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ARTICLES

MODERN TORT LAW AND ITS REFORM

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I. INTRODUCTION: THE CURRENT CONTEXT OF TORT LAW REFORM

In 1960, progressive members of the state judiciary, joined later by the American Law Institute, commenced upon a revolution in the conceptual basis of tort law of a dimension previously unknown in the history of civil common law.¹ Modern tort law was transformed from a modest set of rules directed chiefly to dispute resolution into a powerful engine of social reform with the twin ambitions to reduce the accident rate by fine-tuned control of all corporate operations and to provide a system of injury compensation with benefit levels exceeding those of any compensation system in the Western world. Today, we are beginning to learn that the presuppositions upon which this conceptual revolution was built are flawed, and that this transformation of the law has adversely affected the welfare of U.S. citizens.

Until modern times, tort law has been chiefly the domain of specialists. The tort law revolution of the 1960s was instituted by visionary jurists, but

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1. For a detailed history, see Priest, *The Invention of Enterprise Liability: A Critical History of the Intellectual Foundation of Modern Tort Law*, 14 J. LEGAL STUD. 461 (1985) [hereinafter Priest, *Invention*].

quietly, in part because the consequences of the revolution were not fully anticipated.² In the mid-1970s, concern over the impact of tort law on national commerce began to grow, especially among affected business executives.³ But even through the first years of the 1980s, the problems generated by tort law were addressed seriously only by a limited audience of legal scholars and troubled corporate officers.

In the early months of 1986, however, with the sudden onset of the insurance liability crisis, tort law gained the attention of the broader American public. Citizens whose public parks were closed,⁴ whose police services were suspended,⁵ who lost day care⁶ and obstetric⁷ services, who found vaccines⁸ and intrauterine devices⁹ pulled from the market, and who experienced widespread price increases because of general increases in liability insurance premiums,¹⁰ expressed their distress in such numbers that tort law reform catapulted to the forefront of the national public policy agenda.

The crisis of early 1986 stemmed from the announcements of individual insurers that, for the 1986 policy year, policy premiums were to be drastically increased in a variety of commercial liability insurance lines and coverage was to be withdrawn altogether in a variety of others. In addition, where coverage was still available and despite the premium increases, levels of aggregate coverage were reduced, deductibles were increased, new specific coverage exclusions were introduced, and the basic insurance policy was redefined generally from an occurrence to a claims-made basis.¹¹ The simultaneous and generally uniform announcement of these multiple policy changes generated charges of insurance industry manipulation¹² and even explicit collusion.¹³ But there was little empirical support for such charges,

2. See G. PRIEST, SECTION 402A: THE ORIGINAL INTENT (1987) (unpublished manuscript on file with author) [hereinafter G. PRIEST, ORIGINAL INTENT].

3. See U.S. DEP'T OF COMMERCE, INTERAGENCY TASK FORCE ON PRODUCT LIABILITY: FINAL REPORT OF THE LEGAL STUDY (1977).

4. N.Y. Times, May 12, 1986, at 1, col. 1.

5. Church, *Sorry, Your Policy is Cancelled*, TIME, Mar. 24, 1986, at 17, 18; N.Y. Times, Mar. 4, 1986, at A26, col. 1 (editorial).

6. Wall St. J., Jan. 21, 1986, at 31, col. 1.

7. U.S. GEN. ACCOUNTING OFFICE, MEDICAL MALPRACTICE: INSURANCE COSTS INCREASED BUT VARIED AMONG PHYSICIANS AND HOSPITALS 27 (1986).

8. Brody, *When Products Turn Into Liabilities*, FORTUNE, Mar. 3, 1986, at 20; Wall St. J., *supra* note 6.

9. N.Y. Times, Feb. 1, 1986, at 1, col. 5; Wall St. J., Feb. 3, 1986, at 5, col. 1.

10. *E.g.*, Wall St. J., Jan. 6, 1987, at 64, col. 2; Wash. Post, Jan. 5, 1987, at 18, col. 1.

11. For a discussion and explanation of these changes in insurance policies, see Priest, *The Current Insurance Crisis and Modern Tort Law*, 96 YALE L.J. 1521 (1987) [hereinafter Priest, *Insurance Crisis*].

12. See Goldberg, *Manufacturers Take Cover*, A.B.A. J., July 1, 1986, at 52, 55 (quoting Jay Angoff, National Insurance Consumer Organization); Interview with J. Robert Hunter, Medical Mutual Liability Insurance Society of Maryland (July 1, 1985).

13. See *The Liability Crisis: Who's to Blame?*, 6 MANHATTAN INST. REP. 1, 9 (1986)

and it is difficult to believe that, if the thousands of casualty insurers in a highly competitive industry were able to reach a collusive agreement, they would agree to withdrawing insurance coverage altogether or to the other policy changes, each of which are forms of insurance withdrawal.¹⁴

There grew a consensus that the source of the insurance crisis was the growth of modern tort law. Changes in liability insurance premiums can be described as reflecting the best estimates of insurers as to what the dimension of future liability claims will be.¹⁵ Indeed, the insurance industry estimates of 1986 were made credible by the identical prior claims experience suffered by entities that do not purchase market insurance, but rather self-insure, such as municipalities and very large corporations.¹⁶ The magnitude of current tort claims had generated concern; the estimates that future claims would be many multiples greater generated active calls for tort reform.

In 1985 and 1986, the U.S. Congress seriously discussed enacting a preemptive federal tort reform statute, an effort derailed only in late 1986 on narrow political grounds.¹⁷ Tort law, however, is predominately state law, and the various state legislatures demonstrated greater commitment to reform. Since 1985, every state legislature has considered tort reform legislation; 42 have successfully enacted reform statutes; and 20 have enacted significant statutes.¹⁸ The tort reform movement continues. Within the past two months, two additional states have enacted reform statutes. Indeed, New Jersey, a state whose judiciary commenced the tort law revolution in 1960¹⁹ and has led the subsequent expansion of the law,²⁰ has enacted a products liability reform statute that radically reverses the tradition.²¹

The specific direction of tort law reform, however, has generated extraordinary controversy. Again, though some consumer organizations and the trial bar continue to defend modern law, there is widespread agreement on the need for reform. Yet, despite general consensus, there has been little

(discussant's comment).

14. See generally Priest, *Insurance Crisis*, *supra* note 11.

15. M. TREBILCOCK, *THE SOCIAL INSURANCE-DETERRENCE DILEMMA OF MODERN NORTH AMERICAN TORT LAW*, 3-4 (1987) (unpublished manuscript on file with author); Epstein, *Shooting the Insurance Messenger*, *Chicago Tribune*, May 30, 1986, at 25, col. 1.

16. See, e.g., *Insuring Our Future*, GOVERNOR'S ADVISORY COMMISSION ON LIABILITY INSURANCE (1986) (New York City).

17. For a discussion of the politics of federal tort reform, see D. KOPPELMAN, *FEDERAL PRODUCT LIABILITY REFORM* (1987) (unpublished manuscript on file with author).

18. See *Selected State Legislative Action Re: Affordability and Availability of Liability Insurance*, NATIONAL CONFERENCE OF STATE LEGISLATURES (Aug. 4, 1986).

19. *Henningsen v. Bloomfield Motors, Inc.*, 32 N.J. 358, 161 A.2d 69 (1960).

20. E.g., *Beshada v. Johns-Manville Products Corp.*, 90 N.J. 191, 447 A.2d 539 (1982).

21. N.J. STAT. ANN. § 34:1A-69.1 (West Supp. 1987).

agreement, even among those seemingly united in the tort reform effort, upon the principles upon which reform should be based or upon the priority of specific legal changes. For example, groups who are most greatly concerned about the unpredictability of damage judgments—doctors and manufacturers, in particular—have successfully pressed for limits on non-economic and punitive damages and for changes in the procedures for awarding such damages.²² Other important members of the tort reform alliance, however—insurers, for example—are generally indifferent to the reform of tort damages since they can protect themselves by coverage limits and by outright exclusions of coverage of punitives.

Similarly, there has been substantial effort devoted to reform of the doctrine of joint and several liability,²³ in particular by municipalities, implicated because of the large range of activities they supervise, and by large corporations, public utilities and landowners, whose wide operations or holdings subject them to substantial exposure. Other tort reform groups, however, such as product manufacturers, have less interest in the joint and several liability doctrine.

Some tort reform groups have abandoned the struggle for generic tort reform in favor of special statutes changing the law in ways specifically beneficial to their litigation positions. For example, pharmaceutical companies have advocated adoption of an agency approval defense and manufacturers of durables have advocated enactment of statutes of repose. Municipalities and non-profit organizations have been particularly successful in securing statutes establishing different standards to govern their individual activities.²⁴ The separate medical malpractice, products liability and dramshop statutes are other examples of the phenomenon.²⁵

The absence of agreement on general tort reform principles, however, has substantially impeded the progress of tort reform and has undermined its stability. The narrow focus of some reform alliance groups has allowed reform opponents to characterize the tort reform movement as a creation of special interests. More damagingly, the absence of a principled basis for reform has led to the enactment of what is now a crazyquilt of tort reform legislation. I described earlier the enactment of reform statutes by 42 state legislatures; this has been the enactment of 42 *different* reform statutes.

22. *E.g.*, COLO. REV. STAT. § 13-21-102.5(3) (Supp. 1986) (\$500,000 if clear and convincing evidence, otherwise \$250,000); FLA. STAT. § 768.73 (Supp. 1986) (not greater than three times compensatory, 60 percent to state fund).

23. FLA. STAT. § 768.81 (Supp. 1986).

24. GA. CODE ANN. § 36-33-1 (1987) (municipal liability); N.H. REV. STAT. ANN. § 508-15 (Supp. 1986) (non-profit liability).

25. MO. REV. STAT. § 538.210 (1986) (medical malpractice); N.J. STAT. ANN. § 34:1A-69.1 (West Supp. 1987) (products liability); N.H. REV. STAT. ANN. § 507-F (Supp. 1986) (dram shop).

Tort law reformed is less uniform than the tort law generated by the disparate decisions of the 50 state courts. Lacking coherence, tort reform is made more difficult to defend. Efforts have begun already to restore the tort law that was reformed only months before.²⁶

This essay is an effort both to reanalyze the direction of tort law since 1960 and to set modern tort reform upon firmer ground. I begin by articulating some very simple principles that command widespread acceptance among both those supporting our current law and those supporting its reform. There are two goals of modern tort law that all can agree upon: to reduce the accident rate as much as is practicable, and to provide a sensible and coherent system of compensation insurance for those unfortunate individuals who suffer product- or service-related accidents. The essay, then, attempts to work out rigorously the implications of these principles for the definition of modern law. It is my view that, although the founders of our modern tort regime embraced the goals of accident reduction and compensation, the elaboration of modern law in recent years has lost sight of these goals, and has ignored what can and what cannot be effectively accomplished through common law rules. As a consequence, as I shall show, modern tort law as currently defined largely thwarts the accident reduction and compensation objectives. I also believe, and will attempt to show, that the tort reform legislation of recent years, though it corrects some of the excesses of modern law, is insufficiently sensitive to accident reduction and compensation goals, and so constitutes only a partial correction of the problem.

It is my first hope that the definition and elaboration of these simple principles will demonstrate that the controversy that currently rages over tort law reform is largely misdirected. Much of the debate over tort law has involved accusations that those advocating tort reform are indifferent to the accident rate. There ought to be no grounds for battle on this point. An unquestioning commitment to the desirability of minimizing the accident rate still compels a drastic reorganization of the law.

Secondly, the controversy over compensation of the injured is largely unnecessary. Again, advocates of tort reform are frequently accused of indifference to the injured or, in a more refined version, of sacrificing compensation concerns to achieve cost savings. This debate too, in my view, misses the point. A commitment to providing effective and efficient insurance for the injured and for the low-income and poor among the injured class most of all still strongly compels reorganization of the law.

I hope to show in this essay in addition that, although modern tort law is committed to accident reduction and compensation, it does a scandalously

26. See CONN. GEN. STAT. ANN. § 52-572 (West Supp. 1987).

poor job of controlling the accident rate and an even poorer job of providing compensation to the injured. Similarly, recent tort reform legislation achieves these objectives obtusely, at best. I believe, however, that if our legal system were to focus upon and to pursue the goals of accident reduction and coherent compensation rigorously, many of the unfortunate effects of modern tort law would disappear. If our society is seriously interested in accident reduction and compensation insurance, modern tort law must be vastly reorganized, but in a manner much different than the weak and limited efforts of recent tort reform legislation.

I hope to demonstrate that a reorganization of modern tort law directed solely towards the objectives of accident reduction and effective compensation insurance will eliminate the adverse effects of modern tort law on consumers illustrated by the recent insurance crisis. I also believe that a clearer focus on these two objectives will dissipate much of the vehement debate over modern tort law and transform it from a battle among competing interest groups toward a unified effort to enhance public welfare.

The debate over modern tort reform has ignored that, in the long run in a competitive economy, the interests of consumers, insurers, and corporate product- and service-providers are largely congruent. Product- and service-providers are not the enemies of consumers, but merely the conduits of materials and services to them. To impede the provider, is to impede the provision of the product or service to the consumer. Insurers, similarly, are conduits for the management of financial resources in the face of risk. To impede the insurance function is to directly increase the net risk to which the society is exposed. Conversely, tort liability can enhance consumer welfare if it is directed in an informed manner toward reducing the accident rate. Just as consumers do not gain from inefficiently burdening the manufacturing or the insuring process, manufacturers and insurers do not gain from inefficiently restricting tort liability. That tort reform has appeared as a battle among competing interests is evidence of the analytical failure to which this essay is directed.

Part II describes the presuppositions of modern tort law and suggests how they are ineffective in pursuing the goals of accident reduction and coherent compensation insurance. Part II also returns to the simple principles of accident reduction and compensation and shows how tort law can contribute toward achieving these goals. Part III, then, applies the analysis to the wide range of tort law issues. It discusses, variously, products liability standards, including design and warning defect standards, causation standards, problems of toxic torts and generic cumulative disease. Finally, Part IV discusses the future of tort law and its role in a society dedicated to enhancing the welfare of its citizens.

II. MODERN TORT LAW REANALYZED

A. *The Rationale of Modern Tort Liability Explained*

Since the mid-1960s, corporate tort liability for accidents resulting from product or service use has been vastly extended. The rationale for the extension of liability has been that providers²⁷ of products and services—chiefly corporations—are almost always in a better position than consumers to prevent accidents and to provide insurance for those accidents that cannot be prevented.

First, according to this view, the accident rate can most effectively be reduced by alterations of the product or service itself. Except in cases of flagrant product misuse, consumers will do what they can to prevent injury simply to protect themselves. Most product- and service-related injuries, as a consequence, stem from defects, either as a result of inadequate quality control or of mistakes in product design. The rate of injuries can be reduced if incentives are established to encourage greater provider investments in design and production. Provider tort liability establishes such incentives and the greater the liability, the greater accident reduction incentives will be.

Secondly, according to this view, with respect to injuries which cannot be prevented, the corporate provider can obtain insurance more effectively than can the set of product or service consumers. The corporate provider can either self-insure because of its size and scope of operations or can purchase a single market insurance policy covering all of its consumers, passing a proportionate share of the insurance premium along to consumers in the product or service price. In this way, insurance can be provided for product- or service-related injuries to individuals who may not purchase first-party insurance themselves, in particular the poor and low-income. Corporate provider liability, thus, enlists the provider in the process of spreading the risk of injuries broadly over the population of consumers as a whole.

This rationale for expanded corporate tort liability—to achieve accident reduction and insurance—provides the basis for virtually all modern legal decisions.²⁸ The initial adoption of the strict liability standard for product defects,²⁹ the substitution of comparative for contributory negligence,³⁰ the abolition of the relevance of the victim's status in landowner

27. The term provider refers to producers of goods (manufacturers) and services (other than insurers), including government entities.

28. For a brief review, see Priest, *Invention*, *supra* note 1.

29. *Greenman v. Yuba Power Prods., Inc.*, 59 Cal. 2d 57, 377 P.2d 897, 27 Cal. Rptr. 697 (1963).

30. *E.g.*, *Daly v. General Motors Corp.*, 20 Cal. 3d 725, 575 P.2d 1162, 144 Cal. Rptr. 380 (1978).

actions,³¹ the formulation of novel liability theories such as industry-wide liability³² and retrospective liability,³³ all decisions in modern tort law represent variations of the accident reduction and insurance themes.

In attempting to analyze the effects of modern tort law, however, it is important to see that the current rationale for corporate provider liability, described above, extends beyond a mere statement of goals. Implicit in the modern rationale is both an expression of the goals the law seeks to achieve and a set of empirical judgments as how best to achieve them. Here, in my view, is the source of the many problems of modern law. What I hope to show in this Part is that the goals of the law are unexceptionable, but the methods through which the law is to be implemented are counterproductive and reduce the welfare of consumers and the welfare of poor and low-income consumers most of all.

B. *The Goals Embraced*

The goals of modern law are reduction of the accident rate and the provision of compensation to the injured. Again, these goals should command widespread acceptance. All citizens share the goal of reducing the accident rate both, on moral grounds, because no personal injury can ever be fully compensated and, on economic grounds, because reducing accidents conserves valuable and productive resources in human capital.

Similarly, we must all recognize that, despite best efforts, injuries will continue to occur. No one would advocate reducing the accident rate to zero; all societies tolerate some level of accidents, because some accidents cannot be prevented and others are not worth preventing.³⁴ If injuries will still occur, however, all citizens must share the goal of establishing means for those suffering injuries to obtain compensation. In the long run, a compensation system is essentially an insurance system. The long-run goal for society is to maximize insurance benefits net of insurance costs, which is to say, to reduce the net expected risks of future injuries as much as possible.

These twin goals of modern tort law: accident reduction and compensation of the injured, are totally instrumental in nature. In debates over modern tort law reform, there often is lengthy discussion of non-instrumental goals, such as corrective justice or retribution.³⁵ But in very large part,

31. *E.g.*, Rowland v. Christian, 69 Cal. 2d 108, 443 P.2d 561, 70 Cal. Rptr. 97 (1968).

32. *Sindell v. Abbott Laboratories*, 26 Cal. 3d 588, 607 P.2d 924, 163 Cal. Rptr. 132, cert. denied, 449 U.S. 912 (1980).

33. *Barker v. Lull Eng'g Co.*, 20 Cal. 3d 413, 573 P.2d 443, 143 Cal. Rptr. 225 (1978).

34. *See* G. CALABRESI, *THE COSTS OF ACCIDENTS* (1970).

35. *Product Liability Act Amendments: Hearings on S.100 Before the Subcomm. on the Consumer of the Senate Comm. on Commerce, Science, and Transportation*, 99th Cong., 1st Sess. (1985).

modern tort law, both as conceived by its founders in the 1960s³⁶ and as elaborated over succeeding years,³⁷ has ignored the moral concerns of corrective justice and retribution entirely.³⁸

Indeed, there is a stronger reason than the historical for modern law's commitment to the goals of accident reduction and compensation insurance. Accident reduction and insurance are the *only* important economic effects a legal rule can have. A legal rule can influence investments in loss prevention up to the point that such investments are cost-effective. Where damage measures are compensatory, however, there is a very definite ceiling to the preventive investments that any provider will make. Beyond that point, legal liability serves only to provide insurance for losses that cannot be practicably prevented. Thus, even if a court were to define a legal rule on corrective justice or retributive grounds, the *effect* of the rule on the parties subject to it would only be to encourage greater investments in accident reduction or in insurance, or both. The only important economic effects that any legal policy can have are effects on the accident rate and on the level of insurance provided for losses that are not practicably preventable.

Most courts fully accept this proposition, although perhaps not in the stark form in which I have put it. There has been some increasing attention in modern decisions to employing liability rules to affect the level of injurer activity by internalizing costs³⁹ and to establish incentives for safety-related innovation.⁴⁰ With respect to the basic structure of modern tort law, however, these effects easily can be put aside. I have shown in other work that internalizing costs to affect activity levels can only be shown to improve social welfare after a study of supply and demand conditions that would dwarf any previously known antitrust investigation.⁴¹ Similarly, the influence of legal rules on the level of safety-related innovation is highly speculative and, in my view, overwhelmed by the more easily demonstrated and empirically more substantial effects on the accident rate and on insurance.⁴² Perhaps at some later point in the refinement of a novel tort law regime, effects on activity levels and safety research and innovation may become relevant. In the current context, however, they are trivial sidelights in comparison to the central importance of defining a legal regime to control the

36. See G. PRIEST, ORIGINAL INTENT, *supra* note 2.

37. See Priest, *Invention*, *supra* note 1, at 519-27.

38. *But see infra* notes 81-114 and accompanying text for the importance of the legal heritage of corrective justice as it has influenced the forms of modern law.

39. See, e.g., *Usery v. Turner Elkhorn Mining Co.*, 428 U.S. 1, 18, 19 (1975). For a more general discussion of the concept of cost internalization, see G. PRIEST, INTERNALIZING COSTS (1987) (unpublished manuscript on file with author).

40. See *Beshada v. Johns-Manville Products Corp.*, 90 N.J. 191, 447 A.2d 539 (1982).

41. See G. PRIEST, INTERNALIZING COSTS, *supra* note 39.

42. See Schwartz, *Products Liability, Corporate Structure, and Bankruptcy: Toxic Substances and the Remote Risk Relationship*, 14 J. LEGAL STUD. 689 (1985).

accident rate and to provide coherent compensation insurance.

C. *The Means Criticized*

Accident reduction and insurance, however, are only goals. Central to modern law are presumptions about the means by which these goals can best be implemented. As mentioned above, it is my view that the implementation of the goals, rather than the goals themselves, generates the problems of modern law. These problems stem from two sources. First, although in the 1960s judges drastically reformulated the goals of tort law, they sought to achieve these goals largely through the structure of the law in place, with minimum adjustment to then-existing legal doctrine. Part III will show in greater detail that there is a very poor fit between the new instrumental goals that courts adopted and the formal law through which these goals were expressed.⁴³ The common law heritage of the 1960s obstructs the ability of courts to see the effects of modern law on accident reduction and insurance and, thus, necessarily obstructs the ability of courts to achieve these goals.

Secondly, and more importantly, the modern implementation of the goals of accident reduction and compensation insurance is built upon two empirical presuppositions which the founders thought to be true but which, regrettably, are false, indeed dangerously false. Modern tort law presumes that the corporate provider is always in a better position than the consumer both to prevent injury and to provide insurance for injuries that cannot be prevented. As we shall see, these presuppositions impair the ability of modern law to effectively reduce the accident rate and to provide for injury compensation. As a consequence, modern law is much less effective than it might be in creating incentives to reduce the injury rate. Moreover, as evidenced by the recent insurance crisis, modern law has disrupted liability insurance markets and has led to a reduction in the total level of accident insurance available in the society.

1. Accident Reduction Reconsidered

Modern tort law's failure to adequately control the accident rate derives from the faulty judicial presumption that corporate product- and service-providers are almost always better able than consumers to prevent accidents. This presumption was silently adopted in the beginnings of the modern regime in the 1960s, largely because the initial judicial focus was to define new rules for what are now known as manufacturing defects.⁴⁴ The presumption was later reaffirmed, however, with the continued judicial at-

43. See *infra* notes 81-114 and accompanying text.

44. See generally G. PRIEST, ORIGINAL INTENT, *supra* note 2.

tention on the design and manufacturing process to the exclusion of the wide range of other sources of product and service-related injuries; and because to base rules on the condition of the product versus the provider's conduct has proven the most convenient way to distinguish strict liability from negligence.⁴⁵

The presumption of superior provider control over the accident rate is not absolute. Even modern law incorporates some provider defenses relating to consumer injury prevention, such as defenses of consumer misconduct, product misuse, product alteration and assumption of risk.⁴⁶ But the role of these defenses has been vastly restricted under modern law. In the years since 1960, the concept of the victim's contributory negligence has changed drastically. In most jurisdictions it has been supplanted by comparative negligence, delegating to the jury the attribution of proportionate injury contribution. In products liability cases, many jurisdictions refuse to consider the contributorily negligent actions of the product user at all beyond malevolent or intentionally self-inflicted injuries.⁴⁷ Similarly, the defense of assumption of risk has been drastically redefined, in large part as the obligation of providers to give warnings has been extended.⁴⁸ In warning cases, many courts presume, as a matter of law, that the user would have carefully read, evaluated, and relied upon warnings if they had been offered.⁴⁹

The presumption that product- and service-providers are vastly superior to consumers in the power to prevent injuries has justified the unidirectional expansion of provider liability, and it has generated many of the problems of modern law:

1) As explained above, although it is very commonly believed that the expansion of provider liability will enhance incentives to reduce the accident rate, there is a clear limit to the injury-prevention investments that any provider will make. No provider (or, for that matter, consumer) will continue to invest in injury prevention if the expected costs of further prevention exceed the injury costs themselves.⁵⁰ Put slightly differently, in a competitive economy, consumers will put out of business any provider that makes inefficient investments in accident reduction. Tort liability beyond

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

46. Emphasized in HENDERSON & TWERSKI, *PRODUCTS LIABILITY* 115-16 (1987).

47. See, e.g., *Luque v. McLean*, 8 Cal. 3d 136, 501 P.2d 1163, 104 Cal. Rptr. 443 (1972).

48. See *Heil Co. v. Grant*, 534 S.W.2d 916 (Tex. Ct. App. 1976).

49. See *Phillips*, 269 Or. 485.

50. I am putting aside consideration of greater than compensatory damages, such as punitive damages. Punitive damages may encourage greater manufacturer investments, but it is not clear that the imposition of punitive damages in fact is sufficiently non-random to guarantee greater investments. In some cases, the imposition of punitive damages may reduce the total level of safety, even though it may increase manufacturer investments.

the point of efficient accident prevention investment serves only an insurance function. As a consequence, one principal effect of the continued expansion of substantive tort liability has been the provision of greater and greater amounts of tort law third-party insurance. I will describe below⁵¹ how consumers have been harmed by the expansion of tort law insurance.

2) The unidirectional expansion of liability has had counterproductive effects on incentives to prevent accidents. As is well known, providers are very commonly held liable even though there were no effective alternative investments that could have been made to prevent the accident. Often such decisions are justified purely on insurance grounds,⁵² although there have emerged new doctrines such as retrospective liability,⁵³ products unreasonably dangerous per se,⁵⁴ and the more general rejection of the state-of-the-art defense⁵⁵ which openly ignore the ability of the provider to prevent the injury to extend liability on insurance grounds.

Holding providers liable where they cannot prevent accidents diminishes the effectiveness of the law. First, such liability blunts accident prevention incentives. At its best, the law can serve to inform the behavior of those parties subject to it. This informing or teaching role provides the basis for our understanding of the operation of criminal and constitutional law, and it is odd that it should be neglected in modern tort law. Thus, through examples of investments that providers should have made to prevent accidents, the law can teach what investments future providers should make to achieve the goals the law has adopted. Liability that is insensitive to the actual range of alternatives available at the time the product was made or the service provided forfeits that teaching and informing opportunity. Holding a manufacturer liable based on the concept of retrospective liability is the equivalent of flunking a student in an algebra class because of his or her failure to use the calculus.

Indeed, liability of this nature may *reduce* incentives to prevent accidents. Consumers are interested in encouraging providers to make all practical investments in product or service design features, especially those related to safety. Typically, however, safer designs are costlier designs. A provider will only invest in a costlier design if it expects some positive return on the investment. Where the adoption of a safer and costlier design does not insulate the provider from liability—that is, where the state-of-the-art defense is rejected, where liability is retrospective or is based upon the

51. See *infra* notes 81-114 and accompanying text. For a more extended treatment, see Priest, *Insurance Crisis*, *supra* note 11.

52. See *Beshada v. Johns-Manville Products Corp.*, 90 N.J. 191, 447 A.2d 539 (1982).

53. See *Barker v. Lull Eng'g Co.*, 20 Cal. 3d 413, 573 P.2d 443, 143 Cal. Rptr. 225 (1978).

54. *Halphen v. Johns-Manville Sales Corp.*, 484 So. 2d 110 (La. 1986).

55. *Carreter v. Colson Equipment Co.*, 346 Pa. Super. Ct. 95, 499 A.2d 326 (1985).

concept of products or services unreasonably dangerous per se—providers' design decisions become gambles on the legal process. The provider can calculate that the adoption of the safer and more costly design will increase current manufacturing costs and will reduce future liability costs (because the product or service will be safer). The gamble, however, is whether the certain increase in current costs is greater or less than the uncertain future decrease in liability costs. The increase in manufacturing costs from the adoption of the safer design becomes a sunk investment. Subsequent liability costs, however, are not only discounted for the future, but are manipulable, by future provider delays in settlement or litigation or, in the case of increasing numbers of products and services, by the prospect of future insolvency because of the scope of liability.

This example, of course, is academic, and I have no reason to believe that any provider would consciously select a less safe product or service design on these grounds. But the design selection process is a subtle one, and courts have been insufficiently sensitive to the complexity of product or service design choices. The greatest incentive effect provided by the law derives from the prospect that complying fully with the applicable legal standard reduces legal liability *totally*.⁵⁶ The absence of immediate gain from choosing the most advanced practicable design is very likely to influence the extent to which providers search for alternative designs or try to develop alternatives based upon design methods or safety innovations in related, but not identical, product or service lines. Search incentives of this nature would be enhanced, however, if a provider were assured that it would escape legal liability by choosing the most practicably safe design available at the time of manufacture.

3) Finally, the unidirectional expansion of provider liability has ignored the many ways in which consumers can be enlisted in the accident reduction function beyond the now-largely restricted doctrines of misuse and assumption of risk. There is no meaningful way to consider any product, accident or defect without reference to consumer investments in selection, maintenance, and use of the product.⁵⁷ Consumers influence the rate of product accidents by the initial choice of a product suitable for their expected use, by the nature and extent of maintenance of the product over its useful life, and by the manner of product use in specific contexts. There is growing empirical evidence that, for many products, the consumer's role in accident prevention swamps any effects of differential technological investments by providers.⁵⁸ Moreover, recent studies show wide variations in the

56. Cooter, *Unity in Tort, Contract, and Property: The Model of Precaution*, 73 CAL. L. REV. 1 (1985).

57. For a further discussion of this point, see Priest, *A Theory of the Consumer Product Warranty*, 90 YALE L.J. 1297 (1981).

58. See, e.g., W. VISCUSI, *CONSUMER PRODUCT SAFETY REGULATION* (1984);

characteristics and preferences of consumers which make the product safety question extremely complex.⁵⁹ The continued focus of courts on technological provider investments ignores these issues entirely and, thus, neglects substantial opportunities to define accident reducing incentives.

2. Compensation Insurance Reconsidered

Insurance is a method of reducing the net costs of expected risks. For purposes of the tort law comparison, there are three principal ways in which an insurance system reduces expected risks. First, an insurance system aggregates into insurance pools uncorrelated risks for which error terms cancel out. This is the most obvious meaning of risk spreading. Second, an insurance system controls moral hazard by the design of insurance benefits. Third, an insurance system controls adverse selection by risk segregation.

The second empirical presupposition of modern tort law is that the corporate provider is always in a better position than the consumer to provide insurance for product or service-related injuries. According to this view, providers can easily perform the insurance function because they can very cheaply aggregate risks and spread them over a broad population. Incidentally, providers can offer this insurance service without requiring a specific consumer choice to purchase insurance. Thus, those without separate first-party health or disability insurance purchase such coverage along with the product.

The founders of our modern tort law regime believed that the advantage to provider third-party insurance through tort law derived from the ease with which providers could aggregate risks because they had access to a large pool of consumers to form a risk pool. There are two separate provider advantages here. First, there were thought to be transaction cost advantages from provider insurance. It seems cheaper for a single provider to enter one insurance contract (or to self-insure) than for each consumer to separately obtain insurance for product injury.⁶⁰ Second, the founders emphasized that, for purposes of spreading, the set of consumers of a product or service was much larger than the set of those injured from product- or service-related use. Thus, for each affected person, the burden of potential injury would be smaller if the provider were made the insurer.⁶¹

Peltzman, *The Effects of Automobile Safety Regulation*, 83 J. POL. ECON. 677 (1975); J. MASHAW & D. HARFST, *REGULATING THE FREEDOM MACHINE* (1987) (unpublished manuscript on file with author).

59. FEDERAL TRADE COMMISSION, *WARRANTIES, RULES, CONSUMER FOLLOW-UP STUDY*, Draft Final Report (1983).

60. James, *General Products—Should Manufacturers Be Liable Without Negligence?*, 24 TENN. L. REV. 923 (1957).

61. James, *Contribution Among Joint Tort Feasors: A Pragmatic Criticism*, 54 HARV. L. REV. 1156 (1941).

These propositions are clearly empirical in nature. Yet, although they seem plausible (perhaps, in part, because they have been inculcated in modern law), there are reasons to be suspicious of their validity. The transaction cost comparison, for example, is not fully worked out. The empirical question is whether transaction costs are greater or less by requiring each provider to obtain third-party insurance for its customers or by requiring (by denying tort law recovery) consumers to seek health and disability compensation from first-party insurance policies or government-provided sources. Again, because it was presumed that large numbers of consumers did not possess first-party health and disability coverage (another empirical assumption discussed below),⁶² the pure transaction cost comparison was never carefully evaluated. Obviously, to the extent that consumers already possess first-party coverage, requiring providers to obtain duplicative third-party liability insurance unambiguously increases transaction costs.⁶³

The second purported provider advantage in risk aggregation is equally questionable. The aggregation of many individuals into a risk pool reduces net expected risks where the aggregation leads to the cancelling out of risk terms associated with each member of the pool. An insurer's aggregation function derives from operation of the law of large numbers, according to which the probability function of average loss tends to become concentrated around the mean as the sample number increases.⁶⁴ Risk reduction by aggregation operates in exactly the same manner as opinion polling by random sampling. Like opinion polling, however, effective risk spreading can occur with very low numbers of risks aggregated into a single pool, as long as the risk of injury of each member of the pool is uncorrelated. Thus, it is not necessary to aggregate pools of the dimension of the total set of product consumers to achieve optimal spreading.⁶⁵

Moreover, provider insurance through tort liability may serve to increase, rather than reduce, risks through the aggregation function. For some product- and service-related injuries, the risks brought to the pool by consumers are not independent and uncorrelated, but are highly correlated. Risks related to design defects are an example. With respect to design defects, the risks of the set of consumer pool members are highly correlated: if the design proves injurious, *all* consumers are vulnerable. For risks of this nature, aggregation by the product- or service-provider increases rather

62. I discuss the effects of the mandatory insurance provided through tort law, *infra* notes 81-114 and accompanying text.

63. I shall show below that third-party liability insurance increases insurance costs in other dimensions as well. See *infra* notes 65-76 and accompanying text.

64. See Marshall, *Insurance Theory: Reserves Versus Mutuality*, 12 *ECON. INQUIRY* 476 (1974).

65. For a further explanation of this point, see G. PRIEST, *THE ROLE OF THE GOVERNMENT IN RISK SPREADING* (1987) (unpublished manuscript on file with author).

than reduces total risks. The risks, however, could be spread—that is, reduced by cancelling-out error terms—if consumers subject to the risk were joined in first-party insurance pools with individuals subject to different, uncorrelated risks. The point is that, in circumstances of this nature, the insurance premium is greater for provider third-party tort law insurance than for first-party insurance even though the underlying probability of injury is the same.

Thus, the empirical presumption of modern law that providers have a substantial advantage in risk aggregation is also highly suspect. But there are further reasons to believe providers have, not a comparative advantage, but a serious disadvantage in insurance provision. Even if provider third-party insurance through tort law were equally effective in terms of risk aggregation as consumer first-party insurance, it is far less effective in terms of the two other important insurance functions: the control of moral hazard through benefit design, and the reduction of adverse selection by risk segregation.

Moral hazard is the effect of the existence of insurance on the level of insurance claims. Insurers control moral hazard, in some cases by direct risk monitoring but, more generally, by setting deductible and coinsurance levels which allow premiums to be kept attractively low for low-risk insureds. Though seemingly paradoxical, by restricting some set of insurance recoveries, deductibles and coinsurance increase the availability of insurance for more basic losses.⁶⁶

Insurance provided through tort law is far less effective than first-party insurance in controlling moral hazard. Tort law incorporates both accident control and compensation objectives. To obtain optimal accident control, a party that has violated a legal standard must pay full losses to the victim, including both pecuniary and non-pecuniary losses such as pain and suffering. For purposes of insurance, however, an award of this dimension is far greater than the level of compensation insurance benefits that any consumer would want. First, there is no consumer demand for pain and suffering coverage in any insurance market in the world because pain and suffering losses do not affect the marginal value of wealth which is the purpose of insurance.⁶⁷ In addition, unlike all forms of first-party compensation insurance, third-party tort law insurance never incorporates victim deductibles or coinsurance to constrain moral hazard. Victim moral hazard is just as serious a problem in third-party as in first-party contexts. It follows that third-party premiums will be necessarily higher than first-party premiums for the same level of coverage.

66. For a further discussion, see Priest, *Insurance Crisis*, *supra* note 11.

67. For a further elaboration of this point, see *id.* at 1547.

Third-party tort law insurance is also substantially less effective in reducing risks through risk segregation and the control of adverse selection. Adverse selection refers to the tendency of low-risk members to drop out of insurance pools because insurance premiums are higher than the risks that they bring to the pools. Adverse selection plagues every insurance context. Insurance premiums must be set equal to the average risk of pool members and, so, are necessarily higher than the risks brought by low-risk insureds. Insurers attempt to constrain adverse selection by segregating insureds into narrow risk pools. Careful segregation of risks increases the availability of insurance because it makes insurance relatively more attractive to low-risk insureds.

It is very difficult for providers to segregate risks in the insurance offered through tort law. First-party insurers, through the insurance application process, obtain large amounts of information about individuals which allows substantial risk segregation. For example, in the context of insuring injuries from auto accidents, first-party insurers create risk pools according to the driver's age, driving level, and by moving violation and accident experience. None of these distinctions, however, can be implemented by the third-party auto manufacturer providing insurance for non-preventable accidents in the price of the auto. Tort law insurance must be provided indiscriminately, at the same premium to high-risk and low-risk alike.

The disadvantage of third-party tort law insurance in terms of risk segregation adds even further to the cost difference of third-party over first-party premiums. But there is even a more serious shortcoming of third-party insurance. The risk segregation disadvantages of third-party tort law insurance are inflicted most seriously on the poor and low-income of the consumer population. Where insurance is provided by tort law, the poor and low-income of the society are almost always low-risk members of the insurance pool. Individuals bring risks to an insurance pool in two dimensions: first, in terms of the likelihood of suffering a loss; second, in terms of the magnitude of the expected loss. There is no reason to believe and no evidence to support that the poor are more accident-prone per product than the high-income or wealthy. Yet tort damage payouts to the poor and low-income are certainly lower than tort loss payouts to the wealthy and high-income. Tort law damages are dominated by lost income and by pain and suffering, which is highly correlated with lost income. The expected damage recovery of a low-income or poor individual is substantially less than that of a high-income or wealthy individual. Thus, the poor and low-income are the low-risk members of tort law insurance pools.

It follows necessarily, therefore, that tort law's lumping of low-income consumers and high-income consumers into the same insurance pool and charging each of them a similar premium for the insurance, forces low-income consumers to subsidize high-income consumers. Tying insurance to

the sale of a product or service has exactly this effect. The insurance premium attached to the sale of any product is higher than the expected loss to the low-income consumer and lower than the expected loss to the high-income consumer. Thus, in addition to disadvantages in terms of risk aggregation, the control of moral hazard, and general segregation by risk level, third-party tort law insurance inflicts a regressive redistributive effect.

As a consequence, providing insurance through tort law is an extremely unsavory public policy. Who could support, for example, a policy of providing nationwide disability insurance at a single, uniform premium, irrespective of income, if high-income individuals were allowed to recover high disability payments and low-income individuals were constrained to recover low disability payments? Who could support a policy of providing home casualty insurance set at a uniform premium nationwide, irrespective of home value, if people who live in expensive houses were allowed to recover high casualty payments, and people who live in modest houses were constrained to recover low casualty payments. In these contexts, those with low incomes and those living in modest houses would be disadvantaged by the uniform nationwide premiums. To establish such an insurance regime would seem outrageous given our society's commitment to helping, not encumbering, the poor. Yet charging a uniform premium for differential coverage is exactly how insurance is provided through tort law. Tort law insurance premiums are set at a uniform level, tied to the sale of each unit of the product. The tort insurance payout, however, differs according to whether the income and pain and suffering loss is suffered by a low-income consumer or a high-income consumer. As a consequence, insurance through tort law both harms the poor and reduces the availability of insurance in the society.

First-party insurance is a much more effective method of providing insurance broadly and of reducing the disadvantage to low-income consumers who bring low risks to the insurance pool. In contrast, third-party insurance provided through tort law undermines insurance markets. I have set forth in a separate paper how our modern insurance availability crisis derives from the increasing use of tort law to provide insurance.⁶⁸

The founders of our modern insurance regime justified expanding tort liability to provide insurance in order to make insurance available to those who might not buy insurance otherwise. The most important empirical assumption of our modern regime is that there are large numbers of injured consumers who would lack compensation if they could not recover under expanded corporate tort liability. This empirical assumption, too, is highly questionable. While there may have been large numbers of uncompensated individuals in the 1930s and 1940s when the founders first developed this

68. *Id.*

rationale for expanded liability,⁶⁹ two recent studies suggest that the number of the injured who remain uncompensated for health or disability losses is very small. A 1982 telephone survey of families, for example, found only 1.5 percent in which any family member was denied health care for financial reasons.⁷⁰ Since the study surveyed families, the actual percentage of individuals denied care, of course, is much lower. Secondly, a Rand Corporation study of victims of auto injuries found that 78 to 87 percent of U.S. auto victims received medical loss compensation and 63 to 76 percent received wage loss compensation (there were differences among the various states).⁷¹ The study also found that those who did not receive compensation, typically, could have filed compensation claims, but did not do so because of the low levels of loss that they had suffered (the median medical loss for this group, for example, was \$60).⁷²

These studies confirm that the numbers of individuals denied basic health and disability compensation in the United States is very small. Of course, following the beginnings of the modern tort law regime in the 1960s, there has been a tremendous expansion of government-provided health and disability coverage and, perhaps also, of the market for private first-party coverage. Today in our society those without insurance are those whose incomes or assets place them above the qualifying level for public assistance, but who decline to purchase private first-party coverage.⁷³ Some members of this group are uninsured only formally: those who fail to qualify for government-provided health or disability coverage while healthy and able to maintain employment, but who would qualify for government assistance if, through injury or illness, their employment were to cease.

According to a recent Senate staff study, the most prominent of those lacking insurance are transients and occasional workers.⁷⁴ It is very hard to believe that expanded corporate tort liability is the most effective means of caring for transients and occasional workers. Or, to put the issue more pre-

69. See Committee to Study Compensation for Automobile Accidents, Report to the Columbia University Council for Research in the Social Sciences (1932); James & Law, *Compensation for Auto Accident Victims: A Story of Too Little, Too Late*, 26 CONN. B.J. 70 (1952). Note that both of these studies considered only tort law recoveries and not victim compensation recoveries from first-party insurance sources.

70. See SENATE SUBCOMMITTEE ON THE AGED, 99TH CONG., 2D SESS. WORKING PAPER NO. 1: A PROFILE OF HEALTH BENEFITS AND THE UNINSURED (1986).

71. R. Houchens, *Automobile Accident Compensation: Payments from All Sources*, Rand Corp. R-3051-ICJ (1985). Note that the presumption that there are large numbers of uncompensated victims derives from the focus on tort law recoveries only. The Rand study, for example, found that only 25 percent of victims recovered medical losses from tort judgments or settlements, although 78 percent recovered medical losses from all compensation sources. *Id.* at 26.

72. *Id.*

73. See SENATE SUBCOMMITTEE ON THE AGED, *supra* note 70.

74. *Id.*

cisely, it is implausible that it is sensible public policy to suffer the many disadvantages of our current regime of expanded liability—on the accident rate, on insurance aggregation, on the control of moral hazard and adverse selection, and on the financial positions of the poor and low-income—in order to provide potential compensation to those few who fall through social insurance gaps and are injured by products or services.

To extend insurance most broadly, a society must facilitate effective risk aggregation, it must encourage the segregation of high-risk from low-risk insureds, and it must foster the control of moral hazard. Competitive first-party insurance markets, supplemented by government-insurance benefits for the poor, achieve those ends far more effectively than third-party tort law insurance.⁷⁵ Indeed, as I have shown elsewhere, the expansion of third-party tort law insurance has disrupted liability insurance markets and reduced, rather than increased, the extent of compensation insurance available to the society.⁷⁶

It follows that our society would benefit if the insurance features of modern tort law were excised. Tort law is an extremely perverse method of providing compensation insurance to consumers and is an indefensible method given that, today, there are not large numbers of injured individuals who would be denied compensation but for expanded tort liability. To excise the insurance function from tort law, however, is not to render tort law irrelevant or to return to the tort law of the 1950s. I believe strongly that tort law can be transformed into a new and improved instrument of social policy if the goals of tort law were rigorously redirected toward more effective accident control. Tort law can benefit society by establishing effective accident control incentives. Our current tort law regime, as I have described above, does a poor job of accident control, in large part because of confusion over the insurance function. If tort law were redirected to adopt a single focus on accident reduction, it could substantially improve consumer welfare. The next section will suggest how this redirection might take place.

D. Modern Law Redirected: Controlling the Accident Rate

If the principal goal of modern law is to be accident control, how can it best be achieved? Controlling the accident rate is a very simple proposition. There is now a voluminous literature in the law and economics field unanimous in its conclusion that the accident rate can be reduced to the level optimal for the society by asking at trial one simple question: Is it possible to identify any specific cost-effective action that either the injurer or victim

75. For a fuller discussion of this argument, see Priest, *Compensation for Personal Injury in the United States*, in *INTERNATIONAL COLLOQUIUM ON COMPENSATION FOR PERSONAL INJURY* (J. Hellner ed. 1987).

76. See Priest, *Insurance Crisis*, *supra* note 11.

could have taken which would have prevented the accident? If so, then liability should be placed on the party that could have prevented the accident most effectively in order to create incentives to take such actions in the future.⁷⁷ If no specific action can be identified, then the issue in the case becomes totally one of insurance for the loss.

This standard may sound suspiciously simple, but I believe strongly that it is the only relevant accident reduction concern. The only question relevant at trial should be, "Could this accident have been practicably prevented prior to its occurrence?" Again, for the objective of accident reduction, everything else is irrelevant. Losses that cannot be prevented can only be insured against.

Some might object that this simple standard sounds very much like the negligence or fault standard, which virtually every court has repudiated in at least some contexts. I deny this assertion. Judge Posner and Professor Landes have trumpeted the similarity between the negligence standard of the 19th and early 20th Centuries and modern cost-benefit analysis of economics⁷⁸ and have also argued recently that the strict liability standard of modern products liability law is efficient.⁷⁹ But I believe the Posner-Landes propositions to be incorrect.⁸⁰ The negligence standard as it was implemented in the 1950s and early 1960s, and of course before, was crude and unexacting. It placed minimal requirements on manufacturers, and it enforced rigorously defenses that are irrelevant to cost-effective accident reduction. The strict liability standard and other doctrines of modern tort law which complement it, indeed, were improvements over the vague standards of the negligence regime, if only in the more clear definition of the goals the law sought to achieve. As elaborated, however, the modern doctrine of strict liability represents an overreaction which has led to the unraveling of insurance markets. The trumpeting both of negligence and strict liability by the efficiency-of-the-law theory has led modern analysts astray. It has deflected what should have been and should be unanimous disapproval of modern tort law and the tort law that preceded it by those concerned with the economic effects of law on consumers.

The simple way to reduce the accident rate in all product- and service-related contexts is to ask "Was there a specific act that could practicably have been taken that would have prevented the accident?" If such an action cannot be shown, then attaching liability in the case will not affect the acci-

77. G. CALABRESI, *THE COSTS OF ACCIDENTS* (1970); R. POSNER, *ECONOMIC ANALYSIS OF LAW* (1972).

78. W. LANDES & R. POSNER, *THE ECONOMIC THEORY OF TORT LAW* (1987).

79. Landes & Posner, *A Positive Economic Analysis of Products Liability*, 14 J. LEGAL STUD. 535 (1985).

80. See Priest, *Modern Products Liability Law and Its Effect on the Accident Rate*, in BROOKINGS INSTITUTION CIVIL LIABILITY PROJECT (R. Litan & C. Winston eds. 1987).

dent rate. The only effect of liability will be an insurance effect for what must be an unpreventable loss. For example, if it cannot be shown that the officers of a municipality could have practicably prevented a child from falling off a playground slide, then the accident rate will not be affected by holding the municipality liable for the child's injuries. If it cannot be shown that a pharmaceutical company could have practicably prevented an adverse reaction to a drug, then the rate of adverse reactions will not be affected by holding the manufacturer liable for the injury. If it cannot be shown that an asbestos manufacturer could have practicably lessened the chances of contracting cancer from wartime use of asbestos, then the rate of asbestos injuries will not be influenced by holding the manufacturer liable, nor will the future injury rate from the use of other substances causing cumulative disease, because there will be nothing manufacturers of these substances can do to reduce it.

Modern tort law would be more effective if courts were to focus more rigorously on exactly what can and cannot be achieved in terms of accident reduction. The next Part reviews principal areas of modern tort law to describe more specifically how they should be redefined to more clearly focus on the accident reduction goal.

III. THE ANALYSIS APPLIED

In my view, most of the problems of modern tort law stem from the misguided effort to employ tort law to provide a compensation insurance system. It follows that the law can be reformed by eliminating its insurance features and concentrating the attention of courts and juries on developing more sensitive rules for controlling the accident rate. The most sophisticated (yet still simple) basic standard for accident control is that liability will attach only where it can be shown that there was some act that the defendant could practicably have taken that would have prevented the specific injury to the plaintiff. An even more sophisticated standard would attempt to take into account the heterogenous character of most consumer product uses and so employ the law to aid providers in optimal product and service definition. But too much ought not be expected (or demanded) as tort law begins a new direction. Just as the founders of our modern regime only sketched the direction of the law after announcing the then-novel strict liability standard,⁸¹ the first steps toward modern reform ought simply to focus on the straightforward question of whether some action could practicably have been taken to prevent the accident.

In my various descriptions of what I believe to be the most basic reform standard of liability, I have referred to "practicable" means to prevent

81. See RESTATEMENT (SECOND) OF TORTS § 402A comments (1965).

accidents. In earlier applications of economics to law, there has been substantial debate over the efficiency norm and the justifiability in contexts of personal injury of equating costs and benefits at the margin.⁸² I have employed the term "practicable" because I believe that the efficiency debate is largely academic. The efficiency issue has been treated as seriously as it has only because of excessive attention to the extravagant Posner-Landes empirical claims of the efficiency of the law.

In my view, litigation over product or service quality is not informed by the academic insistence on the efficiency standard. Engineers, designers and business executives do not seek to implement the efficiency standard. They try to make sensible decisions given the range of available alternatives open to them. The litigation process could be informed by attempting to place the court or jury in a similar position: to recreate for them the alternatives the defendants considered (or failed to consider). In such cases, one can ask no more than to consider those alternative means of production or design that were practicable, meaning those means within the range of feasible defendant alternatives. Simple though it may seem, the redirection of tort law to focus more carefully on what can be done to reduce accidents compels vast changes in our modern tort law regime.

A. *The Basic Standards of Products Liability Law*

The seminal Section 402A of the Restatement (Second) of Torts applies the strict liability standard where a product is defective and the defect is unreasonably dangerous to the consumer.⁸³ How important are these two requirements in creating incentives to reduce the accident rate?

Neither the defect requirement nor the requirement that the defect be unreasonably dangerous clearly focuses attention on the specific changes in production or design that would have prevented the injury. Whether or not a product is defective is not clearly related to what a manufacturer or consumer could have done to prevent the injury. Similarly, a manufacturer might well be able to prevent an injury even though the product might not fit within some definition of unreasonable dangerousness.

The defect requirement, as is well known, was introduced because the authors of the Restatement saw strict liability as closely resembling the contract law warranty of merchantability.⁸⁴ And the unreasonably dangerous limitation was meant to limit application of the standard with respect to inherently risky, but useful, products.⁸⁵ Over the years since the adoption of

82. See *Symposium on Efficiency as a Legal Concern*, 8 HOFSTRA L. REV. 485 (1980).

83. RESTATEMENT (SECOND) OF TORTS, *supra* note 81.

84. See G. PRIEST, ORIGINAL INTENT, *supra* note 2.

85. See RESTATEMENT (SECOND) OF TORTS, *supra* note 81, comments h and i.

Section 402A, these concepts have taken on somewhat different meanings.⁸⁶ And admittedly, they can be interpreted in ways sensitive to accident reduction ability,⁸⁷ although such interpretations are unusual. Currently, the notion that attention to product defectiveness is related to reducing the accident rate deflects judicial attention from more realistic evaluation of what manufacturers can do to prevent injuries. The defect requirement is a crude vestige of contract law, and the unreasonably dangerous requirement an unnecessary adjunct. Under a products liability law reformed to more clearly establish accident prevention incentives, both the defect and unreasonably dangerousness requirements should be scrapped.

1. A Standard for Manufacturing Defects

The Restatement's defect requirement has been most important in the context of manufacturing defects where liability today is absolute. In the large run of these cases, however, there is no justification for liability. For purposes of accident prevention, the issue is not whether the product deviated from the manufacturer's own specifications, but rather whether the manufacturer could have practicably prevented the deviation. All manufacturing processes will necessarily involve some deviations from the normal standard run. As consumers, we want manufacturers to make all practicable efforts to reduce the incidence of such deviations, and we reward them in the marketplace if they are successful in doing so. Reliability is a very highly regarded product characteristic. But no manufacturer can make the production process perfect. Nor would consumers find it worthwhile for manufacturers to try to do so.

The effect of holding a manufacturer liable for an injury caused by a production defect, thus, is an insurance effect. Absolute liability for manufacturing defects is an insurance doctrine. Such liability, because it does not relate to the specific ability to prevent accidents, only provides insurance for injuries that are not preventable. Since consumers are harmed by employing the tort system to provide insurance, liability for manufacturing defects must be reformed.

The central accident prevention issue in manufacturing defect cases is whether changes in the manufacturer's quality control methods might have practicably reduced the likelihood of an accident. If not, there are no defensible grounds for manufacturer liability. Indeed, framed in this way, one can see that, in terms of accident prevention, the legal distinction between manufacturing and design defects is no longer tenable. The issue in what are currently called manufacturing defect cases is essentially a design ques-

86. See Priest, *Invention*, *supra* note 1; G. PRIEST, *ORIGINAL INTENT*, *supra* note 2.

87. Landes & Posner, *supra* note 79.

tion: Were there alternative methods of production that would have practicably prevented the injury?

2. A Standard for Issues of Product Design

Since the adoption of the Restatement, courts have developed two basic standards for design defects: the consumer expectation standard and the risk-utility standard. The consumer expectation standard asks whether the design of the product deviated from the reasonable expectations of consumers as to the product's safety features.⁸⁸ This standard represents an extreme delegation of the accident control function to the jury. As a consequence, it is unclear whether implementation of the standard can have a coherent influence on the rate of product-related accidents. Even if one were to presume that consumer expectations of product quality were closely related to optimal product design—a presumption, incidentally, at odds with much of defective warning law, discussed next—the standard is seldom presented to juries in a way to allow informed design evaluation. For example, some courts have held that it is unnecessary to present any expert design testimony if the product is commonly used by the public.⁸⁹ More generally, the standard itself is seldom applied rigorously. The jury is not instructed on how to conceptualize the formation of consumer expectations, the determinants of consumer product selection, or the influences on consumer product use, all factors relevant to product design, again assuming that consumer expectations are well enough formed to evaluate such designs.

Most jurisdictions, however, have rejected consumer expectation as the principal standard for design defects, although many still allow reference to consumer expectation under multi-pronged standards.⁹⁰ Many courts have presumed that consumers are, typically, insufficiently informed about product design for their expectations to be relevant.⁹¹ Other courts have rejected the standard where the dangerous characteristics of the product were fully obvious to the consumer or user, but where a less dangerous design was easily accessible to the manufacturer.⁹² In some cases, this result is sensible although, as we shall see, there are clearer ways to reach it. In other cases, manufacturer liability where the product danger is obvious to the consumer

88. *Campbell v. General Motors Corp.*, 32 Cal. 3d 112, 649 P.2d 224, 184 Cal. Rptr. 891 (1982).

89. *Campbell*, 32 Cal. 3d 112, 649 P.2d 224, 184 Cal. Rptr. 891; *Giglio v. Connecticut Light & Power Co.*, 180 Conn. 230, 429 A.2d 486 (1980); *Slepski v. Williams Ford, Inc.*, 170 Conn. 18, 364 A.2d 175 (1975).

90. *Barker v. Lull Eng'g Co.*, 20 Cal. 3d 413, 573 P.2d 443, 143 Cal. Rptr. 225 (1978).

91. *Phillips v. Kimwood Machine Co.*, 269 Or. 485, 525 P.2d 1033 (1974).

92. *Luque v. McLean*, 8 Cal. 3d 136, 501 P.2d 1163, 104 Cal. Rptr. 443 (1972).

serves only as an insurance effect. In *O'Brien v. Muskin Corp.*,⁹³ for example, the New Jersey Supreme Court affirmed a jury verdict finding defective a generic product: a three and one-half foot deep vinyl swimming pool. There is likely to be no significant accident reduction incentive created by this decision.

The more dominant modern standard for design defects is the risk-utility standard. The risk-utility standard was adopted principally in order to give courts more sophisticated control over the ways in which design decisions affect the accident rate. Indeed, because the risk-utility standard seems to sound like cost-benefit analysis, it has been touted as establishing efficient incentives for accident reduction.⁹⁴ As we shall see, the risk-utility standard in practice is far different from cost-benefit analysis in theory.

The most widely-adopted formulation of the risk-utility standard in modern products liability law is that of Dean John Wade, one of the architects of the Restatement. Wade listed seven factors for the determination of whether a product design was abnormally dangerous:⁹⁵

- 1) The usefulness and desirability of the product — its utility to the user and to the public as a whole.
- 2) The safety aspects of the product — the likelihood that it will cause injury, and the probable seriousness of the injury.
- 3) The availability of a substitute product which would meet the same need and not be as unsafe.
- 4) The manufacturer's ability to eliminate the unsafe character of the product without impairing its usefulness or making it too expensive to maintain its utility.
- 5) The user's ability to avoid danger by the exercise of care in the use of the product.
- 6) The user's anticipated awareness of the dangers inherent in the product and their avoidability, because of general public knowledge of the obvious condition of the product, or of the existence of suitable warnings or instructions.
- 7) The feasibility, on the part of the manufacturer, of spreading the loss by setting the price of the product or carrying liability insurance.

93. 94 N.J. 169, 463 A.2d 298 (1983). See *infra* text accompanying note 97 through end of subheading III(A)(2).

94. Landes & Posner, *supra* note 79.

95. Wade, *On the Nature of Strict Tort Liability for Products*, 44 *Miss. L.J.* 825, 837-38 (1973).

Courts typically allow parties to introduce evidence bearing on any of these seven factors and then refer some version of the list to the jury for the determination of whether or not the product was designed defectively. None of the factors can be said to be irrelevant to the product design question. But it is impossible to know exactly how juries employ the list in evaluating product design. The list's vague and overlapping character suggests a substantial range of possible outcomes in design defect litigation that may only occasionally correspond to decisions that would establish incentives to reduce the accident rate. Indeed, I believe that Wade's seven factors bring a level of analytical confusion to the design defect question that would make it extremely difficult for even the most diligent jury to establish coherent incentives to reduce the accident rate.

First, the seven factors are not equally relevant to all sets of design defect cases. Factor 1) (product usefulness) and factor 2) (product risk) refer to the evaluation of general product utility, but are meaningless in a case involving a claim that a specific alternative design should have been adopted. That is, if the plaintiff is claiming that the defendant-manufacturer failed to adopt some specific risk reduction design feature, there is no particular reason to attempt to calculate product utility net of product risk.

Factors 3) through 6) refer to alternative ways to prevent the accident by manufacturers and consumers. Factor 4) loosely suggests reference to alternative methods the manufacturer might have chosen to design the product so to reduce the accident rate. Factors 3), 5) and 6) refer to alternative actions that consumers might take. Factor 5) most clearly addresses what the efficiency analysis refers to as the consumer's contributory actions to the occurrence of the injury. Factor 6) addresses the information available to the consumer about the character of the product. Factor 3), oddly, refers to the possibility of the use of a safer product to achieve the same end. Perhaps this was meant to suggest that the consumer might have chosen the wrong product for the intended use, or it might be thought to duplicate factors 1) and 2); that is, to condemn products altogether if there are equally effective, but safer, products on the market.

One might argue that factors 3) through 6) together raise the set of considerations needed to evaluate whether the manufacturer or consumer could have taken some specific action to prevent the injury. But, the duplicative character of Wade's factors undoubtedly introduces substantial variance into the juries' design decisions that weakens the influence of the law as an incentive for efficient design.

There is a further confusion in the list of factors. It is difficult to know how a jury's evaluation of factors 3) through 6) interact with its consideration of factors 1) and 2) which are broader and more general. In recent years, factors 1) and 2), referring to the general utility and riskiness of products, have been given increasing attention as courts have entertained

allegations that a product is so dangerous that liability for injuries related to its use should be absolute. Very recently, one court has created a category of products unreasonably dangerous per se.⁹⁶ Another court, somewhat more subtly, has allowed a jury to find a generic class of products—vinyl swimming pools, discussed earlier—unreasonably dangerous, which amounts to essentially the same result.⁹⁷ Other courts approach similar conclusions by employing hind-sight standards of defectiveness—the doctrine of retrospective liability—according to which products still functioning, but whose design is obsolete, can be found defective.⁹⁸ Judicial rejection of the state-of-the-art defense has the same effect.⁹⁹ Moreover, this category of cases is the subject of a rising number of claims against manufacturers of guns, alcohol and cigarettes, among others. The claim of the Indian government that the Union Carbide company should be liable for all losses resulting from the Bhopal disaster on grounds of cost internalization is hardly different.

I believe that there is a fundamental incoherence in applying Wade's risk-utility factors to claims of the defective design of generic products. In order to illustrate the problem, imagine how the evaluation of the utility versus the risk of a generic product might proceed. Calculating generic product risk (Wade's factor 2) is empirically difficult, but it is conceptually straightforward. One must estimate the likelihood of injury from particular product uses and then estimate their expected costs.

Calculating product utility (Wade's factor 1) to set against risk, however, is substantially more problematic. The term "utility" typically refers to the subjective value or satisfaction that consumers obtain from product use. It is never possible to put a precise dollar value on absolute personal satisfaction from consumption, but students of individual utility conceptualize such values in terms of the maximum amount that any single person or the set of consumers as a whole would pay for the product, represented by the area under an economist's demand curve. (This measure is not exactly precise because utility does not equal willingness to pay, but rather willingness to pay discounted by the marginal utility of income.) Demand curves can be estimated, but not with tremendous confidence. An alternative, lower-bound estimate of consumer utility can be obtained by looking at the actual amounts paid by consumers for the product, that is sales volume. This is a lower-bound estimate because, of course, all consumers place a higher value on the product than its price, or they would not buy it. The difference between full product value to consumers and product price is referred to as consumer surplus. These two measures, then—the area under

96. Halphen v. Johns-Manville Sales Corp., 484 So. 2d 110 (La. 1986).

97. O'Brien v. Muskin Corp., 94 N.J. 169, 463 A.2d 298 (1983).

98. Barker v. Lull Eng'g Co., 20 Cal. 3d 413, 573 P.2d 443, 143 Cal. Rptr. 225 (1978).

99. Carreter v. Colson Equip. Co., 346 Pa. Super. Ct. 95, 499 A.2d 326 (1985).

the demand curve and total sales volume, again, a lower-bound because it ignores consumer surplus—seem to be the most plausible measures of product utility for which any empirical basis might exist.

To employ either the area under the demand curve, total sales volume, or any other more casual evaluation of product utility, however, would lead to a serious miscalculation. The idea that a court or jury can independently measure the risk of a generic product against its utility contains a severe conceptual flaw. The risk-utility test anticipates measuring gross utility. But both the area under the demand curve and total sales volume are measures of *net* consumer utility, at least with respect to product risk. The price a person is willing to pay for a product represents the utility of the product to the person net of expected ancillary costs, such as the expected risk of injury or the expected risk of damage to health. Injury or health costs associated with product use, obviously, are meant to enter into the calculation of product risks, Wade's factor 2), not in product utility, Wade's factor 1).

Yet, if utility is measured by the demand curve or total sales volume, then to the extent consumers are informed about expected product or health risks, the risks of the product have already been taken into account. The value of the product to consumers incorporates the deduction of product risks. To then again subtract the cost of product risks pursuant to the risk-utility standard would count product risks twice. Put differently, for products alleged to be unreasonably dangerous per se, factor 1) is all that is necessary for the analysis. Factor 2) is redundant. And according to the prescription of factor 1), if consumers continue to purchase the product at current costs—which include expected risks of injury—then the product's utility must exceed its risks.

The broader point is that consumers themselves engage in risk-utility analysis of generic products. If I refuse to allow my teen-aged son to purchase a motorcycle for safety-related reasons, I am concluding that the risk of the product exceeds its utility. Similarly, if I decide to forego the pleasures of hang-gliding, I am concluding that the expected risk of the product exceeds its expected utility. In contrast, those consumers who choose to buy such products are making different calculations. As long as consumers have information about expected product risks, their continuing purchase represents the best estimate of the utility of a product relative to its risk.

Key to this point, of course, is the caveat that consumers must be informed of product risks to make effective risk-utility calculations. Consumer product demand is only an accurate measure of product utility net of product risks where consumers are well informed about risks. Yet, even this qualification does not justify the use of Wade's seven (or even his first two) factors in the evaluation of generic product risk-utility. The issue in cases in which consumers lack information about product risks is one of the appro-

ropriate product warnings, discussed next, for which an entirely different set of standards is appropriate. Where consumers lack product risk information, the accident rate can be reduced where incentives are created for the dissemination of appropriate product warnings.

The conceptual flaw in analysis of generic product dangerousness cannot be readily corrected. To implement Wade's analysis coherently, one would have to charge a jury to compare product risks (factor 2) against the utility of the product if it were assumed to be risk-free (gross utility). Requiring evaluation of the utility of a hypothetical risk-free motorcycle or a hypothetical risk-free hang-glider places great strains on the imaginative abilities of jurors. More plausibly, there are no circumstances in which the risk-utility calculation can be effectively implemented with respect to claims of generic product dangerousness.

Under a tort regime redirected to rigorously pursue accident control, the design issue becomes straightforward. The simple design test is: Could the manufacturer have practicably adopted some alternative design or production method that would have prevented the accident? Again, manufacturing defect cases should be brought within the same standard since, if insurance is to be ignored, manufacturing defects implicate production design. The issue in all design cases, therefore, becomes evaluation by the court or jury of the alternative design or production methods that the manufacturer considered (or failed to consider) in the design process. If it cannot be shown that there was some practicable alternative design that would have prevented the accident, but which the manufacturer failed to adopt, then manufacturer liability will not create incentives to reduce the accident rate. The only effect of liability would be to provide insurance for the injury, which is counterproductive.

There has been much controversy in the recent tort reform debate about what is called the state-of-the-art defense. Much of this debate has involved a concern that the state-of-the-art defense not be applied in a way that would immunize manufacturers because they have complied with customs in the trade. The vehemence of this controversy may make the term "state-of-the-art" unhelpful in a reformed and redirected tort regime. The analysis of the problem, however, is quite straightforward. Given any sensible concern with reducing the accident rate, it must be necessary to show that there was some practicable method for the manufacturer to have prevented the accident. It follows that the technology available to the manufacturer at the time the product was introduced is crucially relevant.

The concept of retrospective liability, based upon later determinations of the harm-causing potential of a particular product, has no relationship whatsoever to reduction of the accident rate. This is not to say that, under a tort regime rigorously devoted to accident control, manufacturers should not be held to very high standards of design and production method re-

search, not only holding them liable for practicable design methods in their own industries, but also for methods that could be practicably imported from other, related industries. But holding manufacturers liable for failing to anticipate future innovations provides only an insurance effect.

3. The Manufacturer's Duty to Warn

It might seem that current doctrines addressing the manufacturer's duty to provide warnings of product dangers are congruent with the general liability standard that I have proposed to create incentives to control the accident rate. Today, in many jurisdictions, courts hold manufacturers liable if the court believes that a warning could have been offered that would have prevented the accident.¹⁰⁰ Modern warning cases, however, have been substantially influenced by the insurance goal of current law and by the empirical presumption that the manufacturer is almost always in the best position to prevent injuries. As a consequence, although the doctrinal structure of modern law requires little change, the implementation of the law will benefit from much closer attention to the accident prevention question.

The leading edge of modern warning law employs the duty to warn to fulfill insurance objectives. *Beshada v. Johns-Manville*, mentioned earlier, is a prominent example, in which the New Jersey Supreme Court attached liability for a warning failure despite the Court's admission that it was impossible for the manufacturer to have known of the product danger at the time the manufacturer breached its warning duty.¹⁰¹ The Court, however, explicitly justified its conclusion on insurance grounds, and the decision can have no important influence on accident reduction incentives.¹⁰²

There are several other respects, however, in which modern warning law could achieve the accident prevention goal with more precision. For example, as courts have attempted to articulate a strict liability standard in warning cases, they have adopted legal presumptions that impair accident prevention incentives. Many courts presume that manufacturers have (or should have) knowledge of all product dangers, of which they must inform consumers.¹⁰³ This presumption deflects attention from the question of what information about product dangers manufacturers could practicably obtain and impart. Again, there are no effective incentives created by holding manufacturers liable for failing to take actions that it was not practicable to take, in the same way that it is not effective encouragement to severely punish even a well-trained athlete for failing to surpass Olympian standards.

100. *McCormack v. Hanksraft Co.*, 278 Minn. 322, 154 N.W.2d 488 (1967).

101. *Beshada v. Johns-Manville Products Corp.*, 90 N.J. 191, 447 A.2d 539 (1982).

102. See Schwartz, *supra* note 42.

103. *Phillips v. Kimwood Mach. Co.*, 269 Or. 485, 525 P.2d 1033 (1974).

Similarly, as an effort to articulate a distinguishable strict liability standard, courts have adopted legal presumptions that, had a warning been provided, the consumer would have read it and acted on it to prevent the injury.¹⁰⁴ This presumption, too, obstructs the effort to create realistic incentives for accident prevention. In many circumstances, consumers have limited capacities to read and comprehend warnings. Liability for failing to provide a warning, in such circumstances, achieves no effective accident prevention function.

Moreover, the presumption that warnings will always be read and comprehended ignores the complicated issue of the definition of the consumer group to which a particular product warning should be directed. Most modern products are used by consumers in many different ways. It cannot be presumed that a single warning will be most effective for all uses or that a complicated or multivariate warning will be effective for any uses. There are many modern cases in which the product was used in such an unusual manner or in a manner so distinctly within the control of the injured consumer that manufacturer liability for the failure to warn serves no effective accident prevention purpose. Manufacturers, for example, have been held liable for breach of the warning duty where teen-aged girls were injured from pouring cologne on a lighted candle,¹⁰⁵ where a bystander was hit from an exploding champagne cork,¹⁰⁶ or where a four-wheel drive vehicle was being driven on a slope so extreme that the vehicle flipped end-to-end.¹⁰⁷ To put the issue generally, it is very hard to imagine that the respective manufacturers had superior information about the "product" dangers in these cases or, more particularly, that the product users would have been sufficiently sensitive to warnings detailed enough to incorporate these and the wide range of analogous unusual uses to significantly reduce the likelihood of the injuries.

The joint presumptions that the manufacturer has all knowledge about product dangers, that warnings of these dangers are easily and cheaply given, and that all consumers will read, comprehend and act on them, has led warning law toward absolute liability. Except where intentionally self-inflicted, all product-related injuries can be said to derive from insufficient information about product risks. Although initial cases in the warning field have involved injuries in contexts of no available warnings, it is a short step toward judicial evaluation of the adequacy of existing warnings. And given the presumptions regarding consumer responsiveness to warnings, if a consumer is injured despite the warning, the warning must have been inade-

104. See Schwartz, *supra* note 42.

105. Moran v. Faberge, Inc., 273 Md. 538, 332 A.2d 11 (1975).

106. Shuput v. Heublein, Inc., 511 F.2d 1104 (10th Cir. 1975).

107. Leichtamer v. American Motors Corp., 67 Ohio St. 2d 456, 424 N.E.2d 568 (1981).

quate. Informed by these presumptions, the developing doctrine of the duty to warn will lead toward absolute liability for all but self-inflicted injuries.¹⁰⁸ The expansion of the duty to warn in this direction serves no helpful accident reduction purpose. Courts must examine with greater care exactly which warnings would have been effective for which set of consumer product uses.

B. *The Problem of Causation and Issues Involving Toxic Torts*

There are many allegations that causation standards have expanded since the 1960s and much criticism of the expansion,¹⁰⁹ although few of the critics have been able to precisely identify how causation standards have changed. Causation issues are prototypical questions of fact for a jury and thus, except for the most abstract discussion, beyond the realm of theory. Recently, many commentators have proposed replacing legal standards of causation with scientific standards to replace the seemingly impressionistic approach of modern law with the more precise and rigorous approach of the natural sciences.¹¹⁰ I believe, however, that the law, ultimately, can learn very little from the methods of science. More importantly, I believe that the legal adoption of scientific standards of causation would not only subvert the larger ends of the legal system, but would be false to the scientific process itself and to the experience of the scientific community in developing causation concepts.

The history of scientific concepts of causation in epidemiology, for example, shows clearly that scientific concepts evolved as scientists successively faced increasingly difficult problems whose solutions required new and untried approaches toward the prevention of disease. Specific concepts of causation were adopted—and were later amended—as one or another method proved successful in preventing disease.¹¹¹ If the specific causation concepts themselves are examined in terms of logical coherence or according to the standards of philosophy of science, they appear incoherent or, at the least, tautologous. The concepts of causation seem totally retrospective.

108. Some courts have ruled that assumption of risk is inapplicable in a duty to warn action. See *Heil Co. v. Grant*, 534 S.W.2d 916 (Tex. Ct. App. 1976).

109. For a review, see Elliott, *Why Courts? Comment on Robinson*, 14 J. LEGAL STUD. 799 (1985); Black, *Causation Case Law—Where Theory and Practice Diverge*, in CAUSATION AND FINANCIAL COMPENSATION 233 (Novey ed. 1985); Birnbaum, *Remarks on Expert Testimony, Rules of Evidence, and Judicial Interpretation*, in CAUSATION AND FINANCIAL COMPENSATION, *supra*, at 243.

110. Black, *Causation Case Law—Where Theory and Practice Diverge*, in CAUSATION AND FINANCIAL COMPENSATION, *supra* note 109, at 233.

111. Evans, *Causation in the Biological Sciences: Evolution of Our Concepts of Causation in Disease*, in CAUSATION AND FINANCIAL COMPENSATION, *supra* note 109, at 155. See also Gordis, *Causation in Epidemiologic Studies*, in CAUSATION AND FINANCIAL COMPENSATION, *supra* note 109, at 101.

Each of the concepts seems to have been defined after a belief had been formed of what the scientific fact ought to be.

Indeed, the development of scientific concepts of causation has been incontestably ad hoc. Causation concepts in epidemiology were altered as the scientific community gained more experience with one or another source of infectious disease. The first causation concept derived from scientific experience with bacteria.¹¹² As the scientific community turned from bacteria to viruses, however, a new concept of causation was needed. Similarly, as the scientific community turned from the problems of single to multiple viruses, yet another concept of causation was needed.¹¹³ There are no logical similarities between the successive causation concepts. Instead, the development of causation concepts was reactive to the specific problem being addressed, all in a context of disease prevention.

I am convinced that legal concepts of causation develop in exactly the same way. Courts may begin—or may have begun in the 18th Century—with a coherent concept of legal causation. But as a problem arises that is not adequately addressed by the causation concept of the preceding case, the court will amend the concept to adequately deal with the problem. Viewed in the abstract, such an approach may appear absurd. I would predict, however, that if we were to successfully isolate the deeper objectives of the courts defining these concepts, the evolution of the concepts would appear no less rational than the evolution of scientific concepts.

In modern law, judgments concerning causation are informed by the dominant modern attitude that providers are better able than consumers to prevent accidents and to offer compensation insurance for accidents that cannot be prevented. Thus, even without explicit changes in legal definitions of causation, we should expect to observe the expansion of legal concepts of causation as concepts of legal liability expand.

This observation suggests, however, that scientific concepts in the abstract will be of very little value to the legal system. Scientific concepts of causation are likely to be irrelevant to legal problems of causation unless the objectives motivating the scientific inquiry are identical to the objectives motivating the legal process. The similarity of scientific and legal objectives deserves further study, but there is no reason to believe that these objectives are coincident over a large range. It is just as unimaginable that the legal system will adopt a scientific theory of causation irrespective of its effect on legal goals as it is that epidemiology will adopt a legal concept of causation without regard to its influence on disease prevention.

112. Evans, *Causation in the Biological Sciences: Evolution of Our Concepts of Causation in Disease*, in CAUSATION AND FINANCIAL COMPENSATION, *supra* note 109, at 155.

113. *Id.*

It follows that the reform of concepts of causation must be consistent with the reform of tort law more generally. As tort law is reformed to focus more rigorously on accident prevention, so concepts of causation should be redirected toward the accident prevention goal. A product or a substance should be regarded as the cause of an injury or a condition only where it is believed that to attach liability for generating the source will lead to a reduction in the accident rate. If a finding of causation, and the liability that follows from it, will not reduce the accident rate, there is no useful purpose to the causative concept. This approach will lead to the definition of much more rigorous causation standards than are currently applied.

The recent *Agent Orange* decision is illustrative. It is quite clear from the extraordinarily open discussion by Judge Weinstein¹¹⁴ in the case that the causation evidence supporting the allegations of the ill-effects of Agent Orange was quite weak. Indeed, given the context of weak evidence of causation plus the wartime context in which the government virtually compelled manufacture of the product, it is very difficult to imagine an affirmative answer to the question whether the manufacturers of Agent Orange could have taken some action that would have prevented or reduced the alleged injuries that resulted. It follows that the *Agent Orange* complaint should have been dismissed or summary judgment granted. Again, it is important to establish incentives for manufacturers to invest as much as is practicable to determine the long-term effects of the products they are producing. But absolute liability for those effects, based on hunches of what the effects are, serves this purpose poorly and impedes the establishment of appropriate incentives for accident prevention.

The broader issue of toxic tort liability can be analyzed quite similarly. There are very severe causation problems in most modern toxic tort cases. As a consequence, liability is justified chiefly on insurance grounds, which is to say, liability is no longer justifiable at all. Where the issue is prevention of injuries and reduction of the accident rate, it is highly questionable whether attaching liability for dumping a toxic waste many years before will serve a productive purpose. Retrospective liability of this nature, again, serves largely an insurance purpose, and consumers in the aggregate are harmed by employing the tort system to provide insurance.

It is crucial to our society for the future to create a regime, perhaps regulatory, to ensure responsible dumping of toxic materials. The cleanup of current dumpsites is a different matter entirely, and largely an issue of taxation. No one can believe that the Superfund tax will have any effect on future dumping. Indeed, there is little rationale for it beyond political expediency.

114. *In re "Agent Orange" Product Liability Litigation*, 597 F. Supp. 740 (E.D.N.Y. 1984).

The modern treatment of asbestos injuries illustrates the same problem. It is very clear today that the costs of asbestos use exceed the benefits. On this ground, under my analysis, any future manufacture or sale of asbestos (if, implausibly, they were to occur) ought certainly to generate liability. Nevertheless, retrospective liability for past asbestos use achieves little beyond insurance. In fact, the principal issue in modern asbestos litigation ought to be acknowledged openly as distributive: it pits current asbestos victims against future asbestos victims. Current asbestos victims recover full tort damages including non-pecuniary damages at the expense of future claimants who will have no recourse at all because the assets of the manufacturers will have been exhausted.

The liability of pharmaceutical manufacturers for adverse drug reactions is only another variation of the same problem. It is barely exaggeration that today pharmaceutical manufacturers are absolutely liable for adverse reactions to drugs. The only grounds that can justify absolute liability, however, are insurance grounds. All consumers, including those subject to allergies and those who experience other adverse reactions, are better off to rely on the insurance that can be obtained privately, than to force pharmaceutical manufacturers to provide insurance in the sale of the product.

IV. CONCLUSION: THE VISION OF MODERN TORT LAW IN THE CONTEXT OF CURRENT REFORM

The previous Part presented only examples of the application of the approach. Of course, if my proposals were adopted, we should expect the need for substantial refinement over time. In my view, it is obvious that the liability standards that have been implemented in modern tort law are inadequately precise and rigorous to determine hard questions of accident prevention. Current jury instructions and current trial procedures in tort cases have been so heavily influenced by the presumption that more liability is preferable to less, that it will take substantial time to work out methods to make the judicial process effective in reducing the accident rate. Indeed, I am unsure that it is possible to continue to endorse the system of trial by jury in the context of a serious effort to reduce the accident rate. Trial by jury in the complex contexts of modern tort law has been largely defended on fairness and equity grounds which resemble the insurance rationale that I am challenging.

Obviously, there is also need for further study of insurance and the operation of insurance markets. As I have argued, even the most simple understanding of insurance suggests a vast restructuring of the law.¹¹⁵ I firmly believe that as judges begin to understand these insurance issues with

115. See Priest, *Insurance Crisis*, *supra* note 11.

more sophistication than was available in the early 1960s, the law will begin to change.

My analysis also suggests that the current reform legislation of the 42 jurisdictions represents only a beginning effort toward serious tort law reform. Although the statutes differ from state to state, the most important of the provisions are caps on pain and suffering damages, elimination of joint and several liability and of the collateral source rule, and constraints on punitive damages.¹¹⁶ Changes of this nature in the law are improvements over current law, because they constrain—even if only in a limited way—the insurance component of tort law. They increase the ability of insurers to predict risks and to segregate narrow risk pools. But, as should be obvious, in comparison to the liability standards that I propose, these reforms are modest at best. They are improvements. But they are perhaps most successful as signals to the judiciary that it is time to rethink how to achieve the goal of accident reduction and what is the best means for providing coherent compensation insurance. The symbolic importance of these statutes is likely to outweigh their effective importance in reducing the costs of the tort system.

The propositions that I put forth, to be successful as social policy, require that members of the society begin to understand, more perhaps than they do today, the importance of obtaining first-party health and disability insurance. This point can be overstated because, as I have shown, almost all citizens in the United States possess first-party health and disability insurance or would qualify for public health and hospitalization and disability insurance. Nevertheless, it is an important social objective to inculcate the importance of the private obligation to obtain insurance.

It is very commonly stated in judicial opinions that as a society improves in wealth and sophistication, it should express its commitment to the welfare of its citizens by imposing higher standards of legal liability. There are certainly advantages to increasing levels of national wealth and increasing technological sophistication. But the implication for legal liability ought to be the reverse. The United States has a great advantage over every other country in the world in possessing a highly competitive insurance market, a market unequalled in any other country. The private first-party insurance regime in the United States is more efficient, more effective and provides wider benefits for the cost than the social insurance regimes of any of the other western countries, including those of New Zealand, Sweden, and the European countries which are often put forth as superior systems.¹¹⁷ The

116. See *supra* note 18.

117. For a fuller discussion of this argument, see Priest, *Compensation for Personal Injury in the United States*, in INTERNATIONAL COLLOQUIUM ON COMPENSATION FOR PERSONAL INJURY, *supra* note 75.

achievement of the insurance market in the United States thus provides even stronger grounds for restricting the scope of tort liability. It is an extremely curious phenomenon that the United States, with the most advanced insurance market and compensation regime in the world, has since the 1960s increasingly led its citizens into seeking insurance and compensation from the least advanced, most costly and least effective insurance regime of the world: tort law. As an insurance system, our modern tort law regime is vastly inferior to the insurance systems of New Zealand, Sweden and Europe. But it is even further inferior to the private first-party health and disability system in the United States itself. The time has come to reject the insurance function of tort law and to focus the law on the important goal of accident prevention.