

The Need to Reform Personal Injury Law Leaving Scientific Disputes to Scientists

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Personal injury law is staggeringly inefficient as a system of victim compensation. There is little reason to assume that it importantly curtails unreasonably dangerous conduct, yet there is good reason to conclude that it promotes socially undesirable behavior. Moreover, the tort law system ill serves the goal of individual justice, in part because it assumes that lay juries can correctly decide complex scientific issues. Several methods of replacing tort law with other compensation systems are surveyed and a specific, balanced reform package is proposed.

ON 28 FEBRUARY 1980, LYNETTE WEST, A 20-YEAR-OLD California student, collapsed on the bathroom floor (1). She was rushed to the hospital and put in the intensive care unit. She remained in "severe shock" for 18 hours, during which time she was in "very severe danger," according to the hospital. Starting the following morning, her condition sharply improved, and she was released from the hospital on 4 March. She stayed home for a week and then returned to her classes. Although her doctors were puzzled by her malady at the time, some months later, after reading reports of the federal Center for Disease Control (CDC), they concluded that Ms. West had suffered from menstrually related toxic shock syndrome (TSS).

Ms. West, who was using a vaginal tampon manufactured by Johnson & Johnson Products, Inc. (JJP), at the time of her illness, subsequently sued JJP for compensatory and punitive damages. The jury trial amounted to a battle of experts. JJP's experts argued that Ms. West had actually contracted streptococcal scarlet fever (which causes similar symptoms) and had not, as her experts claimed, suffered from TSS brought on by the tampon she was using. On this question, the jury sided with the plaintiff. During the trial it was shown that, although TSS had been identified in children in 1978, the CDC had not established a close association between TSS and tampon use until May or June of 1980—some months after Ms. West had been discharged from the hospital.

The plaintiff's counsel argued to the jury that JJP should be held strictly liable for Ms. West's injuries on the ground that JJP's tampon was a "defective product." Specifically, he contended, and the trial judge concurred, that the "consumer expectation" test, adopted by the California Supreme Court in an earlier product injury case (2), should apply here in determining whether the manufacturer should pay for the harm its product caused. Simply put, Ms. West's lawyer asserted that an ordinary consumer would not expect to "get sick from the product." Not surprisingly, the jury

agreed. Rather more surprisingly, it awarded Ms. West \$500,000 in compensatory damages. Even more spectacularly, the jury also awarded her \$10 million in punitive damages, apparently on the ground that JJP had displayed a "conscious disregard for the safety of others" (3) by failing to test the product adequately before marketing it, and by failing to reexamine the product's possible dangers after receiving complaints from consumers about infections they associated with use of JJP's tampons. To put it mildly, JJP officials were upset by the \$10.5-million award when, in their view, they could not have known about TSS at the time of Ms. West's injury.

In response to the defendant's legal motions, the trial judge decided that the jury's awards were excessive and the result of "passion and prejudice," noting that the victim had offered no proof of any wage loss or other out-of-pocket economic loss and that she had fully recovered from her illness. But he did not overturn the verdict. Rather, he ordered a new trial only if the plaintiff refused to agree to a reduction in compensatory damages to \$100,000 and punitive damages to \$1 million. Both sides appealed, and in December 1985 a California appeals court finally affirmed the trial judge's disposition. In October 1986, the U.S. Supreme Court denied JJP's request for further review.

The case's outcome is not a public matter. Probably, Ms. West accepted the \$1.1 million as a final settlement. Out of that she would pay her costs of litigation, including the fees of her expert witnesses and, most importantly, her lawyer's fee, which was likely in the range of \$300,000 to \$500,000 (4). Is *West v. JJP* a typical case? In some ways it is not. The award was unusually large, and, of course, defendants often win product liability cases (5). Nonetheless, it illustrates quite a bit about American tort law today.

Asking Lay Juries to Resolve Complex Scientific Controversies

Jurors selected at least in part for their ignorance about the topic at hand are asked to decide extremely difficult scientific issues: Was it TSS or was it scarlet fever? Could JJP have discovered TSS before the CDC did? Would it have done so through better testing and follow-up studies? Should the consumer complaints JJP received have put the company on notice that something serious was afoot? Of course, the jury is aided in this process by the testimony of experts. What that means in practice is that it must resolve a dispute between sophisticated witnesses, whose scientific credibility the jurors are unlikely to accurately appraise.

West v. JJP is hardly an isolated instance of this phenomenon. It is repeated in nearly every medical malpractice and product design defect case coming to trial, where one side says, for example, that the defendant should have located the vehicle's gas tank elsewhere or

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should have given the patient some additional diagnostic test, and the other side claims there is no better place to put the gas tank or that nothing in the patient's work-up reasonably called for the additional test.

For some scientists, this creates a whole new area of professional practice—serving as an expert witness, either occasionally or full time. For other scientists—those whose past judgment is being questioned—the process can be highly demoralizing. They see themselves as verbally abused on the witness stand and then rebuked by jurors who, they feel, never understood the scientific issues (6).

Sometimes, a private lawsuit for money damages is cast as a titanic scientific battle that must make many scientists cringe. For example, in *Johnson v. American Cyanamid Co.* (7), the plaintiff claimed he contracted polio after his daughter received an oral dose of the Sabin vaccine. This is a small, but recognized, risk accompanying the Sabin vaccine. The plaintiff contended that his daughter should have been told about and offered the Salk vaccine, even though it was not then for sale in the United States. Both he and his doctor asserted that, if a fully informed choice had been possible, he would have selected the Salk vaccine instead. Suddenly, although the American public health and medical establishment had much earlier clearly decided that the Sabin was superior to the Salk vaccine, a Kansas courtroom became a Sabin versus Salk battleground, with Dr. Jonas Salk's son testifying in favor of his father's vaccine. And the jury sided with the Salks—or at least with the victim—awarding \$2 million in compensatory and \$8 million in punitive damages to the totally incapacitated claimant and against American Cyanamid, the then sole U.S. manufacturer of polio vaccine. The Kansas Supreme Court subsequently reversed the outcome, awarding victory to the defendant, on the ground that the product was not “defective” as a matter of law.

In other cases, determinations are made that many scientists are likely to find mystifying. As one illustration, in *Wells v. Ortho Pharmaceutical Corp.* (8), a federal judge, trying the case without a jury, concluded that the defendant's spermicidal jelly caused the plaintiff child's birth defects. The litigants had presented competing experts who cited conflicting studies. The trial judge “found the studies to be inconclusive on the ultimate issue of whether the Product caused Katie Wells' birth defects.” In the face of this battle of experts, the judge concluded that the plaintiffs' experts were more credible and found in their favor. The federal court of appeal affirmed, noting that “it does not matter . . . that the medical community might require more research and evidence before conclusively resolving the question” (8).

Another troublesome area concerns scientific standards set by federal agencies. Defendants may have complied with them, but juries are sometimes permitted to reject the standards as inadequate. Courts understandably worry that an agency may be “captured” by those it regulates and so set standards that are too lax, but consider *Ferebee v. Chevron Chemical Co.* (9), where the Environmental Protection Agency (EPA) had instructed manufacturers how to label certain pesticides. A federal appeals court upheld the liability of a company that had complied with the EPA rule, saying that Maryland law had the right to denounce the warning as inadequate even though, by federal statute, states had no power to require different warnings (10).

Other examples of complicated scientific questions addressed by tort law include the well-publicized issues of whether Agent Orange injured specific soldiers who served in Vietnam, whether above-ground nuclear weapons testing injured certain personnel who were in the vicinity of the blasts, what should asbestos manufacturers and cigarette makers have known about the dangerousness of their products decades ago, and whether recognized dangers can be reasonably removed from useful products and services, such as ending the AIDS risk from blood transfusions (11).

Promoting the Wrong Conduct

Perhaps these troubling aspects of American tort law could be cheerfully overlooked if the fear of tort liability promoted socially desirable behavior. Although economic models can be constructed to show how legal rules channel conduct in the right direction (12), real world considerations muddy the picture. First, individuals and enterprises have good reasons to act carefully apart from fear of liability. These safety-promoting forces include concern for one's own safety (for example, by airplane pilots), moral inhibitions against endangering others, competitive pressures (for example, preservation of product reputation), and the vast array of administrative regulation that increasingly pervades modern life [(for example, from FDA (Food and Drug Administration) to OSHA (Occupational Safety and Health Administration) and down the alphabet)]. These forces do not prevent all unreasonably dangerous conduct, but there are reasons to be skeptical about whether tort law importantly fills the gap. Ignorance of the law is one; for example, engineers and scientists are often kept in the dark about a company's product liability litigation, in part because the lawyers consider the firm's chances of being sued and held liable to resemble the outcome of a lottery (13). Incompetence is another. Some people are awkward, stupid, or possess bad judgment and cause accidents regardless of their efforts at avoidance. At the organizational level, even if top management wants to emphasize safety, this can be difficult when prevention efforts reduce profits now and pay off only in less visible lawsuits avoided in the future—when the employee responsible for a problem may have moved on to another firm.

Despite the threat of liability, some people have too much at stake to take reasonable care. These include physicians who know they are no longer competent but cannot bring themselves to give up their careers, and small manufacturers who know their main product could be made safer but who would go bankrupt if they recalled or retooled in the way required.

Finally, the purchase of liability insurance blunts the threat that carelessness will bring financial repercussions. To be sure, financial pressure can be reintroduced by the insurers through devices like deductibles, coinsurance, threats of nonrenewal, underwriting conditions, and price differentials that reflect the insured's litigation experience. But it is doubtful whether these sometimes-employed, private incentives actually prod the behavior that the public wants (14). The extent, if any, to which tort law actually promotes safety is, in the end, an empirical question; unfortunately, the results of studies to date are largely inconclusive (15).

Even if tort law promoted safety a little bit, it carries with it considerable costs. It may have significant negative impacts on behavior. For example, liability concerns are said to cause competent physicians to stop delivering babies, enterprises to withdraw socially desired products from the market, and cities to close recreational facilities desired by the community (16, 17). Liability jitters may discourage firms from undertaking important research or from bringing to market beneficial inventions such as vaccines and contraceptives (18). More generally, it is argued that the existing legal system, by threatening potentially crippling liability, favors the status quo, even though, overall, new development promotes safety (19). Another cost of the liability system involves behavior undertaken only to protect the actor from litigation, such as the medically unnecessary tests doctors order from fear of unwarranted lawsuits (20).

Incurring Enormous Administrative Costs While Compensating Inconsistently

If tort law fails as a behavioral control mechanism, is it justified as a mechanism for compensating accident victims? On this score, the

current system is ludicrously inefficient. As shown in *West v. JJP*, a startling proportion of the money paid for liability insurance goes for purposes other than to compensate claimants. One recent study found that costs of litigation, primarily lawyers' fees, roughly equal what claimants receive as compensation (21). But this only begins the indictment. That study excluded brokers' fees, other marketing expenses, and other insurer overhead costs (to say nothing of insurer profits).

Moreover, only a small portion of the claimant's recovery is for actual losses. A fair portion duplicates compensation from other sources such as health insurance, disability income insurance, and other employee benefits (22). Furthermore, as much or more money is paid out for pain and suffering damages as to replace real economic losses (23). Jeffrey O'Connell, for example, estimates that only about 15% of the insurance dollar is returned to claimants to pay for actual losses (24).

Many people think it is right that accident victims receive compensation for pain and suffering. Yet, in the end, the economic burden of those damages generally falls on consumers in the higher prices they pay for products and services. For this same reason, it is naïve to think that pain and suffering damages actually punish people for their wrongdoing. As a practical matter, personal injury lawsuits are almost only brought when the defendant is an insured individual, an enterprise, or a governmental body. These pools of money, called "deep pockets" by the defense bar, are institutions, not human beings.

Even if some payment for serious pain and suffering seems justified, two aspects of the current system remain troubling. (i) In small injury cases, plaintiffs recover pain and suffering damages primarily because the defense insurer wants to settle the case to save legal expenses and to avoid the risk of a giant jury award. The claimant's lawyer knows how to exploit that wish. (ii) Some terribly injured victims are awarded enormous sums. In the spermicidal jelly birth defect case noted earlier, the plaintiff child won \$3 million for pain and suffering. But is it really the function of tort law to make some people millionaires—no matter how badly they are injured?

The idiosyncracies of personal injury law as a compensation system are well illustrated by the Bendectin saga (25). Bendectin, an antinausea drug, was prescribed to as many as 30 million pregnant women worldwide between 1957 and 1983. Some claim that Bendectin causes birth defects, and since 1977 hundreds of lawsuits have been filed against its manufacturer, Merrell Dow. Although the defendant strongly denied that Bendectin is harmful, escalating legal fees and the risk that a jury might see things differently were enough to make Merrell Dow offer to settle all claims for \$120 million. It withdrew the offer, however, when a federal appeals court ruled that the settlement could not be binding on those who wished to pursue their claims on their own. About 1200 claimants then tried their cases together in a single lawsuit. The jury found that they had not proved Bendectin was responsible for their injuries. Suddenly, claimants who under the settlement offer stood to receive an average of nearly \$100,000 each got nothing. Several individual Bendectin cases have since been tried. Most claimants have lost. But a handful have convinced their jury that Bendectin was the culprit after all. Indeed, in one case the jury awarded a single victim \$20 million in compensatory damages and \$75 million in punitive damages, although, because of continuing legal complications, it remains unclear whether any of these winning claimants will ever collect.

This may make for a fascinating story. But if you were interested in compensating children with birth defects, it is hard to imagine that you would set about doing it in this haphazard way. Note, too, as *West v. JJP* also shows, there is often a long delay between injury and recovery, and the award is normally paid out in a lump sum (a clear advantage to the lawyer), rather than in periodic payments the

way that Social Security, workers' compensation, private disability insurance, and health insurance are paid.

The cases noted above also reveal something of the "justice" of the tort system. People often obtain a far cry less than what an informed and dispassionate third party would think they deserve. What counts is one's lawyer, whether one digs up the right evidence and secures the right experts, whether the claimant is financially and psychologically able to hold out for a trial rather than settle for a smaller sum to pay bills or relieve anxiety, where the case is litigated, and who the injurer is (especially, how well insured the injurer is). Anyway, only a tiny portion of personal injury cases are tried in court; nearly all are settled by rough and ready rules of thumb in circumstances under which the negotiating talents of the attorney can play an important role.

Juries award punitive damages in a small proportion of cases, perhaps between 1 and 3% (26), and in that sense too *West v. JJP* is atypical. Moreover, punitive damage awards are often modified by trial judges (as we saw in *West*), overturned on appeal, or diminished in posttrial settlements. Nonetheless, they are sometimes enormous in amount and are awarded for conduct that many would consider at worst to be somewhat knowing negligence. Although it is easy to appreciate that a riled up jury would want to vent its outrage at a defendant, it is less clear that the fairly wide-open award of punitive damages well serves this purpose.

Pursuing Alternatives

Are there sensible alternatives? So far, the American Bar Association and its various study commissions have only endorsed proposals for minor tinkering with the system (27). Yet, bolder reforms are available. One strategy is to focus on certain troubling accidents and tailor no-fault compensation plans to each of them. For example, Virginia has recently eliminated malpractice claims relating to so-called "bad baby" cases and instead has substituted a birth-related neurological injury compensation plan, funded primarily by obstetricians and by hospitals where babies are delivered. If a child suffers severe neurological injuries connected to the birth process, the plan will provide generous compensation without requiring proof of physician negligence—but the child will be deprived of the chance to win the bonanza level of pain and suffering damages that might come with a successful tort suit (28).

The National Childhood Vaccine Injury Act of 1986 is similar (29). Children who suffer substantial adverse consequences of vaccines (the plan is aimed mainly at the side effects of the anti-pertussis vaccine) can obtain generous compensation, including up to \$250,000 for pain and suffering, from a federally created fund financed by an excise tax on the vaccines. Although this program allows families to choose a lawsuit rather than accept the compensation offered by the plan, the Act includes obstacles to discourage litigation. It is too soon to appraise how the Virginia plan and the vaccine-damaged children plan will actually function.

We have far more experience with two considerably broader compensation plans—auto no-fault insurance and workers' compensation. The latter, adopted by all of the states starting in the 1910s, generally substitutes a no-fault and employer-funded compensation scheme for personal injury lawsuits against the employer. In many respects, workers' compensation has been extremely successful, and its protections could be extended to injuries not related to work and to dependents of workers. Yet its income replacement provisions, especially for the long-term disabled worker, have never been very generous. Nor has the system been able to free itself from the involvement of lawyers, especially in those troublesome permanent partial disability cases, which, despite their small numbers, account

for a considerable portion of the money awarded (30).

The experience with auto no-fault insurance is also a mixed bag (31). First, fewer than half the states have adopted the idea, and second, only two states, Michigan and New York, have both provided substantial no-fault victim benefits and removed the bulk of the claims from the tort system. In those two states more victims get benefits, they are paid promptly, and auto insurance costs are down from what they would otherwise have been. This has occurred because legal fees and pain and suffering damages are eliminated from the smaller injury cases, with a resulting 75% or more reduction in the number of liability claims made.

One tort reform strategy would be to push Michigan and New York style auto no-fault insurance nationally. But this would still leave in the personal injury law system the scientifically more complex and currently most alarming areas of litigation, those concerning product liability, toxic materials, and medical malpractice. Although it is possible to imagine the piecemeal adoption of compensation plans in those areas, perhaps patterned after the vaccine-damaged children's plan, a bolder alternative is represented by the New Zealand solution.

In New Zealand there are no private lawsuits by accident victims (32). Victims claim generous compensation from a national agency for income replacement, medical expenses, rehabilitation costs, and other losses. Seriously injured victims obtain up to \$NZ 27,000 for serious pain and permanent impairment. The scheme is funded by contributions from employers (based loosely on the claims that employees in their industries make on the fund for both work-related and non-work-related accidents), from motorists, and from general taxes. In 1991, New Zealand will implement changes to put those disabled by illness on a par with those disabled by accident, thereby achieving the sort of equity that was envisioned at the outset.

Although we could adopt a similar scheme in the United States, it seems rather a long way off politically, even if it were a good idea. A special committee of the prestigious American Law Institute is now reexamining this entire subject, and an American Assembly (sponsored by Columbia University) devoted to tort reform is to be held in mid-1990. The findings and recommendations of both of these endeavors should be of great interest to the legal and scientific communities.

Adopting Balanced Reforms as the First Step

In the meantime, states might adopt two balanced reforms that would help victims, consumers, and business (33). First, the less serious personal injury cases could be taken out of the tort system, and medical care and wage replacement needs could instead be met through mandatory employee benefits and an improved Medicaid system. Second, the seriously injured cases could remain in the tort system, but with new rules. Successful plaintiffs would have their legal fees paid by defendants, and their own carelessness would not be held against them in determining the amount of their recovery (which is the situation in workers' compensation, for example). On the other hand, they would only be compensated for those economic losses not already covered by health insurance, routine employee benefits, and basic social insurance schemes such as Social Security and workers' compensation. Further, pain and suffering awards would be subject to a ceiling of, say, \$150,000.

This two-part reform is not perfect, and it would not keep all scientific disputes out of the courtroom. But it would treat those who now use the tort system in a manner more fitting today's world, a world in which the real choice is which insurers and enterprises are to provide what level of compensation to accident victims of all

sorts. Lynette West should be promptly compensated for her economic losses, without needing to prove the cause of her illness or that anyone was at fault. But, when she apparently suffered no permanent harm, having JJP pay her and her lawyer \$1.1 million approximately 7 years after the event makes no sense.

REFERENCES AND NOTES

1. The "facts" presented here are taken from *West v. Johnson & Johnson Products, Inc.*, 174 Cal. App. 3d 831, 220 Cal. Rptr. 437 (1985), cert. denied, 479 U.S. 824 (1986).
2. *Barker v. Lull Engineering Co., Inc.*, 20 Cal.3d 413, 573 P.2d 443, 143 Cal. Rptr. 225 (1978). This test does not require the product manufacturer to have done anything wrong, but only that there was something wrong with the product. This "strict product liability" reflects the idea that the cost of product injuries should be internalized into the cost of the product even if there was nothing identifiably negligent about the manufacturer's conduct. Subsequent to *West*, the California Supreme Court adopted a different standard for certain socially important products, such as pharmaceutical drugs, where it can be shown that the danger that caused the victim's injury was not reasonably knowable at the time the product was manufactured. Liability in such a case depends on proof of negligence [*Brown v. Superior Court*, 44 Cal.3d 1049, 751 P.2d 470, 245 Cal. Rptr. 412 (1988)]. Whether the *Brown* doctrine would apply to tampons has not yet been decided.
3. California's legal standard for the award of punitive damages was subsequently tightened to require "despicable conduct which is carried on by the defendant with a willful and conscious disregard of the rights or safety of others." The new statute also requires proof by "clear and convincing evidence." Cal. Civil Code §3294 (West Supp. 1990).
4. American lawyers almost invariably handle personal injury cases for claimants on a "contingency fee" basis; the lawyer is only paid if the plaintiff collects something. Moreover, the amount of the fee is a percentage of the recovery, typically one-third to one-half depending on the nature of the case and how far the litigation goes.
5. *Product Liability: Verdicts and Case Resolutions in Five States* (U.S. General Accounting Office, Washington, DC, September 1989).
6. G. Eads and P. Reuter, *Designing Safer Products: Corporate Responses to Product Liability Law and Regulation* (RAND Corp., Santa Monica, CA, 1983), p. 133.
7. *Johnson v. American Cyanamid Co.*, 239 Kan. 279, 718 P.2d 1318 (1986), later proceeding 243 Kan. 291, 758 P.2d 206 (1988).
8. *Wells v. Ortho Pharmaceutical Corp.*, 788 F.2d 741 (11th Cir. 1986), reh'g denied en banc, 795 F.2d 89, cert. denied, 479 U.S. 950 (1986).
9. *Ferebee v. Chevron Chemical Co.*, 736 F.2d 1529 (D.C. Cir. 1984), cert. denied, 469 U.S. 1062 (1984).
10. The consequence of complying with FDA warnings has become a very controversial issue in tampon-caused TSS cases. Now that the FDA requires certain manufacturer warnings, can victims argue to juries that those warnings are still inadequate? Although most courts have said "no," not all have agreed. Compare *Moore v. Kimberley-Clark Corp.*, 867 F.2d 243 (5th Cir. 1989) (reflecting the majority position) with *O'Gilvie v. International Playtex, Inc.*, 821 F.2d 1438 (10th Cir. 1987).
11. For a thoughtful analysis of the system's failure to handle well the causation issue in modern hazardous substances litigation and a call for the use of a "federal Science Panel" see T. Brennan, *Cornell Law Rev.* 73, 469 (March 1988).
12. See generally, G. Calabresi, *The Costs of Accidents: A Legal and Economic Analysis* (Yale Univ. Press, New Haven, CT, 1970); W. Landes and R. Posner, *The Economic Structure of Tort Law* (Harvard Univ. Press, Cambridge, MA, 1987); and S. Shavell, *Economic Analysis of Accident Law* (Harvard Univ. Press, Cambridge, MA, 1987).
13. See (6), p. 94.
14. See generally, S. Sugarman, *Doing Away With Personal Injury Law* (Greenwood, Westport, CT, 1989), pp. 12-18.
15. ———, *ibid.*, pp. 21-23. Three types of studies have been mounted. One uses survey research to determine whether people have changed their conduct in response to changes in the law [J. Wiley, *South. California Law Rev.* 55, 345 (January 1982); D. Givelber, W. Bowers, C. Blitch, *Wisconsin Law Rev.* 1984 (no. 2), 443 (1984)]. A second approach is somewhat anthropological, where the researcher seeks to get inside an organization and observe how its key actors react to legal pressures [for example (6)]. A third method relies on econometric techniques; alternative legal regimes are modeled and then tested with data sets that have been generated for other reasons. This approach has been primarily applied to examine the impact of auto no-fault insurance on the accident rate [E. Landes, *J. Law Econ.* 25, 49 (April 1982); P. Zador and A. Lund, *J. Risk Insurance* 53, 226 (June 1986)].
16. S. Carroll and N. Pace, *Assessing the Effects of Tort Reforms* (RAND Corp., Santa Monica, CA, 1987), p. 33; E. McGuire, *The Impact of Product Liability* (The Conference Board, Res. Rep. no. 908, New York, 1988); Institute of Medicine, *Medical Professional Liability and the Delivery of Obstetrical Care* (National Academy Press, Washington, DC, 1989), vol. 1, pp. 38-39, 46, 73-89.
17. G. Priest, *Yale Law J.* 96, 1565 (June 1987).
18. See generally, P. Huber, *Liability: The Legal Revolution and Its Consequences* (Basic Books, New York, 1988); C. Djerassi, *Science* 245, 356 (1989); and R. Mahoney and S. Littlejohn, *ibid.* 246, 1395 (1989).
19. P. Huber, *Columbia Law Rev.* 85, 279 (March 1985).
20. The American Medical Association estimates the annual cost of defensive medicine to be between \$15 and \$40 billion [Committee on Professional Liability, *Study of Professional Liability Costs* (American Medical Association, Chicago, IL, 1983) (mimeo); *Study of Professional Liability Problems* (American Medical Association,

- Chicago, IL, 1984) (mimeo)].
21. J. Kakalik and N. Pace, *Costs and Compensation Paid in Tort Litigation* (RAND Corp., Santa Monica, CA, 1986).
 22. Tillinghast, a Towers Perrin Company, *An Analysis of Double Recovery of Damages in the State of California* (Association for California Tort Reform, Sacramento, CA, June 1989) (mimeo).
 23. See (17), p. 1554.
 24. J. O'Connell, *San Diego Law Rev.* 23 (no. 1), 17 (1986); *Minnesota Law Rev.* 60, 501 (February 1978).
 25. The story related here is taken from Sugarman [(14), pp. 44-45]. For the most recent developments, see *Richardson v. Richardson-Merrell, Inc.*, 857 F.2d 823 (D.C. Cir. 1988), cert. denied 110 S. Ct. 218 (1989), and *Ealy v. Richardson-Merrell, Inc.*, 1990 U.S. App. (LEXIS 3427) (awarding judgment for the defendant on the ground that expert testimony that Bendectin causes birth defects is "without scientific foundation").
 26. M. Peterson, S. Sarma, M. Shanley, *Punitive Damages: Empirical Findings* (RAND Corp., Santa Monica, CA, 1987).
 27. See, for example, Special Committee on the Tort Liability System, *Towards a Jurisprudence of Injury: The Continuing Creation of a System of Substantive Justice in American Tort Law* (American Bar Association, Chicago, IL, 1984); *Report of the Action Commission to Improve the Tort Liability System* (American Bar Association, Chicago, IL, 1987) (mimeo); and Commission on Mass Torts, *Report to the House of Delegates* (American Bar Association, Chicago, IL, 1989) (mimeo). White House-sponsored reform initiatives of the Reagan years were a one-sided effort to curtail victim rights that failed to recognize the need for accident victim compensation. U.S. Attorney General, Tort Policy Working Group, *Report on the Causes, Extent and Implications of the Current Crisis in Insurance Availability and Affordability* (U.S. Department of Justice, Washington, DC, 1986).
 28. For discussions of the Virginia plan, adopted in part to ensure the continued availability of medical malpractice insurance in the state, see Institute of Medicine, *Medical Professional Liability and the Delivery of Obstetrical Care*, vol. 2, *An Interdisciplinary Approach* (National Academy Press, Washington, DC, 1989).
 29. See generally, V. Schwartz and L. Mashigian, *Ohio State Law J.* 48 (no. 2), 387 (1987).
 30. J. Chelius, *Workplace Safety and Health: The Role of Workers' Compensation* (American Enterprise Institute for Public Policy Research, Washington, DC, 1977).
 31. *Compensating Auto Accident Victims: A Follow-up Report on No-Fault Auto Insurance Experiences* (U.S. Department of Transportation, Washington, DC, 1985).
 32. For descriptions and discussions of the New Zealand scheme, see G. Palmer, *Compensation for Incapacity: A Study of Law and Social Change in New Zealand and Australia* (Oxford Univ. Press, Wellington, NZ, 1979); W. Hodge, *Insurance Counsel J.* 50, 222 (April 1983); Law Commission, *Personal Injury: Prevention and Recovery* (Wellington, NZ, 1988). For critical views, see J. Henderson, *Univ. Chicago Law Rev.* 48, 781 (summer 1981); and R. Miller, *Univ. Hawaii Law Rev.* 11, 1 (fall 1989).
 33. See (14), pp. 167-200.



"It may be indistinguishable from a diamond chemically, Harry - but to me, charcoal is charcoal."