OREGON LAW REVIEW
Winter 1999 – Volume 78, Number 3
(Cite as: 78 Or. L. Rev. 827)

EXPLODING LIABILITY: CREATING A CAUSE OF ACTION FOR DEFECTIVELY DESIGNED AIRBAGS UNDER THE RESTATEMENT (THIRD) OF TORTS

Susan M. Mudgett [FNa1]

In the early 1970s, auto manufacturers, anxious to protect absent-minded, unbelted consumers, introduced to the public passive restraint (airbag) systems capable of protecting vehicle occupants without active occupant participation. Initially viewed as a replacement for seatbelts, airbags have consistently provided even greater protection to belted drivers. In fact, airbags have proven so effective in high-speed collisions that in 1993 Congress amended federal safety standards to require that every passenger vehicle, manufactured on or after September 1, 1997, be equipped with driver and passenger-side bags. [FN1] However, taking one life for every thirty lives saved--in often low-speed, minor collisions--these "consumer safety devices" have recently sparked a heated public policy debate regarding their utility and design.

Newspapers and magazines are replete with examples of faulty airbag tragedies: The August 1998 edition of Automotive News tells the story of Kerri Valeck, a 25-year-old single mother from Streamwood, Illinois, "found dead, slumped over the center console of her 1994 Mitsubishi Mirage in a parking lot." [FN2] County Sheriffs "concluded that the airbag deployed when the car went through a foot-and-a-half-high snow bank." [FN3] Oddly enough, Mitsubishi engineers found evidence that "the airbag system was working properly." [FN4]

An article in the Pittsburgh Post Gazette reports the story of one-year-old Alexandra Greer who was decapitated when the airbag in her mother's car deployed following a low-speed parking ***828** lot accident: "the air bag's impact was so strong that the child's head was forced through the car's passenger-side window, decapitating her and throwing her head out onto the parking lot." [FN5]

Case Western Reserve Law Review relays the tragic story of Pamela and David Gable. One Sunday while attempting to negotiate a turn on a wet highway, Mrs. Gable lost control of the family vehicle, sending it crashing into a guardrail. The vehicle's driver and passenger-side airbags deployed upon impact at a rate of 211 miles an hour. In less than one-thirtieth of a second, Mr. Gable, passenger, and thirty-five-year-old father of one, suffered a broken neck resulting in total paralysis. [FN6]

While the number of airbag related injuries and fatalities increases, to date, few courts have addressed the issue of malfunctioning airbags. Courts that have addressed faulty airbag design have done so under the rhetoric of the Restatement (Second) of Torts, section 402A, which facially characterizes all products liability as "strict." To accommodate the growing realization that design defects are better addressed in risk-balancing "optimality" terms, many states have been forced (often haphazardly) to stray from section 402A's confining terms, and apply a combination of negligence and strict liability to establish defective design.

To remedy the confusion sparked by section 402A, the American Law Institute (ALI) restructured the definition of product "defect" in the final draft of the Restatement (Third) of Torts. The drafters "trifurcated" the "phrase that has confounded courts and commentators for so many years-- 'defective condition unreasonably dangerous" '--into three types of product defects: manufacturing defects, design defects, and warning defects. [FN7] This Comment addresses the possibility of bringing a products liability cause of action for defectively manufactured or designed airbags under this new definition of "defect" found in the Restatement (Third) of Torts.

Part I discusses the dual nature of the new Restatement, the historical confusion caused by the various definitions attached to ***829** the term "defect" under section 402A of the Restatement (Second) of Torts and its progeny, and lays the foundation necessary to establish a prima facie defect case--first generally, then as applied to malfunctioning airbags--under section 2 of the new Restatement (Third). Part I then addresses several provisions drafted by members of the ALI to prevent "unreasonable barriers to recovery" under section 2 of the new Restatement.

Part II addresses the reasons a design defect cause of action for malfunctioning airbags will likely prevail under the new Restatement. While a vast body of inadequate airbag warnings and instruction information exists, this Comment focuses solely on bringing a claim against manufacturers for defective airbag manufacture and design.

Part III addresses other avenues of redress for injured plaintiffs under section 2, comment e, and section 3 of the new Restatement for inherently dangerous products and products that fail to perform their manifestly intended function. In addition, Part III discusses why section 4 of the new Restatement ("Noncompliance and Compliance With Product Safety Statutes or Regulations") currently fails to provide a remedy for most plaintiffs injured by defectively designed airbags and makes suggestions for government improvement in this area.

I The Restatement (Third) Torts: Products Liability

A. The Dual Nature of the Restatement (Third): Conjoining Negligence and Strict Liability

Professor Max Radin once famously analogized the development of common-law rules to the twisting and sometimes misdirected course of a run-away calf. [FN8] Products liability law has been on the run now for over three decades. Although the Restatement (Third) of Torts purports to "put[ ] this body of law much straighter," [FN9] the new Restatement's definitions of "defectiveness" in design and warning cases remain "structurally awkward and unduly complex." [FN10]

Chapter 1, section 1 of the new Products Liability Restatement ***830** "sets forth the rules that govern the liability of commercial product sellers based on product defects at the time of sale." [FN11] Accordingly, "[o]ne . . . who sells or distributes a defective product is subject to liability for harm to persons or property caused by the defect." [FN12]

Chapter 1, section 2 of the Restatement (Third) divides the concept of "defectiveness" into three conventional categories: (a) manufacturing defects, (b) design defects, and (c) inadequate instruction or warning defects. [FN13] While drafters of the new Restatement adopt a traditional strict liability standard for measuring "defectiveness" in the manufacturing context, drafters leave some question as to whether liability for design and warning defects should be based on negligence, or whether liability in certain design and warning cases should continue to be strict. [FN14]

For years courts have purported to apply "strict" liability doctrine to design defect cases while they have, in fact, applied principles that look remarkably like negligence. The application of strict liability in tort for harm caused by defectively designed products first truly emerged in 1964, when drafters of the Restatement (Second) of Torts promulgated the now infamous section 402A. Under section 402A, "[o]ne 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 . . . ." Liability applies "although . . . the seller has exercised all possible care in the preparation and sale of his ***831** product." [FN15] Although express strict liability no longer extends to design and warning defects, it is unclear whether the new Restatement adopts a true negligence standard for design and warning defects under sections 2(b) and2(c).

Under section 2, "liability is predicated entirely on the product--not the seller--being bad. Thus, on the face of the black letter, liability for defective design is 'strict.' " [FN16] However, the comments to section 2 suggest that negligence applies in defective design and warning situations. [FN17] While ALI Reporters admit "this type of terminological confusion 'inevitably [breeds] bad law,' " several arguments have been made to support the "hybrid approach" ultimately adopted by the drafters of the Restatement (Third). [FN18]

First, as many courts do in fact purport to apply strict liability while actually applying some sort of risk-balancing, the incongruity may be viewed as "law," and therefore may arguably be restated as such. [FN19] Second, "while liability is 'strictly' defined in design . . . 'defect' terms, the defect concept is itself explained (albeit in the comments) in terms of 'a reasonableness test traditionally used in determining whether an actor has been negligent." ' [FN20] Third, because products liability borrows piecemeal from negligence and warranty and is not fully congruent with classical tort or contract law, liability may rationally be defined (as reporters have done) "as a combination of the strict liability terms of contract law and the reasonableness-balancing principles of the law of negligence." [FN21]

In fact, conjoining utilitarian, fault-based negligence principles of tort law with the expectational, strict liability

principles of the law of contracts has often been characterized as a useful tool. "Dean Prosser's immortal words, penned prior to the birth of ***832** section 402A, reemerge from the mists of time" to suggest that "'[w]hen the ghosts of case and assumpsit walk hand in hand at midnight, it is sometimes a convenient and comforting thing to have a borderland in which they may lose themselves.'" [FN22] However, because the reasonableness standard applied by courts in design defect cases is nothing more than "negligence, wrapped in a strict liability shroud," drafters of the Restatement (Third) should have "dispense[d] with the myth that responsibility in these contexts is strict" and embraced instead "both the language and doctrine of the negligence standard [courts] truly use." [FN23]

B. Manufacturing and Design Defects: The Historic Confusion Surrounding The Application of Liability

1. Manufacturing Defects Under the New Restatement

While confusion still surrounds the term "defect" in the design and warnings context, the treatment of manufacturing defects under the new Restatement needs little explanation. Like section 402A, chapter 1, section 2(a) of the Restatement (Third), imposes strict liability without fault for all defective manufacturing. [FN24] Under subsection (a), a product, such as an airbag, contains a manufacturing defect: (1) "when the product departs from its intended design" (2) even if "all possible care was exercised in the preparation and marketing of the product." [FN25]

Strict liability in this context fosters several objectives. First, "imposing strict liability on manufacturers for harm caused by manufacturing defects encourages greater investment in product safety than does a regime of fault-based liability under which . . . sellers may escape their appropriate share of responsibility." [FN26] Second, in many cases, "manufacturing defects are in fact caused by manufacturer negligence," though plaintiffs often have difficulty proving it. [FN27] Therefore, strict liability "performs a function similar to the concept of res ipsa loquitur, allowing deserving plaintiffs to succeed notwithstanding what would otherwise be difficult or insuperable problems of proof." [FN28] Ultimately, because "***833** errors in production are apt to be few and far between" liability in manufacturing cases "is unlikely to threaten a manufacturer with financial ruin [[,]" [FN29] and is therefore, justifiably strict.

Creating a cause of action for faulty airbag manufacture under the new Restatement will prove straightforward in most jurisdictions. At least three classes of injury may be attributed to defective airbag manufacturing: (1) injury due to spontaneous and unnecessary deployment, (2) injury attributable to deployment failure at time of impact, and (3) initial or aggravated injury due to proper or improper deployment. Because manufacturers "invest in quality control at consciously chosen levels," [FN30] manufacturers generally "do not even try to deny that deviations from their own design specifications (in excess of accepted tolerances) are in fact usually attributable to some form of negligent mistake." [FN31] As long as plaintiffs can establish that the product was defective when it left the hands of the manufacturer or other commercial distributor down the chain, under the new Restatement, liability will attach to that manufacturer or seller. [FN32]

2. Design Defects Under the New Restatement

While defective manufacturing cases remain straightforward under the Restatement (Third), determining the proper basis of liability for dangers inherent in design (for all products) continues to be "the most vexing problem in the entire field of products liability." [FN33]

In 1963, in the landmark case Greenman v. Yuba Power Products, Inc., [FN34] the California Supreme Court applied the first strict liability cause of action (independent of both negligence and warranty) to a design defect case. The Greenman court held: "A manufacturer is strictly liable in tort when an article he places on the market, knowing that it is to be used without inspection for defects, proves to have a defect that causes injury to a human being." [FN35] While the Greenman court successfully explained that "the central issue in [any] strict products liability action is the ***834** definition to be given to the term 'defect,' " the Greenman court failed to provide "any external standard or criteria for making the initial determination that a particular product is, in fact, defective." [FN36]

The term "defect" created little difficulty in the post-Greenman manufacturing context. Manufacturers evaluated the product at issue "against [[their] own production standards, as manifested by other like products that roll[ed] off the assembly line." [FN37] In the design defect context, however, the term "defect" posed a difficult problem: products defective in design met the manufacturer's design specifications but raised the question whether the specifications themselves created an unreasonable risk. This forced plaintiffs to look to some standard outside the

design specifications--a standard courts had yet to articulate. In adjusting to a theory of liability and recovery based on defect rather than fault, courts after Greenman charted an "uneasy journey from negligence to warranty to strict products liability without fashioning a uniform set of definitions and rules" upon which consumers and manufacturers could rely. [FN38]

When the ALI completed the Restatement (Second) of Torts in 1964, (nearly two years after Greenman), reporters sought to put a substantive gloss on the term "defect." Section 402A explicitly held sellers of products "in defective condition unreasonably dangerous" strictly liable for harm caused to the ultimate consumer or user. [FN39] As section 402A, comment i, of the Restatement (Second) makes clear, drafters included the term "defective condition unreasonably dangerous" to qualify the notion of "defect" and preclude the possibility that manufacturers would be held liable for any and all injuries caused by the use or consumption of their products. Section 402A, comment i states:

The article sold must be dangerous to an extent beyond that which would be contemplated by the ordinary consumer who purchases it, with the ordinary knowledge common to the community as to its characteristics. Good whiskey is not unreasonably dangerous merely because it will make some people drunk, and is especially dangerous to alcoholics; but bad ***835** whiskey, containing a dangerous amount of fusel oil, is unreasonably dangerous. [FN40]

However, in the early 1970s, courts such as the California Supreme Court rejected the "unreasonably dangerous" terminology advanced in section 402A of the Restatement (Second) of Torts. In Cronin v. J.B.E. Olson Corp., the California Supreme Court found that the term "burdened the injured plaintiff with proof of an element which rings of negligence . . . [while] the very purpose of [the] pioneering efforts in [the] field [of products liability] was to relieve the plaintiff from problems of proof inherent in pursuing negligence." [FN41] However, by eliminating the term "unreasonably dangerous," and providing no substitute concept, the Cronin court once again left the term "defect" with little substantive content and caused considerable confusion in the intermediate and surrounding courts.

In 1978, the California Supreme Court attempted to reverse the post-Cronin trend, clarify the meaning of "defect," and define a test for courts to apply in all design defect cases. In Barker v. Lull Engineering Co., the California Supreme Court delineated two alternative tests for determining design defect liability:

[A] court may properly instruct a jury that a product is defective in design if (1) the plaintiff proves that the product failed to perform as safely as an ordinary consumer would expect when used in an intended or reasonably foreseeable manner, or (2) the plaintiff proves that the product's design proximately caused injury and the defendant fails to prove, in light of the relevant factors, that on balance the benefits of the challenged design outweigh the risk of danger inherent in such design. [FN42]

This first test is commonly known as the "consumer expectation test." Under the consumer expectation test, a product is defective if the product's performance fell below the safety expectations of the ordinary consumer. [FN43] Under this test, a product must "meet the safety expectations of the general public as represented by the ordinary consumer, not the industry or a government agency." [FN44] If the injury-causing product is "within the common experience of the ordinary consumer," it is generally ***836** "enough for the injured plaintiff to show the circumstances of the accident and 'the objective features of the product which are relevant to an evaluation of [the product's] safety." ' [FN45]

The Barker court based its second test on a risk-utility balancing calculus. Remiss to allow manufacturers freedom from liability in situations where consumers "would not know what to expect" from a particular product, the Barker court made it clear that "when the ultimate issue of design defect calls for a careful assessment of feasibility, practicality, risk, and benefit, the case should not be resolved simply on the basis of ordinary consumer expectation." [FN46] The court enumerated several factors available to the jury in evaluating the benefits and risks of danger inherent in the design. These factors included the "gravity of the danger posed by the challenged design, the likelihood that such danger would occur, the mechanical feasibility of a safer alternative design, the financial cost of an improved design, and the adverse consequences to the product and to the consumer that would result from an alternative design." [FN47]

C. Confusion in the Courts: Consumer Expectations v. Risk-Utility

More than twenty years after Barker, debate continues to rage over whether courts should apply the consumer expectations test or some risk- balancing formula to design defect cases. Because airbags are still a relatively new product, and because airbags lack a generally agreed upon design, courts have inconsistently applied the consumer expectation and risk- utility balancing tests in malfunctioning airbag cases.

In 1995, in Breshnahan v. Chrysler Corp., plaintiff suffered an elbow fracture when her 1988 Chrysler LeBaron "rear ended" another car, causing the car's passive restraint airbag to inflate. [FN48] The California Court of Appeals for the Second Districtfound that the trial court had "erred in precluding plaintiff from proceeding under the consumer expectations test" because that test required only an inference that the product fell below the legitimate, ***837** commonly accepted minimum safety standard of its ordinary consumers. [FN49] The court found that with expert instruction on complex technical issues, jury members could legitimately call upon their ordinary experience to determine what level of safety they would expect from a car's airbag system and assembly when involved in a minor collision. [FN50]

However, one year later, in Collazo-Santiago v. Toyota Motor Corp., plaintiff, who was injured when her automobile's airbags deployed and exploded during a multi-automobile collision, brought a products liability suit against the automobile manufacturer based on design defect. [FN51] Addressing whether the plaintiff was entitled to present her case under both prongs of the Barker test, the United States District Court for the District of Puerto Rico found it was "highly unlikely that an ordinary consumer would know what technical considerations influenced the design of the airbag system." [FN52] The court further stated that "[i]nstructing the jury on consumer expectations test would . . . impermissibly permit the jury to find liability on little more than intuition or whim." [FN53]

D. Risk Utility Balancing Under the Restatement (Third)

The new Restatement has resolved the problem of which test to apply in design defect (particularly airbag design defect) cases. Drafters of the new Restatement agree consumers do not benefit from products that are excessively safe any more than consumers benefit from products that are excessively risky. In every product design, manufacturers counterbalance the degree of risk or safety with considerations such as cost, utility, and aesthetics. "Because strict liability implies that any degree of risk is simply wrong, it is intrinsically deficient as a true standard for design liability." [FN54] Section 2(b) of the new Restatement, therefore, adopts a reasonableness (risk-utility balancing) test as the standard for judging the defectiveness of product designs. [FN55]

***838** Under the new Restatement a design is defective if the product could have been made safer by the adoption of a "reasonable alternative design." [FN56] If such a design could have been practically adopted at the time of sale, and if the omission of such a design rendered the product "not reasonably safe," the plaintiff establishes a defect under section 2(b). The new Restatement, like most courts (in fact but not in word), explains liability for design defects "in the reasonableness-balancing-negligence terms of the law of tort." [FN57] Consumer expectations remain "entitled to important respect in this context . . . but they are demoted as a strict test of liability and relegated" to a balancing factor. [FN58]

E. Establishing a Prima Facie Case Under Section 2(b) For Defectively Designed Airbags

To establish a prima facie airbag design defect case under section 2(b) of the new Restatement, plaintiffs must prove the availability of a technologically feasible and practical alternative design that would have reduced or prevented plaintiffs' harm at the time of injury. [FN59] Several provisions found in the comments of section 2(b), however, prevent the creation of "artificial and unreasonable barriers to recovery in design defect cases brought under this section." [FN60]

1. No Prototype Needed

When creating a cause of action for defectively designed airbags under section 2(b) of the Restatement (Third), plaintiffs must prove that a reasonable alternative design would have reduced the foreseeable risks of harm posed by the product. [FN61] However, subsection (b) does not "require the plaintiff to produce a prototype in order to make out a prima facie case." [FN62] Plaintiffs may rely on an existing airbag design when bringing a design defect claim.

***839** One suggested alternate design is the "dual speed airbag." [FN63] Dual speed airbags inflate slowly in low

speed collisions thus reducing the probability of neck and spine injury in less severe crashes, and faster in high-speed collisions when powerful deployment is necessary. According to Joan Claybrook, former Administrator of the National Highway Transportation Safety Administration (NHTSA), "[t]his technology was available as far back as the mid-1970's, when General Motors installed dual-stage inflation airbags in over 10,000 cars sold to the public." [FN64] In fact, car makers such as "Mercedes and BMW [currently] offer designs that distinguish between" high and low impact collisions and can detect whether "occupants are wearing seatbelts." [FN65]

In addition, new airbag systems have been developed that mitigate existing safety problems. In several so-called "smart systems," the primary modification is the addition of one or more types of occupant sensors. The Robert Bosch Corporation in Broadview, Illinois has developed a system that uses infared and ultrasonic-sensing technologies. [FN66] The ultrasonic component of the occupant detection system works by emitting 50 kilohertz sound waves from three ultrasound transducers that are installed above and behind the passenger. The sensor then picks up the resulting echoes. A microprocessor analyzes the data to extract the important information and calculates the passenger's position. The airbag deploys according to each passenger's position and distance from the bag upon impact. [FN67]

The Photonics Center at Boston University has developed a technique that uses a piezoelectric polymer, which is a plastic sheet coated with a conductive metal and about as thick as a transparency used for an overhead projector. [FN68] The piezoelectric sheet reacts to weight placed on it by producing a proportional voltage output. If a sheet of this material was embedded directly under the seat, it would react when a passenger sits down providing information on the occupant's position. Sensor output is then ***840** sent to a logic-based controller that uses fuzzy logic to decide whether to deactivate the airbag or deploy it at high or low speed.

Some manufacturers are improving the bag itself. Automotive Systems Laboratory in Farmington Hills, Michigan, a subsidiary of Japan's Takata Corp., is currently developing an airbag with two separate gas-generating chambers instead of one. [FN69] Each can be triggered separately and has about half the explosive power of the original single chamber. The benefit of a dual- stage airbag is that it allows more operating options: mild collisions will deploy only one chamber; more severe collisions will deploy both. This system also takes into account whether the seat belt is buckled, thus giving it four different sensitivity thresholds. [FN70]

Because section 2(b) does not require plaintiff to produce a prototype in order to make out a prima facie case, plaintiffs may arguably rely on these and other alternate designs (assuming they existed at the time the car was manufactured) to prove that a more reasonable alternate design was available at the time of manufacture and should have been used by the manufacturer.

2. No Expert Testimony Needed

Second, under section 2(b), plaintiffs are not required to produce expert testimony in every case. [FN71] Often, cases arise in which the feasibility of a reasonable alternative design is obvious and understandable to laypersons and therefore expert testimony is unnecessary to support a finding that the product should have been designed differently and more safely. To be "sufficient," plaintiffs need only produce enough evidence to prove that a "reasonable person[ ] could conclude that a reasonable alternative could have been practically adopted." [FN72] Once a court concludes that "sufficient evidence on this issue has been presented," the burden shifts to the defendant to prove the product design was in fact reasonable. [FN73] "[T]he issue is then for the trier of fact." [FN74]

The 1998 First Circuit finding in Collazo-Santiago v. Toyota ***841** Motor Corp. [FN75] best exemplifies this burden shift. In Collazo-Santiago, plaintiff, driving a 1994 Toyota Corolla, was involved in a high speed multi-automobile accident. Struck initially from behind, plaintiff's automobile propelled forward into another vehicle, deploying both airbags in plaintiff's vehicle. Plaintiff suffered abrasions to her face that resulted in second degree burns. In accordance with the new Restatement, the First Circuit concluded that: "[A] plaintiff prevails in a design defect case if the plaintiff establishes that the product's design proximately caused her injury and the defendant fails to establish that the benefits of the design outweighed its risks." [FN76]

At trial, the plaintiff testified that she had been wearing her seat belt at the time of the accident and that she did not come into contact with the steering wheel or any other part of the interior of her vehicle. "[P] laintiff did not supply her own expert witness on air bags," [FN77] she simply "elicited testimony from the defendant's expert that abrasions and burns had been associated with air bag deployment." [FN78] From the evidence adduced by the plaintiff, the Collazo-Santiago court held that a reasonable jury could find that it was more likely than not that the

deployment of the airbags caused the friction burns on the plaintiff's face. The burden therefore shifted to the defendant to establish that the benefits of the airbag design outweighed its risks.

3. Economic Impact Not a Factor

Finally, while plaintiffs must prove the availability of a technologically feasible and practical alternative design that would have reduced or prevented plaintiffs' harm under section 2(b), "[g]iven [the] inherent limitations on access to relevant data . . . [plaintiffs are] not required to establish with particularity the costs and benefits associated with adoption of the suggested alternative design." [FN79] The increased cost to consumers may be a relevant consideration, however, the profitability of the manufacturer is not a relevant factor when determining whether the alternative safer design is in fact, reasonable. [FN80]

***842** II Why Airbag Design Defect Cases Will Likely Prevail Under the New Restatement (Third) of Torts

While the aforementioned provisions of section 2(b) appear to overwhelmingly favor consumers, section 2(b) also protects manufacturers and sellers. Section 2(b) only obligates manufacturers to apply risk-reduction techniques that are foreseeable, reasonably knowable, and otherwise commercially feasible at the time of sale. Courts consider several factors when assessing whether an alternative design is reasonable and whether the omission of such design renders a product not reasonably safe. These include: (1) "the instructions and warnings accompanying the product," (2) "the magnitude and probability of the foreseeable risks of harm," and (3) "the nature and strength of consumer expectations regarding the product, including expectations arising from product portrayal and marketing." [FN81] These factors will likely lead courts applying the new Restatement to find that certain malfunctioning airbags are not reasonably safe, because: (1) instructions and warnings accompanying certain airbags are often ineffective; (2) the potential danger of airbags has been very well known to car makers, safety lobbyists, and regulators for years; and (3) manufacturers have been less than forthcoming about the potential dangers lurking behind certain bags.

A. Failure to Warn

Airbags have never contained adequate safety warnings. Federal regulators, in no hurry to puncture the fantasy surrounding their benevolent bags, "waited until 1993 (by which time 13 people had been killed) to begin requiring warning labels in cars with air bags." [FN82] Vehicles manufactured before February 25, 1997, now require a minimal safety label which reads:

CAUTION--TO AVOID SERIOUS INJURY:

For maximum safety protection in all types of crashes, you must always wear your safety belt.

Do not install rearward-facing child seats in any front passenger seat position.

Do not sit or lean unnecessarily close to the air bag.

***843** Do not place any objects over the air bag or between the air bag and yourself . . . . [FN83]

All vehicles manufactured after February 25, 1997 require a somewhat stronger and seemingly more effective warning:

DEATH or SERIOUS INJURY can occur

Sit as far back as possible from the air bag.

ALWAYS use SEAT BELTS and CHILD RESTRAINTS.

The BACK SEAT is the SAFEST place for children . . . . [FN84]

While these labels have been required for several years now, the success of such labeling has been somewhat grim. A recent study supports this conclusion. Researchers at Harvard's Center for Risk Analysis in the School of Public Health recently polled 1,000 adults on their attitudes about airbags. Eighty percent of respondents thought it was

safe to have a child under age 13 in the front seat. [FN85]

In fact, certain automakers often act contrary to the warnings they actually supply. An October 1998 issue of Good Housekeeping reports:

At least one carmaker has promoted its new air bag-equipped vehicles in material featuring children in the front passenger seats, smack in front of the airbags. Even after telling NHTSA in February 1997 that 'children are better off in the rear seat to protect them from deployment-interaction injuries,' Chrysler published promotional materials for its 1997 Voyager van with a team of Little Leaguers, one child seemingly unbelted in the front passenger seat. [FN86]

While current labeling appears to provide some notice to consumers that airbags can be dangerous, manufacturers have seemingly failed to convince consumers of the true dangers lurking behind their dash. Certain automakers know that their airbags, more than others, have the potential to maim and kill vehicle occupants if certain safety procedures are not followed. Sound public policy dictates that these manufacturers go beyond the minimum warning requirements set by the federal government. Because these manufacturers are in the best position to know of any increased danger caused by their particular airbag design, these manufacturers should educate consumers through safety ***844** videos, commercials, and literature on how to safely co-exist with their bags. Failure to do so should result in strict, or in the very least, negligence liability.

B. Foreseeable Risk of Harm

While it may be news to most consumers that airbags can cause "death or serious injury," the potential danger of the devices have "been very well known to car makers, regulators and safety lobbyists for years." [FN87] The auto industry initially designed passive restraint systems, such as airbags "to diminish vehicular fatalities, prevent serious injury, and provide a means of added protection to the average safety-conscious consumer." [FN88] Differing from the active restraint seat belt system which requires "overt action on the part of the vehicle occupant, passive restraint systems were thought to be the perfect protection for an otherwise absent-minded consumer who seemed less than anxious to 'buckle up." ' [FN89]

While early airbags were anything but safe, the allure of safety made the bags an easy sell to safety advisors. Immediately recognizing the airbag's political "sex appeal," pioneering members of the National Highway Traffic Safety Administration (NHTSA), politicians, and bureaucrats alike, refused to accept growing arguments by auto manufacturers that passive protection was unfeasible or ill-advised. [FN90] In fact, NHTSA's pro-airbag posture was historically perceived as "extremist" by most of the industry. [FN91]

As early as 1970, auto manufacturers publicly fretted about the risks airbags posed to consumers, to no avail. At the North Atlantic Treaty Organization (NATO) First International Conference on Passive Restraints, Sydney L. Terry, then vice president of Chrysler Corporation, commented: "It's ashame that we'll have to prostitute our cars by installing these bags in 1973, and to make guinea pigs out of our customers before [final airbag test results] are in." [FN92]

***845** Plenty of test data supported car manufacturers' fears. In 1970, a Chrysler engineer wrote a memo describing airbag tests performed with forty to fifty pound baboons. The engineer reported: "When the [airbag] was inflated the baboon was thrown completely into the rear seat of a standard passenger car body. The G levels on the head of the subject were of the order of 130Gs . . . . Having a child directly in front of the bag when it inflates could prove fatal." [FN93]

In 1991, just before President Bush signed the legislation that would eventually require driver-side airbags in all passenger vehicles, a NHTSA safety engineer wrote a now infamous memo stating: "NHTSA is aware of a half dozen or so cases in which it is believed that the air bag caused the death of the occupant, as these were . . . low severity crashes." [FN94]

The most interesting example of automaker and NHTSA knowledge comes from auto industry giant and safety guru, Lee Iacocca, who states in his 1984 autobiography:

Once when I was in Europe I picked up an English newspaper and was amazed to see a headline that read: "Yank Suggests Air Bags for Capital Punishment." I figured this was a gag, but apparently the proposal was made

seriously. The guy who thought it up was a retired safety engineer in Michigan, and he was proposing that air bags would offer a humane alternative to the electric chair and to other forms of capital punishment.

In his application to the U.S. Patent Office, the inventor stated that by inflating an air bag directly under a condemned person's head, the force of twelve thousand pounds can instantly snap the guy's neck far more effectively than the hangman's noose, and so quickly as to preclude any pain whatsoever. I'm not sure I'd want one of those gizmos in my car. [FN95]

The spoken and written evidence supports the conclusion that auto manufacturers and NHTSA have always known that airbags can and do cause injury to consumers. While there is little doubt airbag designs continue to improve, automakers that choose profit over human life and continue to place dangerous bags in their automobiles should be held accountable to the victims injured by their bags.

***846** C. Product Portrayal and Marketing

While air bags have been heavily marketed as a safety device, manufacturers have been less than forthcoming about the potential dangers lurking behind each bag. "To be effective, an air bag must inflate within 25 milliseconds--faster than the blink of an eye. The air bag deploys with a velocity of up to 200" miles per hour. [FN96] Upon impact, the air bag emerges from a dashboard, steering-wheel, "or side door housing where it has been held in place by a plastic, rigid urethane, polyvinyl, or metal plate hidden by an intentionally split foam cover." [FN97] People sitting less than ten inches from the point of deployment "run the risk of being struck not only by the air bag but also by the materials that are covering the bag." [FN98]

Sitting too close to the steering wheel or dashboard may not be the only problem. Other considerations include the movement of occupants immediately before impact and their position on the seat at the time of airbag deployment. Burn injuries can also occur as a direct result of heat created by the airbag explosion. The temperature of gases released during inflation reach as high as 300 degrees Fahrenheit, and that heat escapes from the bag through vent holes. In addition to heat-related burns, chemical burns are also a concern: "Burns may result from direct contact with a corrosive alkaline plume created as a combustion by-product." [FN99]

A chemical reaction turns sodium azide into nitrogen and causes an airbag to inflate. "Air bags produced by domestic manufacturers contain 60-85 grams of sodium azide in pelletized form. All this sodium azide is intended to be consumed in the chemical reaction before the air bag deploys." [FN100] Deployments where the chemical reaction is incomplete are of particular threat to consumers.

Amidst these dangers, the average consumer's beliefs about airbags have been "shaped by slow-mo[tion] television ads in which air bags gently and benevolently [billow] out of steering wheels." [FN101] Consumers pay extra for the privilege of having ***847** these airbags installed in their vehicles. Because performance upon impact is the only expectation consumers have with respect to airbags, because impact is the only time airbags are supposed to perform, and because manufacturers lead consumers to believe that airbags will in fact perform (without aggravating the situation), current airbag designs known to enhance consumer injuries upon impact will arguably fare poorly in a test of reasonable design.

Because airbags prove dangerous on every level of analysis, plaintiffs will likely succeed when bringing a design defect cause of action in states that apply the common law as restated in the Restatement (Third) of Torts.

III Alternative Means of Redress: Utilizing Sections 2, Comment e, 3 and 4

Regardless of plaintiff's progress under section 2(b) of the new Restatement, section 2, comment e, and section 3 of the new Restatement provide plaintiffs with a means to redress for inherently dangerous products without requiring plaintiffs to produce a reasonable alternative design. Section 2, comment e, provides that liability shall attach to inherently dangerous products absent proof of any reasonable alternative design. [FN102] Section 3 provides that liability shall automatically attach to all products which fail to perform their manifestly intended function.

A. Section 2, Comment e: Inherently Dangerous Products

Conjoining a "high degree of danger" with "low social utility," some products are so "manifestly unreasonable"

that courts find it necessary to attach product defect liability "absent proof of a reasonable alternative design." [FN103] As an example, consider a toy gun, capable of shooting "hard rubber pellets with sufficient velocity to cause injury to children." [FN104] If the realism of the hard-pellet gun is sufficiently important to those who purchase and use such products to justify the court's limiting consideration to toy guns that achieve realism by shooting hard pellets, then no reasonable alternative design will be available. No alternative will be available because the design feature, the realism of the hard ***848** pellet gun (and thus the gun's capacity to injure), is the precise feature to which the user attributes value.

If the court finds the capacity to cause injury to be an egregiously unacceptable quality in a toy for use by children, however, the court will likely conclude that liability should attach without proof of a reasonable alternative design. The product design is defective ("not reasonably safe") because the extremely high degree of danger posed by its use substantially outweighs its negligible social utility.

Airbags, unlike hard-pellet toy guns, have potentially high social utility. "Since driver and front-passenger air bags appeared in significant numbers on the American road, they've . . . saved an estimated 3,400 lives." [FN105] Like hard-pellet toy guns, airbags are designed to deploy hard and fast. Unlike hard-pellet guns, however, engineers design airbags specifically to enhance consumer safety in low and high speed motor vehicle collisions. When certain airbag designs fail to perform this function, and ultimately maim or kill the driver or passenger the airbag is intended to protect, the airbag should be perceived as inherently dangerous.

Airbag tragedies leave behind financial, psychological, and physical wreckage. Consider the case of Alison Sanders:

While her father, attorney Robert Sanders, was driving in Baltimore street traffic, Alison had slipped out of the shoulder strap of her seat belt to try to tune in a Redskins game on the radio. Sanders hit another car in an intersection at 9.3 mph. The braking of the car caused Alison to lurch forward as the air bags inflated. . . .

The collision was minor, and neither Sanders nor his two sons in the back seat were injured. Alison, though, never recovered consciousness; she died the next day. [FN106]

For every "30 people whose lives have been saved by air bags, someone has died as a direct result of [air] bag deployment." [FN107] In addition, "[o] ne out of every 20 airbag-equipped vehicles on the nation's highways has been the subject of federal investigations for airbag-related complaints." [FN108] In total, "[m]ore than 2 million airbag-equipped vehicles--about one out of every 38 on ***849** the road--have been recalled since 1993 for repairs to prevent airbags from deploying when vehicles hit bumps or get wet, or for no apparent reason." [FN109]

Adding insult to injury, many companies remain unable to pinpoint the cause of airbag failure: "If an airbag deploys without a crash, [manufacturers] say undercarriage impact must have occurred. If an airbag fails to go off in a crash, [manufacturers] say the impact was not severe enough." [FN110] While the concepts of "cost-benefit analysis and trade-offs are common in transportation safety engineering, the idea that a device for preventing harm is maiming people--and . . . worse--does not go down easily." [FN111] As the number of airbag-equipped vehicles rises, so do the number of inadvertent deployment deaths and injuries. As the number of fatalities rise, current airbag social utility diminishes.

Because certain airbags designed to enhance consumer safety threaten the lives of those they were installed to protect, courts without regard to alternative design, may deem such bags "inherently dangerous" and allow plaintiffs to prevail in accordance with section 2, comment e.

B. Section 3: Failure to Perform Manifestly Intended Function

As technology improves, inherent airbag danger will likely subside and the potency of section 2, comment e as applied in malfunctioning airbag cases, will proportionally diminish. If this transpires, plaintiffs who fail to bring a design defect claim under section 2 of the new Restatement may arguably still recover under section 3.

The law of negligence has long recognized that an inference of negligence may be drawn in cases where defendant's negligence functions as the best explanation for the cause of an accident, even when plaintiff cannot explain the exact nature of defendant's conduct. [FN112] Tracing its historical antecedents to the law of negligence, section 3 sets forth the formal requisites necessary to draw an inference of product defect:

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, ***850** 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 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. [FN113]

Faulty design occasionally causes products to malfunction in a manner identical to that which would ordinarily be caused by a manufacturing defect. Under section 3, therefore, the trier of fact may draw an inference of defect whether the harm is attributable to faulty manufacturing or design. For example, an automobile equipped with a driver side airbag may inadvertently be designed in such a way that, in new condition and while driving within its intended performance parameters, the airbag suddenly and unexpectedly deploys, causing harm. Under section 3, plaintiffs are not required to incur the cost of proving whether the failure resulted due to a manufacturing defect or due to a defect in design. If negligence functions as the best explanation for the cause of the accident, courts will infer negligence with regard to airbag design and automatically attach liability to the manufacturer.

While plaintiffs must establish "by a preponderance of the evidence that the incident was not solely the result of causal factors other than defect at time of sale," [FN114] the defect need not be the only cause of the incident. If the plaintiff "can prove that the most likely explanation of the harm involves the causal contribution of a product defect," [FN115] other concurrent causes of harm will not preclude liability under section 3. If the plaintiff, however, attributes harm solely to causes other than the original defect, [FN116] an inference of defect under this section may not be drawn. Factors such as age of the product, possible alteration by repairers, and misuse by the plaintiff will be considered.

C. Section 4: Compliance with Product Safety Regulations

Under section 4(a) "a product's noncompliance with an applicable product safety statute or administrative regulation renders the product defective with respect to the risks sought to be reduced ***851** by the statute or regulation." [FN117] While section 4(a) provides possibly the best cause of action for plaintiffs harmed by defectively designed airbags and other products, section 4(a) is currently unavailable to most plaintiffs seeking to bring a negligence cause of action for defectively designed airbags under the Restatement (Third).

In 1993, Congress amended Federal Motor Vehicle Safety Standard 208 (Standard 208) to require mandatory passive restraint installation in all passenger vehicles. While revised Standard 208 makes "passive restraint systems (airbags) mandatory as of the 1998 model year, it does not specify how the air bag should operate, the speed at which it should deploy, or the design, placement, or engineering involved in the air bag itself." [FN118] Standard 208 simply "requires that all cars . . . sold in the U.S. be subjected to a crash test into a solid barrier at 30 mph with a 170-pound unbelted dummy in the front passenger seat." [FN119] This, U.S. car makers say, "means new cars must have air bags that come out fast and hard." [FN120]

Many auto-manufacturers argue Standard 208 "actually requires the industry to make dangerous airbags." [FN121] Airbag proponents, however, suggest "[t]he fact that airbags have killed people stems not from the [current] rule . . . but from the way car makers have complied only with [the current rule's] bare minimum requirements--protecting an unbelted, average-size male, and to hell with everybody else." [FN122]

Airbag proponents arguably have it right. Certain manufacturers have employed safe, next generation, size-sensitive airbags for years. Honda employs a "driver's side air bag [which] deploys downward before rising to protect the driver." [FN123] In addition, Honda's passenger-side airbags "deploy[ ] up and over the dashboard before thrusting into the passenger compartment. By the time the bag passes the dashboard, it is two-thirds deployed and considerably less risky for the passenger." [FN124] BMW's airbag system "detects whether the occupant is belted and adjusts the ***852** power and timing of the air bag's deployment accordingly." [FN125] Other companies employ features such as tethered bags that do not intrude so far into the passenger compartment, bags constructed in sections that inflate with less power, and bags that use aspirated air to deploy more gently are also common. [FN126]

Because "safe" airbags are technologically feasible at this time, if NHTSA chooses to mandate the installation of potentially life threatening passive restraints in all automobiles, NHTSA must implement regulations regarding design choice, placement, size, and speed of all new airbags entering the market. In addition, NHTSA should require manufacturers to install airbags with proven safety records until new airbags are thoroughly tested.

Consumers have already benefited from NHTSA's recent, minimal increases in airbag regulation. On November 18, 1997, the NHTSA instituted a "two-part action to reduce air-bag-related injuries." [FN127] The first part was an education program on proper use of airbags, andthe second part implemented a new policy allowing automobile owners in high-risk groups to disable their airbag systems by installing an on-off switch. [FN128] These high-risk groups include: (1) Those who cannot sit more than ten inches from the steering wheel; (2) Those who need the deactivation for medical reasons such as osteoporosis or severe allergies; (3) Those who cannot avoid placing a rear-facing child safety seat on the front seat; and (4) Those who cannot avoid a situation where children under twelve must sit in the front seat of the vehicle. [FN129] Over 45,254 motorists have applied for on-off switches since August 1998. [FN130]

In March 1998, NHTSA granted a request by the American Auto Manufacturers Association to allow depowered airbags in new model vehicles. Under revised Standard 208 manufacturers may "continue to use the 30-mph unbelted barrier crash test or they [may] switch to a less demanding method in which a mechanical 'sled' yanks a test car backward to simulate the abrupt***853** deceleration of a crash." [FN131] The new "sled method" allows car makers to meet standard 208 requirements "with less forceful bags . . . . [A]bout 90% of new American cars on the market since last autumn now sport [these new bags]." [FN132] However, several older, dangerous bags are still on the road.

While many consumers jump at the opportunity to deactivate their airbags, depowered and or deactivated bags function only as a short-term solution. The ultimate solution should not be total abandonment of the airbag. "Since driver and front-passenger air bags appeared in significant numbers on the American road, [airbags have] deployed 2.6 million times and saved an estimated 3,400 lives." [FN133] While this is far fewer lives saved than NHTSA originally predicted, airbag safety potential is enormous. The solution should be higher government testing and design standards and certain government incentives for shared technology. Automakers currently vie individually to produce the safest, most cost effective "smart airbags." Automakers employ everything from infared to video cameras to plastic "piezoelectric polymer" sheets coated with conductive metal in an attempt to detect weight dispersion and general occupant size and positioning. Auto manufacturers, however, predict it will take years to fit new vehicles with a truly "smart airbag." NHTSA does not require "smart airbags" to reach all vehicles until September 2005. [FN134] Distant safety requirements are barbaric and inane when several automakers such as Honda, BMW and Mercedes currently have the capability to produce statistically safe bags. If NHTSA continues to mandate that all passenger vehicles come equipped with driver and passenger-side airbags, NHTSA must mandate that all airbags function safely.

Conclusion

Passive restraints (airbags) have been an ongoing public policy fiasco in the United States for nearly thirty years. No one is less surprised by the recent panacea of liability surrounding injurious passive restraints than the National Highway Transportation Safety Administration (NHTSA) and the auto industry.

Although the number of airbag related injuries and fatalities ***854** increases as the number of airbag equipped vehicles infiltrate the market, to date, few courts have addressed the issue of malfunctioning bags. The lack of airbag design defect litigation stems, in part, from the courts' inconsistent application of the consumer expectation and risk-utility-balancing tests under the Restatement (Second) of Torts, section 402A.

The Restatement (Third) of Torts, sections 1-4, resolve the historical question of which test to apply in design defect--particularly airbag design defect--cases. These sections of the new Restatement, like most courts, explain liability for design defects in the reasonableness-balancing-negligence terms of the law of tort. Consumer expectations remain entitled to important respect, however, they are relegated to a balancing factor.

Read in its entirety, the black letter and the commentary to the Restatement (Third) incorporate several provisions to prevent artificial and unreasonable barriers that hinder design defect claims. Because the new Restatement provides several different avenues for redress, victims injured by defectively designed airbags in states that have adopted the Restatement (Third) are likely to prevail under the new Restatement when bringing an airbag design defect claim.

[FN1]. See Standard No. 208, 58 Fed. Reg. 46,551 (1993) (to be codified at 49 C.F.R. § 571.208).

[FN2]. Harry Stoffer, Airbags Trigger New Fears: As No-Cause Deployments Rise, Safety Experts Seek Answers, Automotive News, Aug. 24, 1998, at 1.

[FN3]. Id.

[FN4]. Id.

[FN5]. See Bob Fick, Ghoulish Accident Focuses Attention On Air Bags: Federal Expert Investigate 1-Year Old's Decapitation, Pitt. Post-Gazette, Nov. 28, 1996, at A20.

[FN6]. See Patrick J. Norton, What Happens When Air Bags Kill: Automobile Manufacturers' Liability, 48 Case W. Res. L. Rev. 659, 659 (1998) (citing Gable v. Chrysler Corp., No. 322748 (Ohio C.P. Cuyahoga County filed Jan. 13, 1997)).

[FN7]. David G. Owen, Defectiveness Restated: Exploding the "Strict" Products Liability Myth, 1996 U. Ill. L. Rev. 743, 743 (1998).

[FN8]. See Max Radin, The Trial of the Calf, 32 Cornell L.Q. 137 (1946).

[FN9]. Restatement (Third) of Torts: Products Liability at XVI (1998).

[FN10]. Owen, supra note 7, at 743.

[FN11]. Restatement (Third) of Torts: Products Liability at 4 (1998).

[FN12]. Id. § 1.

[FN13]. See id. § 2. While a vast body of inadequate air bag warning and instruction information exists, this Comment focuses solely on bringing a claim against manufacturers for defective airbag manufacture and design. For more information regarding "failure to warn," see Norton, supra note 6.

[FN14]. See Restatement (Third) of Torts: Products Liability § 1 cmt. a. Many courts insist on speaking of liability based on the standards described in sections 2(b) and 2(c) as being strict. Several factors help to explain this rhetorical preference. Many courts worry that a negligence standard might be too forgiving of some small manufacturers who might be excused for their ignorance of risk or for failing to take adequate precautions to avoid risk. Negligence, which focuses on the conduct of the manufacturer, might allow a finding that a smaller manufacturer, with limited resources, was not negligent because it was too difficult for such a manufacturer to discover certain risks or to design or warn against them. Therefore, while the comments speak of negligence, the black letter of the new Restatement focuses on the product rather than the conduct of the manufacturer, and holds the manufacturer to the expert standard of knowledge available to the relevant manufacturing community at the time the product was manufactured. Id.

[FN15]. Restatement (Second) of Torts § 402A (1965).

[FN16]. Owen, supra note 7, at 757.

[FN17]. See Restatement (Third) of Torts: Products Liability § 1 cmt. a (1998).

[FN18]. Owen, supra note 7, at 749-50 (citing James A. Henderson, Jr. & Aaron D. Twerski, Doctrinal Collapse in Products Liability: The Empty Shell of Failure to Warn, 65 N.Y.U. L. Rev. 265 (1990) ("[P]eople tend to give real meaning to differences in terminology; they forget that word games are being played. Thus, although mixing negligence and strict liability concepts is often a game of semantics, the game has more than semantic impact--it breeds confusion and, inevitably, bad law.").

[FN19]. And arguably it should not. Id. See also Stuart Madden, The Duty to Warn in Products Liability: Contours and Criticism, 89 W. Va. L. Rev. 221 (1987).

[FN20]. See Owen, supra note 7, at 749.

[FN21]. Id. at 750.

[FN22]. Id. at 756 (citing William L. Prosser, The Borderland of Tort and Contract, in Selected Topics on the Law of Torts 380, 452 (1953)).

[FN23]. Id. at 744.

[FN24]. See Restatement (Third) of Torts: Products Liability § 2(a) (1998).

[FN25]. Id.

[FN26]. Id. § 2 cmt. a.

[FN27]. Id.

[FN28]. Id.

[FN29]. See Owen, supra note 7, at 752.

[FN30]. Restatement (Third) of Torts: Products Liability § 2 cmt. a (1998).

[FN31]. See Owen, supra note 7, at 752.

[FN32]. Restatement (Third) of Torts: Products Liability § 2 cmt. c (1998).

[FN33]. Owen, supra note 7, at 753.

[FN34]. 377 P.2d 897 (Cal. 1963).

[FN35]. Id. at 900.

[FN36]. Sheila L. Birnbaum, Unmasking the Test for Design Defect: From Negligence [to Warranty] to Strict Liability to Negligence, 33 Vand. L. Rev. 593, 597 (1980).

[FN37]. Id. at 599.

[FN38]. Id. at 600.

[FN39]. Section 402A states: "(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 ...." Id.

[FN40]. Restatement (Second) of Torts § 402A cmt. i (1964).

[FN41]. Cronin v. J.B.E. Olson Corp., 501 P.2d 1153, 1162 (Cal. 1972).

[FN42]. Barker v. Lull Eng'g Co., 573 P.2d 443, 452 (Cal. 1978) (emphasis added).

[FN43]. See generally id.

[FN44]. Soule v. General Motors Corp., 882 P.2d 298, 306 (Cal. 1994) (quoting Campbell v. General Motors Corp., 649 P.2d 224, 233 (Cal. 1982)).

[FN45]. Id. at 306 (quoting Campbell, 649 P.2d at 233).

[FN46]. Id. at 305 (citing Barker, 573 P.2d 443).

[FN47]. Id. (quoting Barker, 573 P.2d at 455). Three other jurisdictions have subsequently adopted California's two-pronged test. See Caterpillar Tractor Co. v. Beck, 593 P.2d 871, 885 (Alaska 1979); Ontai v. Straubclinic & Hosp., Inc., 659 P.2d 734, 740 (Haw. 1983); Lamkin v. Towner, 563 N.E.2d 449, 457 (Ill. 1990).

[FN48]. 38 Cal. Rptr. 2d 446 (Cal. App. 2d 1995).

[FN49]. Id. at 452.

[FN50]. Id.

[FN51]. Collazo-Santiago v. Toyota Motor Corp., 937 F. Supp. 134, 136 (1996) aff'd, 149 F.3d 23 (1998).

[FN52]. Id. at 140.

[FN53]. Id.

[FN54]. Owen, supra note 7, at 754.

[FN55]. See generally Restatement (Third) of Torts: Products Liability § 2 (1998).

[FN56]. Id. § 2(b).

[FN57]. Owen, supra note 7, at 750.

[FN58]. Id. at 750-51.

[FN59]. But see Restatement (Third) of Torts: Products Liability § 2 cmt. e (1998) ("proof of a reasonable alternative design is not an absolute requirement in every [design defect] case") discussed infra Part III.

[FN60]. Restatement (Third) of Torts: Products Liability § 2 cmt. f (1998).

[FN61]. But see Restatement (Third) of Torts: Products Liability § 2 cmt. e (1998) ("proof of a reasonable alternative design is not an absolute requirement in every [design defect] case").

[FN62]. Restatement (Third) of Torts: Products Liability § 2 cmt. f (1998).

[FN63]. Norton, supra note 6, at 689.

[FN64]. Id.

[FN65]. See Joan Claybrook, Statement on FMVSS 208 and Air Bags Transportation Subcommittee on Appropriations House of Representatives (visited Mar. 6, 1998) <http://www.citizen.org/claytest.html>.

[FN66]. Greg Paula, Sensors Help Make Air Bags Safer, Mechanical Engineering-CIME, Aug. 1997.

[FN67]. Id.

[FN68]. Id.

[FN69]. Id.

[FN70]. Id.

[FN71]. Restatement (Third) of Torts: Products Liability § 2 cmt. f (1998).

[FN72]. Id.

[FN73]. Id.

[FN74]. Id.

[FN75]. 149 F.3d 23 (1st Cir. 1998).

[FN76]. Id. at 24.

[FN77]. Id.

[FN78]. Id.

[FN79]. Restatement (Third) of Torts: Products Liability § 2 cmt. f (1998).

[FN80]. See id.

[FN81]. Id.

[FN82]. Peter Carbonara, Is That a Bomb in Your Dashboard?, Money Magazine, Nov. 1998, at 132.

[FN83]. Occupant Crash Protection, 49 C.F.R. § 571.208 S4.5.1(b)(1)(i) (2000).

[FN84]. Id. § 571.208 S4.5.1(b)(2)(v).

[FN85]. Carbonara, supra note 82, at 133.

[FN86]. Ann Reilly Dowd, The Truth About Air Bags, Good Housekeeping, October 1998, at 138.

[FN87]. Carbonara, supra note 82, at 133.

[FN88]. Christine M. Condon, Products Liability: Defective Motor Vehicle Air Bag Systems, 39 A.L.R 5th 267 (1996).

[FN89]. Id.

[FN90]. John D. Graham, Auto Safety: Assessing America's Performance 56 (1989).

[FN91]. Id.

[FN92]. Id. at 47.

[FN93]. Carbonara, supra note 82, at 133.

[FN94]. Id. at 134.

[FN95]. Lee Iacocca, Lee Iacocca, An Autobiography 301 (1984).

[FN96]. Steven C. Laird & Lorin M. Subar, When Air Bags Injure or Kill, Trial Magazine, May 1998, at 76.

[FN97]. Id.

[FN98]. Id.

[FN99]. Id.

[FN100]. Id.

[FN101]. Carbonara, supra note 82, at 132.

[FN102]. Restatement (Third) of Torts: Products Liability § 2 cmt. e (1998).

[FN103]. Id.

[FN104]. Id.

[FN105]. Carbonara, supra note 82, at 132.

[FN106]. Id. at 132.

[FN107]. Laird & Subar, supra note 96, at 74.

[FN108]. Harry Stoffer, Airbags Trigger New Fears: As No-Cause Deployments Rise, Safety Experts Seek Answers, Automotive News, Aug. 24, 1998, at 1.

[FN109]. Id.

[FN110]. Id.

[FN111]. Id.

[FN112]. See Restatement (Second) of Torts § 328D.

[FN113]. Restatement (Third) of Torts: Products Liability § 3 (1998).

[FN114]. Id. § 3 cmt. d.

[FN115]. Id.

[FN116]. For example, when plaintiff can attribute the harm solely to the conduct of others.

[FN117]. Restatement (Third) of Torts: Products Liability § 4 (1998).

[FN118]. Norton, supra note 6, at 663-64.

[FN119]. Carbonara, supra note 82, at 134, 137.

[FN120]. Id. at 137.

[FN121]. Id.

[FN122]. Id.

[FN123]. Laird & Subar, supra note 96, at 76.

[FN124]. Id.

[FN125]. Carbonara, supra note 82, at 138.

[FN126]. Laird & Subar, supra note 96, at 76.

[FN127]. Id. at 75.

[FN128]. Air Bag On-Off Switches, 62 Fed. Reg. 62,406, 62,423 (1997) (to be codified at 49 C.F.R. pt. 595).

[FN129]. Laird & Subar, supra note 96, at 75.

[FN130]. As of August 29, 1998, only 2,307 switches had actually been installed. This is because only about 390

of the country's 25,000 car dealers and repair shops have declared themselves willing to do the work. This is yet another problem with NHTSA's airbag regulation plan.

[FN131]. Carbonara, supra note 82, at 137.

[FN132]. Id.

[FN133]. Carbonara, supra note 82, at 132.

[FN134]. Id.

[FNa1]. Third-year student, University of Oregon School of Law; Associate Editor, Oregon Law Review, 1999-2000.