

BOOK REVIEW

THE LAW AND ECONOMICS OF TORT LAW: THE PROFOUND REVOLUTION

THE ECONOMIC STRUCTURE OF TORT LAW. By William M. Landes¹ and Richard A. Posner.² Cambridge: Harvard University Press, 1987. Pp. ix, 329. \$27.50.

ECONOMIC ANALYSIS OF ACCIDENT LAW. By Steven Shavell.³ Cambridge: Harvard University Press, 1987. Pp. viii, 312. \$30.00.

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I. INTRODUCTION

The cost of all accidents in the United States during the year 1987 has been estimated at \$133.2 billion, with almost half this amount resulting from motor-vehicle accidents.⁵ Because, for example, a pedestrian struck by an automobile will be equally in need of compensation whether the driver was careless (and therefore liable to the victim in tort) or careful, the figure provides a useful benchmark against which to assess the operation of the tort system as a generalized system of compensation for all accidents. Based on figures from all federal and state tort lawsuits terminating in 1985, the tort system spent \$16 billion to \$19 billion in transaction costs and legal fees to deliver roughly \$15 billion in net compensation to victims.⁶

There is tremendous disagreement over whether the tort system is performing admirably or abysmally. In part this reflects the immense

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⁵ Motor-vehicle accident losses — including wage losses, medical expenses, insurance administration costs, and property damages — were estimated at \$64.7 billion. The second largest category is work accidents, with a cost of \$42.4 billion. See NAT'L SAFETY COUNCIL, ACCIDENT FACTS 3 (1988). Just as this \$133.2 billion figure is not limited to tortiously caused accidents — for example, one may slip and fall in the shower without having a legal claim — it does not include all types of tortious injury. "Tort" encompasses a broad array of wrongs extending from libel and negligence to battery and intentional interference with contractual relations.

⁶ The exact estimate of net compensation was \$14 billion to \$16 billion. Therefore, the payout rate of net compensation to total expenditure ranges from 42% to 50%. See J. KAKALIK & N. PACE, COSTS AND COMPENSATION PAID IN TORT LITIGATION 69 (1986).

discord over the logically prior question of the function of tort law. "Over the past few decades," according to Professor Stephen Sugarman, "it has become increasingly popular to view victim compensation as the central purpose of tort law,"⁷ which may in part explain the increasingly popular view that tort law has failed. As these numbers suggest, tort litigation is a poor mechanism for providing compensation: whereas private insurance provides benefits exceeding 80 cents for each dollar of cost,⁸ the tort system — at least when mediated through litigation — provides less than 50 cents on the dollar.⁹

These facts explain why most law and economics scholars favor greater reliance on insurance to provide compensation and seek to justify the tort system as a means of deterring behavior likely to cause injury. Yet, even on this point controversy abounds. One would hope, at a minimum, that the tort system reduces accident costs by \$16 billion to \$19 billion. If we do not gain at least this much from having the tort system, then it cannot be justified as a means of deterrence.¹⁰ Indeed, a vast array of critics maintain that the tort system is utterly incapable of deterring accidents.¹¹ For example, in

⁷ Sugarman, *Doing Away with Tort Law*, 73 CALIF. L. REV. 555, 591 (1985).

⁸ In 1960, net private insurance payments for death and disability totalled \$8.7 billion, whereas administrative costs equaled \$2 billion. Therefore the payout rate was 81.3%. The comparable figures for the tort system in 1960 are estimated as follows: \$1.4 billion in net compensation was paid, whereas litigation and transaction costs consumed \$1.8 billion — a payout rate of 43.8%. See Conard, *The Quantitative Analysis of Justice*, 20 J. LEGAL EDUC. 1, 11 fig. 7 (1967). Note that the tort system had roughly the same payout rate in 1960 and 1985. Compare *id.* with *supra* note 6.

⁹ The caveat is necessary because these figures are derived only from analyzing the outcomes of cases in which lawsuits were filed. To the extent that some injurers are influenced by the existence of the tort system to compensate victims prior to the initiation of legal action, the net compensation as a percentage of the total cost will be somewhat higher for the tort system as a whole than the figures given here for litigated cases suggest. Even with this correction, however, the tort system is still a far less efficient mode of compensation than private insurance.

¹⁰ Before one can conclude that the tort system efficiently deters injuries, one must determine that the reduction in injuries outweighs *both* the \$16–\$19 billion in direct costs and the amount of indirect costs resulting from the alteration in behavior that the tort law induces. This is a necessary but not sufficient condition; alternative methods of controlling accidents must still be evaluated.

¹¹ See, e.g., D. HARRIS, M. MACLEAN, H. GENN, S. LLOYD-BOSTOCK, P. FENN, P. CORFIELD, & Y. BRITTAN, *COMPENSATION AND SUPPORT FOR ILLNESS AND INJURY* (1984) [hereinafter *COMPENSATION AND SUPPORT*]; T. ISON, *THE FORENSIC LOTTERY* 89 (1967) ("[T]he [deterrent] value of tort liability . . . is thought on the whole to be negligible."); see also Brown, *Deterrence in Tort and No-Fault: The New Zealand Experience*, 73 CALIF. L. REV. 976, 1002 (1985) (noting that New Zealand's "removal of tort rights for personal injury cases did not produce the increase in accident-producing behavior predicted by the traditional theory of tort deterrence"). Landes and Posner note, however, that an earlier study of New Zealand's no-fault law "found that the law had caused a 20 percent increase in automobile accident deaths" (Landes & Posner p. 11 n.32 (citing Swan, *The Economics of Law: Economic Imperialism in Negligence Law, No-Fault Insurance, Occupational Licensing and Criminology*, 3 AUSTRALIAN ECON. REV. 92, 103 (1984))).

addition to noting the inadequate compensatory accomplishments of the tort system, Richard Abel asserts:

Tort damages perform no better in deterring inefficient risks. The low probability that a tortfeasor will be held liable undermines and may even nullify the efficacy of tort law as a mechanism for ensuring optimal safety. A rational entrepreneur looking at the probability of having to pay damages almost always will gamble on risk rather than safety.¹²

In contrast, Peter Huber argues that individuals and enterprises, rather than ignoring the threat of tort liability, are consumed by it. The result is massive overdeterrence because:

the doers, the makers, and the providers of this world [have been] pursued and worried at every turn by a hound-like legal profession As the tort system expanded, innovation was suppressed, not encouraged. Safety was set back, not advanced. And the consumer ended worse off, even in his personal security, than he would have been had the legal system been slower to rush to his rescue.¹³

In the midst of this intellectual tumult, Steven Shavell and the prolific team of William Landes and Richard Posner have drawn upon their previous path-breaking work to issue the most important books in the law and economics of tort law since the release in 1970 of Guido Calabresi's *The Costs of Accidents*. Landes and Posner emphasize the broad theme that the law is efficient and serves to minimize accident losses and prevention costs. They analyze most of the major doctrines of tort law from this perspective, discussing well-known cases along the way. Shavell's interest is in developing models that explain the function of the legal system. Unlike Landes and Posner, Shavell does not discuss cases, but he does devote considerable attention to the insurance system, and offers some evaluation of administrative costs and regulation as an alternative to the tort system.

The conclusions of the two books on the hotly contested issue of whether the tort system is an effective deterrent reflect the contrasting scholarly natures of the authors. Landes and Posner, who are always forceful and often controversial, directly challenge the charges of overdeterrence and underdeterrence, concluding that the common law of torts has succeeded admirably in achieving economically optimal incentives (Landes & Posner pp. 312-13).¹⁴ Shavell, on the other

¹² Abel, *£'s of Cure, Ounces of Prevention* (Book Review), 73 CALIF. L. REV. 1003, 1005 (1985) (reviewing COMPENSATION AND SUPPORT, cited above in note 11).

¹³ P. HUBER, *LIABILITY: THE LEGAL REVOLUTION AND ITS CONSEQUENCES* 154 (1988).

¹⁴ If one substitutes "efficiency" for "substantive justice," then Landes and Posner's ultimate assessment is relatively harmonious with that of the American Bar Association's Special Committee on the Tort System, which concluded:

hand, assumes the more qualified and cautious position that “not only does there seem to be considerable consistency, but there also seems to be substantial ambiguity and inconsistency between the liability system that we observe and the regime that is best given the criteria of optimality and the models examined here” (Shavell p. 294). Not only do both books splendidly set forth economic theories that should — and surprisingly often do¹⁵ — govern tort law in a world in which rational actors are deterred by the threat of damages, but they implicitly lay the groundwork for the empirical investigations that will be necessary before their considerable theoretical achievements will be universally embraced.¹⁶

[t]he tort system [is] vital and responsive as a working process, based in legal concepts, for dealing with injuries alleged to be wrongs [W]hile many improvements are desirable in the conduct of dispute resolution, the adversary process gives point and content to a body of law that produces a consistently high quality of substantive justice.

ABA SPECIAL COMM. ON THE TORT LIABILITY SYSTEM, TOWARDS A JURISPRUDENCE OF INJURY: THE CONTINUING CREATION OF A SYSTEM OF SUBSTANTIVE JUSTICE IN AMERICAN TORT LAW 13-1 (1984).

¹⁵ The surprise comes because many legal rules that, on the surface, seem not to give actors the correct incentive to behave efficiently are in fact efficient. For example, assuming that the assessment of marginal costs and benefits must be precise in order to ensure the efficiency of tort law, it would seem that the common law doctrine barring contribution between tortfeasors would fail the efficiency test. If potential injurer *A* knows that the costs of any harm she may do to victim *C* might be paid by a joint tortfeasor, then it appears that *A* will have insufficient incentive to take the optimal level of precaution. After all, someone else may be footing the bill for *A*'s negligence. Yet as Landes and Posner demonstrate with great mathematical precision,

if the total cost of care is less than the expected accident cost . . . it will always be in the interest of at least one of the tortfeasors to behave carefully and thereby place the whole liability on the other; and once one behaves carefully the other has an incentive to do likewise (Landes & Posner p. 196).

Moreover, a similar argument can be used to show that, apart from administrative costs, a comparative negligence rule is as efficient as the contributory negligence rule that it has so widely supplanted (Landes & Posner pp. 79–82; Shavell pp. 39–40).

¹⁶ For example, there has been surprisingly little empirical examination of the fundamental question whether the tort system does in fact deter. See Sugarman, *supra* note 7, at 588 (“[F]ew empirical studies on the impact of tort law . . . have used econometric techniques.”); see also Landes & Posner p. 10 (“[T]here has been little systematic study of the deterrent effect of tort law.”). One study that Landes and Posner rely upon to support the deterrence argument is Elisabeth Landes’s *Insurance, Liability, and Accidents: A Theoretical and Empirical Investigation of the Effect of No-Fault Accidents*, 25 J.L. & ECON. 49, 50 (1982). This study concludes that replacing the tort system with a no-fault system for automobile accidents might increase fatalities by as much as 15%. Suppose that the tort system produced a 15% reduction in *all* accident costs, excluding work-related accidents governed primarily by workers’ compensation. In this event, the savings generated by the tort system would equal roughly \$16 billion, which compares rather poorly with the system’s \$16 billion to \$19 billion in transaction costs and legal fees. Therefore, even if the tort system provides substantial deterrence, it may not be cost-effective. Moreover, the deterrence argument assumes that Landes’s 15% figure not only is valid for the deterrence of automobile fatalities, but also can be applied to all accidents governed by the tort system. For criticism of Elisabeth Landes’s study, see the following articles that are not cited by Landes and Posner: Kornhauser, *Theory and Fact in the Law of Accidents*, 73 CALIF. L. REV. 1024, 1036 n.33 (1985); O’Connell & Levmore, *A Reply to Landes: A Faulty Study of No-Fault’s Effect on Fault?*, 48 MO. L. REV. 649 (1983); and Sugarman, cited above

Part II of this Review explores some of the differences in style and purpose of the two works and comments on their ultimate normative and positive goals. Part III gives some flavor of the types of argumentation that is characteristic of works employing a utility maximization framework to analyze issues of tort law, specifically addressing three issues: (1) the activity level/due care dichotomy that Shavell first developed in 1980 to demonstrate the inefficiency of any liability rule; (2) the appropriate compensation for nonpecuniary losses; and (3) punitive damages for intentional torts. Part IV offers concluding remarks on the law and economics of tort law and on the many small but significant empirical issues raised by my "deconstruction" of some of the economic models presented by Landes and Posner and by Shavell.

II. A REVOLUTION IN SCHOLARSHIP AND IN LAW

A. Methodology and Mission

The expansion of liability in the 1960's and 1970's has been termed a revolution in tort law. Peter Huber has charged that the new tort economists — citing Calabresi and Posner as pioneering figures — "[m]ustering all the dense prose, arcane jargon, and elaborate methodology that only the very best academic economists muster, . . . set about proving on paper that the whole new tort structure was an efficient and inevitable reaction to failures in the marketplace."¹⁷ The statement is a curious one in many respects,¹⁸ and while it can in no way be deemed an accurate portrayal of either of the books under review, its inaccuracies usefully illustrate three differences in the two works.

1. *Contrasting Objectives.* — Whereas Landes and Posner's goal is to demonstrate "that the common law of torts is best explained as if the judges who created the law . . . were trying to promote efficient resource allocation" (Landes & Posner p. 1), one cannot fairly characterize Shavell as having set out to prove anything. Through the use of sophisticated economic models, he analyzes major issues such as risk-bearing and insurance and explores the efficiency implications

in note 7, at 588–91. On the other hand, if Landes is correct that the tort system reduces traffic fatalities by 15%, we might expect even greater savings outside the automotive area. Drivers already have an incentive to take care because they face a substantial risk of personal harm if they drive negligently, whereas in many other areas governed by the tort system — such as the manufacture of potentially dangerous products — the potential tortfeasor is not led to take precautions by any interest in self-protection.

¹⁷ P. HUBER, *supra* note 13, at 6.

¹⁸ For example, the notion that Judge Posner has unduly emphasized market failure in any of his work seems quite odd.

of the broad doctrine of tort law. By proceeding in a systematic and incremental fashion, Shavell conveys a sense of how the conclusions of prior models are affected by changing various assumptions or by introducing additional complexities.

These contrasting objectives explain some major differences in the approaches of the two books. Because Shavell feels less need to marshal his evidence in support of a grand theme, he is able to restrict his analysis to the major issues of tort law, while using an abstract and formal, theoretical approach. Landes and Posner, although by no means slighting formal economic theorizing, also provide a much richer treatment of the fine points of tort doctrine and abundant references to common law cases and the legal literature, which Shavell largely ignores.¹⁹

2. *Contrasting Conclusions.* — Huber's shotgun blast at tort economists for singlemindedly attempting to demonstrate the efficiency of tort law may hit Landes and Posner, but widely misses Shavell, who concludes that many elements of existing tort law are inefficient. For example, Landes and Posner posit that, based on the economic model of accidents, "strict liability [is] more likely to be the superior regulatory device in cases where achieving optimal accident avoidance requires altering the defendant's activity rather than his care or the plaintiff's activity or care" (Landes & Posner p. 107). Landes and Posner then survey the legal rules governing a wide array of accidents (such as those caused by animals, fire damage, and a variety of ultrahazardous activities) and invariably conclude that the overall pattern of the law is consistent with the model's prediction (Landes & Posner pp. 107-22). Shavell, however, is quick to point out that the choice of strict liability over negligence for some activities does not always square with the economic model.²⁰ Furthermore, Shavell notes that the choice of legal rule for the same activity sometimes differs from country to country. For example, the model predicts that automobile-pedestrian accidents should be governed by strict liability or negligence depending on whether controlling the behavior of drivers or pedestrians is more likely to deter accidents efficiently. In either case, the model suggests that the legal rule should generally be the same in all jurisdictions. Noting, however, that such accidents are governed by the negligence rule in the United States and by strict liability in France, Germany, and the Soviet Union, Shavell concludes that "the conformity of the observed pattern of use of strict liability

¹⁹ Shavell, however, does draw upon and cite to the large and growing body of literature that analyzes tort issues from a formal economic approach.

²⁰ Shavell asks: "Is the chance of a wild animal escaping from the zoo and doing harm, for which strict liability would probably apply in the United States, greater than that of an automobile running down a pedestrian, for which the negligence rule would govern?" (Shavell p. 31).

and negligence rules to what would be suggested by the theoretical considerations of this chapter is somewhat rough" (Shavell p. 32). Perhaps Landes and Posner would respond that one cannot expect efficiency from these other countries, since they were deprived of the genius of the common law.²¹

3. *Contrasting Styles.* — Huber's blast about the infelicitous writing styles of tort economists is on target for one work, but wide of the mark for the other. Shavell relentlessly journeys through model after model to show the effects of a slightly different assumption or alternative legal doctrine. This treatment commendably demonstrates the robustness of his results, but as I pushed through Shavell's opus I was reminded of a comment William Styron once made during a television interview: "Writing a novel is like walking from Vladivostock to Spain — on your knees." Indeed, whereas Landes and Posner's thoroughly accessible work is an interesting and readable narrative unified by their broad theme of the efficiency of the common law, Shavell's book is more of a reference work that one can turn to for guidance and illumination on particular issues.

Nonetheless, I am very grateful that, as a reviewer, I was induced to read straight through Shavell's book, because the undertaking was a remarkable epistemological adventure. The work is a masterful tribute to the power of economic modelling and the use of optimization techniques. Shavell divides each chapter into a discussion of the relevant issues and an accompanying mathematical appendix. While I fear that few without at least some graduate economic training will find the mathematical appendices accessible, it is clear that Shavell's soul resides therein. Indeed, anyone who wants a challenging intellectual experience that underscores the value of theoretical reasoning from mathematical models will profit greatly from working through Shavell's proofs. I, for one, was immensely impressed by the richness of the insights that Shavell's theoretical approach provided into the fundamental issues of tort law. But at least equal in value — with implications for the entire enterprise of legal and economic scholarship — was the opportunity to observe a master of the mathematical economic methodology at work to see how far one can go in addressing important issues of public policy without straying from one's armchair.

B. Positively Normative

The issue of whether the substance of these works is normative or positive — a distinction that sometimes seems particularly thorny in

²¹ That automobiles are more dangerous to pedestrians in Europe than in the United States might explain the greater reliance on strict liability in these other countries. Certainly, the number of all deaths (occupants plus pedestrians) per vehicle-mile is far higher in Europe than in the United States. See NAT'L SAFETY COUNCIL, ACCIDENT FACTS 45 (1987).

law and economics²² — merits some discussion. Shavell is avowedly interested in both predictive and normative claims. In the very strong concluding chapter of his book, he outlines some of the interesting conclusions falling into each of these two categories. The positive claims include:

that under error-free application of the negligence rule, the calculating actor will necessarily, and not just sometimes, be led to take due care; . . . that uncertainty surrounding the determination of negligence may lead systematically to the exercise of excessive, defensive, precautionary measures; . . . that individuals are unlikely to insure against many nonpecuniary losses; [and] that the rule regarding treatment of collateral benefits in the computation of liability is unlikely to have much effect (Shavell p. 291).

Shavell then notes the following normative conclusions based on his economic analysis: (1) that strict liability is superior to negligence in controlling injurers' levels of activity; (2) that liability insurance is socially beneficial; and (3) that there is a need to supplement liability by imposing fines when optimal deterrence requires that injurers pay more than what optimal compensation indicates victims should receive (Shavell p. 293).

But while Shavell is explicit about his normative focus, Landes and Posner downplay this aspect of their work, insisting that they are "interested in explaining, rather than defending, the common law of torts" (Landes & Posner p. 9). They sidestep Dworkin's argument that a system of law designed to promote efficiency is immoral, on the ground that they are presenting a purely positive theory (Landes & Posner p. 9). But the tenor of the book seems to be normative as well as positive: the implicit message is that the common law of torts is good because it promotes efficiency, and in the few cases where Landes and Posner find that it does not, they call for reform consistent with efficiency arguments.²³

Indeed, whatever the authors' intent, it is clear that the positive aspects of their work cannot be cleanly separated from the normative elements. When judges, lawyers, and law clerks turn to Landes and Posner's excellent book for guidance on knotty issues of tort law, they will find insights into the types of economic arguments that can be made. Even where an underlying economic basis exists in some hoary common law decision, it is often only Landes and Posner who can extract this rationale and present it to the public.²⁴ But so enlight-

²² See R. COOTER & T. ULEN, *LAW AND ECONOMICS* 347 (1988).

²³ Landes and Posner propose changes in the measurement of damages for loss of life and in the treatment of latent injuries that are not manifested until decades after the allegedly tortious act (Landes & Posner pp. viii, 185-89, 260-69).

²⁴ For a good illustration of the intricate — and perhaps, as some will contend, fantastical

ened, the legal community is apt to embrace these economic doctrines, thereby further contributing to the explanatory power of economics in tort law. In fact, Landes and Posner cite to a recent Iowa case²⁵ in which the court found a railroad strictly liable for the damage caused when some tank cars exploded following a derailment. Although Landes and Posner merely state that the "court relied explicitly on the economic theory of tort law" (Landes & Posner p. 117), in fact, the court quoted directly from Judge Posner's treatise, *Economic Analysis of Law*.

Landes and Posner's position on latent torts provides a further illustration of their blurring of normative and positive claims. They would allow individuals exposed to radiation that increases their chance of death at a much later date to sue immediately and collect damages based on expected future losses. This plan has the advantage of enabling the suit to proceed as a class action²⁶ shortly after the exposure, without waiting for any deaths to occur. Landes and Posner note that "from an economic standpoint, the critical point is that the defendant pays, not that the plaintiff receives" (Landes & Posner p. 268).²⁷ In advocating this plan, Landes and Posner argue that it is efficient and should be adopted. They observe that although probabilistic recovery may not be a "black letter" rule of tort law, "it might be described as a latent or incipient such rule" (Landes & Posner p. 266). In other words, Landes and Posner treat the proposition that the law will soon be efficient as both a positive prediction and a normative desire. Indeed, their overarching positive theory of tort

— argumentation used to salvage the efficiency of the common law, see the extended economic discussion of the doctrine that one has no duty to rescue a perceived victim (Landes & Posner pp. 142–48). Landes and Posner's basic argument, evocative of the now-discredited Lafferite view that the 1981 Reagan tax cuts would lead to *increased* tax revenues, is that the number of rescues may decline if the imposition of a legal duty to rescue causes individuals to avoid situations in which others might be in peril. This position is criticized in Ayres, *A Theoretical Fox Meets Empirical Hedgehogs: Competing Approaches to Accident Economics* (Book Review), 82 NW. U.L. REV. 837, 841 (1988) (reviewing W. LANDES & R. POSNER, *THE ECONOMIC STRUCTURE OF TORT LAW* (1987), and S. SHAVELL, *ECONOMIC ANALYSIS OF ACCIDENT LAW* (1987)). Landes and Posner do qualify their position on this issue by stating that, although their analysis "does not prove that the common law's refusal to impose liability for failure to rescue is efficient, it prevents one from concluding that the absence of such a rule necessarily is inefficient" (Landes & Posner p. 146).

²⁵ National Steel Serv. Center, Inc. v. Gibbons, 319 N.W.2d 269 (Iowa 1982).

²⁶ The members of the class are in a more similar position shortly after the exposure, when they all appear to face a similar increase in the probability of premature death, than subsequently, when some die and others remain unaffected. Note, however, that the risk caused by the exposure will, in all likelihood, vary considerably depending on personal traits, such as whether one smokes.

²⁷ Although those who emphasize the compensatory function of tort law will doubtless be critical of this comment, it nonetheless captures the current reality. For every dollar that is paid by tortious injurers in the United States, less than one-half is received by victims (Shavell p. 263 n.2). See also *supra* notes 6 & 8.

law implicitly embraces the normative conclusion that the common law is desirable as well as efficient. Moreover, to the extent that consistency in the law is valued, greater acceptance of the positive theory in itself becomes the basis for a normative claim that future cases should adhere to its dictates. This fact doubtless lends some authority to the positive assertion of Landes and Posner that "in the years to come the approach sketched in this chapter will become an important method of establishing tort liability and measuring damages in delayed-consequences cases" (Landes & Posner p. 268).²⁸

At the same time, Landes and Posner reject an alternative approach that would allow only those who actually die of cancer, rather than all those exposed, to share the total damage award, stating that "it is an approach so much at variance with traditional tort law thinking that it could not be adopted without a profound revolution in that thinking"²⁹ (Landes & Posner p. 265). But just as it is surprising to see Landes and Posner shrink from conceding their normative focus — and it is very uncharacteristic of them to dodge a fight — it is also unusual to hear the revolutionaries decry revolution. Landes and Posner have played a major role in replacing the traditional legal justification of the tort system based on notions of fairness and compensation with a concern for efficiency and deterrence. The profound revolution has come.

III. TAKING UTILITY FUNCTIONS SERIOUSLY

Those skeptical of the theoretical approach of economics may be surprised to see that the range of issues that these two works demonstrate can be profitably explored through rather abstract economic models. In this Part, I attempt to convey the flavor of the theoretical economic arguments presented in these two studies and to suggest the critical nature of the assumptions used in deriving the offered conclusions.

A. Due Care Versus Activity Level

1. *Shavell's Contribution.* — The art of using economic models to generate useful insights about legal issues requires skill in making

²⁸ For a critical assessment of Landes and Posner's proposal, see Oi, *Tort Law as a Regulatory Regime: A Comment on Landes and Posner*, 13 J. LEGAL STUD. 435 (1984). See also Felstiner & Siegelman, *Neoclassical Difficulties: Tort Compensation for Latent Injuries*, 11 LAW & POL'Y (forthcoming 1989).

²⁹ The rejected approach would have the advantages of drastically reducing the number of plaintiffs and of compensating only those who have the misfortune of contracting cancer, whether or not the exposure was the cause. A disadvantage is that the need to delay the cases for many years and perhaps decades, thereby making the possibility of a single dispositive class action remote, might cause a net increase in administrative costs.

simplifying assumptions. The goal is to transform complex mathematical problems into more tractable forms capable of yielding findings that are both illuminating and easily packaged for publication or classroom presentation. An important illustration of this art was John Prather Brown's decision to divide the world into two discrete classes — injurers and victims — in setting forth the initial formal economic model of tort law in 1973.³⁰ This simplification facilitated the analysis of liability rules because strict liability makes little sense unless it is clear that one party is the injurer and the other is the victim.³¹ Absent this dichotomy it would thus be difficult to build a model of strict liability for accidents between two automobiles, because neither party would obviously be the victim or the injurer (Landes & Posner p. 115).³²

Brown's investigation of strict liability and negligence rules indulged another important simplification: the only factor that affected accident risk was the level of care taken by the respective parties. Based on models incorporating this assumption, Brown concluded that both a negligence standard and a strict liability rule with a contributory negligence defense would induce injurers and victims to take the optimal level of care.³³ At this point, the Posnerian belief in the efficiency of the common law³⁴ — at least with respect to the rule of liability — seemed unassailable because both strict liability and negligence were deemed to be equally efficient.

In 1980, Shavell spoiled the party. He observed that the number of accidents would be affected not only by how careful injurers and victims were — their level of care — but also by how much they

³⁰ See Brown, *Toward an Economic Theory of Liability*, 2 J. LEGAL STUD. 323 (1973).

³¹ One cannot define the "injurer" as the one who "caused the harm." See G. CALABRESI, *THE COSTS OF ACCIDENTS* 6 n.8 (1970); Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 2 (1960); Posner, *Strict Liability: A Comment*, 2 J. LEGAL STUD. 205, 218 (1973) ("[F]rom an economic standpoint an inquiry into causation is vacuous."). For an attempt to base liability on notions of causation, see Epstein, *A Theory of Strict Liability*, 2 J. LEGAL STUD. 151, 160–89 (1973). Shavell seems insufficiently sensitive to this complication. He writes: "There is . . . no difficulty in principle in deciding whether strict liability or the negligence rule will be better in a given situation in a well-defined model . . . and there is nothing problematic about the notion of harm" (Shavell p. 30).

³² One might devise a test to distinguish which of the two automobiles was the "injurer" based on the extent of its fault in causing the accident, but then the simple nature of strict liability — which provides for liability without extended discussion of fault — would be compromised. Alternatively, even though injurers and victims cannot be readily identified, one can give meaning to a strict liability standard by interpreting it to require each party to pay the damage incurred by the opposing party. This will not be an efficient standard, however, because parties will only have an incentive to reduce damages inflicted on others and will ignore their own compensable losses.

³³ This conclusion was also reached by Peter Diamond. See Diamond, *Accident Law and Resource Allocation*, 5 BELL J. ECON. 366 (1974); Diamond, *Single Activity Accidents*, 3 J. LEGAL STUD. 107 (1974).

³⁴ See Posner, *supra* note 31, at 221.

engaged in the particular activities that gave rise to accidents — their activity level.³⁵ For example, the more a person drives her car, the more likely it is that she will be in an accident, even assuming that she always drives with the same degree of care. By altering Brown's model, Shavell demonstrated that no liability standard could simultaneously give both injurers and victims the proper incentive to choose the optimal levels of these two factors.³⁶

The reasoning behind Shavell's point is that actors will behave optimally only if they are under some financial pressure to do so. A negligence standard puts pressure on injurers to act with due care because it confronts them with potential liability payments that exceed the cost of taking care. The negligence standard, however, does not give injurers a financial incentive to limit their activity level. Because, under a negligence rule, injurers will not be liable for *any* damage as long as they act with due care, they will consider only the individual gains associated with each increment of behavior, not the social costs of such activity. Note, though, that the negligence rule gives victims an incentive to control both their level of care and their activity level: assuming that injurers will be careful (as they will be if they act rationally) victims will pay for all damages that they suffer. Therefore, victims have an incentive to consider all the costs and benefits of extra levels of care and activity. Strict liability with a contributory negligence defense would create the exactly reciprocal pattern: injurers would face the appropriate incentives with respect to care and the activity level, but victims would have no incentive to control their activity level.³⁷

Shavell's finding was significant in two respects. First, it undermined confidence in the efficiency of tort law. Second, it provided an economic basis for predicting whether strict liability or negligence should be employed in a given setting, depending upon whether it was more important to control the activity level of injurers or of victims. As noted above, Shavell emphasizes the first aspect — the inefficiency of both standards — whereas Landes and Posner emphasize the second. Landes and Posner embrace the activity level/due care dichotomy as the “most interesting respect in which negligence and strict liability differ” (Landes & Posner p. 66) and find the law to be in substantial conformity with their predictions derived therefrom — a conclusion from which Shavell cautiously distances himself.³⁸

³⁵ See Shavell, *Strict Liability Versus Negligence*, 9 J. LEGAL STUD. 1, 2 (1980).

³⁶ See *id.* at 23.

³⁷ Indeed, victims would have no incentive to control either their activity level or their level of care without the contributory negligence defense, which gives them an incentive to be careful (Shavell pp. 27–28).

³⁸ See *supra* pp. 1049–50.

Indeed, the activity level/due care dichotomy cannot fully explain the limited pockets of strict liability. Consider, for example, the fact that some countries impose strict liability when auto accidents injure pedestrians but retain a negligence standard when two vehicles collide. For auto-pedestrian accidents, imposing strict liability will restrain the activity level of drivers more than pedestrians. But for auto-auto accidents, strict liability and negligence standards will be equally effective in controlling the activity level of drivers. The different legal rules may therefore reflect the greater ability to apply a strict liability standard in auto-pedestrian accidents. The reason is that strict liability only works if one can easily identify an "injurer" and a "victim," which is possible when a car hits a person but not when the accident involves two cars.³⁹ Shavell's artistry in building upon Brown's model unearthed the interesting point about activity levels, but the very nature of the economic modeling that artificially divided the world into injurers and victims may have obscured the immense difficulty of applying strict liability when no one is immediately identifiable as the injurer.⁴⁰

2. *Optimal Care and Activity: You Can't Have One Without the Other.* — The relative importance of Shavell's activity level distinction in undermining the efficiency of both liability standards is not entirely clear. Indeed, in terms of efficiency, things may be either much better or much worse than Shavell believes.

The case of ultrahazardous behavior, for instance, illustrates that in some circumstances Shavell's vision may be unduly pessimistic. For example, Landes and Posner tell us that the imposition of strict liability for damage resulting from blasting with explosives is justified by the need to encourage potential blasters to consider less dangerous substitutes (Landes & Posner p. 113). They fail to explain, however, why a court can easily determine whether a firm acted with due care in dynamiting an old building but cannot ascertain whether another method of destruction would have been safer and no more costly. In other words, one who blasts as carefully as humanly possible could still be deemed negligent if the court found that net social benefits could be increased by using a wrecking ball rather than dynamite.⁴¹ In fact, this latter determination is precisely the one that both Shavell and Landes and Posner assume cannot be made. If the court, how-

³⁹ This observation indicates only that, in the absence of a court's intuitive ability to label one party as the injurer, strict liability is unlikely to be the legal standard. Ability to identify an injurer, however, does not indicate by itself that strict liability will be the legal standard.

⁴⁰ Cf. Coase, *supra* note 31 (discussing the difficulty of determining causation in accidents).

⁴¹ This illustration has focused on a case in which the activity level decision is reduced to the decision whether or not the activity should be undertaken at all. Courts are faced with a more difficult judgment, however, when they must decide whether an incremental increase in an activity that is not ultrahazardous constitutes negligence.

ever, can incorporate both elements into the negligence (and contributory negligence) standards, then the parties will have the incentive to behave optimally.⁴² Hence, there are circumstances in which the legal rule is more efficient than Shavell suggests when he writes:

To formulate a standard for the level of activity, courts would need to determine the character of the benefits parties derive from their activities. (Courts would have to inquire into the pleasure obtained from walking a dog or the need for and importance of driving somewhere.) Because these benefits often seem practically unknowable, attempts by courts to determine appropriate levels of activity would probably quickly land them in the most speculative of realms. Deciding on appropriate levels of care, although by no means an easy task, usually appears to be less problematic (Shavell p. 25).⁴³

In other cases, legal rules are undoubtedly less efficient than Shavell believes because generally courts cannot determine the optimal level of care without simultaneously knowing the optimal activity level. Hence, in circumstances in which the proper due care standard varies as activity level changes, the inability of courts to evaluate the costs and benefits of different activity levels means that their liability rules will generate neither optimal care nor optimal activity levels.

This latter point can be illustrated mathematically with a simple unilateral accident model in which the only factors affecting the accident risk are the activity level and care exercised by the actor. Let s represent the activity level, x be the cost of care per unit of s , $L(s, x)$ be the expected accident loss and $U(s, x)$ be the actor's utility function.⁴⁴ Social welfare is then greatest when the following function is maximized:

$$(I) \quad U(s, x) - L(s, x).$$

⁴² This possibility is recognized in the *Restatement (Second) of Torts*, which reads in part: "A negligent act may be one which involves an unreasonable risk of harm . . . although it is done with all possible care." See *RESTATEMENT (SECOND) OF TORTS* § 297 (1965). Shavell quotes the *Restatement* (Shavell p. 26 n.33).

⁴³ A good illustration of Shavell's point is the case of a taxicab that gets into an accident while cruising in search of passengers. It may well be easier for the court to ascertain whether the cab driver drove safely than to determine whether the social benefits of cruising, as opposed to parking at a cab stand, outweigh the concomitant risk of accidents. But it may be misleading to contend that the failure to evaluate the costs and benefits of cruising versus parking is inefficient. Information is necessarily costly to obtain, and the costs of refining the decision-making in taxi accident cases may outweigh the expected benefits. If the system is performing as effectively as possible, given these information costs, then to call it inefficient is similar to denouncing the "inefficiency" of Federal Express for shipping packages from New York to New Haven via Memphis, Tennessee.

⁴⁴ I use the notations $L(s, x)$ and $U(s, x)$ to indicate that both the expected accident loss and the injurer's level of utility are functions of the variables s and x .

In solving this maximization problem, one must simultaneously determine the optimal levels of care x^* and activity level s^* .⁴⁵ Therefore it is impossible to know the optimal level of care without knowing the optimal activity level.⁴⁶

Although Shavell emphasizes that courts can ascertain the standard of due care without reference to the optimal activity level, this conclusion holds only under certain restrictive conditions. Rather than employing the general utility and loss functions presented above, Shavell adopts the following special case (Shavell p. 41):

$$(2) \quad U(s) - sx - sL(x).$$

In this equation, the first two terms represent the net utility from engaging in the activity at level s while taking x dollars of care per unit of s . The final term represents the expected accident loss, which Shavell assumes to be proportional to the activity level.⁴⁷ When equation (2) is rewritten as:

$$(3) \quad U(s) - s(x - L(x)),$$

it becomes clear that one can minimize the term $x - L(x)$ to obtain the optimal level of care x^* without solving for the optimal value of s^* .⁴⁸ The assumptions crucial to Shavell's demonstration are that an

⁴⁵ To obtain the optimal level of care one must simultaneously solve the two first-order conditions with respect to s and x :

$$(A) \quad \frac{\partial U(s, x)}{\partial s} = \frac{\partial L(s, x)}{\partial s}$$

$$(B) \quad \frac{\partial U(s, x)}{\partial x} = \frac{\partial L(s, x)}{\partial x}$$

Because both equations are functions of s and x , the optimal level of care will vary with the activity level and vice versa.

⁴⁶ Landes and Posner explicitly acknowledge that the optimal level of care may itself depend upon the activity level, although they do not stress the point: "We could have constructed our example in a way that made the optimal size of the firebreak depend on the number of trains run per day" (Landes & Posner p. 41).

⁴⁷ The particular utility function employed by Shavell, $U(s) - sx$, implies that the marginal decline in utility from an increase in the level of care is equal to s . This might be true, for example, if the only cost of driving more slowly were to lengthen the duration of the trip. In the general case defined in equation (1), however, driving more slowly could also result in reduced pleasure in driving. The loss function employed by Shavell, $sL(x)$, implies that, if the level of care is held constant, an increase in activity level causes a proportionate increase in losses. In other words, if the risk of injury is 1/1000 when one drives 100 miles, it will be 1/500 if one drives 200 miles.

⁴⁸ In order to determine the optimal level of care in this case, the partial derivative of equation (3) with respect to x should be set equal to zero. This yields the following first order condition:

$$-s - sL'(x) = 0 \text{ or } 1 = -L'(x).$$

increase in activity level s will affect neither the marginal cost nor the marginal benefit of taking care. Yet we can certainly imagine violations of both conditions. A trucker will presumably find it more difficult to stay alert — that is, more costly to take care — if he has to drive all night as opposed to only a few hours. Furthermore, if the trucker keeps driving through rush-hour traffic, the benefits from heightened care will escalate because of the higher accident risk posed by the greater congestion.⁴⁹

3. *The Relative Importance of the Activity Level/Due Care Distinction.* — The analysis of the previous section leaves us with three possibilities: (1) the courts can determine optimal care but not optimal activity levels,⁵⁰ (2) the courts can adequately ascertain both levels,⁵¹ and (3) the courts cannot ascertain either level without determining both.⁵² While I am prepared to believe that the first may be the most significant category, Shavell gives only a brief reference to the second category (Shavell p. 26) and none to the third.

Indeed, although the distinction between activity levels and levels of care is conceptually interesting, neither book gives a sense of the magnitude of the efficiency loss that is generated by the inability of courts to determine the optimal activity level. In other words, it would be interesting to know whether the inefficiency associated with cases in category (1), where courts fail to give proper incentives to control the activity level, is large relative to other potential sources of

This latter equation merely states that one should increase the level of care to the point that the final dollar spent on x reduces the expected accident losses by exactly one dollar. Because the activity level s does not appear in this condition, we know that the optimal level of care x^* can be determined independently of the optimal activity level s^* (Shavell p. 34).

⁴⁹ For example, if you drive five hours per day, you may be able to avoid rush-hour driving. If you drive ten hours per day, however, you are more likely to hit the rush hour at some point and become exposed to the attendant higher accident risk. Doubling the amount of driving can thus more than double accident risk. In such cases, it may increase welfare to drive more carefully.

⁵⁰ This is the category discussed by Shavell and embodied in equations (2) and (3).

⁵¹ This category includes the set of cases — such as the blasting example discussed above — in which courts succeed in properly determining all factors needed to identify the efficient solution. If all of these factors can be identified in the context of defining the negligence standard, then Shavell's fears about the inadequacy of the liability rules stemming from his activity level/due care dichotomy are eliminated. Indeed, Landes and Posner indicate that:

activity level is occasionally a factor in negligence determinations; and, of particular importance, the cases that have abolished the traditional rule that there is no duty of care to trespassers have made clear that the plaintiff's status of being a trespasser will remain a factor to be considered in deciding whether the plaintiff was contributorily negligent (Landes & Posner p. 93 n.14).

The authors also note that the activity level entered into the determination of negligence in a case in which an individual ran into a burning building to save some horses. The court not only considered whether the individual carefully entered the building, but also asked whether it was appropriate to do so at all (Landes & Posner p. 102).

⁵² This is true in the above example of the truck driver driving through the night and in rush hour.

inefficiency in tort law. Although this factor undoubtedly contributes to the problem of underdeterrence, my guess is that far greater departures from efficiency are attributable to the failure of plaintiffs to press their legitimate claims successfully, because of (1) the inability to identify the tortfeasor or even to recognize the existence of a tort (to which Shavell devotes two paragraphs (Shavell p. 148)),⁵³ (2) the inadequate assets of the tortfeasor (which he discusses briefly), and (3) the cost and hassle of retaining an attorney and prosecuting an action, at times in distant and inconvenient fora (which he never mentions at all).⁵⁴ Moreover, there are probably significant amounts of over-deterrence in the tort system caused by rent-seeking litigation, which both Shavell and Landes and Posner overlook. A final assessment of the relative significance of these various sources of inefficiency will require a major empirical investigation and cannot be resolved by theory alone.

B. Compensation for Nonpecuniary Losses

Just as assumptions about utility functions are important in analyzing the liability issues posed by the due care/activity level dichotomy, they are also critical in evaluating the optimal level of damages. This Part will examine the role of assumptions in the analysis of compensation for nonpecuniary losses. Following this examination, I will consider the role of assumptions in analyzing whether to award punitive damages for intentional torts.

1. *Insuring Against Nonpecuniary Losses.* — Drawing upon the pioneering work of Cook and Graham,⁵⁵ Shavell presents a fascinating analysis that leads him to conclude that plaintiffs should not be compensated for nonpecuniary losses, such as the death of a small child

⁵³ See generally Felstiner, Abel & Sarat, *The Emergence and Transformation of Disputes: Naming, Blaming, Claiming . . .*, 15 LAW & SOC. REV. 631, 652 (1981) (discussing why Americans are "so slow to perceive injury, so reluctant to make claims, and so fearful of disputing — especially of litigating" (footnote omitted)); see also Schwartz & Mahshigian, *Failure to Identify the Defendant in Tort Law: Towards a Legislative Solution*, 73 CALIF. L. REV. 941 (1985) (examining the case in which consumers are harmed by a generic product and do not know which manufacturer produced the particular item they used). Many victims of medical malpractice have no idea that "complications" in the wake of medical treatment are the product of negligence. One study found that only about one-sixth of malpractice incidents give rise to claims. See ABA SPECIAL COMM. ON THE TORT LIABILITY SYSTEM, *supra* note 14, at 11-31; see also COMPENSATION AND SUPPORT, *supra* note 11, at 65 (finding that few victims successfully assert their claims).

⁵⁴ Because most injuries are minor, the costs of suing can easily exceed the expected recovery. Patricia Munch Danzon reports that about 82% of auto accident tort claimants, 77% of product-injury claimants, and 56% of medical malpractice claimants have less than \$1000 of economic loss. P. DANZON, COSTS AND BENEFITS OF THE TORT SYSTEM IF VIEWED AS A COMPENSATION SYSTEM 14, 37, 81 (1977).

⁵⁵ Cook & Graham, *The Demand for Insurance and Protection: The Case of Irreplaceable Commodities*, 91 Q.J. ECON. 143 (1977).

or damage to property of purely sentimental value, because individuals generally will not seek to insure themselves against such losses. Although I was somewhat confused by Shavell's textual discussion of this point, the precision of his mathematical presentation in the appendix greatly clarified the issue (Shavell pp. 245-47).

Shavell begins by determining the level of insurance q that an individual would purchase to protect against an event occurring with probability p that imposes a pecuniary loss of L and a nonpecuniary loss of z . In essence, his question is whether the individual should purchase an insurance policy that, in the event that the loss occurs, awards only L or one that awards L plus some additional monetary compensation for the nonpecuniary loss. Shavell states that the individual's utility function in the event that there is no accident will be $W_n(w - pq)$ and the utility function in the event of an accident will be $W_a(w - pq + q - L)$, where w reflects initial wealth and pq represents the actuarially fair insurance premium.⁵⁶ Given this framework, the expected utility of the individual will be

$$(4) \quad (1 - p)W_n(w - pq) + pW_a(w - pq + q - L).^{57}$$

The nature of the utility function in the event of an accident, W_a , is of critical importance to the determination of the optimal level of insurance, q . Consider, for example, Shavell's most basic case, in which the relationship of the utility functions is captured by the following equation:

$$(5) \quad W_a(w) = W_n(w) - z.^{58}$$

Substituting the right-hand side of equation (5) into the expected utility function (4) yields:

$$(6) \quad (1 - p)W_n(w - pq) + p[W_n(w - pq + q - L) - z].$$

Expected utility is then maximized by differentiating (6) with respect to q and setting this derivative equal to zero, generating the following first-order condition:

$$(7) \quad W_n'(w - pq) = W_n'(w - pq + q - L),$$

⁵⁶ W_n is a different utility function than W_a , because the latter represents a situation in which the individual has suffered the nonpecuniary loss z .

⁵⁷ If p represents the probability that an accident will occur, $1 - p$ represents the probability that an accident will not occur.

⁵⁸ Equation (5) assumes that the source of the nonpecuniary value — be it a small child or a wedding album — provides utility directly without influencing the utility derived from one's monetary wealth. This condition will not always hold. For example, having a small child might cause a parent to gain less benefit from additional wealth because the simple pleasures of staying home with the family would now be valued more highly. Shavell also models the case in which the presence of a child enhances the value of additional wealth, which might, for example, be spent on private schools or a bigger house (Shavell p. 246).

which will be true only when $q = L$. Therefore, in this circumstance, the optimally insured individual will fully insure against the pecuniary loss but will not insure against the nonpecuniary loss.⁵⁹ In other words, an individual would not benefit by trying to protect himself monetarily against the loss of a child, if his utility function was equivalent to that embodied in equation (5).⁶⁰

2. *Implications for Compensation.* — I was tremendously impressed by this presentation. Shavell's analysis is conducted with intellectual rigor and sophistication. Interesting insights into whether one should insure against certain losses such as the death of a small baby were obtained by transforming the question into a particular maximization problem. Indeed, from this demonstration Shavell deduces that the victim of a tort should not be compensated for nonpecuniary losses because a rational individual would not purchase insurance to protect against such losses.

An immediate problem with a rule prohibiting compensation for nonpecuniary loss, however, is that tortfeasors will not have adequate incentive to guard against inflicting such losses.⁶¹ Shavell therefore proposes that, even though accident victims should not be compensated for their nonpecuniary losses, injurers should still be forced to pay a sum equal to such losses as a fine to the state.⁶² This recommendation is consistent with the basic deterrence principle that it is more important for the defendant to pay than for the victim to receive. Shavell does not consider the potential problem that the refusal to award damages for nonpecuniary losses can eliminate the victim's interest in bringing suit, and thus undermine the desired deterrent effect.⁶³ This problem is not insurmountable — a regulatory authority

⁵⁹ If the marginal utility of wealth had declined as a result of the accident, then the party would not fully insure against the *pecuniary* loss (that is, $q < L$); in the opposite case he would overinsure vis-à-vis the *pecuniary* loss (that is, $q > L$).

⁶⁰ David Friedman has made the same point more colorfully in discussing the case of a blinding injury:

There may be no payment large enough to make a blinded man as well off as if the injury had not occurred. . . . Even where it is possible, by enormous payments, to just barely recompense the victim of personal injury, it is not immediately obvious that the creation of blind billionaires living in profligate luxury (and so compensating, with pleasures that large amounts of money will buy, for the lost pleasures that it cannot buy) is a good idea.

Friedman, *What Is 'Fair Compensation' for Death or Injury?*, 2 INT'L REV. L. & ECON. 81 (1982).

⁶¹ Landes and Posner observe that the failure to award damages for nonpecuniary loss results in "a systematic underestimation of damages" (Landes & Posner p. 187).

⁶² One can compute the optimal fine from evidence indicating how much the victim was willing to pay for a slight reduction in the probability that the loss would occur. Thus, evidence that a parent is willing to pay \$100 for an infant car seat that will reduce the risk of death by 1/1000 might support an optimal fine of $1000 \times \$100$, or \$100,000 (Shavell p. 234).

⁶³ Because Shavell's social optimum also requires that the wealth of the injurer be equal in

could seek to ferret out the information generally supplied by victims under a tort system — but the costs of such an approach should be explicitly considered in evaluating Shavell's proposal.

3. *The Compensation Question Versus the Insurance Question.* — The rationale for insurance against monetary losses is that individuals faced with a declining marginal utility of wealth will maximize their welfare by equalizing their income across all states of the world. Although the decrease in utility from paying insurance premiums will be smaller than the decrease resulting from an uninsured monetary loss, Shavell demonstrates that the reduction in utility from insuring against a *nonpecuniary* loss is greater than the increase in utility afforded by the insurance policy in the event the nonpecuniary loss is suffered. But, given Shavell's decision to extract wealth from the injurer on deterrence grounds, one must explore whether higher social benefits will be obtained if injurers compensate victims for nonpecuniary losses (rather than pay the state), even though victims would not themselves insure against such losses.⁶⁴

Two economic arguments suggest that compensating victims may yield the greater social dividend. First, as noted above, paying compensation to victims enhances their incentive to monitor the misconduct of tortfeasors. Such monitoring may be essential if the desired deterrent effect is to be preserved. Second, Shavell's scheme may break down into a system of private bargaining no less costly than tort litigation. Although one advantage of Shavell's scheme is that both injurers and victims will have the correct incentive to reduce nonpecuniary losses because they will both fully bear them, one can imagine a victim who suffered a loss calling for a \$10,000 fine being willing to accept a bribe to forego reporting the loss to the state. Because the injurer would be better off paying the victim anything less than \$10,000 and the victim would be better off receiving anything greater than zero, there is a wide range of bargains that could be struck. Given that the parties are locked into a bilateral monopoly situation, the haggling over such bargains might be costly.

Although awarding damages to the victim might be viewed as merely redistributive, Shavell's position is *not* buttressed by the typical

the two states, the only way that this result can be achieved is if liability insurance is available that will pay the fine to the state on behalf of the injurer.

⁶⁴ Indeed, Shavell fails to address explicitly the question of why his proposal that injurers pay damages to the state but not to the victim should apply only to nonpecuniary damages. His demonstration that a rational individual would insure against pecuniary losses suggests that many victims will be compensated through insurance, which implies that the need to pay tort damages to the victim is, if anything, less compelling in the case of pecuniary losses than in the case of nonpecuniary losses, for which insurance will not be purchased. Shavell's implicit judgment that victims of pecuniary losses will be compensated by their injurers seems only to be essential if victims do not purchase insurance, an outcome that we may not want to encourage. Ultimately, the wisdom of Shavell's proposal, when applied to either pecuniary or nonpecuniary losses, depends upon the relative advantages of public versus private enforcement of tort rules.

argument against wealth transfers — that because they are costly to effect and do not expand the size of the pie, but only change its distribution, they actually reduce total social welfare.⁶⁵ Given Shavell's solution that wealth will be transferred from the injurer to the state through the payment of the optimal fine, no additional cost is entailed in substituting the victim for the state treasury as the recipient of the transfer.⁶⁶ Therefore, although I have benefitted greatly from Shavell's analysis of the problem, I am reluctant to embrace his proposal fully.

C. Punitive Damages for Intentional Torts

At times, no one knows the correct answer to a legal or policy question until it is uncovered through careful economic analysis. At other times, virtually everyone knows the "right" answer, and economists embark on the task of showing that the answer is consistent with economic theory. When conventional economic arguments fail to produce the "right" answer, some analysts treat this outcome as merely the first measure on the bed of Procrustes, and then rush back for another attempt at economic theory. It is in the latter mode that both books struggle gamely with the issue of using punitive damages to sanction intentional torts. In the end, both preserve the "right" answer — society renounces the intentional infliction of harm, even when it seems to generate great benefits for the tortfeasor. Yet once again, the economic analyses depend heavily on assumptions about the nature of the utility functions that some will find problematic.

1. *Socially Illicit Utility.* — Consider the case in which Bill derives sadistic pleasure from kicking his neighbor's dog (Shavell p. 147). In so doing, Bill incurs costs of 10 in stubbing his toes on the dog's face but gains utility of 120 from enraging his neighbor. The damage to the neighbor and his dog is 100. As an intentional infringer of the neighbor's property rights, Bill will have to pay damages of 100. But even so, he will be content to continue kicking the dog because his net benefit will be 10.⁶⁷ Shavell asserts that this result is not optimal because it is "socially illicit" to obtain utility from the infliction of losses on others (Shavell p. 147). In other words, Shavell as the social planner would be willing to decree that certain sources of utility should "not [be] recognized as socially valid" (Shavell p. 146). His solution is to impose, in addition to the 100 in compensatory damages, punitive damages equal to the illicit utility gained by Bill, in this case 120.

⁶⁵ See, e.g., R. POSNER, *ECONOMIC ANALYSIS OF LAW* 436 (3d ed. 1986).

⁶⁶ Noneconomic arguments can also be raised in support of victim compensation. For example, innocent sufferers of nonpecuniary losses may be deemed by many to have strong moral claims to compensation. For interesting experimental evidence supporting this perspective, see Hoffman & Spitzer, *Entitlements, Rights, and Fairness: An Experimental Examination of Subjects' Concepts of Distributive Justice*, 14 J. LEGAL STUD. 259 (1985).

⁶⁷ The net benefit is $120 - 100 - 10$.

While Shavell's sentiment is obviously commendable, it is nonetheless controversial to reach the result of eliminating the incentive to commit intentional torts in this way. If one were to honor individual preferences regardless of their nature, as Judge Posner has always done in his work,⁶⁸ then Bill's behavior would be optimal and the case for punitive damages would collapse.

2. *Socially Optimal Sadism*. — Landes and Posner are quite aware that the economic model has difficulty with the "perplexing" case described above (Landes & Posner p. 157). They present a model of intentional wrongdoing in which the social costs arising from *B*'s infliction of injury on *A* is given by:

$$(8) \quad L(x, y) = p(x, y)(D - G) + A(x) + B(y)$$

where *A* spends *x* to reduce the probability of the injury *p*, *B* spends *y* to increase this probability, *D* is the harm to the victim if the injury occurs, and *G* is the benefit to the injurer from inflicting the injury (Landes & Posner p. 153).⁶⁹ The analysis works well as long as the injurer gains no more from the infliction of injury than the victim suffers — that is, if $G \leq D$. In this event, the social loss is minimized if no resources are spent by *B* trying to inflict pain or by *A* trying to avoid it. But the analysis breaks down if $G > D$, for then it appears that the victim should make no effort to avoid the injury; in fact, the injury, if its infliction is not excessively burdensome on the injurer, will enhance social welfare.⁷⁰

But just as Shavell gropes to avoid this unattractive conclusion, Landes and Posner assert that: "Even [though] the defendant's gain . . . exceeded the plaintiff's loss, the economic argument for liability would still [be] compelling because the injury occurred in a setting of low transaction costs" (Landes & Posner pp. 168–69). This point is valid only to the extent that a market transaction could resolve Bill's desire to inflict pain, which is unlikely to be the case. Is Bill to attempt to bargain with his neighbor for the right to kick his dog? If the neighbor accepts such a proposal, presumably Bill's pleasure would be impaired.

⁶⁸ See, e.g., R. POSNER, *supra* note 65, at 202 (considering the utility that the rapist gains from committing rape); Posner, *The Efficiency and the Efficacy of Title VII*, 136 U. PA. L. REV. 513, 515 (1987) (adhering to the customary law-and-economics assumption that one must consider the utility of discriminators).

⁶⁹ In the case of the sadistic dog-kicker, the probability (*p*) that Bill will succeed in inflicting harm on his neighbor, will be a function of both Bill's expenditures (*y*) to effect this goal and the neighbor's expenditures (*x*) to avoid it.

⁷⁰ Note that the above example in which Bill intentionally kicks the dog is such a case. Expressed in Landes and Posner's formula, $L = D - G + B(y)$, because *p* was assumed to be 1 and *A(x)* was zero. Therefore, $L = 100 - 120 + 10 = -10$, which shows that the behavior is socially optimal because the social loss is negative.

Applying the same reasoning to support the decision in *Alcorn v. Mitchell*,⁷¹ which awarded large punitive damages against a defendant for spitting in the plaintiff's face in a courtroom full of people, Landes and Posner state that the court "implicitly encourag[es] 'transactions' of this type to take place in the market" (Landes & Posner p. 161). But it is unclear, at least to me, that this justification for the *Alcorn* decision makes sense. In Landes and Posner's terms, the court may have been imposing liability for value-maximizing behavior by the defendant, for which no market could provide a suitable substitute.⁷²

The bottom line is that there is no easy way to treat the case of a sadistically motivated tortfeasor within the confines of the traditional economic framework. Shavell's call for imposing punitive damages equal to the defendant's illicit utility, which in effect dresses rights-based considerations in economic garb, does greater violence to the law and economics tradition; in so doing, however, Shavell at least provides an assessment of intentional harm that coincides with our normative intuitions. Landes and Posner remain more faithful to the law and economics tradition by insisting that our absolutist normative intuitions are wrong: the dog-kicker may be engaging in socially optimal behavior. They still preserve the efficiency of the law by concluding that a blanket condemnation of the intentional infliction of harm will save more in reduced costs of decisionmaking than it will lose in terms of deterring what the economic model suggests to be socially desirable behavior (Landes & Posner p. 158). Potential weaknesses in this resolution are that (1) the number of cases in which the utility of the tortfeasor exceeds the disutility of the victim may be greater than they think, and (2) as the *Alcorn* case and the discussion of Shavell's hypothetical case of the sadistic neighbor suggest, Landes and Posner may be too quick to assume that market substitutes exist for the intentional misconduct.

IV. CONCLUSION

I have tried to convey a sense of the economic arguments that are being used to address the fundamental questions of tort law, and to show that readers will find much to enrich and challenge them in these two books. Although virtually any economic theorizing will generate some hostility from within the legal academy,⁷³ one would

⁷¹ 63 Ill. 553 (1872).

⁷² Cf. R. POSNER, *supra* note 65, at 202 (considering rape as an example of an activity without a market substitute); Donohue & Ayres, *Posner's Symphony No. 3: Thinking About the Unthinkable* (Book Review), 39 STAN. L. REV. 791, 792-93 (1987) (reviewing R. POSNER, cited above in note 65).

⁷³ Critics have attacked the assumption of rational utility maximization and have questioned the conformity of the predictions of expected utility analysis with actual decisionmaking under

expect that Landes and Posner, as always, will attract more criticism than Shavell for two reasons. First, their decision to premise their theoretical work on the social goal of wealth maximization (Landes & Posner p. 16), rather than utility maximization, as Shavell does (Shavell pp. 2, 21), is quite controversial.⁷⁴ Second, by maintaining that common law tort rules are efficient, Landes and Posner provide a large target at which those who discern no such singular pattern will gladly take aim. Attacks have already begun from those contending that Landes and Posner have articulated an inadequate positive economic theory,⁷⁵ as well as from those who think that no positive economic theory is possible.⁷⁶

My own view is that common law courts historically were not particularly interested in providing transfer payments to injured litigants and that, because efficiency in its broadest sense is widely perceived to be a very important value, courts are inclined not to tolerate extreme inefficiencies. Landes and Posner deserve considerable credit for identifying the extent to which efficiency considerations are significant in many areas of tort law. On the other hand, their effort to supply efficiency rationales for almost every rule of tort law does not always hit the mark. Many readers will appreciate the jest that, at times, their enterprise can be likened to that of the marksman

uncertainty. See, e.g., Kelman, *Misunderstanding Social Life: A Critique of the Core Premises of "Law and Economics"*, 33 J. LEGAL EDUC. 274, 277 (1983) ("Neoclassical [economic] theory simply does not cope at all with regretted choices or ambivalence (except by misdefining them as information problems); choices made under more or less constraint or duress (except by reducing constraint to resource availability or price effect); or the 'history' of chosen positions.").

⁷⁴ See, e.g., Baker, *The Ideology of Economic Analysis of Law*, 5 PHIL. & PUB. AFF. 3, 47 (1975); Donohue & Ayres, *supra* note 72, at 797 ("[B]y rejecting the goal of utility maximization, Posner is completely at odds with the fundamental tenet of welfare economics."); Kronman, *Wealth Maximization as a Normative Principle*, 9 J. LEGAL STUD. 227, 242 (1980) ("[W]ealth maximization is a bad principle as well as an incoherent one."). See generally *Symposium on Efficiency as a Legal Concern*, 8 HOFSTRA L. REV. 485 (1980).

⁷⁵ For instance, Landes and Posner's model of negligence appears to create a sharp discontinuity in liability at the due care level: an actor who meets the due care standard is liable for no damage whereas an individual who barely falls short of due care will be liable for all damage — even for harm that would have occurred had the injurer been exercising due care. One consequence of this discontinuity is that uncertain actors may use excessive and therefore inefficient levels of precaution to avoid falling on the wrong side of the due care line. For an alternative positive economic theory that attempts to deal with the discontinuity problem, see Grady, *Discontinuities and Information Burdens: A Review of The Economic Structure of Tort Law by William M. Landes and Richard A. Posner*, 56 GEO. WASH. L. REV. 658, 660 (1988) (arguing that courts should "examine the desirability of each untaken precaution individually and then, when they find one that is cost-beneficial, deny liability for any harm that this precaution would not have prevented").

⁷⁶ See, e.g., Balkin, *Too Good to Be True: The Positive Economic Theory of Law*, 87 COLUM. L. REV. 1447, 1489 (1987) (finding "an economic theory of law . . . without the imperfections and maladaptations that evolutionary mechanisms inevitably display [to be] too good to be true").

who shoots arrows at a board and then draws bull's-eyes around the arrows.⁷⁷

A balanced assessment of the economic approach to tort law must acknowledge its value in providing useful insights that go beyond untutored intuition. For instance, Landes and Posner's demonstration of the efficiency of the doctrine prohibiting contribution among tortfeasors illuminates a rule of law that at first glance seems neither efficient nor wise. Moreover, Shavell's arguments about the treatment of nonpecuniary losses should provide compelling evidence that economic modelling can illuminate seemingly intractable questions of public policy.

On the other hand, tort economists occasionally struggle with issues that others unburdened with the baggage of economic training resolve quite readily. Few noneconomists are surprised by the fact that there are so many negligently caused accidents. But this same fact is quite problematic to those who approach the world from the premise of inexorable economic rationality, for, in Shavell's words, "the calculating actor will necessarily, and not just sometimes, be led to take due care" (Shavell p. 291). If the world were populated only by calculating actors, then Shavell's statement implies that no one would ever be negligent. Although both Shavell and Landes and Posner discuss why rational individuals might nevertheless be found negligent,⁷⁸ (Shavell pp. 84-85; Landes & Posner pp. 72-73) the struggle to prove what to many seems obvious — and better explained by motivations other than fully prescient behavior — appears to some as a major weakness of the economic approach, at least as articulated by these authors.⁷⁹ Undoubtedly, Landes and Posner generate similar reactions as they labor mightily to show that the act of intentionally inflicting physical pain on innocent victims should be deemed tortious, even when the injurer enjoys the activity so immensely that the conduct is "socially desirable." That all issues are not so easily explained within an economic framework, however, does not undermine the

⁷⁷ This telling metaphor comes from Balkin. *See id.* at 1461.

⁷⁸ Although a number of reasons are catalogued, no effort is made to evaluate their relative significance. Thus, some determinations of negligence are deemed to be the product of mistake on the part of courts — setting the due care standard inappropriately high — or individuals — underestimating the actual level of due care. Yet these factors must be trivial in comparison to the number of accidents caused by another listed reason — momentary lapses of care. *See Grady, Why Are People Negligent? Technology, Nondurable Precautions, and the Medical Malpractice Explosion*, 82 NW. U.L. REV. 293, 293 (1988).

⁷⁹ My guess is that psychological factors cause many young males both to gain immense satisfaction from engaging in reckless behavior and to underassess drastically the attendant risks. Although the hypothesis would not be favored in Chicago School circles, it can explain the higher accident rates of young men within a basic microeconomic framework in which individuals act consistently with their own personal assessments of costs and benefits, regardless of how inaccurate or bizarre these assessments are.

value of economics in generating rich and meaningful insights in many areas.

This Review has emphasized that the economic analyses of specific tort doctrines frequently rest not only on the large issues of tort economics — such as whether the tort system deters — but also on far more subtle questions, such as the nature of utility functions of drivers, of those suffering nonpecuniary losses, or of those who would inflict intentional wrongs. The existence of natural experiments — such as the adoption of a no-fault insurance system in some states — has made it possible to examine the large issues of the tort system.⁸⁰ However, powerful empirical tests of the more subtle questions that may be essential in setting optimal damages — such as how nonpecuniary losses will affect the marginal utility of wealth — have yet to be conducted.⁸¹ Because the body of empirical work that tries to analyze the large issues of the tort system has yet to generate a broad consensus,⁸² it is doubtful that the answers to these subtler, and far

⁸⁰ This is not to suggest that producing good empirical work is ever easy. For example, Landes and Posner explore some possible explanations for the statutory movement toward laws permitting contribution between tortfeasors and for the trend towards comparative negligence. Their hypothesis is that, because these changes impose efficiency losses on the states that adopt them, these laws should be more prevalent in states that do not value efficiency highly (Landes & Posner pp. 219–22). Landes and Posner suggest that such states may be identified by their per capita public expenditures and taxes, as well as by the progressivity of their state personal income taxes (Landes & Posner p. 221). They then conclude, on the basis of ordinary least-squares regressions, that there is some support for their hypothesis (Landes & Posner p. 222). Although Landes and Posner are careful not to overstate their results, I find their methodology to be seriously flawed. First, it would have been preferable to employ econometric techniques tailored to estimating limited dependent variables rather than to use the linear probability model. See R. PINDYCK & D. RUBINFELD, *ECONOMETRIC MODELS AND ECONOMIC FORECASTS* 274–80 (2d ed. 1981). Second, because all but a handful of states have adopted the two legal rules, there is relatively little power to the econometric test. One might avoid this problem by employing a hazard-rate model that would explore how quickly the states adopted these legislative changes, rather than simply limiting the analysis to a dichotomous examination of those states that have made the change and those that have not. Finally, a hazard model approach would also better deal with a related problem: Landes and Posner use data on state expenditures and taxes in 1982 to explain events such as the movement to a contribution rule in 1940 by Rhode Island and in 1941 by Arkansas, Hawaii, and Maryland. Obviously, if there has been considerable change in the patterns of these proxy variables over time, the relationship that Landes and Posner attempt to uncover would be obscured or distorted. For a discussion of the hazard rate model, see N. TUMA & M. HANNAN, *SOCIAL DYNAMICS: MODELS AND METHODS* (1984).

⁸¹ For those who accept the theoretical model of the decision to purchase insurance, an indirect test would simply demonstrate that, in practice, individuals generally will not insure against nonpecuniary losses.

⁸² One study that illustrates the difficulty of securing consensus is Sam Peltzman's work on the effect of the introduction of government safety regulations in automobiles. See Peltzman, *The Effects of Automobile Safety Regulation*, 83 J. POL. ECON. 677 (1975). The study contains a very interesting theoretical insight — that if government imposes more safety regulation on consumers than they want, they may alter their behavior to assume greater risks. See *id.* at 703–07. Although Peltzman's work is never mentioned by Shavell, Landes and Posner state

more difficult, empirical inquiries will be produced any time soon. In any event, by setting forth their economic theories of tort law in such precise and illuminating terms, Shavell and Landes and Posner have implicitly constructed a research agenda for the systematic empirical inquiry that is needed to reach a final judgment on the profound revolution in tort scholarship that they have nurtured.

that Peltzman "show[s] that drivers respond to a compulsory seat-belt law by driving less carefully" (Landes & Posner p. 10 n.30). Commendably, Landes and Posner do cite two critical studies, one of which concludes that "the intrinsic engineering effects of safety devices appear to swamp the behavioral responses. That result differs substantially from Peltzman's original empirical result." Crandall & Graham, *Automobile Safety Regulation and Offsetting Behavior: Some New Empirical Estimates*, AM. ECON. REV., May 1984, at 328, 330. Significant doubts about the validity of Peltzman's empirical work are raised in MacAvoy, *The Regulation of Accidents*, in *AUTO SAFETY REGULATION: THE CURE OR THE PROBLEM?* 83 (H. Manne & R. Miller eds. 1976), and Nelson, *Comments on Peltzman's Paper on Automobile Safety Regulation*, in *id.* at 63. See also Donohue, *Using Market Incentives to Promote Auto Occupant Safety*, 7 *YALE L. & POL'Y REV.* (forthcoming 1989).