . . The article sold must be dangerous to an extent beyond that which would be contemplated by the ordinary consumer who purchases it, with the ordinary knowledge common to the community as to its characteristics.[46]

For the *Barker* court, however, the consumer expectations test provides only a threshold for analysis. If a plaintiff proves that a product fails to satisfy ordinary consumer expectations, he need go no further—the product is defective and the defendant will be held strictly liable for resulting injuries.[47] Should a plaintiff fail to satisfy this test, however, the inquiry is far from over. Taking into consideration Dean Wade's criticism of the consumer expectations test that "[i]n many situations . . . the consumer would not know what to expect, because he would have no idea how safe the product could be made,"[48] the court reasoned that consumer expectations provide only a minimum standard below which no product should fall.[49] Because of the technological complexity of many products, consumers are often ill-equipped to formulate reasoned expectations about safety. To allow a manufacturer to escape liability simply because the consumer does not know what to expect would severely undermine the very reason for imposing strict liability in the first place.[50]

The *Barker* court also recognized that a manufacturer should not be able to escape liability through the consumer expectations

45. *Id.* at 426-27, 573 P.2d at 452, 143 Cal. Rptr. at 234 (emphasis omitted).
46. RESTATEMENT (SECOND) OF TORTS § 402A, comment i (1965).
47. 20 Cal. 3d at 430, 573 P.2d at 454, 143 Cal. Rptr. at 236.
48. Wade, *supra* note 18.
49. 20 Cal. 3d at 425-26 n.7, 573 P.2d at 451 n.7, 143 Cal. Rptr. at 233 n.7.
50. *See* text accompanying note 21 *supra*.

test simply because users take a dim view of the product's potential safety.

> In *Cronin* . . . we flatly rejected the suggestion that recovery in a products liability action should be permitted *only* if a product is more dangerous than contemplated by the average consumer, refusing to permit the low esteem in which the public might hold a dangerous product to diminish the manufacturer's responsibility for injuries caused by that product.[51]

If the plaintiff fails to convince the trier of fact that the product did not meet ordinary consumer expectations, the second prong, or risk-utility analysis,[52] comes into play. Some of the relevant factors a jury may consider in determining whether, under the *Barker* test, the benefits of the design outweigh the risk of danger inherent in the design include "the gravity of the danger posed by the challenged design, the likelihood that such danger would occur, 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."[53]

To be sure, risk-utility analysis is not a novel approach in strict products liability cases. In fact, the vast majority of courts have for some time employed balancing tests in one form or another.[54] What makes the *Barker* test innovative is the shifting of the burden of proof to the defendant.[55] Among the most compelling policy reasons behind the development of the doctrine of strict products liability was the goal of relieving the injured plaintiff from the "onerous evidentiary burdens inherent in a negligence cause of action."[56] Thus, under *Barker*, once the plaintiff makes a prima facie showing that the injury was proximately caused by the product's design, the defendant rather than the plaintiff must prove, by a preponderance of the evidence, that in light of the relevant fac-

51. 20 Cal. 3d at 425, 573 P.2d at 451, 143 Cal. Rptr. at 233 (emphasis in original).

52. It must be emphasized that the risk-utility balancing analysis urged by the California Supreme Court is not the traditional risk-utility test of negligence. The distinction in approach turns on the fact that in strict liability the focus of the balancing analysis is on the condition of the product, not on the conduct of the manufacturer, which would be the traditional negligence approach. *See* text accompanying notes 79-83 *infra*.

53. 20 Cal. 3d at 431, 573 P.2d at 455, 143 Cal. Rptr. at 237.

54. *See, e.g.*, Schell v. AMF, Inc., 567 F.2d 1259 (3rd Cir. 1977); Dorsey v. Yoder Co., 331 F. Supp. 753 (E.D. Pa. 1971), *aff'd sub nom.* Yoder Co. v. General Copper and Brass Co., 474 F.2d 1339 (3rd Cir. 1973); Byrns v. Riddell, Inc., 113 Ariz. 264, 550 P.2d 1065 (1976); Aller v. Rodgers Mach. Mfg. Co., 268 N.W.2d 830 (Iowa 1978); Cepeda v. Cumberland Eng'r Co., 76 N.J. 152, 386 A.2d 816 (1978); Phillips v. Kimwood Mach. Co., 269 Or. 485, 525 P.2d 1033 (1974); Seattle-First Nat'l Bank v. Tabert, 86 Wash. 2d 145, 542 P.2d 774 (1975).

55. The court makes clear that "the defendant's burden is one affecting the burden of proof, rather than simply the burden of producing evidence." 20 Cal. 3d at 432, 573 P.2d at 455, 143 Cal. Rptr. at 237.

tors his product is not defective.[57] The California Supreme Court's decision to shift the burden of proof was also prompted by its recognition that the technical matters involved in the question of the adequacy of a particular design are "peculiarly within the knowledge of the manufacturer."[58]

The court emphatically reiterated that the risk-utility balancing test it proposed is not a test that "rings of negligence."[59]

> [W]e believe that the test for defective design set out above is appropriate in light of the rationale and limits of the strict liability doctrine, for it subjects a manufacturer to liability whenever there is something "wrong" with the product's design—either because the product fails to meet ordinary consumer expectations as to safety or because, on balance, the design is not as safe as it should be—while stopping short of making the manufacturer an insurer for all injuries which may result from the use of its product. This test, moreover, explicity focuses the trier of fact's attention on the adequacy of the product itself, rather than on the manufacturer's conduct, and places the burden on the manufacturer, rather than the plaintiff, to establish that because of the complexity of, and trade-offs implicit in, the design process, an injury-producing product should nevertheless not be found defective.[60]

Thus, the *Cronin* mandate to eliminate the term "unreasonably dangerous" is followed in *Barker*. The question remains, however, as to whether the dual-standard test, as a practical matter, eliminates the "ring of negligence" and significantly alters the evidentiary burdens in a strict products liability action. Conceptually, shifting the burden of proof to the defendant undoubtedly lessens the plaintiff's burden; but pragmatically, this is not as dramatic a benefit as it might seem at first blush. In practice, defendants have typically come foward with sufficient evidence of complicated technological factors under a risk-utility test to convince the jury that trade-offs were in fact made in designing the product, thus tipping the balance in favor of utility and diminished risk.

Pherson v. Goodyear Tire and Rubber Co.[61] is a case in point. At trial the tire manufacturer was found not to be strictly liable for injuries suffered by the plaintiff when the pickup truck in which she was riding went out of control as a result of a tire blowout.[62] Conflicting evidence was offered on the issue of whether the tire design was defective.[63] On appeal the plaintiff sought reversal of

56. *Id.* at 431, 573 P.2d at 455, 143 Cal. Rptr. at 237.
57. *Id.*
58. *Id.*
59. *Id.* at 433, 573 P.2d at 456, 143 Cal. Rptr. at 238.
60. *Id.* at 432, 573 P.2d at 456, 143 Cal. Rptr. at 238.
61. 590 F.2d 756 (9th Cir. 1978).
62. *Id.* at 758.
63. *Id.* at 758-59.

the judgment on the ground that the *Barker* decision had shifted the burden of proof to the defendant to prove that the product was not defective.[64] Without reaching the issue of whether *Barker* should be applied retroactively, the court noted:[65]

> [A]ppellant made only the barest prima facie showing of a design defect. At trial Goodyear effectively assumed the burden of proof: Goodyear offered extensive testimony from both of its experts to the effect that there were no practical alternatives. The closing arguments also show that Goodyear willingly assumed this burden. Although when read together the instructions technically do place the burden of proof on the plaintiff, the instruction on defective design does not mention plaintiff's burden and only instructs the jury to consider several factors in determining whether a defect in design existed. Thns, in light of the testimony presented, the closing arguments, and the instruction, we conclude that as a practical matter the burden of proof regarding feasibility of alternative designs was shouldered by the appellee.[66]

Pherson calls attention to the fact that shifting the burden of proof not only does not necessarily increase the defendant's burden, but its impact on the plaintiff's burden might also be de minimis. In fact, defense attorneys vigorously attempt to prove that a challenged design is not defective regardless of how the burdens of proof are allocated by the court. Furthermore, the *Pherson* analysis shonld also serve as a warning to plaintiffs not to be lulled into complacency by the apparently minimal requirements under *Barker* for establishing a prima facie case.

A literal reading of *Barker* suggests that a plaintiff could reach the jury by simply showing that a product proximately caused his injury. As one commentator has critically noted, under *Barker* "[a]ll product related accidents have become presumptively actionable."[67] A recent California case,[68] however, decided in light of

64. *Id.* at 760.

65. The *Pherson* court found it significant that the jury bad been instructed as follows:

> The following factors are to be considered in determining whether a defect in design existed when the tire left the manufacturer. One: the availability of an alternative design which could have prevented the injury. Two: The feasibility of the alternative design in terms of cost, practicality and technology. A design may not be found defective wben, under the present state of the art, alternative designs are unreasonable. A product need not be found defective simply because an accident occurred.

Id. at 760.

66. *Id.* at 761.

67. Epstein, *supra* note 18, at 651. *See also* Wilson v. Piper Aircraft Corp., 282 Or. 411, 413, 579 P.2d 1287, 1289 (1978) ("Under that decision [*Barker v. Lull Eng'r Co.*] it appears that a design defect case will always go to the jury if only the plaintiff can show that the product caused the injury."); Henderson, *Renewed Judicial Controversy Over Defective Product Design: Toward the Preservation of an Emerging Consensus*, 63 MINN. L. REV. 773, 782-97 (1979).

68. Korli v. Ford Motor Co., 84 Cal. App. 3d 895, 149 Cal. Rptr. 98 (1978). The same court had dismissed plaintiff's case prior to *Barker*. 69 Cal. App. 3d 115, 137 Cal. Rptr. 828 (1977) (both cases in official reports advance sheets only)(decertified opinions).

Barker, casts some doubt on this proposition by raising the question of just how minimal the plaintiff's threshold of proof must be to satisfy the initial burden of establishing a prima facie case.

In *Korli v. Ford Motor Co.*,[69] plaintiff's two-year-old daughter was riding in the rear of the car when she managed to pull the unlatching handle on the door. At the time, the car was travelling on the highway at a speed of sixty to sixty-five miles per hour. As the rear-hinged door released, it was caught by the wind and forced completely open. The child fell out and was killed by an oncoming vehicle. Plaintiff's husband stopped the car and, in attempting to rescue the child, was also killed.[70] In a strict liability action, the plaintiff alleged that the vehicle was defectively designed because of the rear-hinging of the doors and the accessibility of the unlatching lever.[71] The jury's verdict for the plaintiff was reversed by the appellate court on the ground that "the evidence in the case failed to establish that the car in question was defectively designed."[72] The California Supreme Court granted a hearing, but while the case was pending, it rendered its decision in *Barker* and returned the *Korli* case to the appellate court for reconsideration in light of *Barker*.[73]

The court of appeals affirmed its earlier ruling, noting that the jury "was undoubtedly influenced by the stark horror of this case."[74] The court looked to the first prong of the *Barker* test and held that since the car did not fail to perform as an ordinary consumer would expect, the plaintiff had "no basis for a complaint" under this part of the test.[75] Looking to the second prong, the court reasoned as follows:

> In order to invoke the second prong of the *Barker* test a plaintiff must do more than show that an injury resulted during the use of the product. What is required is a prima facie showing that some feature of the product other than its simple generic quality caused the injury at a time that the product was being put to its intended or reasonably foreseeable use. . . . There must be a nexus between the injury and a feature of the product which could, as a policy matter, justify in holding the manufacturer responsible.[76]

The court determined that the case should not have been sent to the jury at all because the plaintiff failed to advance the quan-

69. 84 Cal. App. 3d 895, 149 Cal. Rptr. 98 (decertified opinion, in advance sheets only).
70. 149 Cal. Rptr. at 100.
71. *Id.* at 101-02.
72. *Id.* at 100.
73. *Id.* at 102.
74. *Id.*
75. *Id.* at 103.
76. *Id.* at 104.

tum of evidence required to meet the initial burden of establishing a prima facie case.[77] The court seems to have muddled hopelessly the issues of cause-in-fact and proximate cause, as the following passage indicates:

> [T]he hinging of the doors or the location of the unlatching device was not the cause of the accident. The proximate cause of the injury was the opening of the door while the car was in high speed motion—an unforeseeable and unintended use of the product.[78]

The court's superficial analysis of the facts and generally illogical approach to the substantive issues in the case can be seriously criticized, but this is beyond the scope of the immediate inquiry (not to mention irrelevant, since the opinion has been withdrawn by order of the court). What is of particular interest here, notwithstanding withdrawal of the decision, is that the seemingly straightforward test announced in *Barker* will doubtless have to be interpreted on a case-by-case basis by the lower courts to determine just how much evidence the plaintiff needs to advance before the burden of proof can be shifted to the defendant.

Further, from a strictly pragmatic point of view, one should note that plaintiffs' attorneys under *Barker* face no less an onerous burden in gathering and mastering complicated evidentiary data in a products case simply because the burden of proof will be shifted to the defendant once a prima facie case is advanced. They still will try to convince the trier of fact that the design in question is defective and that the manufacturer could feasibly have adopted a safer design. Further, it is incumbent upon the plaintiff to master those technical matters "peculiarly within the knowledge of the manufacturer" if only to rebut the defendant's case competently.

In addition to reducing plaintiff's evidentiary burdens, the *Barker* court's dual-standard test was designed to eliminate the ring of negligence thought to inhere in the "unreasonably dangerous" terminology of section 402A.[79] The court exhorts the trier of fact to "focus on the *product*, not on the *manufacturer's conduct*."[80] The manufacturer will be held strictly liable when, on balance, the trier of fact determines that "the design is not as safe as it should be."[81] I suggest that the court's use of the normative verb "should" betrays the underlying negligence calculus that is inescapable in a risk-utility analysis. The jury may be charged to look

77. *Id.* at 105.
78. *Id.* at 104.
79. 20 Cal. 3d at 433, 573 P.2d at 456, 143 Cal. Rptr. at 238.
80. *Id.* at 418, 573 P.2d at 447, 143 Cal. Rptr. at 229.
81. *Id.* at 432, 573 P.2d at 456, 143 Cal. Rptr. at 238.

at the product, but as a common sense matter the jury, in fact, simply weighs the competing factors put in evidence and then reaches a judgment about the judgment (i.e. conduct) of the manufacturer. When a jury decides that the risk of harm outweighs the utility of a particular design (that the product is not as safe as it should be), it is saying that in choosing the particular design and cost trade-offs, the manufacturer exposed the consumer to greater risk of danger than he should have. Conceptually and analytically, this approach bespeaks negligence.[82] As Dean Prosser noted:

> The almost universal use of the phrase 'due care' to describe conduct which it not negligent, should not be permitted to obscure the fact that the real basis of negligence is not carelessness, but behavior which should be recognized as involving unreasonable danger to others.[83]

Although the *Barker* decision may not have actually solved the many and difficult analytic problems that prompted the California Supreme Court to substitute the dual-standard test for the "unreasonably dangerous" language of section 402A, it has proposed a novel approach to design defect cases that courts and commentators alike may draw upon. Some of the more fertile areas of inquiry that emerge from the *Barker* opinion are the interpretation of the significance of ordinary consumer expectations as a "floor" rather than a "ceiling" upon a manufacturer's responsibility; the shifting of the burden of proof to the defendant; and a strong commitment to continue defining a products liability cause of action for defective design in terms that involve a balancing of risk-utility factors.[84]

Since the *Barker* decision was reported, many courts have been asked to reconsider the concept of "unreasonably dangerous" in design defect cases. Divergent formulations of the consumer expectations test and risk-utility analyses have emerged. Although no consensus has been reached, a survey of post-*Barker* opinions suggests something of the creative ferment underlying what has aptly been described as the "rich tapestry" of the developing common law of products liability.[85]

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82. Several commentators and courts specifically recognize that the basis of liability in negligence and strict liability is fundamentally the same. *See* Prosser, *supra* note 1, at 1114 ("[w]here the action is against the manufacturer of the product, an honest estimate might very well be that there is not one case in a hundred in which strict liability would result in recovery where negligence does not."). *See also* Jonescue v. Jewel Home Shopping Service, 16 Ill. App. 3d 339, 343-44, 306 N.E.2d 312, 315 (1973); Jones v. Hutchinson Mfg., Inc., 502 S.W.2d 66, 69-70 (Ky. Ct. App. 1973).

83. W. PROSSER, *supra* note 9 § 31, at 145.

84. The *Barker* case is analyzed thoroughly in Schwartz, *Foreward: Understanding Products Liability*, 67 CALIF. L. REV. 435 (1979).

85. Twerski, *A Critique of the Uniform Product Liability Law—A Rush to Judgment*, 28 DRAKE L. REV. 221, 223 (1979).

III. Consumer Expectations Tests

The consumer expectations test as posed in the first prong of the *Barker* dual standard is derived from the *Restatement (Second) of Torts*, section 402A, comment i.[86] Some courts continue to use this approach, not as a threshold inquiry as in *Barker*,[87] but as a conclusive determinant of product defect. What is not clear from the application of the test in some recent decisions is whether this "ordinary consumer," who is possessed of the ordinary knowledge common to the community as to the characteristics of a product, is a hypothetical construct (analogous to the "reasonable person" of negligence) or whether it is the actual plaintiff in the action at bar.[88]

The danger of not clarifying whether an objective or subjective test is applicable in determining consumer expectations is that issues of plaintiff's implied assumption of risk may inadvertently be injected into the analysis. This danger will of course be magnified where the risk involved is a patent one. A recent case before the South Carolina Supreme Court reveals some of the problems implicit in the application of a consumer expectations test. In *Young v. Tide Craft, Inc.*,[89] plaintiff's husband was drowned when the defective steering mechanism in his boat failed, causing him to be thrown overboard.[90] Among the plaintiff's claims against the manufacturer was the allegation that the boat was defectively designed because it did not have a kill switch (a safety device that cuts power to the motor should the operator be thrown from his seat).[91]

The court, citing comment i of section 402A, noted that for a

86. *See* note 46 *supra* and accompanying text. For a general discussion of the consumer expectations test, see Dickerson, *Products Liability: How Good Does a Product Have to Be?* 42 Ind. L.J. 301 (1967); Fischer, *Products Liability—The Meaning of Defect*, 39 Mo. L. Rev. 339, 348-52 (1974); Rheingold, *What Are the Consumers' "Reasonable Expectations"?* 22 Bus. Law. 589 (1967); Shapo, *A Representational Theory of Consumer Protection: Doctrine, Function and Legal Liability for Product Disappointment*, 60 Va. L. Rev. 1109 (1974).

87. *See* text accompanying notes 47-51 *supra*.

88. *See, e.g.*, Vincer v. Esther Williams All-Aluminum Swimming Pool Co., 69 Wis. 2d 326, 230 N.W.2d 794 (1975). Following the comment i approach, the Wisconsin Supreme Court reasoned that

> whether a product contains an unreasonably dangerous defect depends upon the reasonable expectations of the ordinary consumer concerning the characteristics of this type of product. If the average consumer would reasonably anticipate the dangerous condition of the product and fully appreciate the attendant risk of injury, it would not be unreasonably dangerous and defective. This is an objective test and is not dependent upon the knowledge of the particular injured consumer, although his knowledge may he evidence of contributory negligence under the circumstances.

Id. at 332, 230 N.W.2d at 798-99.

89. 270 S.C. 453, 242 S.E.2d 671 (1978).

90. *Id.* at 458, 242 S.E.2d at 673.

91. *Id.* at 466, 242 S.E.2d at 677.

plaintiff to recover under the theory of strict liability for failure to install a safety device, the absence of the safety device must constitute a defect that makes the product dangerous beyond the contemplation of the ordinary consumer.[92] The court's analysis of the facts of the case, however, turned not on the knowledge common to the community, but rather on the special knowledge of plaintiff's decedent, an experienced boater. The court reasoned,

> [i]t is common knowledge that a normal risk of boating is that of being thrown overboard. While the test set out . . . is an objective one and knowledge common to the community must be attributed to [plaintiff's decedent], there can, nevertheless, be no question of his awareness of this risk.[93]

Although decedent's knowledge of the dangers of boating was established during the trial,[94] it should not have been dispositive of the issue of "unreasonably dangerous" under the literal terms of comment i.[95] The question raised by the plaintiff's allegations was not whether the general dangers of boating were commonly known, but whether the specific danger of a boat without a kill switch would exceed the expectations of an ordinary consumer. The court failed to ask the latter question and instead looked to the decedent's boating experience. The court found that he must have known of the risks attendant upon the failure of the manufacturer to install a kill switch.[96] While it is one thing to impute the general knowledge of the dangers of boating to the decedent, it is quite another to apply a subjective test based on the decedent's personal knowledge and infer that the ordinary consumer would also possess such knowledge. If the court says it is going to apply the objective standard of the comment i test and then decides that this decedent is barred from recovery because he knew of the danger, then the court must have, impliedly at least, imputed decedent's special knowledge to the ordinary consumer.

One of the more troubling aspects of the decision is that, pre-

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92. *Id.* at 470, 242 S.E.2d at 680.

93. *Id.* at 471-72, 242 S.E.2d at 680. The Utah legislature adopted a similar test:

> "[U]nreasonably dangerous" means that the product was dangerous to an extent beyond which would be contemplated by the ordinary and prudent buyer, consumer or user of that product in that community considering the product's characteristics . . . together with any actual knowledge, training or experience possessed by that particular buyer, user or consumer.

UTAH CODE ANN. § 78-15-6(2) (1977).

94. Testimony at trial revealed that the decedent had gone fishing almost every weekend in the ten years prior to the accident. 270 S.C. at 472, 242 S.E.2d at 680.

95. The proof of decedent's specific knowledge of the danger of the boat without a kill switch, if relevant at all, should have been considered only on the issues of contributory negligence or assumption of risk.

96. 270 S.C. at 471-72, 242 S.E.2d at 680.

sumably, had the plaintiff's decedent been a less enthusiastic boater who had gone fishing perhaps only five or six times a year, his executrix might have prevailed since knowledge of the dangers arising from the operation of the boat without a kill switch might not have been imputable to him as the hypothetical ordinary consumer. Thus, the design of the product under this analysis could be deemed to be in a defective condition unreasonably dangerous as to one plaintiff, but not defective as to another. Obviously, this type of approach, wherein the court does not vigorously adhere to an objective standard, can lead to inconsistent verdicts when the same product design is being evaluated.

Even if the "ordinary consumer" test were to be consistently defined as an objective, hypothetical construct, two additional limitations inherent in the test make it a functionally inadequate tool for formulating a rational definition of defect. First, the consumer expectations test has a built-in tendency to short-circuit the analytic process.[97] That is, once a court determines what an ordinary consumer's expectations are, the disposition of a case becomes rather routine. Abbreviating the analysis by failing to take into account any risk-utility factors, which would move the inquiry beyond reasonable consumer expectations may unjustly prejudice a plaintiff. For example, a plaintiff is especially likely to be disadvantaged when the danger or risk would be readily apparent to the ordinary consumer. Under such circumstances the product could not, as a matter of law, be unreasonably dangerous and therefore the manufacturer may escape liability.[98] This will be true even though we may know with certainty that the manufacturer could have cost-efficiently eliminated the risk. It has been suggested that "there is a strong argument that the *Restatement* language is but an updated version of the patent danger rule."[99] Leading commentators and most courts[100] have roundly criticized the patent danger

97. Twerski, *supra* note 22, at 309-12.

98. *See, e.g.*, Stenberg v. Beatrice Foods Co., 576 P.2d 725, 730-31 (Mont. 1978) ("Under this type of instruction [consumer expectations test] it would be virtually impossible for an open and obvious condition to be unreasonably dangerous. For all practical purposes recovery would be limited to latent conditions. . . . [T]here are no policy reasons to refuse recovery if the condition is one that is open and obvious.").

99. Donaher, Piehler, Twerski & Weinstein, *The Technological Expert in Products Liability Litigation*, 52 TEX. L. REV. 1303, 1304 & n.23 (1974).

100. *See* James, *Assumption of Risk: Unhappy Reincarnation*, 78 YALE L.J. 185 (1968); Keeton, *Products Liability — Inadequacy of Information*, 48 TEX. L. REV. 398 (1970); Marschall, *An Obvious Wrong Does Not Make a Right: Manufacturers' Liability for Patently Dangerous Products*, 48 N.Y.U.L. REV. 1065 (1973); Twerski, *Old Wine in a New Flask—Restructuring Assumption of Risk in the Products Liability Era*, 60 IOWA L. REV. 1 (1974). *See also*, Dorsey v. Yoder Co., 331 F. Supp. 753 (E.D. Pa. 1971), *aff'd sub nom.* Yoder

doctrine as not only seriously undermining the duty of manufacturers to design safe products but also as unconscionably denying recovery to injured plaintiffs.

The second inherent limitation of the consumer expectations test is the haphazard subjectivity necessarily brought to bear by the trier of fact in attempting to discern what in fact reasonable consumer expectations are. When the defect is latent and the product complicated in design (as most products now seem to be), it cannot be said with any certainty that consumers know what to expect because they usually do not know how safely the product could or should have been made.[101] If this proposition is true, then presumably jurors, who are themselves ordinary consumers, do not know what the plaintiff or the hypothetical objective consumer expected in the way of safety. How, then, can jurors charged under a consumer expectations test make a determination of whether to impose liability? In all probability, they guess. "The consumer expectation test takes subjectivity to its most extreme end. Each trier of fact is likely to have a different understanding of abstract consumer expectations."[102]

Despite its fundamental inadequacy as a basis for a theory of liability, the notion of consumer expectations as defined in comment i to section 402A is so deeply embedded in the warranty heritage[103] underlying strict products liability that courts have generally been reluctant to eliminate it altogether from a product defect analysis. Thus, to buttress the comment i approach, some courts have fashioned a consumer expectations test with a risk-utility base.[104] That is, in seeking to establish that a product is dangerous

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Co. v. General Copper & Brass Co., 474 F.2d 1339 (3rd Cir. 1973); Byrns v. Riddell Inc., 113 Ariz. 264, 550 P.2d 1065 (1976); Pike v. Frank G. Hough Co., 2 Cal. 2d 465, 467 P.2d 229, 85 Cal. Rptr. 629 (1970); Micallef v. Miehle Co., 39 N.Y.2d 376, 348 N.E. 2d 571, 384 N.Y.S.2d 115 (1976). *Contra* Hunt v. Harley Davidson Motor Co., 147 Ga. App. 44, 248 S.E.2d 15 (1978).

101. Wade, *supra* note 18, at 829.

102. MODEL UNIFORM PRODUCT LIABILITY ACT (hereinafter cited as UPLA), Analysis § 104(B), *reprinted in* 44 Fed. Reg. 62,714, 62,724 (1979). *See also* Montgomery & Owen, *Reflections on the Theory and Administration of Strict Liability for Defective Products*, 27 S.C.L. REV. 803, 823 (1976) ("[A]n attempt to determine the consumer's reasonable expectations of safety concerning a technologically complex product may well be an exercise in futility, for the consumer may have at most only a generalized expectancy—perhaps more accurately only an unconscious hope—that the product will not harm him if he treats it with a reasonable amount of care").

103. Many commentators have recognized the warranty heritage of strict liability. *See, e.g.*, Fischer, *Products Liability—The Meaning of Defect*, 39 Mo. L. REV. 339, 348 (1974) ("The consumer expectations test is natural since strict liability in tort developed from the law of warranty. The law of implied warranty is vitally concerned witb protecting justified expectations since this is a fundamental policy of the law of contracts.").

104. *See, e.g.*, Aller v. Rodgers Mach. Mfg. Co., 268 N.W.2d 830 (Iowa 1978); Seattle-

to an extent beyond that which the ordinary consumer would expect, the trier of fact must first determine what reasonable consumer expectations would be. Under a literal application of comment i, the trier of fact would be invited to rely on some vague commonsense notion of what the ordinary consumer expects in the way of safety. The court would offer no guidelines to help the trier of fact in making this crucial determination. Nonetheless, by grounding the comment i test on a risk-utility base, some courts have recognized the need to define for the jury exactly which factors should be considered in discerning what the objective ordinary consumer expects. Factors considered relevant in determining the reasonable expectations of the ordinary consumer include, "[T]he relative cost of the product, the gravity of the potential harm from the claimed defect and the cost and feasibility of eliminating or minimizing the risk."[105] These factors, of course, involve the traditional balancing test usually invoked to prove unreasonableness in a design case.

Burdening a product defect analysis with the conceptual baggage of the hypothetical ordinary consumer adds essentially nothing of substance to a straightforward risk-utility balancing approach. While offering a deferential nod to the warranty heritage of strict products liability, the single-standard test needlessly protracts the analysis, thereby inviting confusion. One should recall that the *Barker* approach separates the analysis into discrete channels of inquiry. The first prong of the test involves reasonable consumer expectations; then, as a separate matter and without looking through the perspective of the hypothetical consumer, the trier of fact considers the evidence and balances utility against risk in determining whether or not the product is defective. The risk-utility based consumer expectations test, however, works quite differently. It involves a single standard, not a dual standard as in *Barker*. In other words, to determine if a product is unsafe beyond the ordinary consumer's contemplation, the trier of fact must first decide what this hypothetical ordinary consumer would reasonably contemplate. To do this, the trier of fact must balance the various risk-utility factors involved. The conclusions drawn from this

First Nat'l Bank v. Tabert, 86 Wash. 2d 145, 542 P.2d 774 (1975). In *Aller* the Iowa Supreme Court emphasized:

> In order to prove that a product is unreasonably dangerous, the injured plaintiff must prove. . . tbat it was unreasonable for such a danger to exist. Proof of unreasonableness involves a balancing process. On one side of the scale is the utility of tbe product and on the otber is the risk of its use.

268 N.W.2d at 835.

105. Seattle-First Nat'l Bank v. Tabert, 86 Wash. 2d at 154, 542 P.2d at 779.

weighing of factors is then said to constitute the reasonable expectations of the ordinary consumer.[106] At least with a dual standard, the problems of the patent danger doctrine and the low esteem in which the ordinary consumer may hold a particular product are left behind when the trier of fact gets down to balancing the risk-utility factors. With a single-standard test, however, there is the danger that these considerations will improperly infect the balancing test with notions of implied assumption of risk where a patent design defect is at issue.[107]

The Supreme Court of Washington recently had an opportunity to apply this consumer oriented risk-utility test. In *Estate of Ryder v. Kelly-Springfield Tire Co.*,[108] plaintiff's decedent was killed when his tractor-trailer went off the highway, allegedly as a result of a defective wheel and tire.[109] On appeal from a verdict for defendant, plaintiff challenged the court's jury instruction on the ground that it permitted the manufacturer to argue that it should not be liable because it had no reason to foresee the type of wheel failure that occurred.[110] Plaintiff maintained that by allowing such an argument to be made, the action was converted from a strict liability claim to a negligence claim.[111] The Washington Supreme Court reasoned otherwise, holding that the jury instruction was not erroneous since it focused on the buyer's expectations: "The jury does not evaluate the seller's actions. It only determines whether the product is dangerous to an extent beyond that which would be contemplated by the ordinary consumer."[112]

106. *Id.* at 154, 542 P.2d at 779.

107. A recent case in Washington aptly illustrates this problem. Although the risk-utility based consumer expectations test had long been the accepted approach to strict products liability in that state, a trial court nevertheless misapplied the test, falling into the patent danger trap. In Lamon v. McDonnell Douglas Corp., 19 Wash. App. 515, 576 P.2d 426 (1978), the plaintiff stewardess sustained injuries when she stepped through an open galley escape hatch of a DC-10. Plaintiff alleged that the hatch cover created an unreasonably dangerous condition for cabin attendants because it was not equipped with a spring device that would automatically close the hatch cover when the escape hatch was not in use. It was uncontroverted that plaintiff was familiar with the design and operation of the escape hatch. Moments before falling through, she had seen another stewardess come up through the opening in the floor, announce a power failure necessitating use of the lower galley, and then withdraw back down into the escape hatch. The trial court, apparently relying on a literal consumer expectations test, granted summary judgment and dismissed the action against the aircraft manufacturer. The court of appeals reversed, emphasizing that "awareness of the existence of an obvious dangerous condition does not, of itself, absolve the manufacturer of liability for a defective design." *Id.* at 523-24, 576 P.2d at 431.

108. 91 Wash. 2d 111, 587 P.2d 160 (1978).

109. *Id.* at 113, 587 P.2d at 161.

110. *Id.*

111. *Id.* at 114, 587 P.2d at 162.

112. *Id.* at 118, 587 P.2d at 164.

The jury instruction upheld in *Ryder* was, in fact, a simple risk-utility balancing test cloaked in the verbal trappings of the "reasonable expectations of the ordinary consumer." Consider the enormous possibilities for confusion that abound in this kind of instruction. First the jury is charged that the plaintiff must establish

> that the wheel was defective and/or was not reasonably safe for its contemplated use. . . . This means that the wheel must have been defective and/or unsafe to an extent beyond that which would be reasonably contemplated by the ordinary user with the ordinary knowledge common to the community as to the wheel's characteristics. . . .[113]

Before the jurors have a chance to figure out the worrisome question of what the "ordinary knowledge common to the community" is concerning the progression of fatigue cracks in the gutter area beneath a removable flange,[114] they receive another instruction purportedly telling them how to make this determination. Unfortunately, this second instruction has nothing to do with knowledge that can in any realistic sense be said to be "common to the community." Rather, the instruction urges the trier of fact to evaluate the specific technical data offered at trial as follows:

> In determining the reasonable expectations of the "ordinary user" of a product, you may consider the following factors:
> 1. The usefulness and the utility of the design.
> 2. The likelihood, if any, that the design would cause injury, and if so, the probable seriousness of the injury.
> 3. The availability of a substitute design which would meet the same need and which would lessen the likelihood, if any, of injury.
> 4. The ability to eliminate any unsafe aspects of the design without impairing its usefulness, or making it too expensive or otherwise impairing its utility.[115]

Clearly, this so-called consumer expectations test is, at its base, a risk-utility balancing analysis. Fusing this to an ordinary consumer point of view merely invites error and confusion. The common sense meaning of the first part of the instruction urges the trier of fact to bring his own experiences to bear in speculating about the ordinary knowledge common to the community. As an ordinary member of the community the juror must decide what he knows about and reasonably expects from the product. The juror may, however, ignore this part of the instruction and look instead to the second part, which urges a risk-utility balancing. Under this approach, the juror does not need the notion of the ordinary consumer because it is fundamentally irrelevant to the task of weighing the various factors outlined by the court.

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113. *Id.* at 115-16 n.2, 587 P.2d at 162-63 n.2.
114. *Id.* at 113, 587 P.2d at 161.
115. *Id.* at 115-16 n.2, 587 P.2d at 163 n.2.

The confused, divergent, and unjust decisions that may result from the use of a consumer expectations test, either applied alone or in conjunction with a risk-utility base, should be avoided. Otherwise, as Professor Epstein has aptly noted: "The modern design litigation case . . . is an invitation to the kind of standardless adjudication that reduces a lawsuit to a glorious, if expensive, game of chance."[116]

IV. Reasonably Prudent Manufacturer Test

A candid acknowledgment of the negligence approach necessarily underlying a risk-utility analysis, which weighs the design alternatives faced by a manufacturer, has led many courts to adopt a prudent manufacturer test[117] for design defect. An important rationale for adopting such a test is that it "preserves the use of familiar terms and thought processes with which courts, lawyers, and jurors customarily deal."[118] Nevertheless, most of the courts that have adopted a risk-utility analysis insist that they have not accepted a pure negligence approach to design defect either because the constructive knowledge of the dangerous condition of the product is imputed to the manufacturer or because the jury is admonished to focus its attention on the condition of the product rather than on the manufacturer's conduct.

In the leading case of *Phillips v. Kimwood Machine Co.*,[119] for example, the Oregon Supreme Court defined the test as follows: "A dangerously defective article would be one which a reasonable person would not put into the stream of commerce *if he had knowledge of its harmful character.* The test, therefore, is whether the seller would be negligent if he sold the article *knowing of the risk involved.*"[120] What distinguishes this test from an ordinary negligence analysis is the imposition on the manufacturer of constructive knowledge of the dangerous condition of the product.[121]

Courts that have adopted the prudent manufacturer standard acknowledge that even though it probably produces similar results as would be achieved under a consumer expectations test, the focus

116. Epstein, *supra* note 18, at 652.

117. *See* note 125 *infra.*

118. Phillips v. Kimwood Mach. Co., 269 Or. 485, 493, 525 P.2d 1033, 1037 (1974).

119. 269 Or. 485, 525 P.2d 1033 (1974).

120. *Id.* at 492, 525 P.2d at 1036 (emphasis in original).

121. *See* Wade, *supra* note 18. *See also* Phillips v. Kimwood Mach. Co., 269 Or. at 494-95, 525 P.2d at 1037; Newman v. Utility Trailer & Equip. Co., 278 Or. 395, 397-400, 564, 675-77 (1977); Johnson v. Clark Equip. Co., 274 Or. 403, 416-17 & n.12, 547 P.2d 132, 142, & n.12 (1976); Ryder v. Kelly-Springfield Tire, 91 Wash. 2d 111, 119, 587 P.2d 160, 164.

of inquiry is quite different.[122] As in negligence cases, the attention of the jury under the prudent manufacturer test should be directed toward the conduct of the manufacturer. Nevertheless, these courts, in applying the test to a cause of action in strict liability, insist that the analysis turns not on the negligent conduct of the manufacturer but on a characterization of the product as being dangerously defective.[123] It seems that a test that evaluates conduct would lead to a conclusion that characterizes that conduct; yet the prudent manufacturer test demands that the result describe the nature of the product, not the nature of the manufacturer's behavior. The only real difference, however, between the prudent manufacturer test in strict liability and a traditional negligence approach is that in the former the manufacturer is deemed to have scienter (knowledge of the risk of danger from the product), whether or not he reasonably could have been expected to have such knowledge. The confusion in this area can perhaps be best illustrated by two recent decisions from the New Jersey Supreme Court.

In *Cepeda v. Cumberland Engineering Co.*,[124] decided in April 1978, the court declined to adopt the *Barker* test and affirmed the central importance of a finding that the challenged product be "unreasonably dangerous," as defined in terms of the Wade-Keeton prudent manufacturer test.[125] A little over a year later, in *Suter v.*

122. The court in Phillips v. Kimwood Mach. Co. noted:

> [W]e feel that the two standards are the same because a seller acting reasonably would be selling the same product which a reasonable consumer believes he is purchasing. That is to say, a manufacturer who would be negligent in marketing a given product, considering its risks, would necessarily be marketing a product which fell below the reasonable expectations of consumers who purchase it. The foreseeable uses to which a product could be put would be the same in the minds of both the seller and the buyer unless one of the parties was not acting reasonably.

269 Or. at 493, 525 P.2d at 1037; *see* note 205 *infra*.

123. *See, e.g.*, Phillips v. Kimwood Mach. Co., 269 Or. 485, 525 P.2d 1033 (1974).

124. 76 N.J. 152, 386 A.2d 816 (1978).

125. What has come to be known as the Wade-Keeton prudent manufacturer test rests on the threshold premise that scienter of a product's harmfulness will be imputed to the manufacturer. For liability to he imposed, various factors must be weighed to determine whether the challenged product is to be deemed unreasonably dangerous (i.e. not duly safe). Dean Wade has posited the following list of factors to be considered:

> (1) The usefulness and desirability of the product—its utility to the user and to the public as a whole.
>
> (2) The safety aspects of the product—the likelihood that it will cause injury, and the probable seriousness of the injury.
>
> (3) The availability of a substitute product which would meet the same need and not be as unsafe.
>
> (4) The manufacturer's ability to eliminate the unsafe character of the product without impairing its usefulness or making it too expensive to maintain its utility.
>
> (5) The user's ability to avoid danger by the exercise of care in the use of the product.

San Angelo Foundry & Machine Co.,[126] the court once again confronted the issue of defining defectiveness. This time the majority determined that while the prudent manufacturer test of *Cepeda* essentially reflected the correct approach, the jury instruction requiring a finding of "defective condition unreasonably dangerous" imposed "a greater burden on plaintiff than is warranted."[127]

The *Suter* court sought to refine the analysis brought to bear in *Cepeda* but unfortunately succeeded in fashioning no clearer test for product defect. In fact, the court added new language that only served to muddy the waters further. Nevertheless, analysis of the court's shift in position[128] is of particular interest since it calls attention to some of the linguistic and conceptual traps that tend to occlude the development of a uniform, reasonable, and fair test for product defect in design cases.

In *Cepeda* the court followed the Wade-Keeton approach to

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

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

Wade, *supra* note 18, at 837-38. Under Dean Wade's formulation, scienter of the dangerous condition of the product is imputed to the manufacturer and thus supplied as a matter of law as of the time when the manufacturer placed the product into the stream of commerce. "A [product] is not duly safe if it is so likely to be harmful to persons [or property] that a reasonable prudent manufacturer [supplier], who had actual knowledge of its harmful character would not place it on the market." *Id.* at 839-40.

Dean Keeton's test for imposing strict liability on a manufacturer of defective products also relies on a balancing of various risk-utility factors. In contrast to Dean Wade's approach, however, scienter is imputed to the manufacturer as of the time of trial rather than as of the time of manufacture or sale.

> [A] product ought to be regarded as "unreasonably dangerous" at the time of sale if a reasonable man with knowledge of the product's condition, and an appreciation of all the risks found to exist by the jury at the time of trial, would not now market the product, or, if he did market it, would at least market it pursuant to a different set of warnings and instructions as to its use. . . . Since the test is not one of negligence, it is not based upon the risks and dangers that the maker should have, in the exercise of ordinary care, known about. It is, rather, danger in fact, as that danger is found to be at the time of trial that controls.

Keeton, *Manufacturer's Liability: The Meaning of "Defect" in the Manufacture and Design of Products*, 20 SYRACUSE L. REV. 559, 568 (1969).

126. 81 N.J. 150, 406 A.2d 140 (1979).

127. *Id.* at 174-75, 406 A.2d at 152.

128. The New Jersey Supreme Court is deeply split over this shift. Justices Mountain and Sullivan joined in Justice Clifford's strongly worded concurrence in the *Suter* case, which sounded a vehement dissent with the majority's analysis: "I concur in the judgment of the Court. And, most respectfully, in not much else it has done today. Particularly do I deplore the bluntly administered coup de grace to Cepeda v. Cumberland Engineering Co. [citation omitted], barely weaned and now the victim of judicial infanticide." 81 N.J. at 178, 406 A.2d at 154 (Clifford, J., concurring).

strict liability,[129] but only in design defect cases.[130] The plaintiff in *Cepeda* was injured while operating a pelletizing machine from which a bolted safety guard had been removed. The machine was designed without an electronic interlock, a device that would automatically have rendered the machine inoperative if the guard were not in place.[131] Testimony at trial revealed that routine operation of the machine often required frequent removal of the guard.[132] An interlock mechanism could feasibly have been installed at a cost of twenty-five or thirty dollars.[133] A verdict for the plaintiff was reversed by the appellate division, which concluded that as a matter of law the machine was free of defect as designed.[134] The court reasoned that if a machine is designed with a safety guard, which is not used, the manufacturer "cannot be held responsible for unforeseeable negligence on the part of third parties in operating or permitting operation of the equipment without the device."[135]

The New Jersey Supreme Court rejected this approach out of hand, characterizing it as nothing more than a warranty test: "The fact that the instant machine was commercially 'reasonably fit for its intended purpose' of pelletizing plastic strands is obviously irrelevant to the postulate of strict tort liability to a workman injured by reason of the unsafety of the machine due to a design defect."[136] The court was particularly concerned that manufacturers not be able to escape under strict liability on the ground of misuse when the "actual use proximate to the injury was objectively foreseeable."[137] It was in response to this untenable potentiality that the court turned to the Wade-Keeton approach:

> [T]he remaining determinative question as to affirmative liability is whether a reasonably prudent manufacturer with such foreknowledge

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129. *See* note 125 *supra*; Keeton, *supra* note 31; Wade, *Strict Tort Liability of Manufacturers*, 19 Sw. L.J. 5 (1965).

130. The *Cepeda* court insisted that a sharp distinction be drawn between manufacturing and design defects, and that different criteria for imposing liability be applied to each. Manufacturing defects give rise to prima facie liability for physical harm, there being no need for the plaintiff to show unreasonable danger. 76 N.J. at 170, 386 A.2d at 825. The *Suter* majority, on the other hand, held that the same principles of strict liability should apply to manufacturing and design defect cases. The court noted that while the nature of the proof may differ, "the ultimate jury test is the same." 81 N.J. at 174, 406 A.2d at 152. *See also* Twerski, *supra* note 85 (analysis of the many problems implicit in the issue of distinguishing between manufacturing and design defects for the purpose of imposing liability).

131. 76 N.J. at 161, 386 A.2d at 820.

132. *Id.*

133. *Id.* at 166-67, 386 A.2d at 823.

134. 138 N.J. Super. 344, 351 A.2d 22, *rev'd* 76 N.J. 152, 386 A.2d 816 (1978).

135. *Id.* at 351, 351 A.2d at 26.

136. 76 N.J. at 176, 386 A.2d at 828. *See also* Biss v. Tenneco, 64 A.D.2d 204, 409 N.Y.S.2d 874 (1978).

137. 76 N.J. at 177, 386 A.2d at 828

> would have put such a product into the stream of commerce after considering the hazards as well as the utility of the machine, the ease of incorporating a remedial interlock, the likelihood *vel non* that the machine would be used only with the guard, and such other factors as would bear upon the prudence of a reasonable manufacturer in so deciding whether to market the machine.[138]

Under this approach, the "unreasonably dangerous" component of section 402A is indispensable. The analysis of design defect liability is "substantially coordinate with liability on negligence principles."[139] Thus, reasonableness is the pivotal issue upon which the risk-utility analysis and the imposition of liability turns under both doctrines. What sets strict liability apart under *Cepeda*, however, is that foreseeability of the risk of harm is imputed to the manufacturer.[140]

A significant problem that emerges from a hindsight balancing test (in which knowledge of the *risk at the time of trial* is imputed to the manufacturer)[141] is that manufacturers may be held liable for dangerous propensities that were scientifically unknowable at the time the product was placed into the stream of commerce. If a manufacturer is precluded from defending on grounds of the scientific impossibility of having foreseen the potential hazards, a risk-utility analysis becomes a shallow fiction.[142] It is questionable whether a criterion for liability purportedly based on a notion of reasonableness can be justly and fairly applied when cognition of risks is imposed as a matter of law rather than as a matter of fact.

The threat of imposing what is tantamount to absolute liability on the manufacturer for all harm resulting from the use of its product is suggested in other areas of the *Cepeda* opinion as well. The specific facts of the case are particularly revealing in this regard. *Cepeda* is not a simple "failure to install a safety device" case. Rather, it involves a failure to install a safety device on a safety device. The fingerguard provided by the manufacturer was not casually hinged to the machine, thus making it possible for the unskilled worker to lift it carelessly at will. Indeed, it was bolted in

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138. *Id.* at 163, 386 A.2d at 821.

139. *Id.* at 172, 386 A.2d at 825.

140. *Id.*

141. This test is derived from Dean Keeton's formulation in *Product Liability and the Meaning of Defect, supra* note 31. *See* note 125 *supra*.

142. In prescription drug cases based on strict liability for failure to warn, the majority of courts have refused to hold a manufacturer responsible in the absence of knowledge or reason to know of the dangers inherent in the product. Singer v. Sterling Drug, Inc., 461 F.2d 288 (7th Cir. 1972); Basko v. Sterling Drug, Inc., 416 F.2d 417 (2d Cir. 1969); Woodhill v. Parke, Davis & Co., ___ N.E.2d ___ (Ill. 1980); McEwen v. Ortho Pharmaceutical Corp., 270 Or. 375, 528 P.2d 522 (1974). *Contra* Hamilton v. Hardy, 37 Colo. App. 375, 549 P.2d 1099 (1976).

front of the in-running nip rollers and could be removed only with a wrench.[143] This fact coupled with the evidence at trial that even interlock mechanisms can be rendered inoperative,[144] raises the question of whether there is any point short of the absurd at which the manufacturer can be said to have reasonably discharged its duty not to expose users of its product to unreasonable danger. If overriding an interlock mechanism is objectively foreseeable, need the reasonably prudent manufacturer install an interlock interlock?

In *Suter*, the majority of the New Jersey Supreme Court[145] attempted to coalesce the warranty and negligence theories underlying strict products liability.[146] Under this approach, the "unreasonably dangerous" component of section 402A is eliminated, with the notions of "improper design" and "reasonable fitness" substituted in its stead. As a threshold matter, the *Suter* majority adverts to what it considers to be the basic premise underlying strict products liability: "[O]ne engaged in the business of selling a product impliedly represents that goods which it places in the stream of commerce are free of defects, that is, they are reasonably suitable, safe and fit for the purposes for which those have been sold."[147] Thus, the majority seems at first glance to favor the notion of a warranty of merchantability as the appropriate analytic framework within which the determination of liability for product-related injuries will be made. In *Cepeda*, on the other hand, the majority emphasized that design defect liability was to be defined through an approach "substantially coordinate with liability on negligence principles."[148] To reflect this apparent shift, the *Suter* majority noted that "[d]efining the strict liability principle in terms of a defect and an unreasonably dangerous condition does not advance an understanding of the concept and will not assist a jury's comprehension of the issues which it must resolve."[149]

If warranty is to provide the parameters for determining liability, requiring the plaintiff to prove that a defect was unreasonably dangerous might indeed seem a greater burden than necessary. The

143. 76 N.J. at 167, 386 A.2d at 823.

144. *Id.*

145. *See* note 128 *supra*. Although the decision in *Suter* was unanimous for affirmance, the opinion reflects the views of only a bare majority (four of seven) of the court. Interestingly, the three concurring justices here had been joined by a temporarily assigned justice in *Cepeda*, where they had managed to secure a majority opinion.

146. In *Suter* the plaintiff was injured when his hand was caught in the cylinders of a sheet-metal rolling machine. The alleged defect was a failure to install a rotary guard around the gear lever. 81 N.J. at 157, 406 A.2d at 143.

147. *Id.* at 169, 406 A.2d at 149.

148. 76 N.J. at 172, 386 A.2d at 825.

149. 81 N.J. at 176, 406 A.2d at 153.

Suter majority proposed, instead, that the plaintiff prove that "the product design was improper."[150] At least this terminology is consistent with a warranty approach. Citing *Greenman*, the court described what "improper" means: "the product is not reasonably suitable and safe and fails to perform, contrary to the user's reasonable expectation that it would 'safely do the jobs for which it was built'."[151]

Lest the reader hastily conclude (as Justice Clifford seems to have done in his concurrence)[152] that the majority has transformed the manufacturer's duty to fit the sales law model of a warranty of merchantability, the decision quickly serves up an additional defect test based on the reasonably prudent manufacturer analysis. This approach comes into play when the reasonable expectations of the consumer are absent from the case,[153] as when the danger was patent or it could not be said that the consumer or user would know what to expect. The proofs in this respect relate to the conduct of the manufacturer. Did the manufacturer act as a reasonably prudent person by designing the item as he did and by placing it on the market in that condition, or should he have designed it to incorporate certain safety features or some other modifications?[154] In order to ascertain whether the manufacturer acted prudently, the jury must balance the familiar risk-utility factors, all of which were thoughtfully described in *Cepeda*[155] as being substantially coordinate with a negligence analysis.[156] As noted earlier, what distinguished this approach from being a true negligence calculus is the court's insistence that scienter be imputed to the manufacturer.

For all the warranty language scattered throughout the opinion and the apparent shift from a standard of "unreasonably dangerous" to one of "improper design," the decision is in fact nothing more than a rather muddled variation of the *Barker* test. Both decisions involve a dual test calling for a consumer expectations anal-

150. *Id.* at 170, 406 A.2d at 150.

151. *Id.* at 170-71, 406 A.2d at 150 (citing Greenman v. Yuba Power Prods., 59 Cal. 2d 57, 377 P.2d 897, 27 Cal. Rptr. 697 (1963)).

152. Justice Clifford noted with considerable dismay:

> By introducing fitness and suitability into the formula, the Court has suddenly transformed the manufacturer's duty. Heretofore the obligation has heen to avoid marketing products which contain *harmful* defects (citations omitted), henceforth it is to avoid putting in the stream of commerce goods which are unsuitable. This before the ink is yet dry on our explicit rejection of the standard of "reasonable fitness" [in *Cepeda*].

81 N.J. at 179, 406 A.2d at 155 (emphasis in original).

153. *Id.* at 171, 406 A.2d at 150.

154. *Id.*

155. 76 N.J. at 171-75, 386 A.2d at 825-27.

156. 81 N.J. at 171-72, 406 A.2d at 150-51.

ysis on the one hand and a risk-utility balancing analysis on the other. In *Barker*, the prongs are posed in the disjunctive: the court must instruct the jury that a product is defective in design if it fails to meet ordinary consumer expectations *or* if plaintiff proves that the product's design caused injury and the defendant fails to prove that the benefits of the design outweigh the risk of danger inherent in the design.[157] Posing the bifurcated test in this way allows for conceptually discrete analytic approaches—the first involving a warranty perspective, the second calling forth a risk-utility calculus. In *Suter*, however, the clear distinction that was implicit in the *Barker* court's posing of alternative theories of liability is adhered to by the New Jersey court only in its linguistic formulation of the test, not in its application of the test to the facts of the case on appeal.

The two aspects of the *Suter* test are not counterpoised in the disjunctive; instead, the trial court is urged to provide cumulative instructions.[158] First, and as a general overriding theme, the court must charge the jury "that a manufacturer has an obligation to distribute products which are reasonably fit, suitable and safe."[159] Under this part of the test, a product will be deemed defective and improperly designed if it fails to meet reasonable consumer expectations as to safety.[160] Second, if consumer expectations are not involved in the case, for whatever reason, the trial court is instructed to *add* a charge asking the jury to determine "whether the manufacturer, it being deemed to have known of the harmful propensity of the product, acted as a reasonably prudent one."[161] The majority's application of its own analysis to the facts in the *Suter* case gives some indication of the confusion likely to result in future cases as trial courts in New Jersey attempt to fashion proper jury instructions.

In *Suter*, the plaintiff was injured when he accidentally brushed against an unshielded gear lever on a sheet metal rolling machine, thus activating the rollers and pulling his fingers into the machine.[162] In determining whether the merchantability aspect of the jury instruction needs to be augmented by the reasonably prudent manufacturer test involving risk-utility analysis, one must first ascertain whether the plaintiff is relying on a theory involving defeated consumer expectations. The majority poses the issue in this way:

157. 20 Cal. 3d at 426-27, 573 P.2d at 452, 143 Cal. Rptr. at 234.
158. 81 N.J. at 177, 406 A.2d at 153.
159. *Id.*
160. *Id.* at 170-71, 406 A.2d at 150.
161. *Id.* at 177, 406 A.2d at 153.
162. *Id.* at 156-57, 406 A.2d at 143.

> We perceive that the only additional question to be put to the jury in a case involving a design defect, vis-a-vis other defects, is whether the product design was improper. In some improper design situations the nature of the proofs will be the same as in other unintended defect cases. This occurs when the product is not suitable and safe because of a failure to perform, contrary to the user's reasonable expectation that it would "safely do the jobs for which it was built."[163]

Clearly, the plaintiff in *Suter* could not rest his case in this quarter: Suter purchased the machine for his company, had operated it "probably a thousand times" over an eight-year period and was completely conversant with every aspect of the equipment. He knew that he could deactivate the machine either by stepping on the treadle at his feet or pushing the stop button. He knew that pushing or moving the lever would activate the rollers.[164]

In light of the plaintiff's obvious inability under the facts to impose liability upon the manufacturer on a theory of defeated consumer expectations, one would logically anticipate that the court would require that the jury be charged to consider various risk-utility factors in determining whether the manufacturer acted in a reasonably prudent manner in designing the product as he did. The majority, however, seems to be satisfied with something less than this. It approved without reservation the trial judge's charge, which "posed the issue in terms of whether the product as designed by defendant was reasonably fit for the ordinary use for which it was intended."[165] The decision did not even mention the failure of the trial court to add a charge instructing the jury to consider the issue from the perspective of the reasonably prudent manufacturer. Although evidence relating to risk-utility factors was presented at trial, the instruction itself did not ask the jury to consider this data specifically in determining liability. In view of the majority's explicitly stated goal to clarify the constituent elements of a proper jury charge in a strict liability action,[166] it is not altogether clear how the wording of the analysis can be reconciled with the court's tacit approval of the trial court's failure to advance the second prong of the recommended jury charge in a design defect case. The curious juxtaposition of warranty and negligence language in the case adds to the already considerable confusion that has emerged from the dual *Greenman/Restatement* heritage of strict products liability. As Justice Clifford noted in his scathing concurrence:

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163. *Id.* at 170-71, 406 A.2d at 150 (citing Greenman v. Yuba Power Prods., Inc., 59 Cal. 2d 57, 377 P.2d 897, 27 Cal. Rptr. 697 (1963)).

164. *Id.* at 165, 406 A.2d at 147.

165. *Id.* at 154, 168, 406 A.2d at 142, 149.

166. *Id.* at 158, 406 A.2d at 143.

> With the greatest deference I suggest that my brothers of the majority, all of whom are capable of some of the most precise thinking and most lucid judicial writing the bench and bar of this nation have been privileged to witness, have hardly simplified the jury's task by this obfuscation—a mixture of the apples of warranty with the oranges of negligence. I for one quite honestly do not understand how the trial judges and jurors are to go about their business; and if I do not, I venture to say there may be some of them who will share my dullness of comprehension.[167]

At least one thing is very clear in the *Suter* opinion—the risk-utility balancing of factors involved in the prudent manufacturer test is to remain, as in *Cepeda*,[168] a hindsight perspective[169] for evaluating the conduct of the manufacturer.[170] Thus, the possibility that a manufacturer might be held liable for the dangerous propensities of a product that were scientifically unknowable at the time of manufacture[171] continues to raise serious questions about the basic fairness of the prudent manufacturer test. Burying the defensive matter of state of the art in a hindsight risk-utility analysis under which scienter of harm is imputed to the manufacturer, the court allows for the possibility that, nothwithstanding unknowability,[172] the risk of harm posed by a product may still be found to exceed its utility. Since the court's model instruction casts the definition of the duty owed in terms of the merchantability or fitness of the product itself, a manufacturer might be held absolutely liable even more readily than under *Cepeda* for harms that arose from risks that were unknowable when the product was manufactured.

Two other recent cases[173] in which the reasonably prudent manufacturer test was advanced examine the difficulties inherent in the plaintiff's burden of establishing a prima facie case. A liberal application of the reasonably prudent manufacturer test might permit a plaintiff to recover not only when a risk was unknowable, but on a mere showing that a possible alternative design was availa-

167. *Id.* at 184, 406 A.2d at 157 (Clifford, J., concurring).

168. 76 N.J. at 172, 386 A.2d at 825.

169. 81 N.J. at 171, 406 A.2d at 150.

170. *Id.* at 171-72, 406 A.2d at 150-51.

171. *See* text accompanying notes 140-42 *supra*.

172. As to a particular risk of harm, if its existence was unknowable, it is irrelevant whether there was in existence scientifically possible means to obviate it. For example, even if a 15 cent fail-safe widget could have been used on a product to prevent a risk that was unknown at the time the product was designed, the manufacturer would not have known of the need to employ it. Notably the California Supreme Court in *Barker* declined to reach the issue of whether state of the art will be a viable defense under the duel-standard test. 20 Cal. 3d at 430 n.10, 573 P.2d at 455 n.10, 143 Cal. Rptr. at 237 n.10.

173. Brady v. Melody Homes Mfr., 121 Ariz. 253, 589 P.2d 896 (Ct. App. 1978); Wilson v. Piper Aircraft Corp., 282 Or. 61, 577 P.2d 1322, *rehearing denied*, 282 Or. 411, 579 P.2d 128 (1978).

ble.[174] Thus, before it ever reaches the issue of whether the manufacturer's conduct was reasonable, a court would first have to consider whether an alternative design was not only technologically possible, but economically practicable. In *Wilson v. Piper Aircraft Corp.*,[175] the Supreme Court of Oregon addressed the issue of the plaintiff's burden of proof in establishing a prima facie case of liability based upon design defect.

Wilson involved wrongful death actions brought on behalf of passengers killed in the crash of a Piper Cherokee. The accident was allegedly caused by engine failure resulting from carburetor icing.[176] The plaintiffs' contention was that the small aircraft was dangerously defective because it was designed with a carbureted rather than a fuel-injected engine.[177] Evidence offered at trial established that carbureted engines are characteristically more susceptible to icing than fuel-injected engines and that at the time the airplane was manufactured, fuel-injected engines were available and probably could have been obtained.[178] The jury returned substantial verdicts for the plaintiffs. On appeal, the defendant claimed that the evidence submitted by plaintiffs was insufficient to take the case to the jury. The Supreme Court of Oregon agreed. Allowing that the plaintiffs did come forward with sufficient evidence to convince the trier of fact that an alternative and safer design was feasible, the court held that this was not enough to establish a prima facie case of design defect.[179] When a product involves complicated design features that are outside the common knowledge of the lay person, the plaintiff "must show more than the technical possibility of a safer design."[180] The plaintiff offered no evidence on the effect that substituting a fuel-injected engine would have on the "cost, economy of operation, maintenance requirements, overall performance, or safety in respects other than susceptibility to icing."[181]

In a petition for rehearing, plaintiffs called the court's attention to that portion of the *Barker* case holding that a plaintiff need only establish that the design of the defendant's product proxi-

174. *See* 141 South Main, Inc. v. Magic Fingers, Inc., 49 Ill. App. 3d 724, 728, 364 N.E.2d 605, 608 (1977) (the court questioned whether feasibility was an essential element of plaintiff's prima facie case).

175. 282 Or. 61, 577 P.2d 1322, *rehearing denied*, 282 Or. 411, 579 P.2d 128 (1978).

176. *Id.* at 63, 577 P.2d at 1324.

177. *Id.* at 63-64, 577 P.2d at 1324. Plaintiff also alleged that the aircraft was defective because the rear passenger compartment was not crashworthy. *Id.* at 69, 577 P.2d at 1327.

178. *Id.* at 70, 577 P.2d at 1327.

179. *Id.* at 69, 577 P.2d at 1326.

180. *Id.* at 68, 577 P.2d at 1326.

181. *Id.* at 70, 577 P.2d at 1327.

mately caused his injury. The court expressly rejected this approach, affirming that its original opinion was correct under the prudent manufacturer standard, the accepted test for product defect in the state.[182] Thus, in Oregon, a plaintiff may not make out a prima facie case on a simple showing that a safer alternative was technologically feasible. The plaintiff's burden of establishing that a product's design is defective includes the requirement that the plaintiff come forward with evidence to prove that the proposed alternative design was also "practicable in terms of cost and the overall design and operation of the product."[183]

If the manufacturer's liability for design defects is to be cut off somewhere short of absolute liability, the requirement that plaintiffs establish technological and economic practicability in addition to mere feasibility would appear to offer a sound counterbalancing element to the reasonably prudent manufacturer test. There still remain, of course, the problems attendant upon a hindsight imputation to the manufacturer of scienter of danger.[184] A recent Arizona case[185] has proposed a bifurcated strict liability/negligence test for design defect cases that squarely confronts the problem of holding a manufacturer accountable for knowledge and technology that may have been unknowable at the time the challenged product was manufactured. The Arizona court forthrightly recognized that absolute liability could result if scienter of harm was imputed to a manufacturer and concluded that any proposed balancing test must therefore be grounded in pure negligence principles.

In *Brady v. Melody Homes Manufacturer*,[186] a fire of unknown origin destroyed a mobile home, killing two of the occupants and severely injuring a third. Plaintiffs alleged that the mobile home was defectively designed because it provided only one egress,[187] had

182. 282 Or. 411, 579 P.2d 1287 (1978). *See also* note 67 *supra*.

183. 282 Or. at 69, 577 P.2d at 1327. *See also* Hagans v. Oliver Mach. Co., 576 F.2d 97 (5th Cir. 1978)(At trial, plaintiff claimed that an industrial saw was defective because it had a removable safety guard. Plaintiff claimed the saw should have been designed with a permanently attached guard, which was technologically available at the time the saw was manufactured. The Fifth Circuit held that the district court should have directed a verdict for the defendant on the issue of defective design. *Id.* at 101. "The evidence is overwbelming that permanent attachment of the blade guard assembly would seriously impair the usefulness of defendant's product. Texas law does not require a manufacturer to destroy the utility of his product in order to make it safe." *Id.*).

184. *See* text accompanying notes 140-42 *supra* and text accompanying note 194 *infra*.

185. Brady v. Melody Homes Mfr., 121 Ariz. 253, 589 P.2d 896 (Ct. App. 1978).

186. *Id.*

187. In a motion for rehearing, Melody Homes pointed out that the court was mistaken as to the existence of only one door; in fact, the mobile bome had two doors. The court held to its original analysis, however, since the location of tbe second door still provided inadequate egress from the sleeping area of the mobile home in the event of fire. *Id.* at 260-61, 589 P.2d at 903-04.

no escape hatches or pop-out windows, and failed to include smoke detector alarms.[188] The trial court granted defendant's motion for summary judgment. The Arizona Court of Appeals cited with approval the first prong of the *Barker* test, under which strict liability will attach if a product falls below reasonable consumer expectations.[189] Nevertheless, as to the very many design cases in which a consumer would not know what to expect in the way of design safety, strict liability will not apply.[190] The court rejected the second prong of *Barker*[191] for cases of this type, finding unconvincing the logic of the instruction to focus on the product rather than on the conduct of the manufacturer. The Arizona court reasoned that if liability is to be imposed on the basis of defining defect through a risk-utility analysis, which necessarily involves questions of feasibility, "then the court has moved out of the area of strict liability and into the area of reasonableness of the manufacturer's conduct."[192] When a court cannot say as a matter of law that a product or design was dangerous beyond the reasonable contemplation of the ordinary consumer, the second tier of the Arizona test comes into play. Under this approach, the trier of fact openly applies the standard principles of a negligence calculus.[193]

The court expressly rejected the reasonably prudent manufacturer test because of its imputation of scienter of harm to the manufacturer. The court explained that to hold a manufacturer accountable for data that was technologically unknowable at the time of manufacture was essentially to move beyond tort law into a compensation system.[194] Thus, following the Arizona Supreme Court decision in *Byrns v. Riddell, Inc.*,[195] which held that the unreasonably dangerous element of product defect was to be defined in terms of a risk-utility analysis, the court in *Brady* held that this balancing inquiry must be grounded in negligence principles: the trier of fact is to determine if the manufacturer's conduct was reasonable in adopting the design utilized.[196] Simply because a better mousetrap could be built does not mean that liability inexorably follows. "Liability only follows where a showing is made that the

188. *Id.* at 256, 589 P.2d at 899.
189. *See* text accompanying notes 46-50 *supra*.
190. 121 Ariz. at 259-60, 589 P.2d at 902-03.
191. *See* text accompanying notes 53-60 *supra*.
192. 121 Ariz. at 259, 589 P.2d at 902.
193. *Id.*
194. *Id.*
195. 113 Ariz. 264, 550 P.2d 1065 (1976).
196. 121 Ariz. at 259, 589 P.2d at 902.

manufacturer was negligent in not adopting the better mousetrap design."[197]

V. "PURE" RISK-UTILITY TEST

Demanding that a risk-utility analysis (whether conceived in negligence or strict liability) be funnelled through the perspective of either the ordinary consumer[198] or the reasonably prudent manufacturer[199] can raise difficult conceptual problems for the trier of fact. This has led some courts to adopt what is thought to be a less speculative and analytically more direct approach. Rather than set a hypothetical standard or point of view for the analysis, the trier of fact is asked to balance the risk of harm against the utility or social benefit of the product and determine which is greater. No point of view is imposed on the balancing inquiry. This conclusion was reached recently by the Texas Supreme Court in *Turner v. General Motors Corp.*[200]

In *Turner* the plaintiff brought an action in strict liability against the manufacturer of a car, alleging that the vehicle was uncrashworthy.[201] The trial court submitted the case to the jury under a consumer expectations test drafted in the "unreasonably dangerous" language of comment i. A verdict for plaintiff was reversed on appeal. The Texas Court of Civil Appeals distinguished cases in-

197. *Id.* The *Brady* approach to determining manufacturer liability for defectively designed products preserves state of the art as a viable defense. An affidavit submitted in support of the defendant's motion for summary judgment claimed " 'that smoke detector devices . . . were not known to, or available for, use of the mobile home construction industry in the United States in 1964.' " *Id.* at 255, 589 P.2d at 898. Plaintiff's affidavit opposing the motion "stated that photoelectric smoke detectors were the subject of standards adopted by the American National Standards Institute in July, 1962." *Id.* The court found as a matter of law that a reasonable consumer in 1964 would not have contemplated the installation of smoke detector alarms. "This omission, in our opinion, does not fall within the definition of 'defect' for strict liability purposes, and therefore must be judged upon negligence principles—the standard being that of a reasonably prudent manufacturer. In this context [defendant's] 'state of the art' defense is viable." *Id.* at 260, 589 P.2d at 903. The court went on to indicate:

> We note that the legislature has added Article 9, entitled "Product Liability" to Title 12, chapter 6 of the Arizona Revised Statutes, effective for causes of action accruing on or after September 3, 1978. Under A.R.S. § 12-683 of that new section, "state of the art" is considered a defense in all products liability cases, including those to be determined under principles of strict liability. Under our analysis, in design defect cases, "state of the art," that is, "feasibility" of design, is only pertinent in a negligence context. What effect, if any, the statute has, we do not reach.

Id. at 260 n.4, 589 P.2d at 903 n.4.

198. *See* text accompanying notes 104-16 *supra*.

199. *See* text accompanying notes 119-23 *supra*.

200. 584 S.W.2d 844 (Tex. 1979).

201. *Id.* at 846. An earlier decision in *Turner* established that a manufacturer may be strictly liable for second-collision injuries. 514 S.W.2d 497 (Tex. Ct. Civ. App. 1974).

volving a conscious design defect that causes both an accident and resulting injuries, from crashworthiness cases involving a conscious design defect that causes injury only, and held that in the latter, the jury is to be instructed to balance specific risk-utility factors in determining whether the vehicle's design was unreasonably dangerous.[202] In reviewing this decision, the Texas Supreme Court determined, as an initial matter, that a crashworthiness case is subject to the same rules of strict liability as any other design defect case.[203] Prior holdings of the court[204] had submitted such issues to the jury under the following bifurcated test:

> [T]he product is unreasonably dangerous (1) if the product threatens harm to persons using the automobile to the extent that any automobile so designed would not be placed in the channels of commerce by a prudent manufacturer aware of the risk involved in its use *or* (2) to the extent that the automobile would not meet the reasonable expectations of the ordinary consumer as to its safety.[205]

The Texas Supreme Court took the opportunity in *Turner* to reexamine the efficacy of this alternative buyer-seller test[206] and the

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202. General Motors Corp. v. Turner, 567 S.W.2d 812, 818 (Tex. Ct. Civ. App. 1978). The Court of Civil Appeals held that the following factors should be balanced:

> (1) the utility of the product to the user and to the public as a whole weighed against the gravity and likelihood of injury from its use; (2) the availability of a substitute product which would meet the same need and not be unsafe or unreasonably expensive; (3) the manufacturer's ability to eliminate the unsafe character of the product without seriously impairing its usefulness or significantly increasing its costs; (4) the user's anticipated awareness of the dangers inherent in the product and their avoidability because of general public knowledge of the obvious condition of the product, or of the existence of suitable warnings or instructions.

Id. at 818.

203. 584 S.W.2d at 847-48.

204. *See* General Motors Corp. v. Hopkins, 548 S.W.2d 344 (Tex. 1977); Henderson v. Ford Motor Co., 519 S.W.2d 87 (Tex. 1974).

205. 584 S.W.2d at 850.

206. This test appears to have been adopted initially in Welch v. Outboard Marine Corp., 481 F.2d 252, 254 (5th Cir. 1973), in which the court stated:

> We see no necessary inconsistency between a seller-oriented standard and a user-oriented standard when, as here, each turns on foreseeable risks. They are two sides of the same standard. A product is defective and unreasonably dangerous when a reasonable seller would not sell the product if he knew of the risks involved or if the risks are greater than a reasonable buyer would expect.

Accord, Phillips v. Kimwood Mach. Co., 269 Or. 485, 493, 525 P.2d 1033, 1037-38 (1974); note 122 *supra*.

The dissent in Henderson v. Ford Motor Co., 519 S.W.2d 87, 101 (Tex. 1974)(Johnson, J., dissenting), challenged the soundness of the reasoning behind the alternative buyer-seller test:

> It is entirely possible that the proof of the consumer will fully establish that the product would not meet the reasonable expectations of the ordinary user, while the proof of the manufacturer will equally establish that a prudent manufacturer might market the product notwithstanding the risks involved in its use. In such a case, will there be recovery since one element of the majority's bifurcated test has been met, or will recovery

enumerated factors, risk-utility test applied by the intermediate appellate court. The court rejected the validity of the bifurcated test because of "the inconclusiveness of the idea that jurors would know what ordinary consumers would expect in the consumption or use of a product, or that jurors would or could apply any standard or test outside that of their own experiences and expectations."[207] Secondly, it rejected the enumerated factors, risk-utility test because of the "difficulty of formulating a series of specific factors which fact finders will be instructed to balance."[208] The court drew support for this conclusion by noting that different commentators propose different sets of factors to be weighed in design defect cases.[209] The court held that although evidence may be introduced at trial that goes to the issue of ordinary consumer expectations and that raises various factors to be balanced in a risk-utility analysis, the jury may not be instructed in these terms. The court suggested the following model instruction in which the jury is asked in very general terms to weigh the risks involved in using the product against the product's utility:

> Do you find from a preponderance of the evidence that at the time [product] in question was manufactured by [the manufacturer] the [product] was defectively designed?
> By the term "defectively designed" as used in this issue is meant a product that is unreasonably dangerous as designed, taking into consideration the utility of the product and the risk involved in its use.[210]

While the proposed instruction is certainly to be commended for its economy of language, it does raise some serious questions in terms of practical application. By refusing to allow an instruction

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be defeated since the other element . . . has been negated?

This prohlem of potential inconsistency, which is implicit in the alternative buyer-seller test, becomes particularly acute in cases involving products that are designed with open and obvious dangers. For example, in Stenberg v. Beatrice Foods Co., 576 P.2d 725 (Mont. 1978), plaintiff was injured when his left arm slipped into the unshielded intake end of a grain auger. The jury was instructed under an alternative buyer-seller test. The Supreme Court of Montana held this was reversible error. Looking to the consumer-oriented part of the test, the court noted that the trier of fact could find that the grain auger was not unreasonably dangerous because it was not, in the words of the jury instruction, " 'dangerous to an extent beyond that which would be contemplated by the ordinary consumer . . .' " *Id.* at 729. At the same time, and quite inconsistently, a jury could also find, under the second part of the test, that the grain auger was indeed unreasonably dangerous because a manufacturer, assuming he knew of the dangerous condition of the auger, would have been " 'acting unreasonably in placing it on the market.' " *Id.* Thus, concluded the Montana Supreme Court, "[t]his instruction could only have confused the jury as to what is meant by the term 'unreasonably dangerous,' and it was improper." *Id.* at 730.

207. 584 S.W.2d at 851.
208. *Id.* at 849.
209. *Id.*
210. *Id.* at 847 n.1.

that specifically directs a jury to consider certain particular factors in weighing the evidence offered at trial, the court fundamentally leaves the trier of fact to rely on some visceral sense of whether the product was riskier than it was useful. Thus, as the concurring opinion in *Turner* noted,

> [S]uch instruction by implied exclusion limits the jury's evidentiary considerations *solely* to utility and risk and by reason of the clause "Do you find from a preponderance of the evidence" the jury will usually decide the case on whether utility *outweighs* the risk. Though a product bears a danger that could be removed for a few pennies its use would generally outweigh the risk.[211]

Under the *Turner* instruction, the trier of fact might just as likely find the opposite, that is, that the risk outweighs the utility. In cases involving products with which the jury has little experience, the presence of a seriously injured plaintiff in the courtroom might well lead to a sympathetic conclusion that the product is simply too risky (even though the manufacturer may have adequately warned of the danger and designed into the product every safety feature technologically possible).

In *Thibault v. Sears, Roebuck & Co.*,[212] the New Hampshire Supreme Court also had occasion recently to define the nature of a risk-utility analysis that employs neither a consumer nor a manufacturer point of view. The case involved a plaintiff who was injured while operating a lawn mower. Contrary to the product's written instructions to mow slopes horizontally, the plaintiff mowed up and down a steep slope, lost his balance, and slipped. As he fell, the plaintiff's foot somehow got under the housing[213] and came in contact with the mower's blade. There was no rear trailing guard on the equipment. Conflicting evidence was offered at trial as to whether the absence of the guard was causally related to the plaintiff's injury.[214]

The New Hampshire court affirmed a jury verdict in favor of the defendant. The court, in reaching its decision, rejected the oft-repeated theory that strict liability is but a tool of social engineering, whereby manufacturers are required to bear the risk and loss caused by products. The court emphatically noted that

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211. *Id.* at 854 (Campbell, J., concurring)(emphasis in original).

212. 118 N.H. 802, 395 A.2d 843 (1978).

213. The plaintiff advanced the theory that his foot slipped under the housing because there was no trailing guard; the defendant claimed that the plaintiff lifted the mower when he fell and brought the blade down onto his foot, in which case a rear trailing guard would not have prevented the injury. 118 N.H. at 805-06, 395 A.2d at 845.

214. *Id.*

> [u]nlike workmen's compensation and no-fault automobile insurance, strict liability is not a no-fault system of compensation. The common-law principle that fault and responsibility are elements of our legal system applicable to corporations and individuals alike will not be undermined or abolished by 'spreading' of risk and cost in this State.[215]

Thus, the New Hampshire Supreme Court found that the trier of fact, in balancing risk against utility, must consider whether the manufacturer could have reduced the risk without significant impact on the product's utility and cost of manufacture.[216] This approach would not preclude imposing liability on the manufacturer of a product of significant beneficial utility if it were found that the manufacturer failed to take reasonable steps to eliminate or lessen the danger.

Some of the factors to be weighed in the risk-utility analysis emerge from the requirement that the plaintiff prove causation and foreseeability.[217] As the court noted, "[i]nquiry into the dangerousness of a product requires a multifaceted balancing process involving evaluation of many conflicting factors. . . . Reasonableness, foreseeability, utility, and similar factors are questions of fact for jury determination."[218] The New Hampshire Supreme Court insisted that all these balancing factors be advanced to give the trier of fact a reasoned basis upon which to make a determination. Litigants and the trier of fact under the *Thibault* approach will not be left of some purely speculative sense of whether risk outweighs utility.

The *Thibault* court revealed a practical concern for the potentially serious economic repercussions of the application of strict liability on both the consumer and the manufacturer. Since a finding of liability for defective design could result in the removal of a product from the market, with the consequent diminution of consumer choices, the court reasoned that the "utility of the product must be evaluated from the point of view of the public as a whole."[219] Further, since the high cost of insurance threatens the continued existence of many smaller manufacturers, with resultant economic concentration, courts must look closely at the steps the

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215. *Id.* at 806, 395 A.2d at 845-46.
216. *Id.* at 807, 395 A.2d at 846.
217. *Id.* at 809, 395 A.2d at 847.
218. *Id.* at 809, 395 A.2d at 847-48.
219. *Id.* at 807, 395 A.2d at 846. *Contra*, UPLA, *supra* note 102, Analysis § 104(B), 44 Fed. Reg. at 62,723:

> [I]t is important to consider evidence relating to the effect of the alternative design on the usefulness of the product. . . . It is important to note that this evidence is not directed to the general usefulness of the product in society, *i.e.*, the overall social worth of pharmaceuticals, lawnmowers, or other products.

manufacturer has or has not taken to lessen risks before imposing liability.[220]

VI. THE COURT-AS-POLICYMAKER APPROACH

The Pennsylvania Supreme Court has forged a novel solution to the question of formulating a legal definition of "defective condition unreasonably dangerous." In fact, were it not so unacceptable and "unprincipled,"[221] the decision in *Azzarello v. Black Brothers Co.*,[222] would quickly force dismissal of many of the problems raised in this discussion. The facts of the case are familiar and straightforward: the plaintiff's hand was pinched between two hard rubber rollers in a coating machine manufactured and sold by the defendant. Plaintiff, alleging defective design, brought suit against the manufacturer solely on the theory of strict products liability.[223] The trial court repeatedly instructed the jury using the term "unreasonably dangerous." Relying on the earlier Pennsylvania case of *Berkebile v. Brantly Helicopter Corp.*,[224] the plaintiff appealed from a defendant's verdict, claiming that the instruction requiring proof of unreasonable danger constituted reversible error. The Pennsylvania Supreme Court agreed.[225] The decision in *Azzarello* not only eliminated the term "unreasonably dangerous," but it offered a radical shift in the allocation of the appropriate roles for judge and jury in a cause of action based on strict liability.

At the outset, the court emphasized that the term "unreasonably dangerous" as set forth in section 402A has no special meaning of its own; rather, it is a mere "label to be used where it is determined that the risk of loss should be placed upon the supplier."[226] The issue of whether the utility of a product outweighs the danger is essentially a question of social policy: Should the loss be shifted from injured plaintiff to the defendant? Thus, according to the Pennsylvania Supreme Court, a risk-utility analysis is not within the province of the trier of fact; it is a question of law for the court, grounded in social policy.[227] "It is a judicial function to decide whether, under plaintiff's averment of the facts, recovery would be justified; only after this judicial determination is made is the cause

220. 118 N.H. at 806-07, 395 A.2d at 845-46.

221. See Professor Henderson's analysis in *Products Liability*, 2 CORP. L. REV. 246 (1979).

222. 480 Pa. 547, 391 A.2d 1020 (1978).

223. *Id.* at 549-50, 391 A.2d at 1022.

224. 462 Pa. 83, 337 A.2d 893 (1975).

225. 480 Pa. at 551-52, 391 A.2d at 1023.

226. *Id.* at 556, 391 A.2d at 1025.

227. *Id.* at 558, 391 A.2d at 1026.

submitted to the jury to determine whether the facts of the case support the averments of the complaint."[228] The court suggested the following charge to the jury:

> The [supplier] of a product is the guarantor of its safety. The product must, therefore, be provided with every element necessary to make it safe for [its intended] use, and without any condition that makes it unsafe for [its intended] use. If you find that the product, at the time it left the defendant's control, lacked any element necessary to make it safe for [its intended] use or contained any condition that made it unsafe for [its intended] use, then the product was defective, and the defendant is liable for all harm caused by such defect.[229]

Is there any product that cannot be made safer in some way? This instruction calls forth fantastic cartoon images of products, both simple and complex, laden with fail-safe mechanism atop fail-safe mechanism. As Professor Henderson observed:

> Taken literally, the test is absurd and unworkable. No sensible person would insist that a product designer must include every precaution, however costly. At bottom, the design alternatives to which plaintiffs point in these cases must be shown somehow to have been feasible, or sensible, regardless of whether one speaks in terms of "unreasonably dangerous." For the Pennsylvania Supreme Court to suggest otherwise is nonsensical.[230]

Perhaps the most troubling aspect of the decision is the fundamental disdain the court manifests for the adjudicative process. Strict products liability is not the first legal doctrine to emerge out of social and economic policy considerations. Traditionally, however, our system of law leaves it to the good judgment of juries to effectuate the policies underlying legal doctrines. Although some commentators[231] have questioned whether the judicial system is

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228. *Id.*

229. *Id.* at 559-60 n.12, 391 A.2d at 1027 n.12.

230. Henderson, *supra* note 221, at 248.

231. Henderson, *Renewed Judicial Controversy Over Defective Product Design: Toward the Preservation of an Emerging Consensus*, 63 MINN. L. REV. 773, 779-80 (1979):

> The adjudicatory process is inadequate as a method of resolving, on a case-by-case basis, the vague question of whether or not risks presented by a particular product are unreasonable. When forced to make such decisions, courts must resolve complex and often times highly technical issues of design alternatives equipped only with legal principle reduced to its most basic degree of generalization: a balancing test. In effect, the courts are forced to second-guess the designers, they are forced to redesign the product themselves. The result is to push the adjudicatory process to the brink of arbitrariness. Unless more specific middle ground rules of decision, consistent with the underlying cost-benefit principles, are developed, foreseeability, consistency, and other qualities of principled decisionmaking will continue to be lacking and the integrity of the judicial system will continue to be threatened.

See also Owens v. Allis-Chalmers Corp., 83 Mich. App. 74, 79-80, 268 N.W.2d 291, 294 (1978) (the court relied on Professor Henderson's commentary in concluding that "adjudication must necessarily play a limited role in setting design standards."); Henderson, *Judicial*

competent in conscious design defect cases either to establish product safety standards or to reexamine safety standards set by industry or government, most commentators[232] and the courts[233] adhere to the view that a properly instructed jury can adequately and responsibly perform the necessary balancing test required by a risk-utility approach. The argument that the trier of fact is incapable of reasonably and justly resolving conscious design issues is of dubious merit. Juries are frequently called upon to consider complex evidentiary data in many different areas of litigation. Moreover, as the Wisconsin Supreme Court has noted, "[t]he problems presented in products liability jury trials would appear no more insurmountable than similar problems in other areas of the law."[234] It is the function and responsibility of the skillful lawyer to explain and present even the most technical information in a manner comprehensible to the lay juror. A basic premise of our common-law system is that if lawyers perform their function properly, jurors will be able to fulfill their fact-finding responsibility, thereby arriving at a just accommodation of the rights and interests of adverse parties.

This writer's confidence in the fundamental capability of jurors fairly to arbitrate design defect issues[235] should not be viewed as a suggestion that all claims based on defective design be sent to the jury. Trial judges must, as an initial matter, perform their

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Review of Manufacturers' Conscious Design Choices: The Limits of Adjudication, 73 COLUM. L. REV. 1531 (1973).

232. *See, e.g.*, Twerski, Weinstein, Donaher & Piehler, *The Use and Abuse of Warnings in Products Liability—Design Defect Litigations Comes of Age*, 61 CORNELL L. REV. 495, 539 (1976):

> The structure suggested by Professor Henderson to limit judicial participation in the process by requiring courts to take a hands-off position regarding all decisions that are the result of conscious design choice, be they private or governmental, would deny the courts entry into the reexamination of standard setting. . . . [W]e helieve that Professor Henderson's argument goes well beyond a call for tighter judicial control of design defect cases. It is a call to the courts to tread with trepidation when dealing with corporate or governmental decision-making in the context of a private design defect lawsuit. We believe that there exist at present no satisfactory alternatives to the traditional lawsuit.

233. *See, e.g.*, Bowman v. General Motors Corp., 427 F. Supp. 234 (E.D. Pa. 1977); Self v. General Motors Corp., 42 Cal. App. 3d 1, 116 Cal. Rptr. 575 (1974); Arbet v. Gussarson, 66 Wis. 2d 551, 225 N.W.2d 431 (1975).

234. Arbet v. Gussarson, 66 Wis. 2d 551, 561-62, 225 N.W.2d 431, 438 (1975).

235. As one court noted:

> Our faith in the jury system is considerable. We have seen as many defendant's verdicts as plaintiff's verdicts in products liability cases over the past several years, buttressing our conclusion that juries are as impartial as they are intelligent. In view of their hroad community base they seem to us well-equipped to perform the factfinding and judgmental tasks involved.

Bowman v. General Motors Corp., 427 F. Supp. 234, 245-46 (E.D. Pa. 1977).

screening functions with meticulous concern. The fact that jurors have the intellectual capacity to evaluate the issues involved should not diminish in any way the essential role that the trial judge must play in determining if the plaintiff has, in the first instance, stated a cause of action. Especially in cases where plaintiff attacks technologically sophisticated designs, the trial judge must be scrupulously careful in determining whether plaintiff has introduced sufficient evidence to establish a prima facie case. Moreover, when the plaintiff fails to carry this burden, trial courts should not be reluctant to direct verdicts in favor of the defendant.

At first blush, the screening function assigned the court in *Azzarello* appears to be a prudent effort to assure that only meritorious claims of defective design reach the jury. This, however, is not the case. The risk-utility balancing process never gets into the hands of the jury at all, regardless of whether the plaintiff alleges sufficient evidence to state a cause of action. The balancing test is exclusively within the province of the court. The implication is that only trial judges have the special wisdom required to determine whether a product's design is unreasonably dangerous in the sense that its risk of harm outweighs its utility. The only function left for the jury under *Azzarello* is to determine whether the product left the supplier's control lacking any element necessary for its intended use or possessing any feature that renders it unsafe for the intended use.[236] Thus, the question of reasonableness may not be considered by the jury even in a closely contested case.

VII. The Model Uniform Product Liability Act Approach

The Uniform Product Liability Act (UPLA) was recently published by the Department of Commerce for voluntary use by the states.[237] The UPLA had its genesis in the Final Report of the Federal Interagency Task Force on Product Liability, which concluded that one of the primary causes of the product liability problem was the "uncertainties in the tort-litigation" system.[238] The basic philosophy underlying the UPLA is to shift the cost of accidents from an injured claimant to a defendant product seller "when there is a logical and articulated rationale for deeming [the latter]. . . 'responsible' for the claimant's injuries."[239] The UPLA clearly eschews a no-fault (absolute liability) compensation system and adopts

236. 480 Pa. 547, 559, 391 A.2d 1020, 1027.
237. UPLA, *supra* note 102, 44 Fed. Reg. 62,714 (1979).
238. *Id.*
239. *Id.* at 62,715.

rules of liability based on a notion of fault or blameworthiness.[240] Nowhere is this philosophy more clearly reflected than in the provision of the UPLA relating to design defect.

The UPLA initially provides that a manufacturer will be subject to liability if an injured claimant "proves by a preponderance of the evidence that the claimant's harm was proximately caused because the product was defective."[241] This section notes that a product may be proved to be defective if, and only if, it was "unreasonably unsafe."[242] In order to ascertain if the product was unreasonably unsafe in design, the trier of fact is instructed in terms of a formula based on pure negligence/risk-utility balancing of factors. The trier of fact is specifically told to balance "(1) the likelihood that the product would cause the claimant's harm or similar harms, and the seriousness of those harms; against (2) the manufacturer's burden of designing a product that would have prevented those harms, and the adverse effect that alternative design would have on the usefulness of the product."[243]

The requirement that the trier of fact evaluate these factors as of the time of manufacture, not the time of trial, is of particular significance.[244] The UPLA thus rejects the Wade-Keeton hindsight test in favor of an approach characterized by reasonable anticipation of risks of harm.[245] To reinforce this approach, section 104 (Basic Standards of Responsibility for Manufacturers) expressly requires that "[b]efore submitting the case to the trier of fact, the court shall determine that the claimant has introduced sufficient evidence to allow a reasonable person to find" that the relevant product was unreasonably unsafe in design.[246] The Analysis empha-

240. In setting forth the criteria of the Act, the drafters of the UPLA make clear that:
> Product liability law is a branch of the law of torts. . . . Tort law is not a compensation system similar to Social Security or Worker Compensation. A product seller should not, through the medium of tort law, he asked to pay merely because its product caused an injury. If a social judgment is made that product sellers are to hear the costs of all injuries caused by their products, it would be far more efficient to make purchasers of products third-party beneficiaries of product sellers' insurance policies as is the case with other compensation systems. Such systems also utilize cost-saving devices such as limiting recovery for lost earnings, eliminating recovery for pain and suffering, and abolishing the collateral source rule. In contrast, product liability law, with its full tort law recovery, reflects the social judgment that liability should be imposed only when it is fair to hold the individual product seller responsible for an injury.

Id. at 62,715.

241. UPLA, *supra* note 102, § 104, 44 Fed. Reg. at 62,721.

242. *Id.*

243. *Id.*, Analysis § 104(B), 44 Fed. Reg. at 62,723.

244. *Id.*, § 104(B), 44 Fed. Reg. at 62,721.

245. *See id.* Analysis § 104(C), 44 Fed. Reg. at 62,724.

246. *Id.*, § 104, 44 Fed. Reg. at 62,721.

sizes the importance of this allocation of threshold responsibility to the court by noting that "[t]he dangers of the trier of fact introducing hindsight into the risk-utility analysis make it imperative for the court to apply its screening function carefully."[247] If the court determines that the claimant has introduced sufficient evidence to allow a reasonable person to find, by a preponderance of the evidence, that the product was unreasonably unsafe in design, the balancing formula is then given to the jury in the form of an instruction specifying that the claimant has the burden of establishing that the product was unreasonably unsafe in design.[248] The Analysis points out that it is essential that the traditional principle of tort law, that the plaintiff sustain the burden of proof, be retained in defective design cases since the claimant, if he recovers, would be indicting the manufacturer's entire product line.[249]

The UPLA points to several examples of especially probative evidence that the jury may consider in making its evaluation:

> (a) Any warnings and instructions provided with the product; (b) The technological and practical feasibility of a product designed and manufactured so as to have prevented claimant's harm while substantially serving the likely user's expected needs; (c) The effect of any proposed alternative design on the usefulness of the product; (d) The comparative costs of producing, distributing, selling, using, and maintaining the product as designed and as alternatively designed; and (e) The new or additional harms that might have resulted if the product had been so alternatively designed.[250]

Several observations may be made concerning those elements that the jury may consider and those elements that the UPLA expressly excluded from the jury's consideration, either in its formulae or detailed list of the more important evidentiary materials. First, in determining the manufacturer's burden of designing a product that would have prevented the claimant's injuries and the adverse effect the alternative design would have on the usefulness of the product, the jury may consider evidence that it was technologically and practically feasible to design the product in a way that would substantially serve the expected user's needs and at the same time have prevented the claimant's harm. If such an alternative design was available at a slight increase in cost, and if it would have prevented the claimant's harm, the jury is likely to find that the product's design was unreasonably unsafe.[251] Second, in consid-

247. *Id.*, Analysis § 104(B), 44 Fed. Reg. at 62,723.
248. *Id.*
249. *Id.* at 62,724.
250. *Id.* at 62,721.
251. *Id.* at 62,723.

ering the effect that any alternative design would have on the usefulness of the product, the evidence should not be directed to the general usefulness of the product in society, but should focus on the usefulness of the product to specific users.[252] Third, a manufacturer may introduce evidence pointing out that new or additional harms would have arisen had the product been alternatively designed.[253]

The Analysis to Section 104(B) specifically calls attention to the absence of any of the elements of a consumer expectations test for reasons of "economics and practicality."[254] Citing Dean Wade's observation that in many design matters "the consumer would not know what to expect, because he would have no idea how safe the product could be made," the UPLA grounds its rejection of the consumer expectations test on the rationale that it "takes subjectivity to its most extreme end. Each trier of fact is likely to have a different understanding of abstract consumer expectations. Moreover, most consumers are not familiar with the details of the manufacturing process and cannot abstractly evaluate conscious design alternatives."[255]

The approach taken by the drafters of the UPLA would resolve some of the critical problems that have emerged in products liability litigation over the last decade. The verbal formulae adopted by various courts in defining a strict liability approach in design defect cases are specifically rejected in favor of a fault standard.[256] In support of a standard grounded on the notion of blameworthiness, the UPLA drafters point out that the risk distribution justification for the application of strict liability breaks down in practice.[257]

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252. *Id.*

253. *Id.*

254. *Id.* at 62,724.

255. *Id.*

256. It is instructive in this regard to note the justification offered by the drafters for retaining strict liability in the areas of defects in construction and breach of express warranty:

> The "Task Force Report" concluded that strict liahility for defective construction can be absorbed within the existing liability insurance system. There is a degree of predictability with regard to these defective products that is not found with respect to products that are defective in design or to failure to warn. Strict liability for defective construction has also been predicated on Section 402A of the "Restatement" and implied warranty claims under commercial law. These sources support the position that consumers have the right to expect that products are free from construction defects.
>
> Strict liability cases involving breach of an express warranty can also he justified. If a manufacturer makes a specific representation ahout its product, it is fair to hold the manufacturer to that promise. Moreover, the consumer has the right to expect that a product will live up to the manufacturer's representations.

Id. at 62,722.

257. The Drafters note that:

> While courts that have applied strict liability in design and duty-to-warn cases have often stated that they are not imposing "absolute" insurer liability, they have not heen

Moreover, strict liability represents an "overkill" in creating needed incentives for loss prevention.[258] The formulae adopted by the UPLA have the merit of being clear and understandable to a jury and, if uniformly adopted by the states, could have a stabilizing effect on products liability law.

VIII. CONCLUSION

During the decade and a half since *Greenman* and the adoption of section 402A of the *Restatement*, courts have struggled to rework the basic standards for imposing liability in design defect cases. As the many recent decisions discussed in this Article demonstrate, a consistent, uniform, and just approach to defining the term "defect" has not yet been achieved. Courts have tenaciously repeated the original rationales underlying a theory of strict products liability without inquiring into the continued viability of these notions. Manufacturers, for example, are thought to be in the best position to distribute the costs of product-related injuries by purchasing insurance or increasing prices of their products. They are also deemed to be in the best position to control the risk of injuries through safety-conscious design, testing, and inspection programs. Thus, a theory of strict liability, which assures compensation to those injured by defective products, is said to provide the needed economic incentive for manufacturers to design safer products.

The time has come to ask candidly whether some courts, in their eagerness to provide recovery for injured plaintiffs, have not overzealously emphasized and relied upon the risk-spreading rationale of strict products liability with a resultant abandonment of any serious consideration of the reasonableness of the manufacturer's conduct, which is the very essence of a system of tort recovery. If courts are going to apply strict liability as a purely compensatory device, then they should be forthright in identifying it as such instead of covertly providing recovery under the rubric of a risk-spreading rationale. Even more importantly, if as a social matter one deems it desirable to hold manufacturers absolutely liable for all product-related injuries, then a legislative approach to the

able to articulate why they draw a line short of that particular point. The reason for this is that the risk distribution rationale provides no stopping point short of absolute liability. Thus, a number of courts have plunged into a foggy area that is neither true strict liability nor negligence. The result has been the creation of a wide variety of legal "formulae," unpredictability for consumers, and instability in the insurance market. *Id.*

258. *Id.*

problem is required so that limits can be reasonably placed upon recovery.

Without a statutory limitation on recoverable damages, a risk-spreading rationale that approaches absolute liability is no longer tenable because of the considerable increase in the number of products liability cases as well as the substantial increase in the size of jury verdicts and settlements.[259] Both of these factors have created a serious insurance problem[260] for many manufacturers because of the "unaffordability" and, in a few cases, unavailability of coverage.[261] Insurance carriers, who have substantially raised product liability premiums,[262] claim that these increases are due, at least in part, to uncertainties created by the courts in the tort litigation system. Many underwriters "feel they have no way of knowing what the future holds in terms of new theories of liability, eroding

259. *See* Birnbaum, *Legislative Reform or Retreat? A Response to the Product Liability Crisis*, 14 FORUM 251 (1978).

260. U.S. DEP'T OF COMMERCE, INTERAGENCY TASK FORCE ON PRODUCT LIABILITY, FINAL REPORT OF THE INSURANCE STUDY, (1977) [hereinafter cited as FINAL REPORT—INSURANCE]; *Product Liability Insurance, A Report of the Subcommittee on Capital, Investment and Business Opportunities of the Committee of Small Businesses*, H.R. Rep. No.95-997, 95th Cong., 2d Sess. 8-11 (1978) [hereinafter cited as *Subcommittee Report*].

261. U.S. DEP'T OF COMMERCE, INTERAGENCY TASK FORCE ON PRODUCT LIABILITY, BRIEFING REPORT—EXECUTIVE SUMMARY II (1977). The findings of one Congressional panel are illustrative. Of 180 manufacturing companies that responded to a questionnaire about product liability insurance, 15% said they did not need such insurance and therefore did not carry any.

> Of the remaining 153 companies, 33 said they wanted to buy product liability insurance but either could not afford it or could not find a carrier who would sell it to them. Thus 21.6 percent of those in our sample who sought product liability insurance could not obtain it. Fully 60 companies said they had been forced to increase the price they charged on at least one product line because of rising insurance cost. Hence, consumer prices are directly affected by product liability in one out of every three companies in our study. A total of 31 companies, out of 60, told us they had been forced to abandon at least one product in their line because of rising costs or problems.
>
> We had 54 companies that provided us with data on their product liability insurance premiums in the last 6 years. The average increase from 1970 to date was an incredible 944.6 percent.

Product Liability Insurance, Hearings Before the Subcommittee on Capital, Investment and Business Opportunities of the Committee on Small Businesses, 95th Cong., 1st Sess. 14-15 (1977) [hereinafter cited as *Subcommittee Hearings*].

262. *See, e.g.*, the testimony of the National Machine Tool Builders' Association before the House Subcommittee on Capital, Investment and Business Opportunities: "The average machine tool builder has seen his product liability insurance costs rise from $10,000 in 1970 to $40,000 in 1975 to $71,000 in 1976 and then almost double again to $132,100 this year [1977]." *Subcommittee Hearings* at 287. The data collected from the metal cutting machinery builders was even more dramatic: The premiums jumped from an average of $1,000 in 1970 to $126,800 in 1977 (an increase of 6,673 percent). *Id.* at 291. While it is certainly true that not all industries have experienced such extravagant increases in product liability insurance premiums, it is nevertheless clear that in many instances premium increases have exceeded 200% and that increases of more than 1,000% over the last eight years are not uncommon. *Subcommittee Report* at 70.

validity of traditional defenses, or escalating concepts of appropriate compensation for loss or injury."[263]

One must also question whether strict liability in design cases is any more efficacious than a negligence standard in providing an incentive to manufacturers to design safer products. With fifteen years of costly litigation experience and continually soaring insurance rates behind them, manufacturers can forcefully argue that greater incentive might be supplied by a tort, or fault, approach. At least in negligence, when issues of reasonableness and due care are central to the inquiry, the conscientious manufacturer can take heart that the effort and expense he devotes to product safety will make a difference. He can rely on a court of law distinguishing between the safety-conscious and vigilant manufacturer on the one hand, and the lax and careless one on the other. The negligence approach would also add some much-needed stability and predictability to the tort litigation system, which would doubtless have a reciprocal calming effect on insurers. The primary goal underlying any standard of liability for product-related injuries resulting from defective design should be, not compensation, but the reduction of the incidence of injuries. As a matter of rational social policy, it is of foremost importance to build into the rule of law an approach aimed at deterring conduct that exposes consumers and users to unreasonable risks of harm. Presumably, if courts and juries were to take cognizance of a manufacturer's efforts at desiguing a safe product, underwriters would feel confident in formulating insurance rates based on considered judgments of the real risks involved vis-a-vis the specific safety-oriented conduct of the individual manufacturer.[264] In addition, the conscientious manufacturer and the consumer would no longer have to pick up the tab for the careless or negligent manufacturer. Broadly spreading the risk of product-related injuries, without more, meets only a secondary goal of compensating injured plaintiffs. Only by fusing the rule of law governing design cases to a notion of faulty conduct will the rationale of providing manufacturers with a true incentive to design safer products have any meaning.

One must note that strict liability does seem to work efficiently and fairly in cases of manufacturing defects, doubtless because the test for defectiveness is built-in and readily ascertainable by reference to the manufacturer's own production standards as well as those customarily observed in the industry. Serious analytic

263. FINAL REPORT—INSURANCE at 4-88.

264. *See Subcommittee Report* at 12-40 (a general discussion of the nature of product liahility rate-making practices).

difficulties arise, however, when strict liability is applied in conscious design defect cases, in which the very determination of the existence of a defect is the central issue to be resolved. The traditional consumer expectations test is, by and large, hopelessly inadequate as a vehicle for discerning a standard for defectiveness in design cases. When the defect is patent, the test often leaves the loss on the injured consumer, who may be assumed in law to have accepted the risk of injury. When the defect is latent and the product complicated in design, we cannot say with any certainty that consumers know what to expect because they usually do not know how safely the product could or should have been made. If this proposition is true, then presumably jurors, who are themselves ordinary consumers, do not know what the plaintiff or the hypothetical objective consumer expected in the way of safety. How, then, can jurors charged under a consumer expectations test make a determination of whether to impose liability? In all probability, they guess. As the drafters of the UPLA aptly point out, "[e]ach trier of fact is likely to have a different understanding of abstract consumer expectations."[265] The consumer expectations test is clearly a holdover from the warranty heritage of strict products liability, wherein the trier of fact was asked to focus on the buyer's defeated expectations. This, however, is not a tort way of looking at the problem of product defect. Indeed, within the tort system, the question should focus on the manufacturer's conduct (what he did or did not do), rather than on the consumer's expectations.

In *Barker*, however, the California Supreme Court made what seems to be a forceful argument for retaining the consumer expectations analysis, at least as a threshold test for determining product defect. While it is certainly true, as the *Barker* court noted, that consumer expectations provide a floor or minimum standard below which no product should fall, it is not clear that this is a practical or useful test of liability at all. If a product that causes injury is so clearly defective in design that a plaintiff could make out a prima facie case on the grounds of consumer expectations alone, it is extremely unlikely that the case would ever be litigated. It is unthinkable that in a case involving a clear violation of reasonable consumer expectations a manufacturer would go to the enormous expense of litigation and at the same time run the hazardous risk of imperiling an entire product line by ever allowing the issue to go to trial. This is the case that gets settled—quietly.

In a case in which it is not altogether clear whether or not the

265. UPLA, *supra* note 102, Analysis § 104 (B), 44 Fed. Reg. at 62,724.

risk of injury exceeds the expectations of the ordinary consumer, the plaintiff would be foolhardy to rest his case on a comment i approach. Rather, the plaintiff will almost certainly seek to make out his case for imposing liability on the manufacturer on the basis of a risk-utility balancing approach. Practically, it thus seems quite unnecessary to confuse juries with disjunctive instructions posing the vague standard of reasonable consumer expectations on the one hand against the more concrete elucidation of risk-utility factors on the other.

Many jurisdictions have, in fact, turned away from the consumer expectations approach and apply instead some form of a risk-utility balancing test for determining defectiveness in design cases. Nevertheless, in an attempt to define the test in terms that are uniquely suitable and exclusively applicable to products liability cases, courts have taken what is essentially a negligence calculus and turned it into something else by relying on two fundamentally suspect assumptions. First, following Deans Wade and Keeton, the courts impute scienter of the danger to the manufacturer on the ground that it is unfair to burden the injured plaintiff with the difficult task of proving that the manufacturer was negligent. Second, since the risk-utility analysis is, through the magical imputation of scienter, no longer deemed a negligence test, the balancing of factors must necessarily yield a conclusion that focuses on the nature or condition of the product rather than on the conduct of the manufacturer.[266]

The argument that plaintiffs would be tremendously disadvantaged by having to prove negligence on the part of the manufacturer was originally posited in connection with early manufacturing defect cases. Indeed, it is probably true that a plaintiff would find it enormously difficult and sometimes even impossible to prove the negligent conduct that led to the soda bottle with the hairline fracture that ultimately exploded and caused plaintiff's injuries. At some particular moment in time on an otherwise uneventful day, a worker on the assembly line might have been distracted and careless or some slight malfunction in the plant equipment may have damaged a few bottles that somehow managed to slip through the quality-control check points undetected. To be sure, manufacturing defects are an inevitable by-product of mass production, which may or may not even be attributable to negligence. Because of the random and unpredictable nature of the occurrence of a manufacturing flaw, however, a plaintiff cannot be expected to be able to

266. *See* note 125 *supra*.

pinpoint the negligence, if any, that was involved. Manufacturing defects are almost always, by definition, accidents, and so in these cases the goal of deterrence is not as prominent as the need for compensating the victims of these assemblyline errors.

The design defect case, on the other hand, presents a very different configuration of elements. A design defect is neither random, nor unpredictable, nor inevitable. It is the result of deliberate and documentable decisions on the part of the manufacturer. Here the plaintiff does not struggle to find some fleeting indicia of negligent conduct; instead, he seeks to impugu an entire product line by condemning a manufacturer's judgment, as manifested by his conscious choice of available options. Vastly expanded and liberalized discovery rules enable the plaintiff to prove that the manufacturer's deliberate design decision was an ill-considered one. Plaintiffs have ready access to technical data and expert witnesses, making the assumption that it is unduly difficult or impossible to prove the manufacturer's negligence in desigu cases fallacious. Furthermore, as almost every vigorously litigated design defect case shows, plaintiffs do in fact come forward with detailed technical evidence tending to prove that the manufacturer was either aware of the nature and gravity of the risk posed by the challenged product or that he could have designed the product more safely. Imputed scienter is thus essentially an unnecessary fiction that does not theoretically or even pragmatically serve the questionable foundation upon which it is based. The goal it does serve, however, is that it may eliminate defenses based upon state of the art and scientific or technological unknowability. This, of course, raises the spectre of absolute liability, which no court has as yet openly sanctioned.

The second questionable assumption courts have relied on in applying strict liability in design defect cases is that since the risk-utility balancing test will not require proof of negligence, the conclusion derived cannot be cast in terms of negligence. Thus, as the California Supreme Court has insisted, the trier of fact must focus on the product, not on the manufacturer's conduct. This is nothing more than semantic artifice. The ineluctable conclusion is that the competing factors to be weighed under a risk-utility balancing test invite the trier of fact to consider the alternatives and risks faced by the manufacturer and to determine whether in light of these he exercised reasonable care in making the design choices he did. Instructing a jury that weighing factors concerning conduct and judgment must yield a conclusion that does not describe conduct is confusing at best.

With the singular exception of the Pennsylvania Supreme

Court, it is doubtful that any court in this country would impose upon a manufacturer the duty of designing an absolutely safe product. In fairness, all that one can ask is that the manufacturer exercise due care in designing products that do not involve unreasonable danger to consumers and users. Dean Prosser described this as a negligence standard;[267] the risk-utility balancing test is but a detailed version of Judge Learned Hand's negligence calculus.[268] Calling a theory of liability based on a duty of due care and a standard of reasonable conduct anything other than negligence is pure sophistry. Of course, this would be harmless if the trier of fact had the jurisprudential acumen of the legal scholar—but courts are sending lay jurors off to deliberate with nearly incomprehensible instructions, leaving them to formulate random and unpredictable judgments.

Liability for conscious design defects is tortious liability, and the time has come for courts to stop creating obfuscatory tests that can only confuse jurors and deny litigants a consistently fair and just result. Imposing a negligence standard for design defect liability is in many cases only to define in a coherent fashion what litigants are in fact arguing and what jurors are in essence analyzing. Wben this is not the case, it should in all fairness be the case. The confused and inconsistent body of product liability case law that has emerged in the last fifteen years seriously undermines the integrity of the tort system. As a constructive response, it is time for courts to adopt, unequivocally and forthrightly, a pure negligence/risk-utility test in desigu defect cases.

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267. W. PROSSER, *supra* note 9, § 31, at 145.

268. United States v. Carroll Towing Co., 159 F.2d 169, 173 (2d Cir. 1947).