of fireworks on the day celebrating our national independence and unity outweighs the risks of injuries and damage.

In sum, we find that setting off public fireworks displays satisfies four of the six conditions under the Restatement test; that is, it is an activity that is not "of common usage" and that presents an ineliminably high risk of serious bodily injury or property damage. We therefore hold that conducting public fireworks displays is an abnormally dangerous activity justifying the imposition of strict liability.

This conclusion is consistent with the results reached in cases involving damages caused by detonating dynamite. This court has recognized that parties detonating dynamite are strictly liable for the damages caused by such blasting. . . . Because detonating dynamite is subject to strict liability, and because of the similarities between fireworks and dynamite, strict liability is also an appropriate standard for determining the standard of liability for pyrotechnicians for any damages caused by their fireworks displays.

Policy considerations also support imposing strict liability on pyrotechnicians for damages caused by their public fireworks displays, although such considerations are not alone sufficient to justify that conclusion. Most basic is the question as to who should bear the loss when an innocent person suffers injury through the nonculpable but abnormally dangerous activities of another. In the case of public fireworks displays, fairness weighs in favor of requiring the pyrotechnicians who present the displays to bear the loss rather than the unfortunate spectators who suffer the injuries. In addition, . . . [i]n the present case, all evidence was destroyed as to what caused the misfire of the shell that injured the Kleins. Therefore, the problem of proof this case presents for the plaintiffs also supports imposing strict liability on Pyrodyne. . . .

We hold that Pyrodyne Corporation is strictly liable for all damages suffered as a result of the July 1987 fireworks display. Detonating fireworks displays constitutes an abnormally dangerous activity warranting strict liability. Public policy also supports this conclusion. . . . Therefore, we affirm the decision of the trial court.

(Concurring opinion omitted.)

NOTES TO KLEIN v. PYRODYNE CORP.

1. ***Abnormally Dangerous Activities Test.*** Many states have adopted the Restatement (Second)'s six-factor test for determining whether there will be strict liability for engaging in a particular activity. Courts vary widely both in what factors they think are particularly important and in how much weight they give to any particular factor in a given case. The Restatement (Third) of Torts §20 (Proposed Final Draft No. 1, April 26, 2005) consolidates the six factors into a two-part test:

> 20. Abnormally Dangerous Activities
>
> (a) A defendant who carries on an abnormally dangerous activity is subject to strict liability for physical harm resulting from the activity.
>
> (b) An activity is abnormally dangerous if:
>
> (1) the activity creates a foreseeable and highly significant risk of physical harm even when reasonable care is exercised by all actors; and
>
> (2) the activity is not a matter of common usage.

The drafters' comments state that the value and location of the activity may be relevant in determining whether factors (b)(1) and (2) are present. Factors a, b,

and c from the Restatement (Second) test are meant to be considered as part of the proposed (b)(1). Would the holding in *Klein* be different under the Restatement (Third) test?

2. *Abnormally Dangerous Activities: Value to the Community.* The different weights given to various factors by different courts may be illustrated by considering the sixth factor, value to the community. Under the Restatement's formulation, a very dangerous activity might be subject to strict liability in one community and not in another, depending on the value of that activity in the particular community. In Koos v. Roth, 652 P.2d 1255 (Or. 1982), the court considered whether to apply strict liability to "field burning as an agricultural technique" when that burning caused damage to property belonging to a neighbor of the person burning a field. The court refused to consider the economic value of the activity, saying:

> There are at least two reasons not to judge civil liability for unintended harm by a court's views of the utility or value of the harmful activity. One reason lies in the nature of the judgment. Utility and value often are subjective and controversial. They will be judged differently by those who profit from an activity and those who are endangered by it, and between one locality and another. The use of explosives to remove old buildings for a new highway or shopping center may be described as slum clearance or as the destruction of historic landmarks and neighborhoods. On a smaller scale, it may celebrate a traditional holiday which some may value more highly than either buildings or roads. Highly toxic materials may be necessary to the production of agricultural pesticides, or of drugs, or of chemical or bacteriological weapons, or of industrial products of all sorts; does liability for injury from their storage or movement depend on the utility of these products? Judges, like others, may differ about such values; they can hardly be described as conclusions of law.
>
> To rely on the evidence of the market place may show rather different societal values from those probably contemplated by Dean Prosser and the Restatement. While some small airplanes enhance the production of food crops, others perhaps earn a larger return flying passengers or stunt exhibitions at the county fair. Entrepreneurs may bring more money into the local economy by racing automobiles or driving them to deliberate destruction than by operating a public transit system with a comparable incidence of actual injuries. If high risk itself has market value, does this count against strict liability for a resulting calamity? . . . Our cases have not required courts and counsel to enter upon such philosophical issues in deciding whether a defendant is strictly liable for harm from a hazardous activity.
>
> The second reason why the value of a hazardous activity does not preclude strict liability for its consequences is that the conclusion does not follow from the premise. In the prior cases, the court did not question the economic value of blasting, crop-dusting, or storing natural gas. In an action for damages, the question is not whether the activity threatens such harm that it should not be continued. The question is who shall pay for harm that has been done. The loss has occurred. It is a cost of the activity whoever bears it. To say that when the activity has great economic value the cost should be borne by others is no more or less logical than to say that when the costs of an activity are borne by others it gains in value. This, in effect, is postulated in the argument that the industry which relies on field burning is highly valuable but could not survive the cost difference of insurance against strict liability instead of negligence.
>
> Sometimes, moreover, the cost is borne by others engaged in the same or similar activity. That is true in this case, where plaintiffs and defendant farmed adjoining

> fields. The same can occur in cropdusting, in burning forest debris, or in the escape of stored water. If the accidentally impoverished neighbor is told that in the long run the losses will balance out, he may answer, like one economist, that in the long run we are all dead. Society has other ways to lighten the burdens of costly but unavoidable accidents on a valued industry than to let them fall haphazardly on the industry's neighbors.

3. ***Strict Liability for Common Activities.*** Plaintiffs have sought to apply strict liability to numerous fairly common activities where a negligence theory was unlikely to be successful. For example, courts have rejected strict liability in claims against: sellers of lead batteries to a recycling facility, in Thompson v. Zero Bullet Co., 692 So. 2d 805 (Ala. 1997); firearms manufacturers, in Hammond v. Colt Indus. Oper. Corp., 565 A.2d 558 (Del. Super. 1989); and beer sellers, in Maguire v. Pabst Brewing Co., 387 N.W.2d 565 (Iowa 1986).

4. ***Defenses to Strict Liability for Abnormally Dangerous Activities.*** The Restatement (Second) of Torts §515 treats unreasonable assumption of risk as a complete defense in a case of strict liability for harm caused by abnormally dangerous activities but does not allow a defense of contributory negligence. Under the proposed Restatement (Third) of Torts, §25, reflecting the shift of most jurisdictions to a comparative negligence system, unreasonable assumption of risk and contributory negligence both can reduce but not necessarily bar a plaintiff's recovery in these strict liability actions.

5. ***Problem: Abnormally Dangerous Activities.*** Taylor suffered an eye injury when he was shot in the eye after removing his safety goggles during a paintball game at Dodge City Paint Ball. Taylor and his friend Wisley had gone to Dodge City to play paintball. Paintball games involve players on opposing teams shooting each other with paint pellets. The game was played on an open field with a creek bed, trees, and brush. Paintball game players try to capture a flag without being shot.

After arriving at Dodge City, Taylor participated in an orientation meeting in which the rules of the game were explained. At the orientation meeting, the players, including Taylor, were informed that the rules required them to keep their safety goggles on at all times while on the field of play. In the orientation, it was explained that if a player's safety goggles were to become fogged, the player must call for a referee either to help him off the field or to shield the player's face while he cleaned his goggles.

Taylor played two games of paintball without incident. In the third game, Taylor's safety goggles became fogged, so Taylor called "timeout" three or four times, assuming he was supposed to wait for the referee. Taylor lay down while he called timeout. No one gave him permission to raise his goggles, but he raised them because, as he said, "I had been there long enough. I mean, I waited for a while. No one showed up." Taylor raised his goggles and wiped them out. As he was lowering them, he was shot in the eye. Taylor could have walked off the field in the direction he came from without cleaning his goggles, but he would probably have gotten shot if he did that and would then have been out of the game.

Taylor seeks damages from the operator of the facility. Should the operator of a paintball facility be strictly liable? See Taylor v. Hesser, 991 P.2d 35 (Okla. Ct. App. 1998).

Perspective: Strict Liability Where Negligence Theories Fail

The Restatement (Second) of Torts §520 factors are generally viewed as a test for whether strict liability should be substituted for liability based on fault. The reciprocal risk and best cost-avoider theories are typical justifications for choosing strict liability over a fault-based regime. One court has taken another approach, saying that strict liability should be applied only when the negligence system fails adequately to control risks. In Indiana Harbor Belt R. Co. v. American Cyanamid Co., 916 F.2d 1174 (7th Cir. 1990), Judge Posner considered whether the shipper of a hazardous chemical, acrylonitrile, through the metropolitan area of Chicago should be strictly liable for the consequences of a chemical spill. Focusing on whether the negligence system is likely to fail in this instance, Judge Posner organized his discussion of the six Restatement factors as follows:

> [The Restatement factors] are related to each other in that each is a different facet of a common quest for a proper legal regime to govern accidents that negligence liability cannot adequately control. The interrelations might be more perspicuous if the six factors were reordered. One might for example start with (c), inability to eliminate the risk of accident by the exercise of due care. The baseline common law regime of tort liability is negligence. When it is a workable regime, because the hazards of an activity can be avoided by being careful (which is to say, nonnegligent), there is no need to switch to strict liability. Sometimes, however, a particular type of accident cannot be prevented by taking care but can be avoided, or its consequences minimized, by shifting the activity in which the accident occurs to another locale, where the risk or harm of an accident will be less (e), or by reducing the scale of the activity in order to minimize the number of accidents caused by it (f). By making the actor strictly liable — by denying him in other words an excuse based on his inability to avoid accidents by being more careful — we give him an incentive, missing in a negligence regime, to experiment with methods of preventing accidents that involve not greater exertions of care, assumed to be futile, but instead relocating, changing, or reducing (perhaps to the vanishing point) the activity giving rise to the accident. The greater the risk of an accident (a) and the costs of an accident if one occurs (b), the more we want the actor to consider the possibility of making accident-reducing activity changes; the stronger, therefore, is the case for strict liability.
>
> Finally, if an activity is extremely common (d), like driving an automobile, it is unlikely either that its hazards are perceived as great or that there is no technology of care available to minimize them; so the case for strict liability is weakened.

Finding "no reason for believing that a negligence regime is not perfectly adequate to remedy and deter, at reasonable cost, the accidental spillage of acrylonitrile from rail cars," id. at 1179, Judge Posner held that the shipper was not strictly liable. Id. at 1181.

CHAPTER 14

PRODUCTS LIABILITY

I. Introduction

Product manufacturers are among the most frequent defendants in tort suits, because products are involved in lots of injuries, and product manufacturers are usually both identifiable and solvent. Tort law's treatment of product-related injuries has been marked by drastic changes in the range of plaintiffs to whom a manufacturer may be liable and the standards that a product must meet. At common law, only the direct customer of a manufacturer could recover from that manufacturer for product-related injuries. To recover, the customer was required to show that the manufacturer had been negligent or that the product's attributes were worse than a warranty had promised they would be.

The first pro-plaintiff development in products liability law allowed people who lacked contractual connections to the manufacturer to seek damages for injuries caused by a product. The second major pro-plaintiff development supplemented the negligence cause of action with strict liability theories. Courts usually supported these new rules imposing greater liability on manufacturers with economic arguments about bearing the costs of accidents and about how the United States has changed from a society with many small local producers of goods to a society with fewer but much larger companies producing vast quantities of items.

In the 1960s and 1970s, courts in almost all states developed strict liability theories for products liability cases. Since then, judicial and legislative attention has focused on whether strict liability is really different from negligence-based liability and on the more general question of when manufacturers rather than victims of injury should pay for losses caused by products.

II. Allowing "Strangers" to Recover for Negligence: Abrogation of the Privity Requirement

Prior to the famous decision in MacPherson v. Buick Motor Co., if a manufacturer was negligent in producing a product and the product injured someone, the manufacturer

would be responsible only if the victim had bought the item from the manufacturer. If the victim was not the purchaser or had purchased the item from someone else in the chain of distribution, such as a retailer, the manufacturer would be free from responsibility. *MacPherson* changed that fundamental aspect of products liability law.

MacPHERSON v. BUICK MOTOR COMPANY

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

CARDOZO, J.

The defendant is a manufacturer of automobiles. It sold an automobile to a retail dealer. The retail dealer resold to the plaintiff. While the plaintiff was in the car, it suddenly collapsed. He was thrown out and injured. One of the wheels was made of defective wood, and its spokes crumbled into fragments. The wheel was not made by the defendant; it was bought from another manufacturer. There is evidence, however, that its defects could have been discovered by reasonable inspection, and that inspection was omitted. There is no claim that the defendant knew of the defect and willfully concealed it. . . . The charge is one, not of fraud, but of negligence. The question to be determined is whether the defendant owed a duty of care and vigilance to any one but the immediate purchaser.

The foundations of this branch of the law, at least in this state, were laid in Thomas v. Winchester (6 N.Y. 397). A poison was falsely labeled. The sale was made to a druggist, who in turn sold to a customer. The customer recovered damages from the seller who affixed the label. "The defendant's negligence," it was said, "put human life in imminent danger." A poison falsely labeled is likely to injure any one who gets it. Because the danger is to be foreseen, there is a duty to avoid the injury. Cases were cited by way of illustration in which manufacturers were not subject to any duty irrespective of contract. The distinction was said to be that their conduct, though negligent, was not likely to result in injury to anyone except the purchaser. We are not required to say whether the chance of injury was always as remote as the distinction assumes. Some of the illustrations might be rejected to-day. The principle of the distinction is for present purposes the important thing.

Thomas v. Winchester became quickly a landmark of the law. In the application of its principle there may at times have been uncertainty or even error. There has never in this state been doubt or disavowal of the principle itself. The chief cases are well known, yet to recall some of them will be helpful. Loop v. Litchfield (42 N.Y. 351) is the earliest. It was the case of a defect in a small balance wheel used on a circular saw. The manufacturer pointed out the defect to the buyer, who wished a cheap article and was ready to assume the risk. The risk can hardly have been an imminent one, for the wheel lasted five years before it broke. In the meanwhile the buyer had made a lease of the machinery. It was held that the manufacturer was not answerable to the lessee. Loop v. Litchfield was followed in Losee v. Clute (51 N.Y. 494), the case of the explosion of a steam boiler. That decision has been criticised . . . but it must be confined to its special facts. It was put upon the ground that the risk of injury was too remote. The buyer in that case had not only accepted the boiler, but had tested it. The manufacturer knew that his own test was not the final one. The finality of the test has a bearing on the measure of diligence owing to persons other than the purchaser. . . .

These early cases suggest a narrow construction of the rule. Later cases, however, evince a more liberal spirit. First in importance is Devlin v. Smith (89 N.Y. 470). The defendant, a contractor, built a scaffold for a painter. The painter's servants were injured. The contractor was held liable. He knew that the scaffold, if improperly constructed, was a most dangerous trap. He knew that it was to be used by the workmen. He was building it for that very purpose. Building it for their use, he owed them a duty, irrespective of his contract with their master, to build it with care.

From Devlin v. Smith we pass over intermediate cases and turn to the latest case in this court in which Thomas v. Winchester was followed. That case is Statler v. Ray Mfg. Co. (195 N.Y. 478, 480). The defendant manufactured a large coffee urn. It was installed in a restaurant. When heated, the urn exploded and injured the plaintiff. We held that the manufacturer was liable. We said that the urn "was of such a character inherently that, when applied to the purposes for which it was designed, it was liable to become a source of great danger to many people if not carefully and properly constructed." It may be that Devlin v. Smith and Statler v. Ray Mfg. Co. have extended the rule of Thomas v. Winchester. If so, this court is committed to the extension. The defendant argues that things imminently dangerous to life are poisons, explosives, deadly weapons — things whose normal function it is to injure or destroy. But whatever the rule in Thomas v. Winchester may once have been, it has no longer that restricted meaning. A large coffee urn may have within itself, if negligently made, the potency of danger, yet no one thinks of it as an implement whose normal function is destruction. . . .

We hold, then, that the principle of Thomas v. Winchester is not limited to poisons, explosives, and things of like nature, to things which in their normal operation are implements of destruction. 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. That is as far as we are required to go for the decision of this case. There must be knowledge of a danger, not merely possible, but probable. It is possible to use almost anything in a way that will make it dangerous if defective. That is not enough to charge the manufacturer with a duty independent of his contract. Whether a given thing is dangerous may be sometimes a question for the court and sometimes a question for the jury. There must also be knowledge that in the usual course of events the danger will be shared by others than the buyer. Such knowledge may often be inferred from the nature of the transaction. But it is possible that even knowledge of the danger and of the use will not always be enough. The proximity or remoteness of the relation is a factor to be considered. We are dealing now with the liability of the manufacturer of the finished product, who puts it on the market to be used without inspection by his customers. If he is negligent, where danger is to be foreseen, a liability will follow.

We are not required at this time to say that it is legitimate to go back of the manufacturer of the finished product and hold the manufacturers of the component parts. To make their negligence a cause of imminent danger, an independent cause must often intervene; the manufacturer of the finished product must also fail in his duty of inspection. It may be that in those circumstances the negligence of the earlier

members of the series is too remote to constitute, as to the ultimate user, an actionable wrong. . . . We leave that question open to you. We shall have to deal with it when it arises. The difficulty which it suggests is not present in this case. There is here no break in the chain of cause and effect. In such circumstances, the presence of a known danger, attendant upon a known use, makes vigilance a duty. 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 not be. We have put its source in the law.

From this survey of the decisions, there thus emerges a definition of the duty of a manufacturer which enables us to measure this defendant's liability. Beyond all question, the nature of an automobile gives warning of probable danger if its construction is defective. This automobile was designed to go fifty miles an hour. Unless its wheels were sound and strong, injury was almost certain. It was as much a thing of danger as a defective engine for a railroad. The defendant knew the danger. It knew also that the car would be used by persons other than the buyer. This was apparent from its size; there were seats for three persons. It was apparent also from the fact that the buyer was a dealer in cars, who bought to resell. The maker of this car supplied it for the use of purchasers from the dealer just as plainly as the contractor in Devlin v. Smith supplied the scaffold for use by the servants of the owner. 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. Precedents drawn from the days of travel by stage coach do not fit the conditions of travel today. The principle that the danger must be imminent does not change, but the things subject to the principle do change. They are whatever the needs of life in a developing civilization require them to be. . . .

There is nothing anomalous in a rule which imposes upon A, who has contracted with B, a duty to C and D and others according as he knows or does not know that the subject matter of the contract is intended for their use. We may find an analogy in the law which measures the liability of landlords. If A leases to B a tumble-down house he is not liable, in the absence of fraud, to B's guests who enter it and are injured. This is because B is then under the duty to repair it, the lessor has the right to suppose that he will fulfill that duty, and if he omits to do so, his guests must look to him. . . . But if A leases a building to be used by the lessee at once as a place of public entertainment, the rule is different. There injury to persons other than the lessee is to be foreseen, and foresight of the consequences involves the creation of a duty. . . .

In this view of the defendant's liability there is nothing inconsistent with the theory of liability on which the case was tried. It is true that the court told the jury that "an automobile is not an inherently dangerous vehicle." The meaning, however, is made plain by the context. The meaning is that danger is not to be expected when the vehicle is well constructed. The court left it to the jury to say whether the defendant ought to have foreseen that the car, if negligently constructed, would become "imminently dangerous." Subtle distinctions are drawn by the defendant between things inherently dangerous and things imminently dangerous, but the case does not turn upon these verbal niceties. If danger was to be expected as reasonably certain, there was a duty of vigilance, and this whether you call the danger inherent or imminent. In varying forms that thought was put before the jury. We do not say that the court would not have been

justified in ruling as a matter of law that the car was a dangerous thing. If there was any error, it was none of which the defendant can complain.

We think the defendant was not absolved from a duty of inspection because it bought the wheels from a reputable manufacturer. It was not merely a dealer in automobiles. It was a manufacturer of automobiles. It was responsible for the finished product. It was not at liberty to put the finished product on the market without subjecting the component parts to ordinary and simple tests. . . . Under the charge of the trial judge nothing more was required of it. The obligation to inspect must vary with the nature of the thing to be inspected. The more probable the danger, the greater the need of caution. . . . Both by its relation to the work and by the nature of its business, [the manufacturer] is charged with a stricter duty.

Other rulings complained of have been considered, but no error has been found on them.

The judgment should be affirmed.

NOTES TO MacPHERSON v. BUICK MOTOR CO.

1. ***Doctrinal Change.*** Before *MacPherson,* a person not in *contractual privity* with the manufacturer could not sue for injuries caused by the manufacturer's negligence. Considering the various cases cited by Justice Cardozo and his holding, under what circumstances will the manufacturer be liable to people other than the buyer?

2. ***Problem: Required Contact with Manufacturer.*** Roxanne Ramsey-Buckingham's estate sued R.J. Reynolds Tobacco Co. claiming that she died of lung cancer caused by cigarette smoke. Ms. Ramsey-Buckingham was not a smoker, but her estate claimed that she was injured by breathing "environmental tobacco smoke," smoke coming directly from the cigarette into the air or exhaled by people nearby who smoked. Does *MacPherson* suggest that a bystander such as Ms. Ramsey-Buckingham rather than a user of the product can recover from the manufacturer? Would the opinion support treating Ms. Ramsey-Buckingham as a "user" of the cigarettes? See Buckingham v. R.J. Reynolds Tobacco Co., 713 A.2d 381(N.H. 1998).

III. Allowing Recovery Without Proof of Negligence: Development of Strict Liability

A. Early Development

Two California decisions introduced strict liability concepts to modern products liability jurisprudence. They represent a strong pro-plaintiff emphasis. Escola v. Coca Cola Bottling Co. of Fresno, decided in 1944, is famous because of the concurring opinion by Justice Traynor. It influenced a wave of products-liability developments in the 1960s and 1970s, including the opinion in Greenman v. Yuba Power Products, Inc., adopting and elaborating upon the ideas from the *Escola* concurrence almost 20 years after *Escola* had been decided.

A product injury might be the result of deficient manufacturing, deficient design, or some combination of deficient design and manufacturing. *Escola* and *Greenman* do

not distinguish between these types of defect, perhaps because of their factual contexts or perhaps because litigants and courts had not yet become aware of that possible complexity.

ESCOLA v. COCA COLA BOTTLING CO. OF FRESNO

24 Cal. 2d 453, 150 P.2d 436 (1944)

GIBSON, C.J.

Plaintiff, a waitress in a restaurant, was injured when a bottle of Coca Cola broke in her hand. She alleged that defendant company, which had bottled and delivered the alleged defective bottle to her employer, was negligent in selling "bottles containing said beverage which on account of excessive pressure of gas or by reason of some defect in the bottle was dangerous . . . and likely to explode." This appeal is from a judgment upon a jury verdict in favor of plaintiff.

Defendant's driver delivered several cases of Coca Cola to the restaurant, placing them on the floor, one on top of the other, under and behind the counter, where they remained at least thirty-six hours. Immediately before the accident, plaintiff picked up the top case and set it upon a near-by ice cream cabinet in front of and about three feet from the refrigerator. She then proceeded to take the bottles from the case with her right hand, one at a time, and put them into the refrigerator. Plaintiff testified that after she had placed three bottles in the refrigerator and had moved the fourth bottle about 18 inches from the case "it exploded in my hand." The bottle broke into two jagged pieces and inflicted a deep five-inch cut, severing blood vessels, nerves and muscles of the thumb and palm of the hand. . . .

Although it is not clear in this case whether the explosion was caused by an excessive charge or a defect in the glass there is a sufficient showing that neither cause would ordinarily have been present if due care had been used. Further, defendant had exclusive control over both the charging and inspection of the bottles. Accordingly, all the requirements necessary to entitle plaintiff to rely on the doctrine of *res ipsa loquitur* to supply an inference of negligence are present. . . .

The judgment is affirmed.

TRAYNOR, J.

I concur in the judgment, but I believe the manufacturer's negligence should no longer be singled out as the basis of a plaintiff's right to recover in cases like the present one. In my opinion it should now be recognized that a manufacturer incurs an absolute liability when an article that he has placed on the market, knowing that it is to be used without inspection, proves to have a defect that causes injury to human beings. MacPherson v. Buick Motor Co. established the principle, recognized by this court, that irrespective of privity of contract, the manufacturer is responsible for an injury caused by such an article to any person who comes in lawful contact with it. In these cases the source of the manufacturer's liability was his negligence in the manufacturing process or in the inspection of component parts supplied by others. Even if there is no negligence, however, public policy demands that responsibility be fixed wherever it will most effectively reduce the hazards to life and health inherent in defective products that reach the market. It is evident that the manufacturer can anticipate some hazards and guard against the recurrence of others, as the public

cannot. Those who suffer injury from defective products are unprepared to meet its consequences. The cost of an injury and the loss of time or health may be an overwhelming misfortune to the person injured, and a needless one, for the risk of injury can be insured by the manufacturer and distributed among the public as a cost of doing business. It is to the public interest to discourage the marketing of products having defects that are a menace to the public. If such products nevertheless find their way into the market it is to the public interest to place the responsibility for whatever injury they may cause upon the manufacturer, who, even if he is not negligent in the manufacture of the product, is responsible for its reaching the market. However intermittently such injuries may occur and however haphazardly they may strike, the risk of their occurrence is a constant risk and a general one. Against such a risk there should be general and constant protection and the manufacturer is best situated to afford such protection.

The injury from a defective product does not become a matter of indifference because the defect arises from causes other than the negligence of the manufacturer, such as negligence of a submanufacturer of a component part whose defects could not be revealed by inspection . . . or unknown causes that even by the device of *res ipsa loquitur* cannot be classified as negligence of the manufacturer. The inference of negligence may be dispelled by an affirmative showing of proper care. If the evidence against the fact inferred is "clear, positive, uncontradicted, and of such a nature that it can not rationally be disbelieved, the court must instruct the jury that the nonexistence of the fact has been established as a matter of law." An injured person, however, is not ordinarily in a position to refute such evidence or identify the cause of the defect, for he can hardly be familiar with the manufacturing process as the manufacturer himself is. In leaving it to the jury to decide whether the inference has been dispelled, regardless of the evidence against it, the negligence rule approaches the rule of strict liability. It is needlessly circuitous to make negligence the basis of recovery and impose what is in reality liability without negligence. If public policy demands that a manufacturer of goods be responsible for their quality regardless of negligence there is no reason not to fix that responsibility openly.

In the case of foodstuffs, the public policy of the state is formulated in a criminal statute. . . . Statutes of this kind result in a strict liability of the manufacturer in tort to the member of the public injured.

The statute may well be applicable to a bottle whose defects cause it to explode. In any event it is significant that the statute imposes criminal liability without fault, reflecting the public policy of protecting the public from dangerous products placed on the market, irrespective of negligence in their manufacture. While the Legislature imposes criminal liability only with regard to food products and their containers, there are many other sources of danger. It is to the public interest to prevent injury to the public from any defective goods by the imposition of civil liability generally.

The retailer, even though not equipped to test a product, is under an absolute liability to his customer, for the implied warranties of fitness for proposed use and merchantable quality include a warranty of safety of the product. This warranty is not necessarily a contractual one . . . for public policy requires that the buyer be insured at the seller's expense against injury. . . . The courts recognize, however, that the retailer cannot bear the burden of this warranty, and allow him to recoup any losses by means of the warranty of safety attending the wholesaler's or manufacturer's sale to him. . . . Such a procedure, however, is needlessly circuitous and engenders wasteful

litigation. Much would be gained if the injured person could base his action directly on the manufacturer's warranty.

The liability of the manufacturer to an immediate buyer injured by a defective product follows without proof of negligence from the implied warranty of safety attending the sale. Ordinarily, however, the immediate buyer is a dealer who does not intend to use the product himself, and if the warranty of safety is to serve the purpose of protecting health and safety it must give rights to others than the dealer. In the words of Judge Cardozo in the *MacPherson* case . . . "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." While the defendant's negligence in the *MacPherson* case made it unnecessary for the court to base liability on warranty, Judge Cardozo's reasoning recognized the injured person as the real party in interest and effectively disposed of the theory that the liability of the manufacturer incurred by his warranty should apply only to the immediate purchaser. It thus paves the way for a standard of liability that would make the manufacturer guarantee the safety of his product even when there is no negligence.

This court and many others have extended protection according to such a standard to consumers of food products, taking the view that the right of a consumer injured by unwholesome food does not depend "upon the intricacies of the law of sales" and that the warranty of the manufacturer to the consumer in absence of privity of contract rests on public policy. . . . Dangers to life and health inhere in other consumers' goods that are defective and there is no reason to differentiate them from the dangers of defective food products. . . .

In the food products cases the courts have resorted to various fictions to rationalize the extension of the manufacturer's warranty to the consumer: that a warranty runs with the chattel; that the cause of action of the dealer is assigned to the consumer; that the consumer is a third party beneficiary of the manufacturer's contract with the dealer. They have also held the manufacturer liable on a mere fiction of negligence: "Practically he must know it [the product] is fit, or take the consequences, if it proves destructive." Such fictions are not necessary to fix the manufacturer's liability under a warranty if the warranty is severed from the contract of sale between the dealer and the consumer and based on the law of torts. . . . Warranties are not necessarily rights arising under a contract. An action on a warranty "was, in its origin, a pure action of tort," and only late in the historical development of warranties was an action in assumpsit allowed. . . .

As handicrafts have been replaced by mass production with its great markets and transportation facilities, the close relationship between the producer and consumer of a product has been altered. Manufacturing processes, frequently valuable secrets, are ordinarily either inaccessible to or beyond the ken of the general public. The consumer no longer has means or skill enough to investigate for himself the soundness of a product, even when it is not contained in a sealed package, and his erstwhile vigilance has been lulled by the steady efforts of manufacturers to build up confidence by advertising and marketing devices such as trade-marks. . . . Consumers no longer approach products warily but accept them on faith, relying on the reputation of the manufacturer or the trade mark. . . . Manufacturers have sought to justify that faith by increasingly high standards of inspection and a readiness to make good on defective

products by way of replacements and refunds. . . . The manufacturer's obligation to the consumer must keep pace with the changing relationship between them; it cannot be escaped because the marketing of a product has become so complicated as to require one or more intermediaries. Certainly there is greater reason to impose liability on the manufacturer than on the retailer who is but a conduit of a product that he is not himself able to test. . . .

The manufacturer's liability should, of course, be defined in terms of the safety of the product in normal and proper use, and should not extend to injuries that cannot be traced to the product as it reached the market.

NOTES TO ESCOLA v. COCA COLA BOTTLING CO. OF FRESNO

1. ***Analytical Structure.*** Justice Traynor's argument has four primary themes: (a) defective products cases can often be handled as applications of the doctrine of *res ipsa loquitur*, but that doctrine is essentially equivalent to strict liability in these cases; (b) manufacturers are always in a better position than consumers to prevent the harms, control the risks, and distribute the losses over society, so they should be held liable without regard to fault; (c) consumers can recover damages for defective products from retailers, and retailers can get compensation from manufacturers under the rules of indemnification; and (d) warranties provided under contract law provide for strict liability, and tort law and contract law should treat injuries from products the same way. What legal, factual, and policy ideas support each element of the opinion?

2. ***Strict Liability for Breach of Contractual Warranty.*** When there is a contract between a plaintiff and defendant for purchase and sale of the product that injures the plaintiff, the law of sales, part of contract law, permits the plaintiff to recover damages. That cause of action does not require any proof of negligence. Tort law's recognition of strict liability for product-related injuries is parallel to the strict liability in contract law.

The Uniform Commercial Code (UCC), Article 2, adopted by most states, provides that a seller may make a warranty that expressly provides guarantees about the quality of the goods to the buyer (express warranty). The UCC also states that there are implied warranties that accompany purchases of goods from merchants. Section 2-314 states that, unless the contract provides otherwise, sellers guarantee, among other things, that the goods will be "fit for the ordinary purposes for which such goods are used." Section 2-315 states that, unless the contract provides otherwise, goods will be fit for the buyer's particular purpose, "where the seller at the time of contracting has reason to know any particular purpose for which the goods are required and that the buyer is relying on the seller's skill or judgment to select or furnish suitable goods." Express and implied warranties are the sources of strict liability for defective products in contract law.

The UCC provides the following three options for state provisions on the topic of who besides a buyer may recover under contract-based strict liability.

> §2-318. Third Party Beneficiaries of Warranties Express and Implied
>
> Alternative A: A seller's warranty whether express or implied extends to any natural person who is in the family or household of his buyer or who is a guest in his home if it

is reasonable to expect that such person may use, consume or be affected by the goods and who is injured in person by breach of the warranty. A seller may not exclude or limit the operation of this section.

Alternative B: A seller's warranty whether express or implied extends to any natural person who may reasonably be expected to use, consume or be affected by the goods and who is injured in person by breach of the warranty. A seller may not exclude or limit the operation of this section.

Alternative C: A seller's warranty whether express or implied extends to any person who may reasonably be expected to use, consume or be affected by the goods and who is injured by breach of the warranty. A seller may not exclude or limit the operation of this section with respect to injury to the person of an individual to whom the warranty extends.

Statute: DEFINITION OF CONSUMER

Ind. Stat. §34-6-2-29 (2002)

Consumer for the purposes of IC 34-20, means:

(1) a purchaser;

(2) any individual who uses or consumes the product;

(3) any person who, while acting for or on behalf of the injured party, was in possession and control of the product in question; or

(4) any bystander injured by the product who would reasonably be expected to be in the vicinity of the product during its reasonably expected use.

NOTE TO STATUTE

Observe that the range of people to whom the warranty extends increases in the UCC provisions, with the smallest range in Alternative A to the largest range in Alternative C. How does the Indiana statute relate to the three UCC choices?

GREENMAN v. YUBA POWER PRODUCTS, INC.

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

TRAYNOR, J.

Plaintiff brought this action for damages against the retailer and the manufacturer of a Shopsmith, a combination power tool that could be used as a saw, drill, and wood lathe. He saw a Shopsmith demonstrated by the retailer and studied a brochure prepared by the manufacturer. He decided he wanted a Shopsmith for his home workshop, and his wife bought and gave him one for Christmas in 1955. In 1957 he bought the necessary attachments to use the Shopsmith as a lathe for turning a large piece of wood he wished to make into a chalice. After he had worked on the piece of wood several times without difficulty, it suddenly flew out of the machine and struck him on the forehead, inflicting serious injuries. About ten and a half months later, he gave the retailer and the manufacturer written notice of claimed breaches of warranties and filed a complaint against them alleging such breaches and negligence.

After a trial before a jury, the court ruled that there was no evidence that the retailer was negligent or had breached any express warranty and that the manufacturer

was not liable for the breach of any implied warranty. Accordingly, it submitted to the jury only the cause of action alleging breach of implied warranties against the retailer and the causes of action alleging negligence and breach of express warranties against the manufacturer. The jury returned a verdict for the retailer against plaintiff and for plaintiff against the manufacturer in the amount of $65,000. The trial court denied the manufacturer's motion for a new trial and entered judgment on the verdict. The manufacturer and plaintiff appeal. Plaintiff seeks a reversal of the part of the judgment in favor of the retailer, however, only in the event that the part of the judgment against the manufacturer is reversed.

Plaintiff introduced substantial evidence that his injuries were caused by defective design and construction of the Shopsmith. His expert witnesses testified that inadequate set screws were used to hold parts of the machine together so that normal vibration caused the tailstock of the lathe to move away from the piece of wood being turned permitting it to fly out of the lathe. They also testified that there were other more positive ways of fastening the parts of the machine together, the use of which would have prevented the accident. The jury could therefore reasonably have concluded that the manufacturer negligently constructed the Shopsmith. The jury could also reasonably have concluded that statements in the manufacturer's brochure were untrue, that they constituted express warranties,[1] and that plaintiff's injuries were caused by their breach.

The manufacturer contends, however, that plaintiff did not give it notice of breach of warranty within a reasonable time and that therefore his cause of action for breach of warranty is barred by section 1769 of the Civil Code. Since it cannot be determined whether the verdict against it was based on the negligence or warranty cause of action or both, the manufacturer concludes that the error in presenting the warranty cause of action to the jury was prejudicial.

Section 1769 of the Civil Code provides: "In the absence of express or implied agreement of the parties, acceptance of the goods by the buyer shall not discharge the seller from liability in damages or other legal remedy for breach of any promise or warranty in the contract to sell or the sale. But, if, after acceptance of the goods, the buyer fails to give notice to the seller of the breach of any promise or warranty within a reasonable time after the buyer knows, or ought to know of such breach, the seller shall not be liable therefor."

Like other provisions of the uniform sales act (Civ. Code, §§1721-1800), section 1769 deals with the rights of the parties to a contract of sale or a sale. It does not provide that notice must be given of the breach of a warranty that arises independently of a contract of sale between the parties. Such warranties are not imposed by the sales act, but are the product of common-law decisions that have recognized them in a variety of situations. . . . It is true that in many of these situations the court has invoked the sales act definitions of warranties . . . in defining the defendant's liability, but it has done so,

[1] In this respect the trial court limited the jury to a consideration of two statements in the manufacturer's brochure. (1) "When Shopsmith is in Horizontal Position—Rugged construction of frame provides rigid support from end to end. Heavy centerless-ground steel tubing insures perfect alignment of components." (2) "Shopsmith maintains its accuracy because every component has positive locks that hold adjustments through rough or precision work."

not because the statutes so required, but because they provided appropriate standards for the court to adopt under the circumstances presented. . . .

The notice requirement of section 1769, however, is not an appropriate one for the court to adopt in actions by injured consumers against manufacturers with whom they have not dealt. . . . "As between the immediate parties to the sale (the notice requirement) is a sound commercial rule, designed to protect the seller against unduly delayed claims for damages. As applied to personal injuries, and notice to a remote seller, it becomes a booby-trap for the unwary. The injured consumer is seldom 'steeped in the business practice which justifies the rule,' (James, *Product Liability*, 34 Texas L. Rev. 44, 192, 197) and at least until he has had legal advice it will not occur to him to give notice to one with whom he has had no dealings." (Prosser, *Strict Liability to the Consumer*, 69 Yale L.J. 1099, 1130, footnotes omitted.) . . . We conclude, therefore, that even if plaintiff did not give timely notice of breach of warranty to the manufacturer, his cause of action based on the representations contained in the brochure was not barred.

Moreover, to impose strict liability on the manufacturer under the circumstances of this case, it was not necessary for plaintiff to establish an express warranty as defined in section 1732 of the Civil Code. 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. Recognized first in the case of unwholesome food products, such liability has now been extended to a variety of other products that create as great or greater hazards if defective.

Although in these cases strict liability has usually been based on the theory of an express or implied warranty running from the manufacturer to the plaintiff, the abandonment of the requirement of a contract between them, the recognition that the liability is not assumed by agreement but imposed by law . . . and the refusal to permit the manufacturer to define the scope of its own responsibility for defective products . . . make clear that the liability is not one governed by the law of contract warranties but by the law of strict liability in tort. Accordingly, rules defining and governing warranties that were developed to meet the needs of commercial transactions cannot properly be invoked to govern the manufacturer's liability to those injured by their defective products unless those rules also serve the purposes for which such liability is imposed.

We need not recanvass the reasons for imposing strict liability on the manufacturer. They have been fully articulated in the cases cited above. (See also . . . Escola v. Coca Cola Bottling Co., 24 Cal. 2d 453, 461, 150 P.2d 436, concurring opinion.) The 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. Sales warranties serve this purpose fitfully at best. . . . In the present case, for example, plaintiff was able to plead and prove an express warranty only because he read and relied on the representations of the Shopsmith's ruggedness contained in the manufacturer's brochure. Implicit in the machine's presence on the market, however, was a representation that it would safely do the jobs for which it was built. Under these circumstances, it should not be controlling whether plaintiff selected the machine because of the statements in

the brochure, or because of the machine's own appearance of excellence that belied the defect lurking beneath the surface, or because he merely assumed that it would safely do the jobs it was built to do. It should not be controlling whether the details of the sales from manufacturer to retailer and from retailer to plaintiff's wife were such that one or more of the implied warranties of the sales act arose. (Civ. Code, §1735.) "The remedies of injured consumers ought not to be made to depend upon the intricacies of the law of sales." (Ketterer v. Armour & Co., D.C., 200 F. 322, 323; Klein v. Duchess Sandwich Co., 14 Cal. 2d 272, 282, 93 P.2d 799.) To establish the manufacturer's liability it was sufficient that plaintiff proved that he was injured while using the Shopsmith in a way it was intended to be used as a result of a defect in design and manufacture of which plaintiff was not aware that made the Shopsmith unsafe for its intended use.

The manufacturer contends that the trial court erred in refusing to give three instructions requested by it. It appears from the record, however, that the substance of two of the requested instructions was adequately covered by the instructions given and that the third instruction was not supported by the evidence.

The judgment is affirmed.

NOTES TO GREENMAN v. YUBA POWER PRODUCTS, INC.

1. ***Design and Manufacturing Defects, Compared.*** The plaintiff's experts, as described in the court's opinion, testified that screws used to hold parts of the machine together were inadequate. If the design of the Shopsmith required use of screws of that type, the plaintiff's claim would be called, in current terminology, a *design defect* claim. On the other hand, if the design called for stronger screws but the particular Shopsmith that injured the plaintiff happened to be manufactured with weaker screws, the plaintiff's claim would be what is now called a *manufacturing defect* claim. Does Justice Traynor's opinion distinguish between these two types of claims?

2. ***Negligence and Warranty, Compared.*** A basic difference between negligence claims and warranty claims (and between negligence claims and strict liability claims) is that a negligence claim requires proof that the defendant acted unreasonably, while a warranty claim requires proof only that the defendant's product was not as good as warranties associated with the product required it to be. In the negligence framework, the jury must analyze how the defendant happened to produce an inadequate product, while in the warranty framework, the jury must analyze what the express and implied warrantees guaranteed in terms of product quality and performance. In the context of *Greenman*, why would the plaintiff have made claims based on both negligence and warranty?

3. ***Elements of the Claim.*** Near the end of the *Greenman* opinion there is a simple sentence that explains that the plaintiff established a claim for strict liability by showing that "he was injured while using the Shopsmith in a way it was intended to be used as a result of a defect in design and manufacture of which plaintiff was not aware that made the Shopsmith unsafe for its intended use." What specific separate elements of required proof does this statement include?

Perspective: Total Occurrence of Injuries

Traditional strict liability may be imposed on parties who are in the best position to consider alternative ways to minimize risks and to implement those alternatives. Implicit in many of Justice Traynor's justifications for strict liability is an assumption that the adoption of strict liability will decrease the overall number of injuries related to products. One way this question can be analyzed is by comparing: (1) the precautions a manufacturer will take under a negligence system, and (2) the precautions a manufacturer will take under a strict liability system. Under a negligence system, an enterprise is likely to be characterized as negligent if it fails to spend money to prevent injuries that are likely to be more costly than an expenditure that would have prevented them. Under a strict liability system, an enterprise may have to pay for injuries regardless of whether preventing them would have been cheaper or more expensive than letting them occur. Will strict liability encourage an enterprise to avoid an injury where the anticipated payments to injured plaintiffs are less than the costs of avoiding the accident?

Another way to analyze this question is to consider whether the overall costs of being in business will be greater for an enterprise exposed to negligence liability or to strict liability. Even if a business takes the same precautions under either regime, there may be more suits or plaintiff victories in a strict liability system. If liability is really "strict," total payments to plaintiffs will be higher even if precautions taken are the same. The increased costs of doing business under strict liability might curtail the level of activity in that line of business. That reduced level of production would decrease the number of accidents. See generally A. Mitchell Polinsky & Steven Shavell, *Punitive Damages: An Economic Analysis*, 111 Harv. L. Rev. 869 (1998); and Steven Shavell, *Economic Analysis of Accident Law* (1987).

B. Restatements (Second) and (Third)

The Restatement (Second) of Torts, adopted by the American Law Institute in 1966, included §402A, which applied liability without fault (strict liability) to products cases. Section 402A became one of the most influential Restatement provisions adopted for any area of law. The provisions of §402A are closely related to the reasoning in *Escola* and *Greenman*. They reflect the general nature of those two decisions, including the treatment of product flaws without differentiating among types of possible flaws.

In 1998, the American Law Institute adopted Restatement (Third) of Torts: Products Liability. There was broad consensus that ambiguities in §402A had led to many common law developments and that changes in other aspects of tort law, in particular the ascendance of comparative negligence, made some parts of §402A difficult to apply. With regard to the actual provisions of Restatement (Third), however, there was considerable controversy, with strongly stated positions about whether it truly "restated" existing law and about whether its positions represent sound policy.

The role of the Restatements in products liability law at present is somewhat complex. Restatement (Second)'s §402A has been adopted in whole or in part in the vast majority of states. Subsequent decisions and, in some states, legislation, have changed or amplified its provisions. Only a small number of courts have responded to the Restatement (Third).

RESTATEMENT OF TORTS (SECOND)

§402A (1966)

§402 A. 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.

RESTATEMENT OF TORTS (THIRD): PRODUCTS LIABILITY

(1998)

§1. Liability of Commercial Seller or Distributor for Harm Caused by Defective Products

One engaged in the business of selling or otherwise distributing products who sells or distributes a defective product is subject to liability for harm to persons or property caused by the defect.

§2. Categories of Product Defects

For purposes of determining liability under §1:

A product is defective when, at the time of sale or distribution, it contains a manufacturing defect, is defective in design, or is defective because of inadequate instructions or warnings. A product:

(a) contains a manufacturing defect when the product departs from its intended design even though all possible care was exercised in the preparation and marketing of the product;

(b) is defective in design when the foreseeable risks of harm posed by the product could have been reduced by the adoption of a reasonable alternative design by the seller or a predecessor in the commercial chain of distribution and the omission of the alternative design renders the product not reasonably safe;

(c) is defective because of inadequate instructions or warnings when the foreseeable risks of harm posed by the product could have been reduced by the

provision of reasonable instructions or warnings by the seller or a predecessor in the commercial chain of distribution and the omission of the instructions or warnings renders the product not reasonably safe.

NOTES TO RESTATEMENTS

1. ***Coverage.*** The two Restatements and the UCC apply only to commercial sales transactions. Leases and sales by individuals not in business may be outside their coverage. The most notable difference between the two Restatements is the definition of types of product defects. What types of product defects does each Restatement define?

2. ***Multiple Entities.*** If a number of entities, such as a manufacturer, distributor, and retailer, are involved in the production and sale of an item, do the Restatement provisions expose each of those entities to potential liability?

Statute: DEFINITION OF PRODUCT SELLER

N.J. Stat. §2A:58C-8 (2002)

"Product seller" means any person who, in the course of a business conducted for that purpose: sells; distributes; leases; installs; prepares or assembles a manufacturer's product according to the manufacturer's plan, intention, design, specifications or formulations; blends; packages; labels; markets; repairs; maintains or otherwise is involved in placing a product in the line of commerce. The term "product seller" does not include:

(1) A seller of real property; or

(2) A provider of professional services in any case in which the sale or use of a product is incidental to the transaction and the essence of the transaction is the furnishing of judgment, skill or services; or

(3) Any person who acts in only a financial capacity with respect to the sale of a product.

NOTE TO STATUTE

Products Associated with Services. Numerous cases consider whether strict liability applies to sales of products in conjunction with services. Examples would be popcorn at a movie theater or shampoo at a beauty salon. How would they be treated under the New Jersey statute or under the Restatements?

C. Manufacturing Defects

Products liability cases are usually categorized as involving "manufacturing," "design," or "warning" defects. Manufacturing defect cases are usually straightforward. The disputes in manufacturing defect cases often concern only whether a particular unit made by the defendant conformed to the defendant's own design choices. The individual unit that injured the plaintiff may be compared to others produced by the manufacturer or to the manufacturer's design. In re Coordinated Latex Glove

Litigation demonstrates this comparison. The case was the first to go to trial in a group of coordinated cases involving allegations against defendants who manufactured latex gloves.

Sometimes a manufacturing defect can be shown by testimony from people who have examined the product and compared how it was constructed to the manufacturer's specifications for it. Where examining the item is not possible, courts sometimes permit juries to infer from circumstantial evidence that the product as delivered differed in some dangerous way from the way the manufacturer intended it to be. In Myrlak v. Port Authority of New York and New Jersey, the court compares the inferences allowed in a strict liability case with the inferences represented by the *res ipsa loquitur* doctrine in negligence cases.

IN RE COORDINATED LATEX GLOVE LITIGATION

121 Cal. Rptr. 2d 301 (Cal. App. 2002)

HUFFMAN, J. . . .

On review of this order granting JNOV, we state the facts in the light most favorable to the jury's verdict. . . . [T]he plaintiffs in these coordinated cases pursue a theory of product liability that the latex gloves supplied to them caused a serious, disabling, and potentially life-threatening allergy to all forms of natural rubber latex (referred to as NRL) to develop, even though they did not have this condition prior to their extensive use of latex gloves. They accordingly claim improperly designed and manufactured NRL gloves caused this allergy by allowing excessive levels of allergenic agents, latex proteins, to remain present on the surface of the gloves during manufacture. It is not disputed that such agents may be greatly reduced or eliminated through washing and chlorinating procedures in the design and manufacture of these gloves. The issue is whether, as plaintiff complains here in the context of her manufacturing defect claim, Baxter "took too long" to make that its standard practice, in light of its knowledge and research.

McGinnis (sometimes referred to as Plaintiff) was employed as a respiratory technician by various hospitals and care facilities for a number of years between 1982 and 1996, and used thousands of pairs of Baxter NRL gloves during her career. The brands she used over 93 percent of the time, Flexam powdered exam gloves and Triflex powdered surgical gloves, were manufactured at Baxter plants in the United States and Malaysia. . . .

Both through her own use of NRL products and the use of others around her, McGinnis became sensitized to that substance to the point of developing a serious Type I latex allergy, which caused her in 1995 to experience symptoms going beyond mild symptoms of itching and skin irritation, to a life-threatening anaphylactic reaction (respiratory distress, hives and other symptoms). She was forced to leave health care work, has undergone emergency medical treatment for such reactions, and must carry medication to treat them at all times, as her allergy is a lifelong condition.

McGinnis sued Baxter and other defendants (who were no longer involved in the case by the time of trial and this appeal) on various products liability and negligence theories. The matter went to jury trial on strict liability theories of manufacturing defect and failure to warn of a defective product, as well as negligence through manufacture and failure to warn.

Extensive testimony and documentary evidence was presented at trial about the manufacturing process of NRL gloves. The critical qualities provided by rubber gloves to the health care profession include barrier protection and tactile sensitivity. The market for gloves grew tenfold from 1983 to 1990 after the FDA recommended and then in 1987 adopted universal precautions for health care workers to prevent the spread of AIDS and hepatitis, requiring expanded use of gloves and other barrier protection equipment. By 1990, Baxter was manufacturing and distributing approximately four billion gloves per year, which represented approximately half of the American medical glove market. Most of these gloves were made of NRL.

The multistep manufacturing process begins with the tapping of rubber trees and centrifuging and mixing of raw rubber, the preparation of glove molds to be positioned on a continuous conveyor line, the dipping of the mold in coagulant and rubber compounds, the leaching in water of the molds, curing, rinsing, powdering, chlorination and sterilization, and packaging of the gloves. Plaintiff presented evidence that additional washing and chlorination of the gloves would reduce allergenic protein levels, while Baxter presented evidence that these steps might lead to defects in barrier protection such as pinholes, tearing, or a change in texture. . . .

Plaintiff's counsel presented closing argument that focused upon the instruction about the manufacturing defect claim, BAJI No. 9.00.3: "A defect exists if the product differs from the intended result." He argued that the Baxter witnesses testified they had the intent, starting in 1990, to produce a low protein glove, but that although "their intentions were good, their execution was bad. And that creates a defect. They didn't execute their intent." Also, Plaintiff's counsel argued that the product could also be defective under the test "if the product differs from apparently identical products from the same manufacturer." . . .

In contrast, Baxter argued that the protein level evidence offered by Plaintiff had not been placed in context with any applicable government requirements, and that at the time Dr. Truscott was investigating the problem, complaints had been received about both high protein and low protein gloves, which made analysis at that point inconclusive. Before and after 1992, Baxter was constantly tinkering with the system to get the best protein testing system in place. This protein testing system had to be implemented while keeping production up, due to the health care profession's need for universal precautions equipment. Baxter's position was that its personnel were at the top of the heap in the production field, and although they were not perfect, they acted reasonably.

The jury returned a verdict finding that a manufacturing defect had been proven and awarded McGinnis net compensatory damages of $886,921.20. The jury also found Baxter had been negligent but there had been no causation of her injuries through negligence. A comparative fault finding was made assessing 70 percent of the negligence to Baxter, 15 percent to McGinnis, and 15 percent to her previous hospital employer (not a party to the action). The jury also rejected McGinnis's claim that a warning defect was present. . . .

After briefing and argument, the trial court granted the Baxter motion for JNOV on the single cause of action on which McGinnis had prevailed, manufacturing defect under a strict products liability theory. . . .

McGinnis's appeal . . . argues the trial court incorrectly applied both the alternative tests for a manufacturing defect as set forth in Barker v. Lull Engineering Co., 573 P.2d 443 (Cal. 1978). There, the Supreme Court opined (optimistically, in

hindsight) that defining the concept of a product defect "raises considerably more difficulties in the design defect context than it does in the manufacturing or production defect context. In general, a manufacturing or production defect is readily identifiable because *a defective product is one that differs from the manufacturer's intended result or from other ostensibly identical units of the same product line.*" These concepts form the basis of BAJI 9.00.3, defining a manufacturing defect, which was given to the jury here. . . .

As explained by the Supreme Court in Brown v. Superior Court, 751 P.2d 470 (Cal. 1988) (*Brown*), under *Barker*'s strict products liability analysis, there are three types of product defects: "First, there may be a flaw in the manufacturing process, resulting in a product that differs from the manufacturer's intended result. . . . Second, there are products which are 'perfectly' manufactured but are unsafe because of the absence of a safety device, i.e., a defect in design. . . . " The third type of defect "is a product that is dangerous because it lacks adequate warnings or instructions." . . .

Here, McGinnis's case relied on the first and third types of product defects . . . and the jury rejected the third (failure to warn of a defect). Only the first type, manufacturing defect, is squarely presented as an issue in this appeal. Hence, our task is to see if, as McGinnis contends, substantial evidence was presented to support a manufacturing defect theory under either of the *Barker* formulations. . . .

In Morson v. Superior Court (2002) 90 Cal. App. 4th 775, 109 Cal. Rptr. 2d 343, this court relied on Dierks v. Mitsubishi Motors Corp. (1989) 208 Cal. App. 3d 352, 354-355, 256 Cal. Rptr. 230 as a statement of the difference between a defect in manufacture and a defect in design: " 'The latter focuses upon whether the product was designed to perform as safely as an ordinary consumer would expect or whether the risk of danger inherent in the design outweighed the benefits of the design. [Citations.] The former focuses on whether the particular product involved in the accident was manufactured in conformity with the manufacturer's design. [Citations.]' " . . .

McGinnis first claims the trial court mistakenly evaluated the evidentiary record only in light of the "intended result test," by finding she failed to produce essential evidence that the high protein gloves that Baxter produced departed from its own design, specifications, or prototypes. She contends she showed, through the evidence of the research and data collection that Baxter was doing to reduce protein levels, that Baxter had internal standards that it was developing that constituted such evidence of "formal product design, prototype, or specifications." . . .

As stated in Baxter's respondent's briefs, it was uncontested at trial "that Baxter intended to, and did, produce and sell gloves with a wide range of protein levels." These gloves met Baxter's design specifications as they existed at all the relevant times. There was no set standard for protein levels under either Baxter's corporate policies or the government regulations. Plaintiff cannot convert these undisputed facts into an adequate showing of a manufacturing defect under the *Barker* tests.

We also evaluate the evidence in light of the Baxter argument that McGinnis actually tried this case under a design defect approach, and did not change her arguments into a manufacturing defect format until she realized the design defect approach was fatally flawed. Both the traditional definitions of manufacturing defect presuppose that a suitable design is in place, but that the manufacturing process has in some way deviated from that design. Focus is on whether the particular product involved in the incident was manufactured in conformity with the manufacturer's design. Here, we are

unable to separate out the raw material, NRL, from the forming and processing of it, nor does Plaintiff argue we should. The NRL gloves in this case were processed exactly as Baxter intended that they should be, in light of the state of its scientific and manufacturing knowledge at the time. This was true of all the various lines of production, even though testing was ongoing at some and not others at times. That later developments showed the product was subject to immense improvement does not necessarily show the products processed earlier were defective, under either formulation of the *Barker* test. The fact that simultaneously manufactured gloves were subject to different standards at different production lines, due to the status of the manufacturer's research and development, where scientific knowledge was as inconclusive as is shown by this record, does not require that some items must be deemed defective under a manufacturing defect approach. Rather, such arguments actually deal with design defect evidence, and the jury properly did not receive those instructions in this case. Allowing the Plaintiff's verdict to stand here would be inconsistent with the applicable public policies as stated above, for lack of any supporting evidentiary showing.

In conclusion, we believe that Plaintiff's efforts are ineffective to show that the various NRL gloves that were manufactured precisely as intended, that complied with applicable governmental standards, and that fulfilled their primary barrier function, nevertheless have manufacturing defects due to the existence of evidence of the testing, improvement, research and development efforts, targets and goals of the manufacturer, at different times and locations, reflective of the state of scientific knowledge regarding latex protein levels of exposure available to the relevant participants in this health care product context. The products did not differ from the manufacturer's intended result, nor did they have materially significant differences among identical units from the same product line. The motion for JNOV was properly granted. . . .

NOTES TO IN RE COORDINATED LATEX GLOVE LITIGATION

1. ***Definition of "Manufacturing Defect."*** An individual unit of a manufacturer's product has a manufacturing defect if it varies from other units in an unintended way, or if it varies from the manufacturer's intended design for the product. How did the plaintiff's evidence fail to satisfy either of these definitions?

2. ***Origin of Manufacturing Defect.*** The plaintiff is obligated to prove only that a product fell short of the manufacturer's own specifications. The strict liability definition of "manufacturing defect" ignores questions that would be relevant in a negligence context, such as evaluating the conduct involved in the creation, inspection, and distribution of the flawed product.

MYRLAK v. PORT AUTHORITY OF NEW YORK AND NEW JERSEY

157 N.J. 84, 723 A.2d 45 (1999)

COLEMAN, J.

In this strict products liability case involving one defendant, the primary issue is whether the doctrine of *res ipsa loquitur* should be applied when liability is based upon an alleged manufacturing defect. The trial court declined to instruct the jury

regarding *res ipsa loquitur*. The Appellate Division held that the trial court should have given such an instruction. We disagree and reverse. We hold that the traditional negligence doctrine of *res ipsa loquitur* generally is not applicable in a strict products liability case. We adopt, however, the "indeterminate product defect test" established in Section 3 of the Restatement (Third) of Torts: Products Liability as the more appropriate jury instruction in cases that do not involve a shifting of the burden of persuasion.

On July 6, 1991, plaintiff, John Myrlak, was injured when his chair collapsed while he was at work. At that time, plaintiff was forty-three years old, six feet six inches tall, and weighed approximately 325 pounds.

At the time of the accident, plaintiff had been seated in the chair performing his duties for approximately one hour and forty-five minutes. He suddenly heard a loud noise, and the back of his chair cracked and gave way. Plaintiff and the chair fell backwards, causing both to land parallel to the floor. Plaintiff grabbed the arms of the chair and pulled himself forward as he was falling. He injured his lower back and was hospitalized.

Plaintiff . . . filed products liability claims against the manufacturer of the chair [Girsberger] alleging both a manufacturing and a warning defect theory of liability. Plaintiff's expert was unable to . . . identify a specific defect in the chair; nor could he state that a defect caused the accident.

At the close of all of the evidence, plaintiff requested the court to charge the jury on *res ipsa loquitur* regarding the manufacturing defect claim. In denying the requested charge, the trial court stated that it wanted to avoid that phrase even though plaintiff relied on circumstantial evidence to infer that there was a manufacturing defect. The jury . . . found that plaintiff failed to establish a manufacturing defect in the chair.

The [Appellate Division] reversed the verdict in favor of the manufacturer, concluding that the trial court should have instructed the jury on *res ipsa loquitur*. We granted defendant Girsberger's petition for certification, limited to the issue whether *res ipsa loquitur* should apply to this strict products liability case.

Res ipsa loquitur permits an inference of defendant's want of due care when the following three conditions have been met: "(a) the occurrence itself ordinarily bespeaks negligence; (b) the instrumentality was within the defendant's exclusive control; and (c) there is no indication in the circumstances that the injury was the result of the plaintiff's own voluntary act or neglect."

Whether an occurrence ordinarily bespeaks negligence is based on the probabilities in favor of negligence. Hence, *res ipsa* is available if it is more probable than not that the defendant has been negligent.

In a products liability case in which the plaintiff alleges a manufacturing defect under the Act, the plaintiff has the burden to prove "the product causing the harm was not reasonably fit, suitable or safe for its intended purpose." N.J.S.A. 2A:58C-2. In the typical manufacturing defect case, a plaintiff is not required to establish negligence. In other words, a plaintiff must impugn the product but not the conduct of the manufacturer of the product.

The Act defines a manufacturing defect as a deviation "from the design specifications, formulae, or performance standards of the manufacturer or from otherwise identical units manufactured to the same manufacturing specifications or formulae." N.J.S.A. 2A:58C-2a.

Simply because a plaintiff is not required to prove fault in a strict liability case does not mean that absolute liability will be imposed upon a manufacturer. Based on our well-established case law in this area, a plaintiff must prove that the product was defective, that the defect existed when the product left the manufacturer's control, and that the defect proximately caused injuries to the plaintiff, a reasonably foreseeable or intended user.

To prove both the existence of a defect and that the defect existed while the product was in the control of the manufacturer, a plaintiff may resort to direct evidence, such as the testimony of an expert who has examined the product, or, in the absence of such evidence, to circumstantial proof. Scanlon v. General Motors Corp., 65 N.J. 582, 591 (1974).

We agree with the majority of jurisdictions that, ordinarily, the traditional *res ipsa loquitur* jury charge should not be used in strict products liability actions. As noted previously, *res ipsa loquitur* is a negligence doctrine; it is a circumstantial means of proving a defendant's lack of due care. Strict liability, on the other hand, is a theory of liability based on allocating responsibility regardless of a defendant's unreasonableness, negligence or fault. Thus, while *res ipsa* might demonstrate a manufacturer's negligence in failing to inspect or appropriately assemble a particular product, strict liability merely questions whether there is a defect in that product that existed before it left the manufacturer's control.

We recognize that as an alternative to a traditional *res ipsa loquitur* instruction, various states and commentators have advocated an intermediate-type approach for circumstantially proving the existence of a product defect. That approach appears to best serve the interest of all parties and is not inconsistent with the Act.

The *Scanlon* rule regarding circumstantial proof of a defect in a strict products liability case was adopted recently in the Restatement (Third) of Torts: Products Liability. [Section 3] provides:

> It may be inferred that the harm sustained by the plaintiff was caused by a product defect existing at the time of sale or distribution, without proof of a specific defect, when the incident that harmed the plaintiff:
>
> (a) was of a kind that ordinarily occurs as a result of a product defect; and
>
> (b) was not, in the particular case, solely the result of causes other than product defect existing at the time of sale or distribution.

Although Section 3 of the Restatement is based on a *res ipsa* model, it permits the jury to draw two inferences: that the harmful incident was caused by a product defect, and that the defect was present when the product left the manufacturer's control. The *res ipsa loquitur* doctrine, on the other hand, creates the single inference of negligence. Nevertheless, Section 3 of the Restatement parallels the elements of our *res ipsa loquitur* doctrine.

Section 3 of the Restatement has been referred to as the "indeterminate product test" because its use is limited to those product liability cases in which the plaintiff cannot prove a specific defect. A plaintiff can satisfy the requirements of Section 3 of the Restatement the same way as in the case of *res ipsa loquitur*, by direct and circumstantial evidence as well as evidence that negates causes other than product defect.

Other jurisdictions have adopted similar circumstantial methods for establishing an inference of a product defect in strict products liability cases. We agree with those

states that in some cases, "common experience indicates that certain accidents do not occur absent some defect," and therefore an inference of a defect under specific circumstances should be permitted. Fifteen other states have adopted the principles incorporated into Section 3 of the Restatement. See Reporters' Notes to Section 3, at 115-18. We also adopt the indeterminate product defect test announced in Section 3 of the Restatement.

Because we have adopted Section 3 of the Restatement, upon retrial, plaintiff need not prove a specific defect in the chair if he can establish that the incident that harmed him is of the kind that ordinarily occurs as a result of a product defect, and that the incident was not solely the result of causes other than product defect existing at the time the chair left Girsberger's control. Restatement (Third) of Torts §3(a) and (b). If plaintiff cannot satisfy those requirements, he is not entitled to have the jury charged regarding an inference of a product defect, and plaintiff would be obligated to establish one or more manufacturing defects required by the Act, N.J.S.A. 2A:58C-2a.

That part of the Appellate Division's judgment requiring a *res ipsa loquitur* charge on the manufacturing defect claim is reversed. The matter is remanded to the Law Division for further proceedings as otherwise directed by the Appellate Division.

NOTES TO MYRLAK v. PORT AUTHORITY OF NEW YORK AND NEW JERSEY

1. *Circumstantial Evidence.* *"Res ipsa loquitur"* and the "indeterminate product defect test" used in strict liability for manufacturing defect cases are both labels for circumstantial evidence. Applying the *res ipsa* doctrine in negligence cases has three characteristics that are analogous to the indeterminate product defect test. First, *res ipsa loquitur* is limited to situations where the plaintiff is unable to identify what conduct of the defendant caused the harm. Second, to protect the defendant from liability caused by others, *res ipsa loquitur* requires that the instrumentality causing the harm has been in the defendant's control at the time of the negligence. Third, *res ipsa loquitur* permits two inferences — that negligence caused the harm and that the defendant was the negligent party. The indeterminate product defect test is analogous to *res ipsa loquitur* in each of these characteristics. To what kinds of manufacturing defect cases is this test limited? Does any part of the test protect defendants from strict liability? What inferences does the indeterminate product defect test permit?

2. *Variation in Definitions.* New Jersey is one of many states that have adopted statutes to govern various aspects of products liability actions. How does the New Jersey statute's definition of "manufacturing defect," discussed in *Myrlak*, compare with the definition in the Restatement (Third)?

3. *Problem: Unspecified Defect.* John Whitted crashed his 1987 Chevrolet Nova into two trees in 1993 and sued the manufacturer, General Motors. The court described Mr. Whitted as six feet tall, weighing 265 pounds. He was driving home on slick roads wearing his seat belt, which included both a shoulder harness and lap belt. To avoid an oncoming car, Whitted moved the car closer to the shoulder. He moved too far, and the car slid off the road and hit the trees. The webbing of the seat belt separated, while the clasp remained connected to the buckle. Whitted remained inside the car, but he was thrust against the steering wheel. He sustained fractures to

two bones in his lower left arm and cuts to his forehead. He argued that the seat belt was defective in some way but did not identify the specific defect. Would the indeterminate product defect test aid his case? See Whitted v. General Motors Corp., 58 F.3d 1200 (7th Cir. 1995).

D. Design Defects

1. Consumer Expectation and Risk-Utility Tests

The Restatement (Second) of Torts §402A recognized strict liability for products with a "defective condition unreasonably dangerous to the user or consumer or to his property." Where plaintiffs have challenged the design of products, courts have sought to give meaning to that definition of defectiveness. Morton v. Owens-Corning Fiberglas Corp. applies a "consumer expectation" test to determine whether asbestos used in shipbuilding was a product in a defective condition unreasonably dangerous to the plaintiff. Another test is known as the *risk-utility test.* To decide what constitutes an "unreasonable" danger, many courts use that test to balance a design's costs and benefits. Warner Fruehauf Trailer Co. v. Boston applies that test to the design of a truck's liftgate. Denny v. Ford Motor Co. involves a claim that a sports utility vehicle was defectively designed because it rolled over when the driver slammed on the brakes. It illustrates how the consumer expectation and risk-utility tests may produce different results.

MORTON v. OWENS-CORNING FIBERGLAS CORP.

33 Cal. App. 4th 1529; 40 Cal. Rptr. 2d 22 (1995)

HAERLE, A.J.

Robert and Pamela Morton brought this strict products liability action against Owens-Corning Fiberglas Corporation (OCF) and others for damages arising from Mr. Morton's exposure to asbestos containing products and his consequent development of mesothelioma, an asbestos-caused form of cancer. . . .

From December 1959 to February 1961, Mr. Morton worked at the New York Shipbuilding Yard in Camden, New Jersey (the Shipyard). He worked as a wireman, installing cable on board ships. The majority of his time at the Shipyard was spent working on a ship called the Kitty Hawk. . . . Mr. Morton was in good health until October 1991, when he developed flu symptoms and chest pains. During the following months, Mr. Morton underwent various tests and, in May 1992, was diagnosed with mesothelioma.

The trial court ordered that the trial be bifurcated. The damages phase was tried first, to the judge, who made separate findings for each type of damages plaintiffs suffered. The liability phase was tried to a jury [that] found OCF liable to plaintiffs and responsible for 12% of their damages. . . .

[On appeal,] OCF objects to the method by which plaintiffs proved OCF's product was defective, i.e., the "consumer expectations" test. OCF contends the trial court should have granted its motion for nonsuit because the consumer expectations test does not apply to this case as a matter of law. Alternatively, OCF argues that, if the

consumer expectations theory did apply, the court erred by excluding "state of the art" evidence offered to disprove plaintiffs' theory.

"[T]he term defect as utilized in the strict liability context is neither self-defining nor susceptible to a single definition applicable in all contexts." (Barker v. Lull Engineering Co. (1978) 20 Cal. 3d 413, 427, 143 Cal. Rptr. 225, 573 P.2d 443.) Our Supreme Court has identified two alternative criteria for ascertaining whether a product has a design defect.

First, the consumer expectations test provides that "a product may be found defective in design if the plaintiff demonstrates that the product failed to perform as safely as an ordinary consumer would expect when used in an intended or reasonably foreseeable manner." This test derives from the warranty heritage upon which our product liability doctrine partially rests and recognizes that "implicit in a product's presence on the market is a representation that it will safely do the job for which it was built."

The second "risk-benefit" test evolved in response to situations in which the consumer would not know what to expect because, for example, he would have no idea how safe the product could be made. Under this test, "a product may be found defective in design, even if it satisfies ordinary consumer expectations, if through hindsight the jury determines that the product's design embodies 'excessive preventable danger,' or, in other words, if the jury finds that the risk of danger inherent in the challenged design outweighs the benefits of such design."

Our Supreme Court recently clarified that the consumer expectations test is not suitable in all design defect cases because "in many instances it is simply impossible to eliminate the balancing or weighing of competing considerations in determining whether a product is defectively designed or not." (Soule v. General Motors Corp. (1994) 8 Cal. 4th 548, 562-563, 34 Cal. Rptr. 2d 607, 882 P.2d 298.) OCF contends that *Soule* establishes that the consumer expectations test does not apply to strict liability actions involving asbestos products. However, we recently rejected this precise contention in Sparks v. Owens-Illinois, Inc. (1995) 32 Cal. App. 4th 461, 472-476, 38 Cal. Rptr. 2d 739 (hereafter *Sparks*).

In *Sparks,* this court affirmed a judgment against Owens-Illinois in a case in which plaintiffs established that Owens-Illinois' asbestos-containing insulation product was defective under the consumer expectations test. Our analysis included a thorough discussion of the limited scope of the consumer expectations test as set forth by the Supreme Court in *Soule.* We applied the *Soule* analysis to the asbestos context, focusing on the "crucial question" as to "whether the circumstances of the product's failure permit an inference that the product's design performed below the legitimate, commonly accepted minimum safety assumptions of its ordinary consumers." Ultimately, we concluded that *Soule* did not preclude plaintiffs from relying on a consumer expectations theory because, among other things, "[t]here were neither 'complicated design considerations,' nor 'obscure components,' nor 'esoteric circumstances' surrounding the 'accident' " and because the product failure was "beyond the 'legitimate, commonly accepted minimum safety assumptions of its ordinary consumers.' "

. . . As in *Sparks,* the situation in the present case is one in which the everyday experiences of the consumers of OCF's product would permit a conclusion that the product's design violated minimum safety assumptions. The injury Mr. Morton incurred was not the result of esoteric circumstances or an alleged mechanical

malfunction. OCF's product was not itself a complex or technical device. Further, the individuals who worked with and around this product were capable of formulating minimum expectations as to its safety. Thus, as we did in *Sparks,* we reject the contention that the consumer expectations theory does not apply to this case as a matter of law.

Further, we find sufficient evidence in the record to satisfy the consumer expectations test in the present case. Plaintiffs presented several percipient witnesses, including Mr. Morton, who testified they believed the insulation products used on the Kitty Hawk were safe and that they had no expectation that exposure to such products would make them ill.[2] OCF presented no evidence that consumers of its product knew, expected, or even suspected that product was unsafe.

OCF contends the trial court erred by precluding it from offering "state of the art" evidence which it defines as "evidence that a particular risk was neither known nor knowable by the application of scientific knowledge available at the time of manufacture and/or distribution." OCF's theory of relevance was "that Mr. Morton would not have an expectation of the product that it could be safer than the medical and scientific knowledge at the time indicated it was." The trial court ruled OCF's state of the art evidence was not relevant under the consumer expectations test.

We agree with the trial court that evidence as to what the scientific community knew about the dangers of asbestos and when they knew it is not relevant to show what the ordinary consumer of OCF's product reasonably expected in terms of safety at the time of Mr. Morton's exposure. It is the knowledge and reasonable expectations of the consumer, not the scientific community, that is relevant under the consumer expectations test. The fact that the scientific community was unaware of the dangers of asbestos, if that is a fact, would not make it any less reasonable for Mr. Morton or other consumers of OCF's products to expect that they could work with or near OCF's product without getting cancer. . . .

Finally, OCF contends that courts have admitted, in consumer expectations cases, expert evidence designed to educate the jury about the nature of the allegedly defective product. Under certain circumstances, expert testimony may be admissible to prove what ordinary consumers of the product actually expect when those expectations are beyond the lay experience common to all jurors. Our point is that evidence as to the knowledge of the scientific community is nevertheless irrelevant to prove the reasonable expectations of the consumers of OCF's product. OCF's authority does not hold to the contrary. . . .

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[2] Mr. Morton testified there were no warnings about the dangers of asbestos dust, and nobody used masks. He believed the materials being used at the yard were safe, and did not know about the hazardous nature of asbestos dust until the early 1980's.

William Kimley worked as an electrician's assistant on the Kitty Hawk, and knew Mr. Morton. Kimley specifically remembered that OCF asbestos insulation was used on the Kitty Hawk. Kimley testified he believed the asbestos insulation used on the Kitty Hawk was safe and never expected that asbestos dust would cause cancer or other diseases.

John Murphy also worked at the New York shipyard during the time Mr. Morton was there. He specifically recalled that OCF "Kaylo" insulation was used on the Kitty Hawk. Murphy testified that, at the time he worked in the shipyard, he did not expect that dust from the insulation materials was harmful.

[Judgment against the defendant was affirmed, modified as to the amount of damages awarded.]

NOTES TO MORTON v. OWENS-CORNING FIBERGLAS CORP.

1. ***Origin of the Consumer Expectation Test.*** The Restatement (Second) provided comments that led some courts to adopt the consumer expectation test. A comment on "Defective Condition" states:

> *g. Defective Condition.* 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. . . . (emphasis added).

A comment on the "unreasonably dangerous" term also supported development of the consumer expectation test. Comment i states:

> *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. 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 over-consumption. Ordinary sugar is a deadly poison to diabetics, and castor oil found use under Mussolini as an instrument of torture. That is not what is meant by "unreasonably dangerous" in this Section. 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 characteristic. Good whiskey is not unreasonably dangerous merely because it will make some people drunk, and is especially dangerous to alcoholics; but bad whiskey, containing a dangerous amount of fusel oil, is unreasonably dangerous. Good tobacco is not unreasonably dangerous merely because the effects of smoking may be harmful; but tobacco containing something like marijuana may be unreasonably dangerous. Good butter is not unreasonably dangerous merely because, if such be the case, it deposits cholesterol in the arteries and leads to heart attacks; but bad butter, contaminated with poisonous fish oil, is unreasonably dangerous. (Emphasis added.)

2. ***Whose Expectation?*** The consumer expectation test might refer either to the expectations of a particular injured consumer, the plaintiff, or to the expectations of an "ordinary" consumer. While some courts originally took a subjective approach, the objective approach, which is consistent with the language of comments g and i, above, is generally accepted now. This approach avoids testimony by self-interested plaintiffs about whether they expected products to have dangers that cause injuries.

3. ***Open and Obvious Dangers.*** A rigorous application of the consumer expectation test would protect many very dangerous products from being characterized as defective so long as their dangers were apparent. This result might encourage manufacturers to design products with obvious and prominent hazards. Courts have generally avoided this result. For example, in Linegar v. Armour of America, 909 F.2d 1150 (8th Cir. 1990), the design of a bullet-resistant vest was called into question by the estate of a police officer who was fatally wounded while wearing it. The vest's design left parts of a wearer's sides unprotected. Because this feature was

obvious, the consumer expectation test might have been a full defense. The court noted that possibility but also analyzed the risks and utility inherent in the defendant's design choices and refused to treat the obviousness of the product's shortcoming as a full defense.

WARNER FRUEHAUF TRAILER CO. v. BOSTON

654 A.2d 1272 (D.C. 1995)

BELSON, J. . . .

Appellee William Boston, a supervising mechanic for the Potomac Electric Power Company ("PEPCO"), was injured on the job due to the malfunction of an Anthony A-146 single cylinder liftgate attached to the back of a PEPCO truck. Boston had responded early on a Sunday morning to an emergency call to obtain a material truck and a work crew to respond to a power outage. He obtained a truck, one he had never used before, and with the help of one of his crew members began to unload it so that he could load it with equipment needed to remedy the outage. After they had used the liftgate to remove some heavy objects from the truck, and Boston's crew member had returned the liftgate platform to, or at least near, the vertical "closed" position at the back of the truck, Boston approached the liftgate to attach the safety chains. The liftgate suddenly malfunctioned, and the 1050 pound metal platform fell free, striking Boston and injuring his hip.

Boston and his wife filed a complaint against the liftgate manufacturers and the liftgate distributor, appellant Warner Fruehauf. Appellees proceeded to trial only against Warner Fruehauf, seeking damages for personal injury and loss of consortium on a theory of strict liability in tort based on the defective design of the liftgate. . . .

Most of the Bostons' evidence was directed toward establishing that the one-cylinder hydraulically-controlled liftgate was defectively designed and unreasonably dangerous in that it had no backup system to prevent a free-fall of the heavy tailgate in the event of a mechanical failure. At the close of all the evidence . . . the judge concluded that, as a matter of law, the liftgate was defectively designed and unreasonably dangerous and that no reasonable juror could find that Boston had assumed the risk of being injured by it. He therefore directed a verdict in favor of the Bostons as to liability.

The case was submitted to the jury on damages only. The jury awarded the Bostons a total of $550,000.00. Warner Fruehauf noted this appeal. . . .

To establish strict liability in tort, a plaintiff must establish that the defendant sold the product in question in a defective and unreasonably dangerous condition. In design defect cases, most jurisdictions decide this issue by applying some form of a risk-utility balancing test. We follow that approach.

In general, the plaintiff must "show the risks, costs and benefits of the product in question and alternative designs," and "that the magnitude of the danger from the product outweighed the costs of avoiding the danger." Hull v. Eaton Corp., 263 U.S. App. D.C. 311, 317, 825 F.2d 448, 453 (D.C. Cir. 1987) (design defect case, looking to Maryland law in the absence of D.C. case law "clearly setting out the necessary elements of a D.C. strict liability claim"). There are many different factors that may

be considered by the jury in applying a risk-utility analysis.[12] In order to weigh properly the interests of manufacturers (or distributors), consumers, and the public, the risk-utility analysis must be applied in a flexible manner that is necessarily case specific.

In the context of this case, the risk side of the equation is comprised of the danger of death or serious injury presented by the use of a single-cylinder liftgate with no safety backup, less the extent to which that danger might have been reduced by the warning decals routinely placed on the liftgates. On the other side of the balance is the availability of commercially feasible design alternatives, a factor which indicates the utility or benefit derived from marketing the product with the design at issue in this case.

The risk of bodily injury presented by the design of the single-cylinder liftgate was serious. The evidence presented by the Bostons reveals that: (1) over half of the Anthony single-cylinder liftgates in PEPCO's fleet had reportedly experienced identical free falls; (2) tests observed by PEPCO's Safety Committee Chairman comparing Anthony single-cylinder liftgates to similar liftgates with two cylinders showed that single-cylinder liftgates would fall free in the event of a mechanical failure, but that dual-cylinder liftgates would not; (3) tests conducted after Boston's injury by PEPCO's Maintenance Superintendent showed upon a mechanical failure the liftgate involved in Boston's accident fell several times while being operated normally; and (4) the liftgate's warning decal and instructions manual — both stating that "the lift is not equipped with a back-up system to prevent falling in the event of a failure" — indicate the serious risks presented by the design of the Anthony single-cylinder liftgate.

Under a risk-utility analysis, "[a] manufacturer [or distributor] is entitled to defend a strict liability claim based on defective design by showing that a warning accompanied the product that reduced its dangers." However, while the adequacy of a warning is relevant and may even tip the balance in the decision whether a product is or is not defectively designed, it is not the sole consideration: "A warning is only one of a product's many design attributes that weigh in the balance of dangers against utility . . . but could be a pivotal design attribute in a particular case."

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[12] For example, under New Jersey case law, some of the factors relevant to a risk-utility analysis are:

> (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.
>
> (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.

O'Brien v. Muskin Corp., 94 N.J. 169, 463 A.2d 298, 304-05 (N.J. 1983) (citation ommitted) (claim of defective design brought against swimming pool manufacturer).

There is some inconsistency among the authorities concerning the effectiveness of warnings in various factual scenarios. However, we do not have to resolve the issues those authorities raise, because the warning decals in this case were inadequate as a matter of law. [O]ne of the warning decals was inadequate because the jury would have had to engage in conjecture to have concluded that it was in a location where Boston could have seen it, and because it consisted of 189 words only the last few of which contained the vague warning of possible danger quoted above. The other decal—"stand clear while lowering and raising the gate"—did not provide any warning of the specific defect alleged or of the danger created by it.

Turning to the other side of the scale, we must determine, based upon the record before us, whether the utility or benefit realized from marketing the liftgate with the design at issue outweighed any risks presented by that particular design. In order to determine whether a safer design that would have prevented the injury should have been used, the trier of fact ordinarily must consider whether any safer alternative designs were commercially feasible. . . .

The Bostons presented uncontradicted expert testimony that the liftgate, as designed, was "unreasonably dangerous." Both the Bostons' mechanical engineering expert, James Kita, and Warner Fruehauf's mechanical engineering expert, Roger Link, testified that alternative designs that would have prevented the metal platform from a free fall were available when the Anthony A-146 single-cylinder liftgate was manufactured in the mid-1970s. These alternative designs included dual-cylinder and multi-cylinder configurations, as well as the inclusion of a limit switch on the latching mechanism of the liftgate.

The Chairman of PEPCO's Safety Committee, Fred Lawless, testified that the committee had investigated six incidents in which Anthony single-cylinder liftgates "[fell] from a near-vertical folded position to the ground creating a hazard." He explained that he had observed tests demonstrating that, in the event of the failure of the locking or hooking mechanism, a single-cylinder liftgate would fall "in a split second with no warning." In the case of a similar failure, however, a dual-cylinder liftgate would "creep [down] very slowly." According to Mr. Kita's cost-benefit analysis, any one of the above alternatives was available at nominal additional cost to appellant, would have caused no reduction in the liftgate's overall utility, and would have prevented the metal platform from falling free. Principally on the basis of these factors, Mr. Kita ultimately opined within a reasonable degree of engineering certainty that the liftgate as designed was defective and unreasonably dangerous.

By contrast, Warner Fruehauf failed to offer any expert or even lay testimony to substantiate its general assertion that the liftgate as designed was safe for its intended use and was therefore neither defective nor unreasonably dangerous. Moreover, Warner Fruehauf failed to impeach or contradict any of the statements or opinions expressed by either Mr. Link or Mr. Kita. . . . Moreover, Warner Fruehauf failed to offer any evidence showing any benefit gained by marketing a single-cylinder liftgate that outweighed the risk of death or serious bodily harm inherent in this particular design.

Although directed verdicts are granted sparingly in favor of the party who has the burden of proof, we recognize that "to the extent that the party with the burden of proof has established his case by testimony that the jury is not at liberty to disbelieve, a

verdict may be directed for him. . . . " See 9 C. Wright & A. Miller, Federal Practice and Procedure §2534, at 590-91 (1971). . . .

In this case, the evidence overwhelmingly supported the Bostons, even on issues as to which they bore the burden of persuasion. Given the danger presented by the design of the liftgate, the ineffectiveness of the warning of that danger, and the uncontradicted expert testimony that safer alternative designs providing the same utility were both economically and technologically feasible, we find no error in the trial judge's conclusion that, as a matter of law, the liftgate was defectively designed and unreasonably dangerous. Warner Fruehauf . . . failed to refute the Bostons' expert testimony or to neutralize it by cross-examination. Under the circumstances, appellees' expert testimony establishing that the liftgate was defectively designed and unreasonably dangerous "must be taken as true". Therefore . . . the Bostons were entitled to a directed verdict on the issue of liability. Accordingly, the judgment is affirmed.

NOTES TO WARNER FRUEHAUF TRAILER CO. v. BOSTON

1. ***Identifying Risk-Utility Factors.*** The factors set out in the court's footnote are typical of factors used by courts in a risk-utility analysis of product defect. They are derived from a classic article, Wade, *On the Nature of Strict Tort Liability for Products*, 44 Miss. L.J. 825 (1973).

2. ***Risk-Utility and Reasonableness.*** A reasonable person who designs a product will likely take into account most of the elements of the risk-utility test. For this reason, a standard negligence analysis might often produce the same results as would a strict liability risk-utility test. Some distinctions, however, are possible. First, the seventh factor, feasibility of spreading the loss through insurance or raising the product's price, is excluded from a negligence analysis. Another difference is that in strict liability cases courts state that they are analyzing characteristics of the product rather than the character of the manufacturer's conduct.

3. ***State of the Art and Time of Trial Knowledge.*** In a negligence case, a manufacturer is obliged to conduct itself as a reasonable person with the knowledge it has or should have regarding risks and alternatives. A reasonable person is not obliged to have all available knowledge or to acquire all available knowledge. When evaluating a product in a strict liability claim using a risk-utility test, however, many courts consider the state of the art. The state of the art includes all knowledge of risks and alternatives that is available at the time the manufacturer markets and distributes the product, *regardless of whether a reasonable manufacturer would have known about those risks and alternatives.* This assigns constructive knowledge of risks and alternatives to a manufacturer.

An approach that is more favorable to a plaintiff evaluates the safety of the product according to risks and alternatives known at the time of trial. One court held, in a case involving asbestos, that manufacturers were to be treated as if they had all knowledge of risks that was available at the time of trial, regardless of whether that knowledge had been known or discoverable at the time of marketing and distribution. See Beshada v. Johns-Manville Products Corp., 447 A.2d 539 (N.J. 1982). That court later limited its holding to the precise facts of that case (see Feldman v. Lederle Laboratories, 97 N.J.

429 (1984)) and the state's legislature subsequently adopted legislation contrary to the *Beshada* holding.

4. ***Consumer Expectation versus Risk-Utility.*** The consumer expectation test and the risk-utility test need not be mutually exclusive. In evaluating these doctrines, most states have chosen among the following approaches:

a) permitting plaintiffs to choose between the consumer expectations and risk-utility tests;
b) permitting plaintiffs to show a defect using the consumer expectations test, then allowing defendants to rebut this showing using a risk-utility test;
c) permitting the consumer expectations test only in appropriate cases and otherwise requiring the risk-utility test; or
d) rejecting the consumer expectations test completely and permitting only the risk-utility approach to proving product defects.

5. ***Problem: Applying Consumer Expectation and Risk-Utility Tests.*** Many people have been caught in the turning augers of combines used for harvesting wheat. Combines are commonly designed with two augers, which look like huge horizontal screws that, when turning, move the wheat from one end of the grain tank to the other (the discharge auger) and disperse the grain throughout the tank (the leveling auger). The augers are in plain view to users of the combine but are extremely dangerous nevertheless. If loose clothing gets caught in the leveling auger, a user of the machine can be pulled into the tank and suffer severe injuries from the turning screw. If an injured user sues on a tort theory of strict products liability for defective design, what obstacles to recovery would be presented by the consumer expectation and risk-utility tests? See, e.g., Sperry-New Holland v. Prestage, 617 So. 2d 248 (Miss. 1993).

Perspective: Risk Spreading

Imposing liability on manufacturers may be sensible public policy for two reasons. The first is the *deep pocket theory.* This theory holds that it makes sense to place liability on the wealthier party, who has less need for the money at stake or who gives less value to each dollar and so suffers a lesser subjective loss than the poorer plaintiff. The second is the *risk spreading theory,* which holds that it makes sense to distribute the loss as widely as possible, so that many individuals suffer a small loss rather than one victim suffering a large loss.

A problem with the deep pocket theory is that manufacturers are not always wealthy. The accumulation of judgments against manufacturers can drive them into bankruptcy. In addition, it is not clear whether a company gives any particular "value" to money. A corporation is made up of its officers, employees, and stockholders. Any loss to the corporation must be a loss to them as well, and the deep pocket theory says nothing about their level of wealth compared to the victim's. Moreover, we do not know how the loss will be distributed among these constituent groups. These problems make the deep pocket theory the less favored of these two theories.

Under the risk spreading theory, manufacturers can raise prices so that accidental losses are spread over a larger group. Judge Mentz relied on this argument in Richman v. Charter Arms Corp., 571 F. Supp. 192, 203-204 (E.D. La. 1983), which involved strict liability under the theory of abnormally dangerous activities for damages to a woman who was kidnapped, robbed, raped, and murdered by a man using a handgun manufactured by the defendant:

> Perhaps the most significant fact the defendant ignores is that increased insurance costs can be passed on to consumers in the form of higher prices for handguns. The people who benefit most from marketing practices like the defendant's are handgun manufacturers and handgun purchasers. Innocent victims rarely, if ever, are beneficiaries. Consequently, it hardly seems unfair to require manufacturers and purchasers, rather than innocent victims, to pay for the risks those practices entail. Furthermore, economic efficiency seems to require the same result. In an important article on ultrahazardous activities and risk allocation, Professor Clarence Morris makes just this point. Morris, *Hazardous Enterprises and Risk Bearing Capacity*, 61 Yale L.J. 1172 (1952). In his view, "the avowed goal of the absolute liability approach is allocation of loss to the party better equipped to pass it on to the public: the superior risk bearer." Professor Morris discusses a variety of examples to show that the defendant is not always the superior risk bearer in an ultrahazardous activity case. Here is what he says, however, about bodily injury and risk-bearing capacity:
>
> > The financial burden of disabling personal injury overwhelms most people. While many can bear the cost of minor injury, prolonged infirmity and extended medical expense often exceed the financial competence of common men. Unless [common man] happens to be rich or covered by one of the more generous workmen's compensation plans, he will probably bear the risk less easily than Enterpriser. The preponderant likelihood is that Enterpriser is the better risk bearer of the two.
> >
> > . . . Thus, both fairness and economic efficiency suggest that the community would be better off if the defendant's marketing practices were classified as ultrahazardous. . . .

The manufacturer may be able to ensure against losses either by charging higher prices and holding a reserve against future liability or by buying a liability insurance policy. On the other hand, the consumer might also be able to obtain insurance.

DENNY v. FORD MOTOR COMPANY

639 N.Y.S.2d 250 (N.Y. 1995)

TITONE, J. . . .

As stated by the Second Circuit, this action arises out of a June 9, 1986 accident in which plaintiff Nancy Denny was severely injured when the Ford Bronco II that she was driving rolled over. The rollover accident occurred when Denny slammed on her brakes in an effort to avoid a deer that had walked directly into her motor vehicle's path. Denny and her spouse sued Ford Motor Co., the vehicle's manufacturer,

asserting claims for negligence, strict products liability and breach of implied warranty of merchantability (see, UCC 2-314[2][c]; 2-318). The case went to trial in the District Court for the Northern District of New York in October of 1992.

The trial evidence centered on the particular characteristics of utility vehicles, which are generally made for off-road use on unpaved and often rugged terrain. Such use sometimes necessitates climbing over obstacles such as fallen logs and rocks. While utility vehicles are traditionally considerably larger than passenger cars, some manufacturers have created a category of down-sized "small" utility vehicles, which are designed to be lighter, to achieve better fuel economy and, presumably, to appeal to a wider consumer market. The Bronco II in which Denny was injured falls into this category.

Plaintiffs introduced evidence at trial to show that small utility vehicles in general, and the Bronco II in particular, present a significantly higher risk of rollover accidents than do ordinary passenger automobiles. Plaintiffs' evidence also showed that the Bronco II had a low stability index attributable to its high center of gravity and relatively narrow track width. The vehicle's shorter wheel base and suspension system were additional factors contributing to its instability. Ford had made minor design changes in an effort to achieve a higher stability index, but, according to plaintiffs' proof, none of the changes produced a significant improvement in the vehicle's stability.

Ford argued at trial that the design features of which plaintiffs complained were necessary to the vehicle's off-road capabilities. According to Ford, the vehicle had been intended to be used as an off-road vehicle and had not been designed to be sold as a conventional passenger automobile. Ford's own engineer stated that he would not recommend the Bronco II to someone whose primary interest was to use it as a passenger car, since the features of a four-wheel-drive utility vehicle were not helpful for that purpose and the vehicle's design made it inherently less stable.

Despite the engineer's testimony, plaintiffs introduced a Ford marketing manual which predicted that many buyers would be attracted to the Bronco II because utility vehicles were "suitable to contemporary life styles" and were "considered fashionable" in some suburban areas. According to this manual, the sales presentation of the Bronco II should take into account the vehicle's "suitab[ility] for commuting and for suburban and city driving." Additionally, the vehicle's ability to switch between two-wheel and four-wheel drive would "be particularly appealing to women who may be concerned about driving in snow and ice with their children." Plaintiffs both testified that the perceived safety benefits of its four-wheel-drive capacity were what attracted them to the Bronco II. They were not at all interested in its off-road use.

At the close of the evidence, the District Court Judge submitted both the strict products liability claim and the breach of implied warranty claim, despite Ford's objection that the two causes of action were identical. With respect to the strict products liability claim the court told the jury that "[a] manufacturer who places a product on the market in a defective condition is liable for injury which results from use of the product when the product is used for its intended or reasonably foreseeable purpose." Further, the court stated:

> A product is defective if it is not reasonably safe. . . . It is not necessary for the plaintiffs to prove that the defendant knew or should have known of the product[']s potential for causing injury to establish that the product was not reasonably safe. Rather, the plaintiffs must prove by a preponderance of the evidence that a reasonable

> person . . . who knew of the product's potential for causing injury and the existence of available alternative designs . . . would have concluded that such a product should not have been marketed in that condition. Such a conclusion should be reached after balancing the risks involved in using the product against the product[']s usefulness and its costs against the risks, usefulness and costs of the alternative design as compared to the product defendant did market.

With respect to the breach of implied warranty claim, the court told the jury:

> The law implies a warranty by a manufacturer which places its product on the market that the product is reasonably fit for the ordinary purpose for which it was intended. If it is, in fact, defective and not reasonably fit to be used for its intended purpose, the warranty is breached.
>
> The plaintiffs claim that the Bronco II was not fit for its ordinary purpose because of its alleged propensity to roll over and lack of warnings to the consumer of this propensity.

Neither party objected to the content of these charges.

In response to interrogatories, the jury found that the Bronco II was not "defective" and that defendant was therefore not liable under plaintiffs' strict products liability cause of action. However, the jury also found that defendant had breached its implied warranty of merchantability and that the breach was the proximate cause of Nancy Denny's injuries. Following apportionment of damages, plaintiff was awarded judgment in the amount of $1.2 million.

Ford subsequently moved for a new trial under rule 59(a) of the Federal Rules of Civil Procedure, arguing that the jury's finding on the breach of implied warranty cause of action was irreconcilable with its finding on the strict products liability claim. The trial court rejected this argument, holding that it had been waived and that, in any event, the verdict was not inconsistent. [The Second Circuit Court of Appeals certified to this court the question of whether the implied warranty cause and strict products liability actions are identical.] . . .

Although the products liability theory sounding in tort and the breach of implied warranty theory authorized by the UCC coexist and are often invoked in tandem, the core element of "defect" is subtly different in the two causes of action. Under New York law, a design defect may be actionable under a strict products liability theory if the product is not reasonably safe. Since this Court's decision in Voss v. Black & Decker Mfg. Co., 59 N.Y.2d 102, 108, 463 N.Y.S.2d 398, 450 N.E.2d 204, the New York standard for determining the existence of a design defect has required an assessment of whether "if the design defect were known at the time of manufacture, a reasonable person would conclude that the utility of the product did not outweigh the risk inherent in marketing a product designed in that manner." This standard demands an inquiry into such factors as (1) the product's utility to the public as a whole, (2) its utility to the individual user, (3) the likelihood that the product will cause injury, (4) the availability of a safer design, (5) the possibility of designing and manufacturing the product so that it is safer but remains functional and reasonably priced, (6) the degree of awareness of the product's potential danger that can reasonably be attributed to the injured user, and (7) the manufacturer's ability to spread the cost of any safety-related design changes. The above-described analysis is rooted in a recognition that there are both risks and benefits associated with many products and that there are instances in which a product's inherent dangers cannot be eliminated without simultaneously

compromising or completely nullifying its benefits. In such circumstances, a weighing of the product's benefits against its risks is an appropriate and necessary component of the liability assessment under the policy-based principles associated with tort law.

The adoption of this risk/utility balance as a component of the "defectiveness" element has brought the inquiry in design defect cases closer to that used in traditional negligence cases, where the reasonableness of an actor's conduct is considered in light of a number of situational and policy-driven factors. While efforts have been made to steer away from the fault-oriented negligence principles by characterizing the design defect cause of action in terms of a product-based rather than a conduct-based analysis, the reality is that the risk/utility balancing test is a "negligence-inspired" approach, since it invites the parties to adduce proof about the manufacturer's choices and ultimately requires the fact finder to make "a judgment about [the manufacturer's] judgment" (Birnbaum, *Unmasking the Test for Design Defect: From Negligence [to Warranty] to Strict Liability to Negligence,* 33 Vand. L. Rev. 593, 610, 648). In other words, an assessment of the manufacturer's conduct is virtually inevitable, and, as one commentator observed, "[i]n general, . . . the strict liability concept of 'defective design' [is] functionally synonymous with the earlier negligence concept of unreasonable designing." (Schwartz, *New Products, Old Products, Evolving Law, Retroactive Law,* 58 N.Y.U. L. Rev. 796, 803, citing United States v. Carroll Towing Co., 159 F.2d 169, 173 [Hand, J.].)

It is this negligence-like risk/benefit component of the defect element that differentiates strict products liability claims from UCC-based breach of implied warranty claims in cases involving design defects. While the strict products concept of a product that is "not reasonably safe" requires a weighing of the product's dangers against its over-all advantages, the UCC's concept of a "defective" product requires an inquiry only into whether the product in question was "fit for the ordinary purposes for which such goods are used" (UCC 2-314[2][c]). The latter inquiry focuses on the expectations for the performance of the product when used in the customary, usual and reasonably foreseeable manners. The cause of action is one involving true "strict" liability, since recovery may be had upon a showing that the product was not minimally safe for its expected purpose—without regard to the feasibility of alternative designs or the manufacturer's "reasonableness" in marketing it in that unsafe condition.

This distinction between the "defect" analysis in breach of implied warranty actions and the "defect" analysis in strict products liability actions is explained by the differing etiology and doctrinal underpinnings of the two distinct theories. The former class of actions originates in contract law, which directs its attention to the purchaser's disappointed expectations; the latter originates in tort law, which traditionally has concerned itself with social policy and risk allocation by means other than those dictated by the marketplace. . . .

In any event, while the critics and commentators may debate the relative merits of the consumer-expectation and risk/utility tests, there is no existing authority for the proposition that the risk/utility analysis is appropriate when the plaintiff's claim rests on a claimed breach of implied warranty under UCC 2-314(2)(c) and 2-318. . . .

As a practical matter, the distinction between the defect concepts in tort law and in implied warranty theory may have little or no effect in most cases. In this case, however, the nature of the proof and the way in which the fact issues were litigated

demonstrates how the two causes of action can diverge. In the trial court, Ford took the position that the design features of which plaintiffs complain, i.e., the Bronco II's high center of gravity, narrow track width, short wheel base and specially tailored suspension system, were important to preserving the vehicle's ability to drive over the highly irregular terrain that typifies off-road travel. Ford's proof in this regard was relevant to the strict products liability risk/utility equation, which required the fact finder to determine whether the Bronco II's value as an off-road vehicle outweighed the risk of the rollover accidents that could occur when the vehicle was used for other driving tasks.

On the other hand, plaintiffs' proof focused, in part, on the sale of the Bronco II for suburban driving and everyday road travel. Plaintiffs also adduced proof that the Bronco II's design characteristics made it unusually susceptible to rollover accidents when used on paved roads. All of this evidence was useful in showing that routine highway and street driving was the "ordinary purpose" for which the Bronco II was sold and that it was not "fit" — or safe — for that purpose.

Thus, under the evidence in this case, a rational fact finder could have simultaneously concluded that the Bronco II's utility as an off-road vehicle outweighed the risk of injury resulting from rollover accidents and that the vehicle was not safe for the "ordinary purpose" of daily driving for which it was marketed and sold. Under the law of this State such a set of factual judgments would lead to the concomitant legal conclusion that plaintiffs' strict products liability cause of action was not viable but that defendant should nevertheless be held liable for breach of its implied promise that the Bronco II was "merchantable" or "fit" for its "ordinary purpose." Importantly, what makes this case distinctive is that the "ordinary purpose" for which the product was marketed and sold to the plaintiff was *not* the same as the utility against which the risk was to be weighed. It is these unusual circumstances that give practical significance to the ordinarily theoretical difference between the defect concepts in tort and statutory breach of implied warranty causes of action.

From the foregoing it is apparent that the causes of action for strict products liability and breach of implied warranty of merchantability are not identical in New York and that the latter is not necessarily subsumed by the former. It follows that, under the circumstances presented, a verdict such as the one occurring here — in which the manufacturer was found liable under an implied warranty cause of action and not liable under a strict products cause of action — is theoretically reconcilable under New York law. . . .

NOTES TO DENNY v. FORD MOTOR COMPANY

1. ***Contrast Between Consumer Expectation and Risk-Utility Tests.*** New York applies a consumer expectation test to warranty claims, and a risk-utility test to strict liability design defect claims. *Denny* illustrates the theoretical possibility that the two tests can produce different results in connection with a single product.

2. ***Multiple Theories.*** In some situations, warranty claims and design defect claims should obviously produce different results, as where a plaintiff contends that a product's durability was inadequate. Where safety is not an issue, it is understandable that warranty and strict liability design defect claims would yield different results. Many states have rejected, however, the possibility of differing conclusions on product safety when confronted with plaintiffs' efforts to use both warranty and strict liability

claims. The Restatement (Third) of Torts: Products Liability calls for a single submission to the jury:

> Two or more factually identical defective design claims . . . should not be submitted to the trier of fact in the same case under different doctrinal labels. Regardless of the doctrinal label attached to a particular claim, design . . . claims rest on a risk-utility assessment. To allow two or more factually identical risk-utility claims to go to a jury under different labels, whether "strict liability," "negligence," or "implied warranty of merchantability," would generate confusion and may well result in inconsistent verdicts.

§2 comment n.

3. ***Problem: Unprotected Propellers.*** The plaintiff's decedent was killed when someone accelerated a motorboat in an area where the decedent was swimming. The outboard motor's propeller wounded the victim severely. The plaintiff sought damages from the motor manufacturer, claiming that had a guard been installed around the propeller blades, the injury would have been avoided. How would this claim be analyzed under warranty, consumer expectation, and risk-utility approaches? See Fitzpatrick v. Madonna, 623 A.2d 322 (Pa. Super. 1993).

2. Mandatory Proof of a Feasible Alternative Design

Proof of a *feasible alternative* to a defendant's design is a factor recognized in the risk-utility test used by many states. A particularly controversial element in Restatement (Third) §2(b) *requires* that a plaintiff introduce proof of a feasible alternative instead of merely permitting that type of proof. In General Motors Corp. v. Sanchez, the court analyzes the degree of detail that should be required in a state where evidence of a feasible alternative design is a mandatory component of the plaintiff's case.

GENERAL MOTORS CORP. v. SANCHEZ

997 S.W.2d 584 (Tex. 1999)

GONZALES, J.

Because there were no witnesses, relatively little is known first hand about the circumstances of the accident that is the basis of this litigation. Lee Sanchez, Jr. left his home to feed a pen of heifers in March 1993. The ranch foreman found his lifeless body the next morning and immediately called Sanchez's father. Apparently, Sanchez's 1990 Chevy pickup had rolled backward with the driver's side door open, pinning Sanchez to the open corral gate in the angle between the open door and the cab of the truck. Sanchez suffered a broken right arm and damaged right knee where the gate crushed him against the door pillar, the vertical metal column to which the door is hinged. He bled to death from a deep laceration in his right upper arm.

The Sanchez family, his estate, and his wife sued General Motors Corporation and the dealership that sold the pickup for negligence, products liability, and gross negligence based on a defect in the truck's transmission and transmission-control linkage. The plaintiffs presented circumstantial evidence to support the following theory of how the accident happened. Sanchez drove his truck into the corral and stopped to close the gate. He mis-shifted into what he thought was Park, but what was actually an

intermediate, "perched" position between Park and Reverse where the transmission was in "hydraulic neutral." Expert witnesses explained that hydraulic neutral exists at the intermediate positions between the denominated gears, Park, Reverse, Neutral, Drive, and Low, where no gear is actually engaged. Under this scenario, as Sanchez walked toward the gate, the gear shift slipped from the perched position of hydraulic neutral into Reverse and the truck started to roll backwards. It caught Sanchez at or near the gate and slammed him up against it, trapping his right arm and knee. He was pinned between the gate and the door pillar by the pressure the truck exerted while idling in Reverse. Struggling to free himself, Sanchez severed an artery in his right arm and bled to death after 45 to 75 minutes.

In the trial court, G.M. offered alternative theories explaining the cause of the accident, all of which directed blame at Sanchez.

The jury rejected G.M.'s theories and found that G.M. was negligent, the transmission was defectively designed, and G.M.'s warning was so inadequate as to constitute a marketing defect. The trial court rendered judgment for actual and punitive damages of $8.5 million for the plaintiffs. A panel of the court of appeals affirmed the trial court's judgment with one justice dissenting.

Here, G.M. does not dispute that Sanchez's fatal injury was caused when he mis-shifted the truck's transmission into hydraulic neutral, which then migrated into Reverse. The parties agree that all transmissions made today can mis-shift, that no design eliminates the possibility of a mis-shift, and that a mis-shifted car is dangerous. As G.M. puts it, a "mis-shift is just physics." G.M. contends that it has no liability, even if its product is defective, because the plaintiffs failed to present evidence of a safer alternative design.

We consider first the evidence of strict liability. We will sustain G.M.'s no evidence point only if there is no more than a scintilla of evidence to prove the existence of a product defect.

A design defect renders a product unreasonably dangerous as designed, taking into consideration the utility of the product and the risk involved in its use. A plaintiff must prove that there is a safer alternative design in order to recover under a design defect theory.[9] An alternative design must substantially reduce the risk of injury and be both economically and technologically feasible.[10] We first examine the evidence concerning the operation of the transmission in Sanchez's truck and then determine whether the plaintiffs have proven a safer alternative design.

Most of the plaintiff's design evidence came in through the testimony of the plaintiffs' expert, Simon Tamny, who testified about the operation of the 700R4 transmission in Sanchez's truck. He opined that the G.M. transmission and transmission-control linkage presented a particular risk. All transmissions have an intermediate position between Reverse and Park. It is impossible, under federal standardization guidelines, to design a gear shift without an intermediate position between Reverse and Park. However, Tamny testified that G.M.'s transmission has the added danger that internal forces tend to move the gear selector toward Reverse rather than Park when the driver inadvertently leaves the lever in this intermediate position. Tamny explained how G.M. could alter the design to make the operation of the 700R4 safer.

[9] See Caterpillar, Inc. v. Shears, 911 S.W.2d 379, 384 (Tex. 1995).

[10] See Tex. Civ. Prac. & Rem. Code §82.005(b)(1) & (2).

It is possible for the gear shift to be moved to a position between Reverse and Park, called hydraulic neutral by the parties. In hydraulic neutral, the roller is perched at the peak between the two gears. At this point, Reverse is hydraulically disengaged, and the ratchet spring is forcing the parking pawl against the output shaft. Tamny performed an experiment in which he moved the gear selector of Sanchez's truck to this position six times. He disturbed the friction of the linkage four times by slapping the steering wheel; once by revving the engine, and once he took no action. In each case, the gear shift slipped into Reverse.

Tamny offered a few alterations to G.M.'s design that he contended would reduce the risk of injury. First, he suggested moving (1) the peak between Park and Reverse from its current position 5.7 degrees from Park to a position 7.5 degrees from Park and (2) the "ratchet" point (where the parking pawl contacts the output shaft) nearer to Park, from 10.9 degrees to 7.0 degrees. Second, he proposed sharpening the peak to .0010 of an inch to reduce the likelihood that the roller could perch. Third, he proposed using a stronger roller spring to increase the force pushing the rooster comb into a gear position, also reducing the likelihood that the roller would perch.

Tamny admitted that his design change would not totally eliminate the possibility of leaving the gearshift in the intermediate position of hydraulic neutral. However, according to Tamny, his design change would totally eliminate the possibility of slipping into Reverse from hydraulic neutral. Tamny described his design change as a "99% solution" to the mis-shift problem. While his design change would not eliminate the risk that the car might roll in hydraulic neutral, it would eliminate the most dangerous risk of migration to Reverse and powered movement without a driver.

G.M. does not challenge that Tamny's design was technically and economically feasible. Instead, G.M. argues that, as a matter of law, Tamny's design is inadequate to prove a substantial reduction in the risk of injury because: (1) the design was not proved safer by testing; (2) the design was not published and therefore not subjected to peer review; and (3) G.M.'s statistical evidence proved that other manufacturers, whose designs incorporated some of Tamny's suggestions, had the same accident rate as G.M. These arguments however, go to the reliability and therefore the admissibility of expert evidence rather than the legal sufficiency of the evidence of a product defect.

G.M. argues that the substance of Tamny's testimony does not amount to evidence of a safer alternative design. G.M. contends that Tamny's testimony was based on "speculation and conjecture," . . . We disagree. [H]ere there is more to the evidence than an expert's bald assertion that his design would be safer. Tamny described the current operation of the 700R4 transmission at length, and explained in some detail how his proposed design would make the transmission safer by eliminating the risk that the vehicle could move in a powered gear due to an inadvertent mis-shift. "It will take you from a 90% solution to a 99% solution," he said. Tamny's testimony about the engineering principles underlying his proposed design support his conclusion that his design features would be safer than those in the 700R4.

G.M. mis-characterizes Tamny's testimony by considering whether each individual feature of Tamny's design makes the design safer, instead of considering the design as a whole, and by considering the plaintiffs' testimony in light of its statistical evidence instead of considering the plaintiffs' evidence alone. G.M. argues that none of the other manufacturers' designs incorporating different aspects of Tamny's design have proven safer than G.M.'s and that Tamny offered no testing

evidence or engineering principles to show his design was safer. Without this evidence, G.M. concludes, Tamny's opinion is mere speculation.

However, the plaintiffs did not have to build and test an automobile transmission to prove a safer alternative design. A design need only prove "capable of being developed."[25] The Restatement (Third) of Torts: Products Liability takes the position that "qualified expert testimony on the issue suffices, even though the expert has produced no prototype, if it reasonably supports the conclusion that a reasonable alternative design could have been practically adopted at the time of sale." Furthermore, assuming we could consider evidence contrary to the verdict, no manufacturer has incorporated Tamny's design into an existing transmission. For that reason alone, G.M.'s statistical evidence comparing the safety of different existing designs could not conclusively establish the safety of Tamny's design.

The evidence supporting Tamny's conclusion that his design is safer raises a fact question that the jury resolved in favor of the plaintiffs. We conclude that the plaintiffs have presented more than a scintilla of evidence that Tamny's alternative design substantially reduced the risk of injury.

[Judgment for plaintiff affirmed.]

NOTES TO GENERAL MOTORS CORP. v. SANCHEZ

1. ***Required Proof of Feasible Alternative Design.*** The requirement that a plaintiff prove feasibility of an alternative design is adopted in §2(b) of the Restatement of Torts (Third): Products Liability. In Potter v. Chicago Pneumatic Tool Co., 694 A.2d 1319 (Conn. 1997), the Connecticut Supreme Court declined to adopt the requirement, stating that a review of past cases failed to support the conclusion that the requirement had wide support in American case law, and suggesting that the requirement would impose too heavy an evidentiary burden on litigants because it might require costly expert testimony in situations where without that evidence a jury could easily draw an inference of improper design.

Proof of a feasible alternative design might readily be available to a plaintiff in a case where a defendant manufacturer has adopted a new and safer design after injury to a plaintiff. In many states and in federal court, that evidence is forbidden to be introduced, under a rule that is justified as providing an incentive for remedial measures. See, for example, Federal Rules of Evidence 407.

2. ***Generically Unsafe Products.*** In O'Brien v. Muskin Corp., 94 N.J. 169, 184, 463 A.2d 298 (1983), the New Jersey Supreme Court evaluated an above-ground swimming pool with a very slippery plastic liner. Its low friction contributed to a serious injury suffered by someone who attempted to dive in and protect his head and neck by keeping his hands in front of them. Despite the unavailability of alternate designs, the court stated that a product for which no alternative exists can be so dangerous and of such little use that a manufacturer should bear the costs of injuries such products may cause.

In McCarthy v. Olin Corp., 119 F.3d 148 (2d Cir. 1997), plaintiffs claimed that the defendant's product, hollowpoint bullets, were defective because they were designed to inflict unusually severe harm upon impact, and because they were sold to the general

[25] See Boatland of Houston, Inc. v. Bailey, 609 S.W.2d 743, 748 (Tex. 1980).

population. How might the New Jersey and Texas courts respond to an argument that the manufacturer's product could not be made safe without destroying its utility?

3. *Expert Testimony.* Expert testimony is crucial in most design defect cases. In *Sanchez*, the defendant claimed that the expert's conclusions were not sufficient to support a verdict for the plaintiff. Another common attack on expert testimony is to challenge its initial admissibility. In federal courts and in most state courts, an expert's conclusions are admissible evidence only if they are based on scientifically legitimate research or analysis. See Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993).

Statute: PRODUCT LIABILITY ACTIONS

Mich. Comp. Laws Ann. §600.2946 (2000)

Sec. 2946.(2) In a product liability action brought against a manufacturer or seller for harm allegedly caused by a production defect, the manufacturer or seller is not liable unless the plaintiff establishes that the product was not reasonably safe at the time the specific unit of the product left the control of the manufacturer or seller and that, according to generally accepted production practices at the time the specific unit of the product left the control of the manufacturer or seller, a practical and technically feasible alternative production practice was available that would have prevented the harm without significantly impairing the usefulness or desirability of the product to users and without creating equal or greater risk of harm to others. An alternative production practice is practical and feasible only if the technical, medical, or scientific knowledge relating to production of the product, at the time the specific unit of the product left the control of the manufacturer or seller, was developed, available, and capable of use in the production of the product and was economically feasible for use by the manufacturer. Technical, medical, or scientific knowledge is not economically feasible for use by the manufacturer if use of that knowledge in production of the product would significantly compromise the product's usefulness or desirability.

Statute: STATE OF THE ART

Colo. Rev. Stat. §13-21-403 (2002)

(1) In any product liability action, it shall be rebuttably presumed that the product which caused the injury, death, or property damage was not defective and that the manufacturer or seller thereof was not negligent if the product:

(a) Prior to sale by the manufacturer, conformed to the state of the art, as distinguished from industry standards, applicable to such product in existence at the time of sale. . . .

NOTES TO STATUTES

1. *Modern Codification of Strict Product Liability Rules.* The Michigan statute was adopted in 1995, decades after the drafting of the Restatement (Second) of Torts. What details regarding the application of strict liability to products does the Michigan statute answer that Restatement (Second) §402A does not address?

2. ***State of the Art.*** The power of the "state of the art" defense depends on the precise wording of applicable statutes. Under the Colorado statute, would a plaintiff have to abandon both negligence and strict product liability claims if, prior to sale of the product in question, no manufacturer had ever produced a product safer than the defendant's product?

Perspective: Choosing Among Tests for Product Defect

The Restatement (Third) rejects the consumer expectation test for design defects. As the following article excerpts show, that decision has been highly controversial. Jerry S. Phillips, *Consumer Expectations*, 53 S.C. L. Rev. 1047 (2002), states:

> Mark Twain cabled the Associated Press from London in 1897 stating: "The reports of my death are greatly exaggerated." Similarly, the reports of the death of the consumer expectations test as a standard for determining products liability are also greatly exaggerated. . . .
>
> The drafters of the Products Liability Restatement were probably largely motivated to jettison consumer expectations as the central test for determining product defectiveness because of their desire to establish reasonable alternative design under 2(b) as the essential basis for determining design defect. Section 2(b) was the cornerstone of the Products Liability Restatement from its inception.
>
> A number of prominent courts have expressly rejected 2(b) as a basis for determining design defect. Others reject it either by using consumer expectations alone or in conjunction with risk-benefit analysis to determine consumer expectations, without making proof of a reasonable alternative design a sine qua non for determining such expectations. Risk-benefit analysis fits neatly within the definition of consumer expectations. Courts widely recognize that expert testimony may be used to establish consumer expectations. . . .
>
> Courts reject the reasonable-alternative-design standard as the test for determining liability in design defect cases not so much because the standard often places a very heavy burden of proof on the plaintiff—although it does do that. Rather, courts, being practical, common-sense institutions, are aware that design defectiveness cannot be so easily cabined by the alternative-design test. Tort law is a many-splendored thing. It evolves in response to changing times and circumstances. Products liability for the last half century has been the crown jewel of tort law. No temporary, conservative backlash is likely to stem the creative evolution of tort law and products liability.

In contrast, Victor E. Schwartz, *The American Law Institute's Process of Democracy and Deliberation*, 26 Hofstra L. Rev. 743 (1998), states:

> [W]hy have plaintiffs' lawyers claimed that the Restatement (Third) is pro-defense? . . .
>
> The plaintiffs' advocates . . . objected vehemently to the fact that in a design defect case, the Restatement (Third) requires a plaintiff to show that a reasonable alternative design could have provided overall better safety than the original design. . . . As a practical matter, plaintiffs' lawyers in virtually every major products liability design case, from allegedly defective automobiles to medical devices, have shown the jury a reasonable alternative design. They

have helped the jury visualize what was wrong with the product and how it could have been made so as to have avoided causing the plaintiff harm. Winning plaintiffs' lawyers know that this is the only practical way to litigate a design case.

E. Warnings and Instructions

Inadequate warnings accompanying products may be characterized as defects that present unreasonable dangers to users or consumers. Restatement (Second) §402A comment j says, "In order to prevent the product from being unreasonably dangerous, the seller may be required to give directions or warnings, on the container, as to its use." The Restatement (Third) §2(c) says that a product "is defective because of inadequate instructions or warnings when the *foreseeable risks* of harm posed by the product could have been reduced by the provision of *reasonable instructions or warnings*" (emphasis added). Richter v. Limax International focuses on when a manufacturer must give warnings and how much information about the risks associated with a product a manufacturer is presumed to have.

RICHTER v. LIMAX INTERNATIONAL

45 F.3d 1464 (10th Cir. 1995)

LAY, J.

Dearmedia Richter appeals from the district court's grant of judgment as a matter of law to Limax International, Inc. and LMX-Manufactures Consultants, Inc. (collectively Limax). Richter claimed that repetitive use of a mini-trampoline manufactured by Limax caused stress fractures in her ankles. In March 1991, Richter sued Limax alleging the mini-trampoline was defectively designed and came with an inadequate warning. The jury found, in a special verdict, that the mini-trampoline was not defectively designed. However, it nonetheless found Limax was liable under theories of strict liability and negligence for its failure to warn and determined damages to be $472,712 reduced by Richter's percentage of fault of thirty-eight percent.

Limax then moved for judgment as a matter of law, which the court granted. The court concluded the defendant had no duty to warn because the plaintiff had failed to prove that Limax had knowledge of the danger of stress fractures or that the danger was known in the state of the art. The court further concluded that under these circumstances Kansas law does not impose a duty on manufacturers to warn about dangers they might have discovered by conducting reasonable tests. Richter appealed. We reverse and remand to the district court with instructions to reinstate the jury's verdict and enter a judgment on the verdict.

Richter purchased a mini-trampoline from Limax on February 1, 1989. There were no instructions in or on the box containing the mini-trampoline, although the trampoline did have sticker on it stating: "This product was designed to be used only as an exercise device. It is not designed to be used for acrobatics, trampolining or any

springboard type activities." Richter stated she only used the trampoline for jogging. She began by jogging for short periods of time but eventually increased her time up to sixty minutes per day. She used the product until March 10, 1989. The next day she experienced severe pain in her ankles while walking. A doctor diagnosed her as having stress fractures in her ankles. Richter testified the pain forced her to discontinue her work as a sales representative for a furniture manufacturer.

The plaintiff produced expert testimony which established relatively simple tests would have revealed that because the surface of a mini-trampoline depresses furthest in the center and decreasingly towards the edges, as a jogger's feet strike the trampoline's surface and it gives way, the inside of each foot drop further than the outside. This rotation of the foot, which is termed "eversion," occurs to a lesser degree in normal jogging, but rebound jogging markedly accentuates the degree of rotation.

Further testimony established it has long been known that lateral pulling on a bone by ligaments or muscles can cause microscopic fractures. If the bone is not allowed time to heal and the stress on the bone continues, these tiny fractures can coalesce into a stress fracture. The eversion of the feet caused by the mini-trampoline results in certain tissues pulling laterally on particular ankle bones. Richter's expert witnesses testified that long-term use of the trampoline could cause stress fractures in the affected ankle bones.

Limax admitted it conducted no tests relating to the long-term effects of jogging on the mini-trampoline and did not systematically review published studies of mini-trampolines by sports medicine and exercise specialists. The CEO of Limax testified the company had sold approximately two million mini-trampolines world-wide and Richter's complaint about stress fractures was the first Limax had received. Further, although mini-trampolines had been in use since 1975, by the time of Richter's purchase no one had yet suggested their use entailed a risk of stress fractures. No expert testifying at trial could identify any study or article on rebound jogging or mini-trampolines that reported ankle stress fractures or pointed out the risk joggers faced of incurring such an injury.

Richter, however, produced testimony by experts that observations from very simple tests, interpreted in light of well-established knowledge about the structure of the foot and the causes of stress fractures, would have made it apparent that the repetitive use of the mini-trampoline for jogging could cause stress fractures. Two experts testified the danger was well within the state of society's knowledge about such matters. . . . Although the mini-trampoline was found by the jury not to have a defective design, Richter's expert witness testimony established that the marked accentuation of eversion caused by the design of the mini-trampoline could result in her kind of injury developing from her repetitive jogging.

Richter contends Kansas law imposes a duty on manufacturers to test their products and warn consumers appropriately. In Wooderson v. Ortho Pharmaceutical Corp., the Kansas Supreme Court held an ethical drug company had a duty to warn the medical profession about what "it knows, has reason to know, or should know, based upon its position as an expert in the field, upon its research, upon cases reported to it, and upon scientific development, research, and publications in the field." 681 P.2d 1038, 1057 (Kan.), *cert. denied,* 469 U.S. 965, 105 S. Ct. 365, 83 L. Ed. 2d 301 (1984). Richter interprets the language "upon its research," to require manufacturers to test their products for their potential to injure consumers.

The district court held, "though not without misgivings," that Kansas law does not require a manufacturer to test its products for dangers not otherwise known in the state of the art. . . .

Appellate review of a district court's determination of state law is de novo. We find the district court's restrictive interpretation . . . is contrary to Kansas law on the duty of a manufacturer to warn consumers of foreseeable dangers. An earlier district court decision summed up Kansas law relating to the duty to warn consumers:

> Ordinarily, a manufacturer has a duty under Kansas law to warn consumers and users of its products when it knows or has reason to know that its product is or is likely to be dangerous during normal use. The duty to warn is a continuous one, requiring the manufacturer to keep abreast of the current state of knowledge of its products as acquired through research, adverse reaction reports, scientific literature, and other available methods. A manufacturer's failure to adequately warn of its product's reasonably foreseeable dangers renders that product defective under the doctrine of strict liability.

Pfeiffer v. Eagle Mfg. Co., 771 F. Supp. 1133, 1139 (D. Kan. 1991) (O'Connor, J., citations and footnote omitted).

Kansas applies the same test to whether a manufacturer met his duty to warn under negligence as it does under strict liability.[5]

Kansas law makes clear this general duty to warn consumers of foreseeable dangers is not limited to ethical drug companies. In 1976, Kansas adopted the rule set out in the Restatement (Second) of Torts §402A (1965) in Brooks v. Dietz, 545 P.2d 1104, 1108 (1976), an adoption that has been repeatedly affirmed. Section 402A establishes strict liability for a seller of a product whose defective condition makes the product unreasonably dangerous. Comment h to section 402A states that where a seller "has reason to anticipate that danger may result from a particular use, . . . he may be required to give adequate warning of the danger (see Comment j), and a product sold without such warning is in a defective condition." Kansas courts have relied on both comments j and k to section 402A in concretizing the duty to warn announced in comment h.[7] These comments make clear that a product may not be defectively designed, but may nonetheless be defective because the manufacturer failed to adequately warn the users of the

[5] In determining warning issues, the test is reasonableness. . . . "[I]n all warning cases [either negligence or strict liability] — even if the plaintiff or the court claims to analyze failure to warn or inadequacy of warning in the context of a strict products liability claim — the tests actually applied condition imposition of liability on the defendant's having actually or constructively known of the risk that triggers the warning." Johnson v. American Cyanamid Co., 239 Kan. 279, 718 P.2d 1318, 1324 (1986), *aff'd*, Kan. 291, 758 P.2d 206 (1988), (quoting Kearl v. Lederle Lab., 172 Cal. App. 3d 812, 218 Cal. Rptr. 453, 465-66 (1985)).

[7] Comment j reads, in pertinent part:

> Directions or warning. In order to prevent the product from being unreasonably dangerous, the seller may be required to give directions or warning, on the container, as to its use. . . .
>
> Where warning is given, the seller may reasonably assume that it will be read and heeded; and a product bearing such a warning, which is safe for use if it is followed, is not in defective condition, nor is it unreasonably dangerous.

Comment k reads:

> Unavoidably unsafe products. There are some products which, in the present state of human knowledge, are quite incapable of being made safe for their intended and ordinary use. . . . Such a product, properly prepared, and accompanied by proper directions and warning, is not defective, nor is it unreasonably dangerous. . . . The seller of such products, again with the qualification that they are properly prepared and marketed, and proper warning is given, where the situation calls for it, is not to be held to strict liability for unfortunate consequences attending their use, merely because he has undertaken to supply the public with an apparently useful and desirable product, attended with a known but apparently reasonable risk.