Articles

Innovation on Trial: Punitive Damages Versus New Products

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Innovation, scientific discovery transformed into valuable products, is a powerful asset for the United States in today's global economy, but it is being put on trial by the U.S. product liability system. Strict liability and huge jury awards, bloated by the uncontrolled imposition of punitive damages, have led to a proliferation of lawsuits, which in turn has created immense legal uncertainty for innovators who want to create new products. Because a high level of legal uncertainty and scientific innovation cannot coexist, new, safe products may be kept off the market and the scope of research and development restricted. Punitive damages constitute the driving force behind this problem, and both judges and legislators should aim at bringing them under control with legal reforms.

E conomic success for the United States in the years ahead will depend mainly on innovative thinking, especially from scientists. New knowledge, creative solutions, and innovative products—advantages in the past—are becoming the necessities of the future. "More so than in any other economy," said David J. Teece of the University of California at Berkeley, "the United States today depends critically on its ability to innovate, and to capture the benefits from innovation, for its economic prosperity" (1, p. 3).

Monsanto focused on this need for more innovation a decade ago and fundamentally shifted its strategy toward the creation of novel, higher-value products through scientific discovery. At the strategy's heart is a concentration on chemistry and biology and, importantly, their intersection in the use of biotechnology to create new pharmaceutical and agricultural products. Monsanto now spends more money annually on research and development than on capital investment—\$650 million in 1988, about 7% of sales.

Still, research and development is an inherently unpredictable enterprise in which neither the pace of discovery nor the certainty of success can be guaranteed. Nevertheless, scientific uncertainty can be managed, whereas the legal uncertainty in the nation's courtrooms caused by product liability cannot. Monsanto's policy is to produce safe products based on sound science. Yet, no set of responsible actions by the company's scientists and development people can be identified which, if undertaken today, will ensure the legal accept-

ability of their innovations tomorrow.

Some products cannot be pursued. One such product was an asbestos substitute, a safe, biodegradable, and effective reinforcing phosphate fiber called calcium sodium metaphosphate. The unpredictable potential for further expansion or misapplication of product liability laws led Monsanto to cancel the product just before commercialization (2). A whole generation of lawyers has been schooled in asbestos liability theories that could possibly be turned against this or any similar substitute.

At the time of cancellation, the phosphate fiber program director, Joseph J. Narciso, observed that "seven-figure jury awards on claims without merit are enough to send shivers down anyone's spine" (3, p. 15). The costs of litigation are so high, the uncertainty of courtroom outcomes so great, and the possibility of multimillion dollar awards so real that winning every lawsuit would still have been a Pyrrhic victory.

Monsanto's experience is not unusual. Capable of managing the uncertainties of research but not the uncertainties of law, companies have no choice but to avoid the courtroom by withdrawing products, keeping others off the market, and restricting the scope of research and development at its earliest stages. As author Peter Huber concluded, "across the board, modern tort law weighs heavily on the spirit of innovation" (4, p. 14).

The chief executive officers of the nation's leading companies summed up the impact of product liability on innovation in a 1988 survey by the Conference Board. The study showed that uncertainty over potential liability had led almost 50% of the responding companies to discontinue product lines, nearly 40% to withhold new products, including beneficial drugs, and 25% to discontinue product research. Half the chief executives polled also reported that product liability had a major impact on our international competitiveness, and 75% expected product liability problems to grow in significance (5).

Strict Liability, Punitive Damages Halt Innovation

The slowing of innovation is directly attributable to a dramatic increase in product liability lawsuits caused not by more unsafe products or injuries but by two legal developments: The shift from negligence to strict liability and a continued increase in punitive damage jury awards (6). Strict liability generates added lawsuits. It brings thousands of product manufacturers into court regardless of their attention to product safety. Then, potentially massive punitive damage jury awards create uncertainty that cannot be managed along with innovation.

"To expand liability and provide unrealistically high compensa-

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tion can only magnify our present predicament," said George L. Priest of Yale Law School (7, p. 234). As Huber explains, the negligence standard had focused on whether the "human actor on the scene was careful, prudently trained, and properly supervised" (4, p. 157). In this context, Huber contends, lay jurors can make reasonably sensitive intuitive judgments about people. The best scientists and researchers, from whom the greatest innovations come, can easily meet this test.

However, the change to strict liability in the 1960s shifted the issue from whether human conduct was negligent to whether a product was defective in design or manufacture (8). "Jurors," says Huber, "are not experts about technology itself, and intuition here is a terrible guide . . . (because) people everywhere underestimate the risks they know well and face every day and overestimate those that are new and foreign" (4, p. 157).

The result has been a vast expansion of legal liability for America's innovators. According to one study, "each year since 1974, the volume of product-related litigation has exceeded that of the previous year, sometimes to a substantial extent; nearly four times as many suits were filed in 1986 as in 1976" (9, p. ix). These lawsuits have grown substantially faster than have filings for any other kind of federal lawsuit, and filings at the state level are "almost certainly several times greater than federal filing levels" (9, p. v).

These data usually evoke rejoinders that the increase in litigation actually only involves a few industries, and then only a few products, with the large number of asbestos suits frequently cited. On the contrary, researchers have found thousands of federal product liability defendants and thousands of products leading to liability suits, with the cases widely dispersed across different sectors of the economy (9).

Arguments that the proliferation of liability suits are somehow related to an increase in unsafe products are also not supported by facts, as no relation can be found between the two. Priest concludes that "data on deaths and injuries cast great doubt on the proposition that the liability crisis derives from an increase in the underlying accident rate" (10, p. 203) and "provide no evidence that the expansion of litigation has affected the injury or death rate" (11, p. 194).

Product-related injuries have remained constant on an index basis before and during the escalation of product liability suits (7). In certain key areas, for example, the workplace, which accounted for 60% of product liability claims in 1985 in which large sums were paid, disabling injury rates remained relatively constant and death rates began dropping steadily in 1945, well before the increase in lawsuits (10). Similarly, the general aviation accident rate has shown consistent improvement since 1946, once again beginning before the lawsuit phenomenon (12).

When coupled with strict liability, huge punitive damage awards are the greatest cause of legal uncertainty for innovators (13) and the most attractive lure for lawyers filing lawsuits. Theoretically, punitive damages are meant to punish and deter, not to provide additional compensation (14). The law already ensures adequate compensation for nearly all conceivable harm, including noneconomic damages like pain and suffering, and usually does not account for additional payments from other sources.

The award of punitive damages is an anomaly peculiar to the United States, rare in Great Britain and Canada, and virtually unknown in the world's civil law countries (15). Before 1976, they were also virtually unknown in United States product liability cases (16). Legal scholars have been able to find only three earlier cases of appellate approval of punitive damages for defective products. Now, the same scholars say punitive damages are almost commonplace with multimillion-dollar awards occurring monthly (17).

In Cook County, Illinois, for example, the average punitive

damage award between 1980 to 1984 in personal injury actions had risen to \$1,934,000. Over six times as much money was awarded in punitive damages between 1980 and 1984 as was awarded during the previous 20 years combined (18).

A legal expert has found that, between 1922 and 1959, the highest punitive damage award affirmed by a California appellate court was \$10,000. In the 1960s the record jumped to \$250,000. In the 1970s, the highest was \$740,000. By 1986, a \$3 million punitive damage award had been approved, and in 1988 California appellate courts approved awards of \$14 and \$15 million in contract cases where the only actual damages were economic (19).

One case exemplifies the problem with punitive damages. Lederle Laboratories, a pharmaceutical company, followed Food and Drug Administration (FDA) instructions to the letter in producing and marketing a polio vaccine, only to have a Kansas jury hand down an \$8 million punitive damage verdict against it. The reason: The lay jury decided that the firm should have used a less effective vaccine, essentially overruling FDA doctors, scientists, and policy-makers who had told the firm to do otherwise. The verdict was later set aside by a narrow, four-to-three decision of the Kansas Supreme Court, but the company still had to pay the legal costs of its appeal (20).

The punitive damages system makes it too easy for lawyers to mislead jurors, many of whom possess little scientific background but believe in the possibility of a risk-free society, to enrich plaintiffs and their attorneys with multimillion-dollar windfalls. Too often, witnesses that plaintiffs' lawyers bring before juries to explain complicated scientific details are, in fact, advocates of fringe theories not generally accepted by most scientific authorities (21).

Few of the traditional safeguards usually afforded defendants are available in punitive damages cases. Most states have only vague and uncertain standards of conduct, require only minimum proof, and impose few limits on huge dollar awards, thus giving juries little practical guidance. The result: Conduct for which punitive damages may be awarded is whatever a single jury says it is. Then, with few exceptions, nothing stops different juries from awarding punitive damages in huge amounts against the same defendant for the same alleged conduct.

Proponents of punitive damages argue that such awards are rare. They overlook the ripple effect just a few huge punitive damage verdicts can have in triggering a rush to the courthouse by plaintiffs' lawyers to file new claims. Thus, for one to count the number of punitive damage verdicts, declare it small, and dismiss the problem ignores the role of punitive damages in creating great uncertainty for innovators.

The U.S. Justice Department has observed that punitive damages have become a legal lottery where many plaintiffs regularly file claims (22). Even though their probability of success is small and only about 5% of all cases filed end with a verdict (23), plaintiffs' lawyers recognize that if enough such claims are filed, they may eventually hit the jackpot.

Even if plaintiffs' lawyers do not hit the jackpot, the mere possibility of doing so results in higher settlements (24). In one sample, a study reports that settlements in claims where plaintiffs sought punitive damages were nearly 150% higher than in those where plaintiffs did not seek punitive damages. In another sample, the settlements were 60% higher because of this punitive damages "shadow effect" (24).

People who favor punitive damages also argue that verdicts making such awards are usually reduced upon appeal. On the contrary, verdicts against business defendants were reported to be reduced less than were awards against individuals. Not only do business defendants have larger punitive damage awards assessed against them, but they are also likely to pay a greater portion of

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those awards. In addition, among all types of actions, punitive damages in product liability cases are reduced the least (25).

Researchers have found that corporate defendants are, in fact, more likely than individuals or public agencies to be the target of punitive damages and that juries also award more money when the defendants are institutions or organizations rather than individuals—the "deep pocket" effect (26). Neatly summarizing what is happening, West Virginia Supreme Court of Appeals Justice Richard Neely, in an appeal for national standards, explains that "as a state court judge, much of my time is devoted to designing elaborate ways to make business pay for everyone else's bad luck" (27, p. 1).

Impact Greatest in Health Care, Aviation, and Basic Research

The result of this liability expansion has been a slowing of innovation in entire fields of inquiry, especially in those having to do with health care. The American Medical Association (AMA) has concluded that "product liability issues are having a profound negative impact on the development and utilization of potentially life-saving medical technologies" (28, p. 88).

Even when high litigation products like the Dalkon Shield and Bendectin are excluded from analysis, the product liability impact on pharmaceuticals has been severe. For non–Dalkon Shield and non-Bendectin defendants between 1981 and 1986, the annual number of lawsuits filed doubled and the number of different defendants nearly doubled. The former rate is greater than the total increase of federal product liability litigation, whereas the latter rate is only exceeded by that of asbestos litigation (9). In just the past 4 years, the number of punitive damage awards in all pharmaceutical product liability cases was fifteen times greater than in the entire decade of the 1970s (29).

Ironically, pharmaceuticals are among the most cost-effective elements in health care, which is already strained by liability-induced annual payments of \$8 billion in medical malpractice insurance premiums and some \$20 billion for unnecessary tests and procedures (30).

The inhibiting effect of expanded product liability may permeate a firm's entire decision-making process. For example, among groups of pharmaceutical industry representatives surveyed, some offered the example of the bench chemist "who simply chooses not to pursue his curiosity about pregnancy-related drugs because he knows that the firm's senior management is unlikely to fund later and more costly stages of the development process for such a high-hazard product" (6, p. 26).

Elizabeth B. Connell, chairman of the FDA Obstetrics and Gynecology Devices Panel, says that the United States is losing its leadership role in the area of contraceptive technology, "with potentially disastrous consequences for women and men in this country and elsewhere" (31, p. 46). Now, Johnson & Johnson and American Home Products are the only U.S. companies conducting contraceptive research, and the remaining researchers are three nonprofit, publicly funded organizations with a total annual budget of \$16 million (32).

In 1983, Merrell Dow Pharmaceuticals withdrew the antinausea morning sickness drug Bendectin, also widely used by health care professionals and approved by the FDA. Legal bills and insurance premiums, plus other product costs, were far in excess of Bendectin's \$12 to 13 million annual sales (33).

The outlook for future drugs is not auspicious. The AMA noted that basic biomedical research is deteriorating, and small companies involved in innovative research are delaying or foregoing product releases (28). The National Academy of Sciences has concluded that

"given the extremely high cost of vaccine-related injuries, many manufacturers may be unwilling to initiate or pursue the derivation or distribution of a vaccine to prevent AIDS [acquired immunodeficiency syndrome]" (28, p. 86). For example, Huber estimates that the "tax" imposed by liability law on childhood vaccines for insurance accounts for 95% of the price (4).

Medical equipment has been affected too. Union Carbide has foregone developing a suitcase-sized kidney dialysis unit and offering intravenous equipment (34). The sole domestic manufacturer of anesthesia gas machines, Puritan-Bennett, stopped making the devices in 1984, leaving the market to two foreign competitors (33).

Other affected industries include general aviation, where the U.S. advantage in aircraft production is eroding because of liability costs. Between 1977 and 1985, paid claims for judgments, settlements and defense increased from \$24 million to \$210 million in the general aviation industry. In 1979, that industry produced nearly 18,000 planes, but by 1986 the number had decreased to less than 1,500 planes. Overall industry employment is down 70% (12).

Some companies, while not totally withholding a product from market, may severely restrict permitted applications and users. One chemical manufacturer refused to permit a product to be used in the manufacture of aircraft landing gear, although it believed that this application would have enhanced the safety of the gear (6).

A similar phenomenon has been observed when U.S. companies or consumers seek to purchase a needed product from abroad. In one case, a U.S. lawyer had to travel to Europe in order to convince the supplier that "the legal climate in North Carolina, where the product was to be used, was not as 'hostile' as in states more frequently discussed in the press" (6, p. 40). In another instance, the Japanese maker of a vaccine for Japanese encephalitis withdrew the product from the U.S. market in June 1987 because of liability concerns, leaving U.S. travelers to Asia unprotected (35).

Even centers of basic research like the Lawrence Livermore Laboratory in California and the University of Wisconsin at Madison are finding it difficult to transfer useful discoveries into the marketplace because of liability concerns. Stephen M. Matthews of the Livermore Laboratory has tried unsuccessfully to generate interest in his food irradiation invention for killing insects, larvae, and parasites that infest freshly harvested fruit and vegetables. At the University of Wisconsin, patent counsel Howard W. Bremer says universities are reluctant to license patents to small companies, fearing that plaintiffs may find colleges' deeper pockets more attractive targets for lawsuits (36).

Judges, Lawmakers Beginning to Reform Punitive Damages

State and federal courts, the Supreme Court, state legislatures, and Congress are just beginning to take action on the problems caused for innovation by the uncontrolled imposition of punitive damages. These early reforms, although encouraging, currently affect only a handful of the 50 states.

Last year, the Georgia Supreme Court ruled that a \$5 million punitive damages award, more than 100 times the amount of the compensatory damages award, violated the excessive fines clause of the Georgia Constitution (37). The California Supreme Court also refused to extend strict liability to makers of prescription drugs and limited their "market share" liability, thereby restricting exposure to punitive damages (38). Recently, the Hawaii Supreme Court ruled that an award of punitive damages requires the higher proof burden of clear and convincing evidence (39).

This year, U.S. District Court Judge H. Lee Sarokin concluded that companies sued in mass tort product liability litigation should

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be punished only once for the alleged wrongful conduct, although he acknowledged in a subsequent decision that he did not have the authority to limit what other courts might do. He observed that "astronomical punitive damage awards may run counter to the public interest by inhibiting research and development of new products, including those aimed at promoting good health and curing disease." Judge Sarokin called for a reexamination of the purpose and constitutionality of punitive damage awards in his first ruling and for uniform legislation in his subsequent decision (40).

The U.S. Supreme Court has also given punitive damages greater attention, especially in Browning-Ferris Industries, Inc. v. Kelco Disposal, Inc. Although in that case the Court refused to use the Excessive Fines Clause of the Eighth Amendment to restrict punitive damages, it noted that a different outcome might result if a portion of the punitive damages were paid directly to the government (41). The Court said an inquiry into possible due process limits awaits "another day" (42, p. 4990) because this question was improperly presented before the court, but suggested that the present system of awarding punitive damages may violate the Due Process Clause.

Justices William Brennan and Thurgood Marshall seized upon this suggestion and stated that "without statutory (or at least common law) standards for the determination of how large an award of punitive damages is appropriate in the given case, juries are left largely to themselves in making this important, and potentially devastating, decision" (42, p. 4992). Justices Sandra Day O'Connor and John Paul Stevens, noting that "awards of punitive damages are skyrocketing," said, "some manufacturers of prescription drugs, for example, have decided that it is better to avoid uncertain liability than to introduce a new pill or vaccine into the market" (42, p. 4992).

In an earlier case, Bankers Life & Casualty v. Crenshaw, Justice Antonin Scalia and Justice O'Connor, concurring, asserted that "there is no objective standard" that limits the amount of punitive damages so "the impact of these windfall recoveries is unpredictable and potentially substantial" (43, p. 78). They continued, saying that "this grant of wholly standardless discretion to determine the severity of punishment appears inconsistent with due process" (43, p. 78).

Meanwhile, lawmakers at both the federal and state levels are beginning to deal with the punitive damages problem. Laws in Alabama, Colorado, Florida, Kansas, Oklahoma, Texas, and Virginia use a variety of means to set an outer limit on punitive damages awards (44). Enactments in New Jersey, Ohio, Oregon, Utah, and Arizona provide a defense against punitive damages for products in full compliance with FDA product approval regulations (45). Certainly, this should be the case in an era when government approval for the marketing of certain products is obtained only after years of data gathering, careful scientific review, and strict adherence to government directives (46)

Permitting the division of trials involving punitive damages into two or more phases are Missouri, Utah, Georgia, Connecticut, New Jersey, Maryland, Nevada, California, Montana, and Kansas (47). In the first phase, the jury determines whether the defendant injured the plaintiff, hearing evidence only on this question. Then, in a second or third phase, the jury decides on compensatory damages and later, if the case is still open, on whether to award punitive damages

This bifurcation or trifurcation of trials into phases keeps the jury focused on the cause of the alleged harm without being confused by often inflammatory, unrelated testimony on alleged damages. According to a Louis Harris poll (48), 80% of judges using bifurcation believe it speeds up trials while improving fairness, but not enough states use it.

Last year, in Congress, a bipartisan products liability bill (H.R.

1115) containing punitive damages reform won approval in the House Energy and Commerce Committee. This year, similar bills have been introduced in the House (H.R. 2700) and the Senate (S. 1400). Each provide for bifurcation and a defense against punitive damages for FDA-approved products.

Support for product liability reform, especially of punitive damages, comes from a wide range of groups. The American Federation of Labor and Congress of Industrial Organizations (AFL-CIO) Executive Council said in 1986 that punitive damages should be "more predictable and related to the degree of injury inflicted by, and the level of culpability of, the defendant" (49, p. 5). The American Bar Association advises that punitive damages should only be supported by at least clear and convincing evidence (50). The American College of Trial Lawyers has recommended limiting punitive damage awards to \$250,000 or twice compensatory awards, whichever is greater (51).

Organizations supporting limits on punitive damages in briefs filed with the Supreme Court in Browning-Ferris Industries, Inc. v. Kelco Disposal, Inc. included the American Red Cross, the Council of Community Blood Centers, and the City of New York (52). Most important, 78% of the American people favor restricting punitive damages to flagrantly negligent and malicious behavior (53).

As this cross section of U.S. society recognizes, punitive damages reform will affirm that our nation's future depends on the continued pursuit of new and useful scientific knowledge. That pursuit will be greatly enhanced by reasonable punitive damages rules which no longer stifle the forward progress of innovation.

REFERENCES AND NOTES

- 1. D. J. Teece, The Competitive Challenge: Strategies for Industrial Innovation and Renewal (Ballinger, Cambridge, 1987)
- S. Tarnoff, Business Insurance 21, 3 (20 July 1987). S. Wilkinson, Chemical Week 141, 15 (29 July 1987)
- 4. P. W. Huber, Liability: The Legal Revolution and Its Consequences (Basic Books, New York, 1988), pp. 3, 155-161.
- 5. E. P. McGuire, The Impact of Product Liability, report no. 908 (The Conference Board, New York, 1988), pp. 8, 20; for similar results, see also E. Zehnder, Corporate Issues Monitor, Vol. II, No. 3, (1987), p. 1. An earlier Conference Board report incorrectly reported diminished business concern over product liability; see N. Weber, *Product Liability: The Corporate Response*, Report No. 893 (The Conference Board, New York, 1987).
- P. Reuter, The Economic Consequences of Expanded Corporate Liability: An Exploratory Study (The RAND Corporation, Santa Monica, CA, 1988), pp. 25–27.
- G. L. Priest, Fortune 119 (no. 9), 323 (24 April 1989). See W. Prosser and W. P. Keeton, The Law of Torts (West, St. Paul, MN, ed. 5, 1984), pp. 692-693 (where the courts' acceptance of strict liability in the 1960s is attributed to agreement that the costs of damaging events due to defective products should be borne by the makers and sellers of the products; accident prevention
- would be promoted; and the burden of proof for plaintiffs should be eased).

 9. T. Dungworth, Product Liability and the Business Sector: Litigation Trends in Federal Courts (The RAND Corporation, Santa Monica, 1988), pp. 20, 42.

 10. G. L. Priest, in New Directions in Liability Law, W. Olson, Ed. (Academy of Political
- Science, New York, 1988), pp. 200-203.
- in Liability Perspectives and Policy, R. E. Litan and C. Winston, Eds. (Brookings Institution, Washington, DC, 1988).
- 12. Product Liability (Part 1): Hearings before the Subcomm. on Commerce, Consumer Protection, and Competitiveness of the House Comm. on Energy and Commerce, 100th Cong., 1st Sess. 550 (1987) (statement by Frederick B. Sontag, President, Unison Industries and Chairman, Product Liability Committee, General Aviation Manufacturers Association).
- 13. More than 85% of respondents to a national survey of corporate insurance buyers ranked capping noneconomic and punitive damage awards as the single most important issue facing their companies. See 1989 Risk Management Survey (A&A Government & Industry Affairs, Washington, DC, 1989). Some argue that unpredictably large punitive damage awards deter wrongful acts. See P. J. Corboy, National Law J. 12 (no. 9), p. 13 (6 November 1989). On the contrary, punitive damages uncertainty overdeters the conscientious, driving them away from socially beneficial activity. See D. D. Ellis, Southern California Law Review 56, 1 (November 1982). When defendants overcomply, increasing the expected damage award only increases overcompliance. See J. E. Calfee and Richard Craswell, Virginia Law Review 70, 965 (June 1984). In fact, serious questions have even been raised as to whether excessive damages are actually helpful in deterring unwanted conduct. See G. T. Schwartz, Southern California Law Review 56, 133 (November 1982)
- 14. Exceptions include Connecticut, where punitive damages are used only to compensate plaintiffs for no more than litigation expenses, and Michigan, where exemplary

- damages compensate the plaintiff for humiliation, sense of outrage, or injury, but are not permitted as punishment of a defendant or as a deterrent. See Waterbury Petroleum Products, Inc. v. Canaan Oil & Fuel Co., Inc., 193 Conn 208, 477 A2d 988 (1984); Jackovich v. General Adjustment Bureau, Inc., 119 Mich App 221, 326 NW2d 458 (1982); and Willett v. Ford Motor Co., 400 Mich 65, 253 NW2d 111
- 15. For example, Australia has decided not to include punitive damages in a new product liability statute; see The Law Reform Commission, Product Liability, Report 51 (Australian Government Printing Service, Canberra, Australia, 1989),
- p. 106. 16. L. F. Bittle, California Law Review 75, 1433 (July 1987). Punitive damages typically are not awarded in product liability cases in Connecticut and Michigan (14) where they serve a compensatory purpose; in New Hampshire, Louisiana, Massachusetts, and Washington where they are permitted only in a limited number of nonproduct-related cases authorized only by statute; and in Nebraska where the state constitution prohibits them. See NH Rev. Stat. Ann. § 507:16, as added by Laws 1986, ch 227:3, effective July 1, 1986; Philippe v. Browning Arms Co., 375 So.2d 151, 157 (La. App. 1979), afrd, 395 So.2d 310; Santana v. Registrars of Voters of Worcester, 502 N.E.2d 132, 135 (Mass. 1986); Barr v. Interbay Citizens Bank, 96 Wash.2d 409, 635 P.2d 441 (1981); Miller v. Kingsley, 194 Neb. 123, 230 N.W.2d 472, 474 (1975), cited with approval Chlopek v. Schmall, 224 Neb. 78, 396 N.W.2d 103, 109 (1986).
- 17. The first appellate decision approving an award of punitive damages in a product liability case was not entered until 1967, and there were only two others by 1975. liability case was not entered until 1967, and there were only two others by 1975. See Toole v. Richardson-Merrell, Inc., 251 Cal. App. 2d 689, 60 Cal Rptr. 398 (1967); Gillham v. Admiral Corp., 523 F.2d 102 (6th Cir. 1975), cert. denied, 424 U.S. 913 (1976); and Moore v. Jewel Tea Co., 116 Ill. App. 2d 109, 253 N.E.2d 636 (1969), aff'd, 46 Ill. 2d 288, 263 N.E.2d 103 (107); see J. C. Jeffries, Jr., and G. C. Freeman, Jr., For the Defense 31, 9 (1988).

 18. M. A. Peterson, S. Sarma, M. G. Shanley, Punitive Damages: Empirical Findings, R-
- 3311-ICJ (The RAND Corporation, Santa Monica, CA, 1987), p. 42.
- T. B. Olson, Testimony on Behalf of the Minnesota Civil Justice Coalition, Minnesota Injury Compensation Study Commission Hearing: Punitive Damages, Minneapolis (25 January 1989), p. 12. 20. Johnson v. American Cyanamid Co., 239 Kan. 279, 718 P.2d 1318 (1986). In a
- similar earlier case, a punitive damage award of \$2.75 million involving an oral contraceptive made by Ortho Pharmaceutical Corporation was upheld for the failure to include a warning the FDA had refused to approve because of lack of
- supporting medical evidence. See Wooderson v. Ortho Pharmaceutical Corp., 253 Kan. 387, 681 P.2d 1038, cert. denied, 469 U.S. 965 (1984).

 21. See J. D. Pagliaro and A. C. Benton, Toxics Law Reporter (Bureau of National Affairs, Washington, DC, 1989), Vol. 3, no. 42, pp. 1336–1342; see also Richardson v. Richardson Merrell, Inc., 649 F. Sup. 799 (DC 1986), affd, 857 F.2d 823 (D.C. Cir. 1988)
- R. K. Willard and R. L. Willmore, An Update on the Liability Crisis (U.S. Department of Justice, Washington, DC, 1987), pp. 47–51.
 G. L. Priest and B. Klein, J. Legal Studies 13, 1 (1984).
 See ISO Data, Inc., Claim File Data Analysis: Technical Analysis of Study Results 86–87 (Insurance Services Office, New York, 1988), pp. 86–87.

- 25. M. G. Shanley and M. A. Peterson, Posttrial Adjustments to Jury Awards, R-3511-ICJ
- Che RAND Corporation, Santa Monica, CA, 1987), pp. 38, 42.
 A. Chin and M. A. Peterson, Deep Pockets, Empty Pockets: Who Wins in Cook County Jury Trials, R-3249-ICJ (The RAND Corporation, Santa Monica, CA, 1985), p. 27.
- R. Neely, The Product Liability Mess (Free Press, New York, 1988).
 See American Medical Association, "Impact of Product Liability on the Development of New Medical Technologies", Proceedings House of Delegates, 137th Annual Meeting, 18–22 June 1988, Chicago, IL.
- 29. See Amicus Curiae Brief of the Pharmaceutical Manufacturers Association and the American Medical Association to the U.S. Supreme Court in Browning-Ferris Industries, Inc. v. Kelco Disposal, Inc., No. 88-556, p. 12.

 30. See The Competitive Status of the U.S. Pharmaceutical Industry (National Academy
- Press, Washington, DC, 1983), p. 15; see also "Billions Blown on Health," The
- New York Times 12 April 1989, p. 25.
 E. B. Connell, Technology Review, Vol. 90, No. 10 (May–June 1987).
 "Birth Control Industry Being Transformed," The New York Times 22 February 1989, p. D1; "Birth Control Makers Weary of Controversy; Liability Problems Limit Contraceptive Choices as Drug Firms Leave the Field," Los Angeles Times 3 May 1988, p. 15.
- 33. M. Brody, Fortune 113, 22 (1986).

- 34. See W. Anderson, remarks made at the Annual Meeting of the National Association of Casualty and Surety Executives, White Sulphur Springs, WV, 7 October 1986.
- 35. D. R. Hill and R. D. Pearson, Ann. Internal Med. 108, 839 (1988).
- "Does the Fear of Litigation Dampen the Drive to Innovate," The New York Times, 36. 12 May 1987, p. 1. Colonial Pipeline Co. v. Brown, 365 S.E.2d 827 (Ga. 1988).
- Brown v. Superior Court, 751 Cal. 470 P.2d (1988); see also G. D. Cox, National Law J. 10 (no. 32), p. 7 (18 April 1988).
 See Masaki v. General Motors Corporation, Sup. Ct. Haw., Docket No. 13023, 20
- September 1989.
- Juzwin v. Amtorg Trading Corp., 705 F.Supp. 1053 (D.N.J. 1989); see also "Judge Limits Punitive Claims for Products," The New York Times 10 March 1989, pp. B1, B7. Subsequently, Judge Sarokin ruled in Juzwin v. Amtorg Trading Corp., No. 87-3876 (D.N.J. 1989), that he lacked the power to implement his earlier ruling although he did not retreat from his belief that multiple imposition of punitive damages for harms involving one product could violate due process. Also, a number of the arguments regarding multiple punitive damage awards made in Juzwin v. Amorg Trading Corp. were rejected by U.S. District Court Judge Clarkson Fisher in Leonen v. Johns Manville Corp., 717 F. Supp. 272 (D.N.J. 1989), although he did not discount entirely the finding that due process requires some limit be placed on the amount of punitive damages which can be awarded against a manufacturer for the same culpable conduct. Missouri credits past punitive damage awards against the present punitive damage award, and Georgia allows recovery of only one award of punitive damages in a Georgia court from a defendant for any act or omission, regardless of the number of causes of action which may arise from such act or omission; see Mo. Rev. Stat. § 510.263(4) (Vernon Supp. 1989) and Ga. Code Ann. § 51-12-5.1(e)(1) (Michie Supp. 1988).

 41. Some states, unlike Vermont, the site of *Browning-Ferris*, receive at least part of a
- punitive damages award; for example, Illinois, where the trial court may apportion the award among the plaintiff, the plaintiff's attorney and the State of Illinois Department of Rehabilitation Services; see Ill. Ann. Stat. ch. 110, \$ 2-1207 (Smith-Hurd Supp., 1988).
- Browning-Ferris Industries, Inc. v. Kelco Disposal, Inc., 57 U.S.L.W. 4985 (U.S. 1989).
- 43. Bankers Life & Casualty v. Crenshaw, 486 U.S. 71 (1988).
- 44. See Ala. Code Code \$\$ 6-11-20(4), 6-11-21 (Supp. 1988); Colo. Rev. Stat. \$ 13-21-102 (1987); Fl.A. Stat. Ann. § 768.73(1)(b) (Supp 1989); Kan. Stat. Ann. § 60-3701 (1987); Okla. Stat. Ann. tit. 23, 9 § (West 1987); Tex. Civ. Prac. & Rem. Code Ann. § 41.001 et. seq. (Vernon 1987); and VA. CODE ANN. § 8.01-38.1 (1987).
- 45. See Ariz. Rev. Stat. \$ 12-701 (added by S.B. No. 1453, 1989); N.J. Stat. Ann. \$ 2A:58C-5(c) (West 1987); Ohio Rev. Code Ann. \$ 2307.80 (Page Supp. 1987); Or. Rev. Stat. § 30.927 (1987); Utah Code Ann. § 78-18-2 (added by
- S.B. No. 24, 1989).
 See C. J. Walsh and M. S. Klein, Food Drug Cosmetic Law Journal 41, 171 (1986).
 See Mo. Ann. Stat. \$510.263 (Vernon Supp. 1989); 1989 Utah Laws Ch. 237 \$7818-1, 7818-2; Conn. Gen. Stat. \$52-240b (West Supp. 1988); Ga. Code Ann. \$ 51-12-5.1(d)(2) (Michie Supp. 1988); and N.J. Stat. Ann. \$ 2A:58C-5(b) (West Supp. 1987); Md. Cts. & Jud. Pros. \$10-913(a) (Rep. Vol. 1984, Supp. 1989); Act of May 30, 1989, ch. 218, 1989 Nev. Stat. 485; Cal. Civ. Proc. \$ 3295(d) (Deering 1989); Mont. Code Ann. § 27-1-221(7)(a) (1989); Kan. Stat. Ann. § 60-3701(a) (1988).
- Louis Harris and Associates, News Release issued at a Conference "Issues in Civil Procedure: Advancing the Dialogue," Yale Program in Civil Liability, Yale University (8 April 1988).
- AFL-CIO Executive Council, Liability Insurance and Tort Law (Washington, DC, 21 May 1986), p. 5.
- "ABA Votes Against Ceilings on Damage Awards" The Washington Post, 18 February 1987, p. A5; see also S. Adler, Business Insurance 21, 3 (14 August 1989).
- 51. See American College of Trial Lawyers, Report on Punitive Damages of the Committee on Special Problems in the Administration of Justice (Chicago, 1989), p. 15.
- See Amicus Curiae Brief of the American National Red Cross, the American Tort Reform Association, the Association for California Tort Reform, the Council of Community Blood Centers, General Electric Company, the Merchandising Group of Sears, Roebuck and Company, and the Texas Civil Justice League to the U.S. Supreme Court in *Browning-Ferris Industries, Inc. v. Kelco Disposal, Inc.*, No. 88-556; see also Amicus Curiae Brief of the City of New York.
- 53. Louis Harris and Associates, "Majority of Americans Support Tort Reform," (May 1987).