

## Compensation Systems and Efficient Deterrence

Jennifer H. Arlen

Follow this and additional works at: <http://digitalcommons.law.umaryland.edu/mlr>



Part of the [Torts Commons](#)

---

### Recommended Citation

Jennifer H. Arlen, *Compensation Systems and Efficient Deterrence*, 52 Md. L. Rev. 1093 (1993)

Available at: <http://digitalcommons.law.umaryland.edu/mlr/vol52/iss4/10>

This Conference is brought to you for free and open access by the Academic Journals at DigitalCommons@UM Carey Law. It has been accepted for inclusion in Maryland Law Review by an authorized administrator of DigitalCommons@UM Carey Law. For more information, please contact [smccarty@law.umaryland.edu](mailto:smccarty@law.umaryland.edu).

# COMPENSATION SYSTEMS AND EFFICIENT DETERRENCE

JENNIFER H. ARLEN\*

## INTRODUCTION

Most people agree that the tort system is in serious need of reform: victims often cannot afford the expense or the delay associated with pursuing their claims to resolution, successful plaintiffs with serious physical injuries are undercompensated, and potential defendants complain of crushing liability, much of which goes to administrative costs—including attorneys fees—and not to victims. It is not surprising, then, that legal scholars and legislators are increasingly interested in alternatives to the tort system, such as the administrative compensation plans presented in this Symposium.

These proposals—which are intended to supplant the tort system to a considerable degree—represent a dramatic improvement over the current tort system in many respects. Each proposed system would substantially lower administrative costs and would improve the compensation of injured victims. Compensating victims, however, is not the only goal of the tort system. Another central goal is to reduce accident costs by deterring the creation of risks. Accordingly, in order to properly evaluate the proposed compensation systems, it is necessary to consider the likely effect of these proposals on expected accident costs, and to determine whether the present proposals can be reformed to better serve the goal of efficient deterrence, while still retaining their desirable effects on victim compensation.

In examining the impact of the compensation system proposals on deterrence and compensation, the present analysis will focus on two features common to each of the plans presented in this Symposium: (1) the elimination of fault-based liability and (2) the restriction (or elimination) of recovery for nonpecuniary losses in physical injury cases. The present analysis reveals that for some types of accidents these aspects of the proposed compensation systems pro-

---

\* Visiting Professor, University of Southern California Law Center; Associate Professor of Law, Emory Law School. B.A., Harvard University; J.D., Ph.D. (Economics), New York University. I would like to acknowledge the helpful comments of Richard Craswell, Harriet King, Andrew Kull, Paul Rubin, and Gary Schwartz. An earlier version of this paper was presented to the Torts and Compensation Systems Section at the 1993 annual meeting of the Association of American Law Schools.

mote both efficient compensation—that is, efficient risk spreading<sup>1</sup>—and efficient deterrence. In other contexts, however, these features of administrative compensation systems reduce individuals' incentives to reduce risk, resulting in an inefficient increase in expected accident costs. In those situations where adopting a compensation system is inconsistent with the goal of efficient deterrence, the resulting increase in expected accident costs must be considered a cost of adopting the new system—to be weighed against the benefits—in any consideration of whether the plan should be adopted. Finally, this commentary suggests ways of improving each proposal to better serve the goal of efficient deterrence while retaining the relatively low administrative costs and the broad victim compensation characteristic of a compensation system.

Because the deterrent effect of a compensation system depends on the type of accident involved, this Article considers four types of accidents separately. Section I examines accidents between strangers<sup>2</sup> that result from activities in which one person unilaterally imposes a risk of injury on others (“unilateral risk activities”)—such as injuries to local residents resulting from environmental harms—and considers Professor Rabin's suggested compensation system to govern environmental mass toxic tort cases.<sup>3</sup> Section II examines bilateral risk accidents between strangers—accidents in which both potential parties to the accident risk injury—and considers Profes-

---

1. Under economic theory, victim compensation functions largely as a form of insurance against loss; compensation is optimal when it equals the efficient level of insurance coverage or is less than this level and potential victims are able to purchase insurance on the open market. Efficiency is defined for purposes of this Article as Kaldor-Hicks efficiency, under which a reallocation of resources is efficient if the winners *could* compensate the losers; there is no separate requirement that victims be made no worse off than they would have been without the reallocation. This is in contrast with the Pareto criterion, which requires that the reallocation not make anyone worse off, and benefit at least one person. Accordingly, the Kaldor-Hicks criterion does not require full compensation of victims, whereas the Pareto criterion does. For a comparison of Kaldor-Hicks and Pareto efficiency in the wrongful death context, see Jennifer H. Arlen, Note, *An Economic Analysis of Tort Damages for Wrongful Death*, 60 N.Y.U. L. REV. 1113 (1985) [hereinafter Arlen, Note]; cf. Jennifer H. Arlen, *Reconsidering Efficient Tort Rules for Personal Injury: The Case of Single Activity Accidents*, 32 WM. & MARY L. REV. 41, 69-70, 81-84 (1990) [hereinafter Arlen, *Efficient Tort Rules*] (arguing that full *ex post* compensation may not be necessary for efficiency under the Pareto criterion when both potential parties to the accident risk injury).

2. Throughout this Article, the term “strangers” refers to individuals who are not in a market or consensual relationship.

3. See Robert T. Rabin, *Some Thoughts on the Efficacy of a Mass Toxics Administrative Compensation Scheme*, 52 MD. L. REV. 951 (1993). The terms “environmental mass toxic torts” and “environmental hazard cases” are used in this Article to refer to personal injury and death claims resulting from an injurer's contamination of the environment.

sor O'Connell and Michael Horowitz's new no-fault proposal to govern automobile accidents.<sup>4</sup> Section III examines accidents between people in a market relationship, and considers Professor Rabin's compensation system proposal as applied to product-related mass toxic torts. Much of this analysis also would apply to liability rules and compensation systems governing work-related injuries to employees. Section IV also examines accidents between people in a market relationship and considers Professor Weiler's proposal for no-fault medical liability.<sup>5</sup>

### I. UNILATERAL RISK ACCIDENTS BETWEEN STRANGERS

Injuries to community residents caused by a producer's hazardous waste or other environmental pollutant is a classic example of a unilateral risk accident between strangers. Generally, these injuries are governed by the tort system;<sup>6</sup> usually a rule of strict liability applies.<sup>7</sup> Accordingly, this section compares Professor Rabin's proposal with a system of strict or absolute tort liability.<sup>8</sup>

Noting the long delays and huge administrative costs associated with tort liability for mass toxic torts, Professor Rabin considers the possibility of handling these cases under an administrative compensation system.<sup>9</sup> Under Professor Rabin's proposed compensation system, producer liability would be absolute, and each victim's recovery generally would be limited to pecuniary losses (for example,

---

4. Jeffrey O'Connell et al., *Consumer Choice in the Auto Insurance Market*, 52 Md. L. Rev. 1016 (1993).

5. Paul C. Weiler, *The Case for No-Fault Medical Liability*, 52 Md. L. Rev. 908 (1993).

6. One exception is nuclear accidents, which are governed by the administrative compensation scheme established by the Price-Anderson Act, 42 U.S.C. § 2210 (1988). For an insightful critique of this administrative compensation system, see Rabin, *supra* note 3, at 955-57.

7. Most states have adopted the rule of *Rylands v. Fletcher*, L.R. 1 Ex. 265 (1866), *aff'd*, L.R. 3 H.L. 330 (1868) (opinions of Justice Blackburn and Lord Cairns), which holds land users strictly liable for injuries resulting from the escape of abnormally hazardous substances or "non-natural" use of land. See W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS, § 78, at 545-49 (5th ed. 1984). In addition, many activities involving hazardous waste would be considered "abnormally dangerous" for purposes of imposing strict liability under the guidelines established by the *Restatement (Second) of Torts*. See RESTATEMENT (SECOND) OF TORTS §§ 519, 520 (1977) (providing guidelines for defining abnormally dangerous activities subject to strict liability).

8. Following the convention of most of the Law and Economics literature, this Article uses the terms strict and absolute liability interchangeably, while recognizing that the legal definitions of the two terms differ.

9. Although Professor Rabin's focus is on product-related mass injury cases, his proposal explicitly covers mass toxic injuries resulting from environmental hazards. Rabin, *supra* note 3, at 964. Rabin does observe, however, that if mass environmental torts were the only mass tort cases, a compensation system might not be necessary. *Id.*

lost wages and medical expenses). Victims of very severe injuries would be permitted modest recovery for nonpecuniary losses.<sup>10</sup>

Professor Rabin's compensation system would exist alongside the tort system: an injured victim could pursue a claim in one or the other system, but not in both. Under Professor Rabin's scheme, victims would be under considerable pressure to accept the recovery offered by the compensation system, however, because a victim who pursues a tort remedy and loses could end up with no recovery at all.<sup>11</sup> The victims most likely to pursue a remedy in tort would be those with clear claims to recovery—the very victims who should be channeled into a compensation system.

### A. *Strict Liability and Efficient Deterrence*

Because Professor Rabin's suggested compensation system would substitute (to a large extent) a compensation scheme for tort recovery for mass torts, it is important to examine the impact of his system on expected accident costs, and to consider whether the proposal can be improved to deter risk more effectively.<sup>12</sup>

Under economic theory, the optimal level of risk for any particular activity is the level at which the total social cost of accidents is minimized—that is, the level that minimizes the cost of reducing (or eliminating) the risk in question, plus the expected cost to the members of society of the resulting injuries.<sup>13</sup> To deter risk efficiently, society must induce individuals to take the efficient level of care when engaging in a risky activity and to engage in the efficient level of the activity.<sup>14</sup> Standard economic analysis has shown that in the unilateral risk context, strict liability rules can be used to induce both efficient caretaking and efficient activity levels, because strict liability can be employed to force injurers to bear the full social cost

---

10. *Id.* at 971.

11. The tort system would be less attractive to victims than it is at present, because Professor Rabin favors limiting tort damages for nonpecuniary losses, *id.*, rendering the guaranteed recovery under the compensation system all the more attractive.

12. Rabin himself acknowledges that a compensation system for mass torts may not be desirable, but his reasons for concern—and his possible solutions—differ from those presented here.

13. See generally WILLIAM LANDES & RICHARD POSNER, *THE ECONOMIC STRUCTURE OF TORT LAW* ch. 2 (1987); STEVEN SHAVELL, *ECONOMIC ANALYSIS OF ACCIDENT LAW* 5-46, 215-17 (1987); Lewis A. Kornhauser, *Theory and Fact in the Law of Accidents*, 73 CAL. L. REV. 1024, 1034-36 (1985) (discussing the theory of deterrence and applying it to the no-fault system).

14. See A. Mitchell Polinsky, *Strict Liability Versus Negligence in a Market Setting*, 70 AM. ECON. REV. 363, 365-67 (1980); Steven Shavell, *Strict Liability Versus Negligence*, 9 J. LEGAL STUD. 1, 22 n.27 (1980).

of any risks they create.<sup>15</sup> Potential injurers forced to pay the full social costs of the risks that they create face efficient incentives to reduce risk by increasing caretaking and decreasing activity frequency to the efficient levels.

For strict liability to be efficient, however, an injurer's expected liability must equal the total expected social cost of the risk imposed on others. If an injurer's expected liability is less than the costs imposed on others, strict liability will not force the injurer to fully internalize the social costs of her activity; she will exercise too little care and engage in too much of the activity.<sup>16</sup>

In addition, in the real world, liability insurance may undermine the efficient incentives created by strict liability by shifting the costs of risk-taking from the potential injurer to the insurance company, thereby undermining the injurer's incentives to incur costs to reduce risk. Accordingly, a second requirement for absolute liability to be efficient is that liability insurance, if available, must be designed to preserve injurers' incentives to incur costs to reduce risk. This goal is achieved either if injurers "self-insure," or if injurers purchase third-party insurance with risk-based (*e.g.*, experience-rated) premiums and deductibles such that each injurer bears the full cost of her expected risk-taking in the form of higher premiums and direct payments to victims.<sup>17</sup>

Because the ability of strict liability to provide efficient incentives depends substantially on whether damage awards are efficient, it is necessary to determine the appropriate damage awards for accidents resulting in death and physical injury. In order to force injurers to internalize fully the costs they impose on others, damage awards must equal the amount necessary to fully compensate those

---

15. See Shavell, *supra* note 14, at 2-3.

16. See Robert Cooter, *Prices and Sanctions*, 84 COLUM. L. REV. 1523, 1539-40 (1984). It must be recognized that, in the case of environmental harms, the deterrent effect of strict liability is muted by various tort doctrines that limit an injured victim's ability to sue in tort for physical injury resulting from environmental harms. See Don Dewees & Michael Trebilcock, *The Efficacy of the Tort System and Its Alternatives: A Review of Empirical Evidence*, 30 OSGOODE HALL L.J. 57, 108-09 (1992). To the extent that the actual tort system differs from the liability system presented here, the present analysis suggests that reform of the present system should be considered.

17. See Gary T. Schwartz, *The Ethics and Economics of Tort Liability Insurance*, 75 CORNELL L. REV. 313, 337-38 (1990) (arguing that insurance does not eliminate the deterrent effect of liability under the current tort system because many risk imposers are not insured, and those who are insured often have policies with experience-rated premiums, policy limits, and deductibles).

who suffer these costs.<sup>18</sup> It is not necessary—or even desirable—to base the deterrence damage award on the amount necessary to fully compensate injured victims for their losses, however. For deterrence purposes, the cost of an injurer's risky activity is best measured as the cost of the *risk* she imposes on each affected person, not the cost of any resulting injuries. Accordingly, the social cost of the activity is the amount necessary to compensate each person on whom the risk was imposed for the amount of the risk—regardless of whether that person is ever injured. The efficient damage award under this risk-based measure of social costs would be the total cost of the risk to the affected population, divided by the expected number of victims.<sup>19</sup>

### B. *The Deterrence Effect of Rabin's Proposal*

The preceding analysis reveals that Professor Rabin's proposal for a mass tort compensation system based on absolute liability would promote efficient deterrence. In fact, from this standpoint,

---

18. In other words, the proper measure is what economists call the "compensation demand" value of death or injury. See W. KIP VISCUSI, *REFORMING PRODUCTS LIABILITY* 90-92 (1991) (the deterrence measure of life is the amount one must pay people to accept the risk of death); E. J. Mishan, *Evaluation of Life and Limb: A Theoretical Approach*, 79 J. POL. ECON. 687, 693-94 (1971) (the proper method for valuing a risk of death is to determine the amount that compensates each person for the additional risk to which she will be exposed).

19. See Arlen, Note, *supra* note 1, at 1128-34. This risk-based measure of the social cost of risky activities is generally accepted as the appropriate measure of the efficient deterrence damage award. See, e.g., VISCUSI, *supra* note 18, at 89-91. The risk-based measure of the social cost of the injurer's activity is likely to differ significantly from a measure based on the cost to injured victims of the harm suffered because serious physical injuries impact directly on the victim's utility function, changing the victim's valuation of wealth. The most extreme example of this is death: an individual who previously might have placed a very high value on money may well attach no value at all to money paid to her after she is dead. Consider an activity that imposes a 1/10,000 risk of death on a population of 10,000 people, and thus has an expected cost of one human life. If one views the cost of the activity as the expected loss of one life, then the social cost of the activity is probably infinite, because no finite sum paid to the dead individual can compensate her for her loss. This would suggest that the injurer should be deterred completely from engaging in the risky activity unless the activity produces infinite benefits. By contrast, if one views the cost of the injurer's activity as being the cost of the *risk* imposed on the population, the proper measure of the deterrence value of the harm is the amount necessary to compensate each of the 10,000 potential victims for the 1/10,000 increased risk of death, assuming that the money is paid to each potential victim regardless of whether she is injured. In other words, the total social cost of the injurer's risky activity is  $10,000 \times C$ , where 10,000 is the number of people affected by the risk, and  $C$  is the amount that fully compensates each individual for a 1/10,000 increased risk of death. This amount will be finite, and may even be relatively small. The per victim measure of the cost of the injurer's risky activity is the total social cost of the risk divided by the expected number of victims (which here is one). See *id.*

Professor Rabin's system may even be preferable to the current system to the extent that currently various tort doctrines restrict injured victims' ability to recover.<sup>20</sup> Professor Rabin's system also can be expected to have substantially lower administrative costs than the current tort system.

Nevertheless, the beneficial effect of Professor Rabin's proposal on injurers' incentives to reduce risk to efficient levels could be dramatically improved by altering two aspects of his proposal: (1) the provision that potential injurers' liability to the system need not be experience-rated initially,<sup>21</sup> and (2) his decision to exclude most nonpecuniary losses from the system.<sup>22</sup> These two aspects of Professor Rabin's proposal are inconsistent with the requirement for efficient deterrence that potential injurers bear all the costs they impose on others.

Professor Rabin is skeptical about whether experience-rating promotes deterrence, but argues that it may be desirable in order to promote corrective justice. Initially, however, he envisions a flat tax linked to gross revenues.<sup>23</sup> Experience rating is more important than Rabin suggests, however. Proper concern for deterrence requires that each potential injurer's contributions to the system be experience-rated so that each injurer bears more directly the costs of the risks she actually creates. This risk-based liability should begin immediately with contributions to the system being based on the expected cost of the potential injurer's activity, given known risks. Although basing contributions on expected risk certainly would increase administrative costs, this is not a sufficient argument against doing so. Rather, analysts must determine whether the costs of calculating risk-based premiums in the initial phase of the program outweigh the social benefits flowing from the resulting reduction in expected accident costs. Moreover, there probably are relatively low-cost methods for aligning an injurer's contributions more closely with the risks he actually creates: for example, liability to the system could be made to depend on the nature of the potential injurer's business (including the amount and type of waste produced), the potential injurer's accident record, proof of compliance with various safety regulations, and the implementation of an effective compliance program designed to deter improper dumping of waste.

---

20. See *supra* note 16.

21. See Rabin, *supra* note 3, at 977-78.

22. *Id.* at 971.

23. *Id.* at 977-78.



Moreover, and perhaps more importantly, even if the potential injurer's premium payments to the system are "experience-rated," Professor Rabin's system will not deter risk creation efficiently if the amount of each potential injurer's "premium" payment is determined by the expected amount of compensation paid by the system to the injurer's expected victims. For an absolute liability rule to be efficient, an injurer's liability to the system must equal the total cost of the risk the injurer imposes on the affected population.<sup>24</sup> Yet under Professor Rabin's system, each victim's recovery generally is limited to her pecuniary losses. The available empirical evidence suggests that the social cost of activities that risk physical injury far exceeds the total pecuniary losses of each of the expected victims. For example, empirical analysis of the amount workers require to compensate them for risk reveals that blue-collar workers receive an extra \$300-\$600 in wage compensation each year for bearing an average risk of fatality of one in 10,000.<sup>25</sup> This translates into an implicit per victim value of life of \$3-\$6 million. This amount far exceeds the expected pecuniary losses of virtually all potential victims. Accordingly, to provide efficient incentives to deter risk, Professor Rabin ideally would amend his proposal to provide that each injurer's liability to the system be based on the cost of the risks he creates—assuming, of course, that these could be measured—and not on the cost to the system of compensating the victims' pecuniary losses.<sup>26</sup>

This is not to say, however, that Professor Rabin is incorrect in concluding that a victim's recovery should be limited to her pecuniary losses. Such a limitation appears to promote efficient risk-spreading by victims. Economic analysis of insurance reveals that rational individuals do not fully insure against all pecuniary and

---

24. See *supra* text accompanying note 19.

25. VISCUSI, *supra* note 18, at 108-09. This implicit value of life is not, however, the same for all individuals. As one might expect, people select occupations with different risk levels depending in part on their attitudes towards risk and the implicit value they attach to their lives. Workers in high-risk jobs generally are those who attach a lower value to their lives: studies of these workers reveal implicit life valuations of \$1 million or less. Workers in lower risk jobs, by contrast, appear to have implicit life valuations of \$10 million or more. *Id.* at 108. Valuations of nonfatal injuries range between \$12,000 and \$50,000 per injury. *Id.* at 109-10.

26. The calculation of each injurer's liability could be based on the choices the members of the affected population actually have made regarding willingness to accept risk in return for compensation. Such calculations would not be particularly susceptible to fraud and would be easy to make in environmental hazard mass tort cases, where the size of the affected population is relatively easy to determine and the magnitude of the risk imposed is likely to be relatively constant across the affected population.

nonpecuniary losses associated with injury (or death).<sup>27</sup> Thus, full compensation recovery exceeds the recovery level that permits victims to spread risk efficiently.<sup>28</sup> In fact, many analysts argue that individuals only desire insurance coverage for the pecuniary losses associated with a physical injury and do not want any coverage against the nonpecuniary losses.<sup>29</sup> Given that inducing victim risk spreading is the central economic justification for allowing victims to recover,<sup>30</sup> permitting victims to recover more than the optimum amount of insurance coverage is not necessary for efficiency. Nor, in fact, is it desirable to permit this excessive recovery because it shifts resources from healthy individuals to partially-compensated

---

27. See, e.g., SHAVELL, *supra* note 13, at 247-51; Philip J. Cook & Daniel A. Graham, *The Demand for Insurance and Protection: The Case of Irreplaceable Commodities*, 91 Q. J. ECON. 143 (1977) (showing that full insurance coverage for nonpecuniary losses exceeds efficient insurance coverage). The standard condition for efficient risk-spreading is that a potential victim optimally spreads a risk of injury—thereby maximizing her utility—when she allocates her wealth before and after the injury so that she derives the same benefit (utility) from her last dollar of wealth whether injured or uninjured. This condition is efficient because, if the individual derived more utility from wealth after the injury than she did before it, she could purchase additional insurance, thereby increasing her total expected utility by transferring wealth from herself when healthy to herself once injured. See SHAVELL, *supra* note 13, at 186-205, 228-61. The reason full insurance against physical injuries is not efficient is that the marginal utility of additional wealth for a fully insured individual is lower should the accident occur than if the accident does not occur. *Id.* at 228-30. Therefore, a potential victim with full insurance coverage would be better off if she transferred wealth from the injured state to the uninjured state by reducing her insurance coverage. *Id.*

28. See, e.g., SHAVELL, *supra* note 13, at 247-51.

29. Whether the efficient risk-spreading award equals or exceeds the victim's purely pecuniary loss remains a matter of considerable debate. See, e.g., John E. Calfee & Paul H. Rubin, *Some Implications of Damage Payments for Nonpecuniary Losses*, 21 J. LEGAL STUD. 371 (1992) (considering in detail optimal insurance under various assumptions about the effect of an injury on the victim's marginal utility); Arlen, *Efficient Tort Rules*, *supra* note 1, at 73 n.149 (arguing that optimal insurance coverage may include coverage for nonpecuniary losses); Stephen P. Croley & Jon D. Hanson, *What Liability Crisis? An Alternative Explanation for Recent Events in Products Liability*, 8 YALE J. ON REG. 1, 51-75 (1991) (same); George L. Priest, *The Current Insurance Crisis and Modern Tort Law*, 96 YALE L. J. 1521, 1547 (1987) (arguing that individuals only insure for pecuniary losses); Alan Schwartz, *Proposals for Products Liability Reform: A Theoretical Synthesis*, 97 YALE L.J. 353, 367 (1988) (same); VISCUSI, *supra* note 18, at 89-90 (arguing that the optimal amount of insurance coverage may be greater, less than, or equal to the victim's purely pecuniary losses). The limited empirical evidence on the subject seems to support the conclusion that individuals do not insure against the nonpecuniary losses associated with physical injuries. See W. Kip Viscusi & William N. Evans, *Utility Functions that Depend on Health Status: Estimates and Economic Implications*, 80 AM. ECON. REV. 353, 371 (1990). This evidence is not conclusive, however.

30. Deterrence depends on the injurer's expected liability, not the amount of recovery, provided that recovery is sufficient to induce victims to bring suit. Victim risk-spreading, by contrast, depends on the amount of recovery by the victim. See *supra* note 1.

injured individuals who derive less utility from the additional money.

This analysis suggests that Professor Rabin's proposal to limit victims' recovery to purely pecuniary losses probably would promote efficient risk-spreading. Nevertheless, the question arises: how could a compensation system be designed to induce both efficient risk-spreading and efficient deterrence? The answer to this question highlights another advantage of a properly designated compensation system over the current tort system. Under the tort system, a strict liability rule cannot achieve both efficient deterrence and efficient risk-spreading because the damage award necessary to deter risk efficiently precludes risk spreading by victims.<sup>31</sup> A compensation system, if properly designed, can achieve both goals. One way to do this would be to require each injurer to pay an amount equal to the efficient deterrence damage award for the risks she imposed into a common fund.<sup>32</sup> The fund would then award to each victim an amount equal to the efficient risk-spreading award plus litigation expenses. The excess money in the fund could be used to administer the system and to provide a cushion against the possibility that some of those who create environmental risks will not contribute to the system; any additional funds could be distributed to the affected population in lump sum payments.<sup>33</sup> This revised com-

---

31. See, e.g., SHAVELL, *supra* note 13, at 228-61; but cf. Jennifer H. Arlen, *Liability for Physical Injury When Injurers as well as Victims Suffer Losses*, 8 J. LAW, ECON. & ORGAN. 411 (1992) (the conflict between deterrence and risk-spreading may not exist when both parties to the accident risk injury). The magnitude of the problem may be less than it appears even under strict liability. Under the current tort system, a substantial portion of the damage award paid by the injurer goes to people other than the victim—for example, the victim's lawyer. Because deterrence depends on the amount paid by the injurer, whereas risk-spreading depends on the amount received by the victim, these litigation costs increase the possibility that the tort system may be able to achieve both efficient deterrence and efficient risk-spreading, even under a rule of strict liability. This possibility becomes stronger once one recognizes that, under current law, litigation costs generally equal the victim's pain and suffering award, in which case victims in effect are compensated only for their purely pecuniary losses even though injurers pay considerable amounts for pain and suffering. See VISCUSI, *supra* note 18, at 114.

32. If it is difficult to measure the exact amount of the risk each injurer imposes, it might be possible to send the correct incentives to injurers by requiring them to pay into a common fund an amount equal to the deterrence value of life (or injury) every time they injure a victim.

33. The tort system could be reformed to have a similar effect by basing the victim's recovery on the efficient insurance amount, with the injurer paying an additional fine to the state. See, e.g., A. Mitchell Polinsky and Yeon-Koo Che, *Decoupling Liability: Optimal Incentives for Care and Litigation*, 22 RAND J. ECON. 562 (1991); SHAVELL, *supra* note 13, at 233; VISCUSI, *supra* note 18, at 92. Attempts to achieve this goal in the tort context—for example, through damage caps and statutes providing that the state gets a share of punitive damages—have had mixed success in part because many of these statutes have met

pensation system would be consistent with efficient deterrence in that each injurer's liability would equal the costs she actually imposes, and it would promote efficient risk-spreading by victims.<sup>34</sup> Distributing the system's excess funds to the population affected by the risk (instead of awarding excess compensation to injured partially-compensated victims) would promote social welfare by awarding the money to people when they are healthy and derive more utility from it.<sup>35</sup>

Professor Rabin might reject these suggestions because he believes that deterrence should not be heavily considered in the design of a compensation system since it is not a primary goal of liability, particularly in toxic tort cases.<sup>36</sup> Imposing liability on firms does not effectively control risk production, Professor Rabin claims, because many toxic tort risks are unforeseeable at the time they are produced and because corporate managers tend not to take proper account of the long-term consequences of their actions.<sup>37</sup> Moreover, Professor Rabin argues that deterrence concerns are less important in this area because various government regulations exist to deter risk.<sup>38</sup> In fact, many scholars have taken the next step and suggested that deterrence is not a proper concern for either a liability or compensation system, and should be left to government regulation.<sup>39</sup>

The argument that risk control should be left to government regulation cannot be defended either in theory or by the empirical

---

with various constitutional challenges. Most of these challenges would not be available were recovery channeled through a compensation system.

34. In some situations victims' caretaking is also a concern. We need not be particularly concerned about this issue in the mass environmental tort context, however, because usually there is little that potential victims can do to reduce the risk. Moreover, awarding victims only part recovery for their losses provides victims with some incentives to take measures to reduce the risk where such measures are possible.

35. Individuals necessarily would prefer to receive compensation when healthy, instead of when injured, if the compensation system provides them with the efficient amount of insurance coverage should they be injured. See *supra* note 27.

36. Rabin, *supra* note 3, at 977.

37. *Id.*

38. See *id.* (arguing that statutes like CERCLA and RCRA diminish the significance of liability rules in achieving optimal deterrence).

39. For example, throughout his recent book on products liability, Kip Viscusi seems to suggest that it might be preferable to rely on regulation to control product-related injuries. VISCUSI, *supra* note 18, *passim*; see also O'Connell, *supra* note 4. The discussion of the actual behavior of regulatory agencies in Viscusi's book et al., however, provides strong evidence of regulatory failure, not regulatory success. VISCUSI, *supra* note 18, at 122. See Paul Rubin, Book Review, 11 CATO J. 332, 334 (1991) (reviewing VISCUSI, *supra* note 18); see also Jennifer H. Arlen, Book Review, 30 J. ECON. LIT. 2170, 2171-72 (1992) (same).

evidence, notwithstanding the limitations of liability and compensation systems. This argument in favor of regulation is based largely on the idea that regulators have more expertise in the area than the courts, and therefore will make better-informed judgments about what risks are acceptable. But this argument implicitly assumes that legislators and government regulators attempt to enact rules that improve social welfare. Both theory and empirical evidence suggest, however, that we cannot rely on legislatures and administrative agencies to act in the public interest. Public Choice theory argues that legislators—like everyone else—are rational, self-interested utility maximizers.<sup>40</sup> Many legislators, accordingly, act in order to maximize their chances of getting re-elected,<sup>41</sup> not to benefit society at large. This desire to get re-elected causes many legislators to support laws that favor well-organized groups with concentrated influence and wealth, even if, on net, the laws will hurt society as a whole.<sup>42</sup> Thus, we cannot confidently rely on legislators to regulate risk efficiently. Similar political pressures bear on administrative agencies and should leave us wary of relying on these agencies to efficiently regulate risk creation.<sup>43</sup> This conclusion is confirmed by the empirical evidence demonstrating the inability of regulatory agencies to reduce environmental risks effectively.<sup>44</sup> Accordingly, it is far from clear that society can rely on government regulation to deter risk.<sup>45</sup> Deterrence, therefore, should remain a primary goal of

---

40. For a good introduction to Public Choice theory, see DANIEL A. FARBER & PHILIP P. FRICKEY, *LAW AND PUBLIC CHOICE: A CRITICAL INTRODUCTION* (1991).

41. *See id.* at 22. Some legislators also have issues they are particularly concerned about. In focusing on these issues, the legislators still are maximizing their own utility, and can be counted on to pursue efficiency only if efficiency happens to be a goal a particular legislator considers important.

42. *Id.* at 23. The public at large exerts less political pressure than well-organized groups because the members of the public probably are not sufficiently informed to know that particular legislation hurts their interests. Moreover, even if they are informed, members of a large group—such as “the public”—are plagued by collective-action problems, such as the “free rider” problem, that render effective political action costly and unlikely. By contrast, smaller groups with a concentrated stake in a particular piece of legislation (*e.g.*, the pharmaceutical industry) are more likely to be aware of the effect of the legislation on them, and—because of their higher individual stake in the legislation—will be more likely to exert effective political pressure to make their wishes known. These pressures often will result in legislation being enacted which favors well-organized, smaller and well-funded groups over the interests of society at large. *Id.*

43. *See generally id.* at 12-37; Gary T. Schwartz, *Waste, Fraud, and Abuse in Workers' Compensation: The Recent California Experience*, 52 MD. L. REV. 983, 986 (1993) (explicitly recognizing the deleterious impact of interest-group politicking on the design of California's workers' compensation system).

44. *See Dewees & Trebilcock, supra* note 16, at 119-21; *see supra* note 39.

45. Additionally, increasing government regulation would provide legislators with more opportunities to threaten industries with proposed regulation in order to extract

any compensation or liability system.<sup>46</sup>

### C. Conclusion

In conclusion, therefore, this analysis reveals that a modified version of Professor Rabin's compensation system may well be preferable to the tort system: liability is more nearly absolute; his scheme has lower administrative costs;<sup>47</sup> and under a compensation system it is easier to reconcile the competing goals of efficient deterrence and efficient victim risk-spreading. In addition, Professor Rabin's proposal to set each victim's recovery in an amount equal to her pecuniary losses appears to promote efficient risk-spreading. Professor Rabin's system could be greatly improved, however, by making several changes designed to promote efficient deterrence. Each potential injurer's liability to the system—that is, her premiums—should equal the expected total cost of the risk she imposes on others. Moreover, the proposed compensation system should be the exclusive remedy for the mass toxic torts it covers. Specifically, injuries from those hazards where the causal link has been established and the potential injurer's liability to the system is relatively easy to determine should be governed exclusively by the compensation system; victims of these injuries should not have the option to sue in tort. Tort recovery (if any) should be limited to those situations where the hazard from the product in question was not known in advance and, therefore, the potential injurer had not been contributing to the compensation system for the risks created by this

---

campaign contributions from them. See Fred S. McChesney, *Rent Extraction and Rent Creation in the Economic Theory of Regulation*, 16 J. LEGAL STUD. 101, 112-17 (1987).

46. See, e.g., Kornhauser, *supra* note 13, at 1034-36; Michael J. Trebilcock, *Incentive Issues in the Design of 'No-Fault' Compensation Systems*, 39 U. TORONTO L.J. 19, 24-25 (1989). Moreover, an administrative compensation scheme is not justifiable if its only goal is to provide victims with insurance (compensation) because a better mechanism exists for compensating victims: first-party insurance. Administrative costs are lower under first-party insurance than under compensation systems. Weiler, *supra* note 5, at 926 (noting that private health insurance spends approximately 5-10% of each claims dollar on administration, while the administrative costs of compensation systems, such as workers' compensation, consume roughly 20% of each claims dollar). Moreover, unlike a compensation system, first-party insurance provides compensation to all those who are injured, regardless of whether they can attribute their injury to a particular cause, thus providing more uniform compensation. Finally, if compensation is desired because some individuals cannot afford insurance, a lump-sum tax levied on each individual in order to provide such compensation might well be a more effective means of providing insurance than using a compensation system to effectively impose a tax on certain industries.

47. See Weiler, *supra* note 5, at 926-928.

hazard.<sup>48</sup>

Finally, further analysis may reveal that one additional change in Professor Rabin's proposal is desirable. Although basing each victim's recovery on her own pecuniary losses does promote efficient risk-spreading, Gary Schwartz in his contribution to this Symposium has shown that this recovery rule is particularly susceptible to fraud and abuse.<sup>49</sup> Under such a rule, victims have no incentive to minimize their pecuniary losses and medical doctors benefit from providing unnecessary treatment. If the costs of this fraud and abuse are significant, it might well be preferable to abandon an individualized determination of each victim's recovery in favor of a recovery schedule under which each victim of a particular injury receives a fixed amount based on expected pecuniary losses for that victim's injury and income bracket. This rule would undercut the market for fraudulent medical services that Professor Schwartz discusses, and would provide victims with strong incentives to return to the labor force as soon as (and to the extent that is) possible.<sup>50</sup>

## II. BILATERAL RISK ACCIDENTS TO STRANGERS: AUTOMOBILE ACCIDENTS

We now turn to the proposal presented by Professor O'Connell, Michael Horowitz, and Stephen Carroll for an expanded no-fault system to govern automobile accidents. Although both the

---

48. Whether, and to what extent, the victim should be able to recover in tort in this latter circumstance requires a more thorough analysis of the impact of the tort system on injurers' incentives to discover and reveal risks than is possible to perform in this Article. See *infra* text accompanying notes 92-104.

49. See Schwartz, *supra* note 43, at 988.

50. An additional consideration also appears to weigh in favor of a recovery schedule under which each victim who suffers a particular injury receives the same amount. One problem with a system that bases a victim's recovery on her pecuniary losses—including lost income—is that it incorporates into our system for compensating victims the wage discrimination that affects employment markets. Cf. MICHAEL L. BROOKSHIRE & STAN V. SMITH, ECONOMIC/HEDONIC DAMAGES: THE PRACTICE BOOK FOR PLAINTIFF AND DEFENSE ATTORNEYS 123-24, 127 (1990) (noting that recovery for injuries to women are affected by the fact that median annual earnings for women are 60-65% of median earnings for men; damage awards for minorities are similarly affected by earning differentials); Jane Goodman et al., *Money, Sex, and Death: Gender Bias in Wrongful Death Damage Awards*, 25 LAW & SOC'Y REV. 263, 268-69 (1991) (noting that differences in expected lost income result in male decedents receiving substantially larger awards than female decedents); see also Gail Cox, *Juries Place Less Value on Homemakers: Wrongful Death Awards Are Higher for 'Working' Wives*, NAT'L L.J., Sept. 14, 1992, at 1; BROOKSHIRE & SMITH, *supra*, at 96 (noting that "housewives'" work-product is valued based on the \$4.75 or so per hour it would cost to replace their services). Employing a set recovery schedule would reduce the effect on the compensation schedule of any discrimination present in the labor markets.

economic analysis of accidents and most torts scholarship focuses on unilateral risk accidents—in which only one potential party to the accident risks injury—bilateral risk accidents, such as automobile accidents, are the primary source of tort claims for serious permanent injury and death in this country.<sup>51</sup> Professor O'Connell is one of the few torts scholars to recognize the importance of bilateral risk accidents, particularly automobile accidents, devoting much of his career to the issue of no-fault automobile insurance.

No-fault insurance differs from the current tort system in three important respects: (1) it replaces the current fault system with a system eliminating liability in certain circumstances; (2) it substitutes first-party insurance for third-party insurance; and (3) it limits recovery to purely pecuniary losses. Many states now have no-fault insurance laws. These statutes generally preclude victims from suing in tort if their injuries are below a certain amount.<sup>52</sup> Nevertheless, all current no-fault statutes allow victims of automobile accidents to sue in tort if they have suffered serious physical injuries.<sup>53</sup> This enables victims of these accidents to seek recovery for pain and suffering. This feature of current no-fault systems is considered by Professor O'Connell and his co-authors to be one of their central failings. In their contribution to this Symposium, they argue that we should replace the current system with a no-fault system in which potential victims could agree to limit their recovery to purely pecuniary losses in return for giving up the right to sue others in tort for nonpecuniary losses.<sup>54</sup>

The "choice" feature of this new no-fault proposal is interesting and innovative. The problem with the plan is that we can expect it to diminish the deterrent effect of tort liability—especially if (as the authors plausibly assume will happen) the great majority of drivers do in fact opt out of the tort system. Furthermore, motorists will opt out of the tort system if presented with this no-fault proposal even though, when all the effects of a liability system are taken into

---

51. See PETER W. HUBER, *LIABILITY: THE LEGAL REVOLUTION AND ITS CONSEQUENCES* 9 (1988) (noting that traffic accident claims account for about 40% of all tort cases).

52. See generally KEETON ET AL., *supra* note 7, § 84, at 606-08 (discussing the history of states' adoption of no-fault compensation schemes).

53. See *id.* at 607 (discussing the Massachusetts statute, which permits a person to sue in tort only if reasonable medical expenses exceed \$500, or if death or serious bodily injury results). Eight of the 24 states with no-fault statutes do not limit the victims' ability to sue in tort. *Id.* Sixteen do limit this ability, but all permit tort recovery if damages exceed a certain threshold; this threshold invariably will be met by those who suffer serious permanent injury or death. Trebilcock, *supra* note 46, at 47.

54. O'Connell et al., *supra* note 4, at 1026.



account, each individual might well be better off under the current tort system than under the no-fault system. The reason for this is simple. Tort liability provides potential victims with two benefits: it reduces the amount of risk imposed on them by others and it provides a form of insurance coverage against injury. Individuals considering whether to accept Professor O'Connell's pure no-fault alternative will ignore the deterrent effect of tort liability on others, however, because each motorist will recognize that her decision to opt out of the tort system will not have much effect on the expected liability—and thus the risk-taking behavior—of other motorists.<sup>55</sup> Accordingly, each motorist will decide whether to elect the no-fault plan based only on the plan's impact on risk-spreading, assuming that her decision will have no effect on the care and activity levels of other drivers. Consequently, each motorist will opt for no-fault because it is the better option from an insurance standpoint, since it limits coverage to pecuniary losses, which, as was previously established, appears to be the optimal amount of coverage.<sup>56</sup> Moreover, any motorist desiring coverage against nonpecuniary losses can obtain this coverage by opting for no-fault and purchasing first-party accident insurance.<sup>57</sup> Accordingly, in evaluating the "choice" no-fault proposal, it is reasonable to assume that all motorists will select no-fault if it is available. The issue is whether this would be socially desirable.

#### A. *Efficient Rules for Automobile Accidents*

To evaluate the proposed no-fault system, it is necessary to consider the deterrent effects of negligence liability.<sup>58</sup> To induce efficient caretaking and risk-spreading in the bilateral risk context, each person who imposes risk must bear both the cost to herself of this risk and the cost of this risk to others. Previous analysis of auto-

---

55. Moreover, each motorist will recognize that each other motorist can avoid all tort liability for automobile accidents by deciding to opt for Professor O'Connell's no-fault system.

56. See Trebilcock, *supra* note 46, at 52 (suggesting that O'Connell's no-fault plan will be particularly attractive to high-risk drivers and drivers of heavy vehicles who impose more risk on others than on themselves).

57. This would be less expensive than the tort system because the motorist, by electing no-fault, avoids all liability for the nonpecuniary losses of others.

58. Efficient tort liability and damage rules governing automobile accidents are discussed in more detail in Arlen, *supra* note 31 (discussing the importance of distinguishing between unilateral risk and bilateral risk accidents); Arlen, *Efficient Tort Rules*, *supra* note 1 (same); see also Michelle J. White, *An Empirical Test of the Comparative and Contributory Negligence Rules in Accident Law*, 20 RAND J. ECON. 308 (1989).

mobile accidents has established that negligence liability<sup>59</sup> is capable of inducing motorists to take the efficient level of care, because each motorist recognizes that if she fails to take due care and is involved in an accident she will bear both her own costs and those of the other person, if the other person took due care. Accordingly, a negligence liability rule forces each motorist to internalize the full social cost of failing to take due care.<sup>60</sup> Moreover, negligence has a beneficial effect on each motorist's caretaking even though motorists generally are insured. Automobile insurance premiums generally are experience-rated, and moreover, automobile policies generally include deductibles and policy limits, all of which force motorists to bear some of the costs to others of their negligent behavior.<sup>61</sup>

Negligence liability does have its limits, however, even in an ideal world. Specifically, negligence liability rules do not induce efficient activity levels because motorists who take due care do not bear the costs they impose on others each time they drive. Accordingly, motorists do not consider the full social costs of the activity in determining their driving frequency.<sup>62</sup> Negligence liability nonetheless does reduce activity levels below what they would be in the absence of any tort liability, and thus moves them toward the efficient level. Under negligence liability, each motorist recognizes that she sometimes will be liable to others for their injuries.<sup>63</sup> Because in-

---

59. Throughout this section, "negligence liability" will be used to refer to both pure negligence liability and negligence with contributory negligence.

60. See Arlen, *Efficient Tort Rules*, *supra* note 1, at 78-81, 97-100; Arlen, *supra* note 31, at 415-16. Negligence liability will induce efficient caretaking even if the damage award is less than the full social cost of the risk. All that is necessary for efficient caretaking is that the damage award equal (or exceed) the additional cost to the motorist of taking due care divided by the probability of an accident. See Arlen, *Efficient Tort Rules*, *supra* note 1, at 100-03.

61. See, e.g., Richard A. Epstein, *A Clash of Two Cultures: Will the Tort System Survive Automobile Insurance Reform?*, 25 VAL. U.L. REV. 173, 181 (1991); Schwartz, *supra* note 17, at 320-21; see generally SHAVELL, *supra* note 13, at 206-15. The relationship between insurance and deterrence is discussed in more detail above. See *supra* note 31 and accompanying text. For additional arguments why we should expect tort law for automobile accidents to provide motorists with incentives to create fewer risks notwithstanding the presence of third-party insurance, see Trebilcock, *supra* note 46, at 30-33.

62. JENNIFER ARLEN, LIABILITY RULES AND ACTIVITY LEVELS WHEN INJURERS AS WELL AS VICTIMS SUFFER LOSSES 8 (Emory University Law and Economics Working Paper No. 37, 1992); see also Brian Hindley & Bill Bishop, *Accident Liability Rules and Externality*, 3 INT'L REV. L. & ECON. 59, 60-61 (1983).

63. The economic analysis of negligence appears to imply that individuals will never be negligent. Yet we observe negligent behavior all the time. See Christopher J. Bruce, *The Deterrent Effects of Automobile Insurance and Tort Law: A Survey of the Empirical Literature*, 6 LAW & POL'Y 67, 69 (1984) (noting that a United States study of 352 automobile accident

insurance premiums are experience-rated, each motorist treats this expected liability to others as a cost of engaging in the activity, as any actual liability she incurs translates directly into higher premiums.<sup>64</sup> Accordingly, under a negligence liability rule, the cost to each motorist of driving is closer to the actual social cost of the activity than it would be in the absence of tort liability, and thus each motorist's activity level is closer to the efficient level.

In addition, negligence liability with experience-rated premiums has a beneficial impact on activity levels by reducing the number of inefficient—that is, overly risky—motorists below the level that would prevail in the absence of tort liability. In deciding whether to drive, each motorist treats her expected premiums as a cost of the activity. To the extent that premiums force each motorist to bear some of the costs she imposes on others, in addition to her own costs, insurance premiums reduce the number of motorists on the road for whom the benefits of driving are less than the expected social costs. Premiums, in other words, provide socially desirable incentives for high-cost motorists to refrain from driving.<sup>65</sup> Accord-

---

insurance claims found that 90% involved uncontroverted evidence of fault); see Dewees & Trebilcock, *supra* note 16, at 65. One explanation for this, offered by Mark Grady, is that the legal standard for negligence focuses on the action the motorist actually took, not the underlying attention level necessary to ensure that the proper care is taken. Accordingly, an individual's actual care—in the sense of the level of attention devoted to taking due care—under a negligence rule might be efficient, and yet the person might in fact behave negligently because of momentary (but efficient) inadvertence. See Mark F. Grady, *Why Are People Negligent? Technology, Nondurable Precautions, and the Medical Malpractice Explosion*, 82 NW. U.L. REV. 293, 306 (1988); see also Schwartz, *supra* note 17, at 347. In this case, individuals can expect to incur some tort liability even though their level of care (as properly defined) is efficient.

64. See Schwartz, *supra* note 17, at 320-21; see discussion *infra* note 65.

65. See Epstein, *supra* note 61, at 181 (arguing that liability insurance does not eliminate the beneficial effect of the tort system on motorists' activity levels); cf. *infra* note 71 (discussing the impact of higher costs on the poor). It might appear that negligence will not increase the motorist's costs of engaging the activity because, although she will sometimes be liable for injuries caused to another, in some cases the other driver will have been negligent and will have to pay for her costs. This is not the case in physical injury cases. Each motorist recognizes that in automobile accidents sometimes only one party will suffer a serious physical injury, or, for other reasons, only one will be liable and the other will not. Accordingly, each motorist recognizes that there will be circumstances where she will face a positive net liability for the losses of another. Given this, consider the motorists' insurance costs. Were there no tort liability she would only insure against her pecuniary losses because her expected utility is higher if she does not insure against nonpecuniary losses. Under current tort law, however, her expected pecuniary losses include her expected liability for the other motorist's nonpecuniary losses. In other words, tort law transforms the nonpecuniary loss component of a physical injury into a pecuniary loss, which a rational motorist will insure against, paying the premium out of wealth which otherwise would be available to her when healthy. In return for these increased costs, the motorist knows that she sometimes will be compen-

ingly, both the number of motorists and the frequency with which each motorist drives are closer to the social optimum under a negligence liability rule than it would be were there no tort liability.

*B. Analysis of O'Connell's No-Fault Proposal*

We now are in a position to consider the proposed no-fault system. The new no-fault proposal would, in effect, eliminate tort liability for automobile accidents and substitute a system of first-party insurance under which victims would only recover their pecuniary losses.<sup>66</sup> This system would have the desirable effects of reducing administrative costs and rationalizing victim compensation. The cost of adopting this system, however, would be significant: adopting this proposal would decrease motorists' incentive to reduce risk, thereby increasing accident costs. Moreover, it does not appear to be possible to improve the deterrent effects of this compensation system without eliminating its core characteristic of no-fault first-party insurance.

The central problem with the proposal is that it would effectively eliminate each motorist's liability for other motorists' accident costs. As a result, motorists governed by the new system would take insufficient care, leading to increased expected accident costs.<sup>67</sup> In addition, and perhaps of greater significance, replacing negligence liability with no-fault liability would lead to greater activity levels because it would lower insurance premiums: both the number of motorists and the frequency with which each motorist drives could be expected to increase.<sup>68</sup> Given that, under negligence, liability activity levels are too high, the increase in activity levels brought about by replacing negligence liability with the proposed no-fault system

---

sated by the other if injured. Yet, given our assumption that the motorist would not have insured against the nonpecuniary component of the injury were she to suffer it herself, we know that on average the expected cost of the increased premium associated with negligence liability exceeds the expected benefit of any compensation the motorist might receive if injured. See *infra* Appendix (proving this claim). Accordingly, the total expected cost to each individual of becoming a motorist is higher under a negligence rule than it is in the absence of tort liability, and thus activity levels are lower. Given that activity levels would be too high if motorists do not face tort liability because the expected cost of the activity is too low, this increase in the cost of the activity resulting from the use of a negligence liability rule results in a more efficient activity level, although it still will exceed the efficient activity level. See *supra* text accompanying notes 62-65.

66. See *supra* text accompanying notes 55-57.

67. See, e.g., Kornhauser, *supra* note 13, at 1035-36.

68. See *supra* text accompanying notes 62-65. This conclusion is confirmed by the RAND study that the authors rely on in their article.

clearly would be undesirable.<sup>69</sup> The resulting increase in expected accident costs must be treated as a cost of adopting the O'Connell and Horowitz plan.<sup>70</sup> The proposed no-fault plan should be rejected as too costly if the resulting increase in expected accident cost exceeds the resulting reduction in administrative costs.<sup>71</sup>

The authors of the "choice" no-fault proposal do not consider the impact of their system on expected accident costs in the empirical analysis of their plan, however. This is a surprising—and critical—omission. The authors argue that they do not have to consider the effect of no-fault on accident rates because tort liability has no deterrent effect. The empirical evidence does not support this claim, however, but rather demonstrates that adopting the new no-fault plan would increase expected accident costs. The best evidence on this issue comes from Quebec which, in the 1970s, replaced tort liability for automobile accidents with a system of no-fault insurance.<sup>72</sup> One analysis of the effects of the Quebec scheme

---

69. See *supra* text accompanying notes 62-65; accord Trebilcock, *supra* note 46, at 30 (suggesting that movement to a first-party no-fault system is unlikely to entail any reduction in safety); see also Kornhauser, *supra* note 13, at 1039-42 (criticizing the impact of no-fault on deterrence). But see Richard A. Epstein, *Automobile No-Fault Plans: A Second Look at First Principles*, 13 CREIGHTON L. REV. 769, 785-86 (1980) (shifting from negligence to no-fault is likely to have little effect on incentives to create risk). Moreover, the individuals whose activity level would be most likely to increase as a result of adopting the O'Connell plan are those motorists who impose more risk on others than they bear themselves: the high-risk drivers and the drivers of heavy vehicles such as trucks. See Trebilcock, *supra* note 46, at 52.

70. The RAND study, on which Professor O'Connell relies, does not examine the effect of no-fault on expected accident costs in its analysis of whether no-fault will reduce costs. Thus, the RAND study does not address the question of whether no-fault will reduce total social costs.

71. The proposed no-fault plan would appear to have some desirable distributional effects which warrant consideration. Among the people most likely to be dissuaded from driving by a policy favoring greater cost internalization are young urban motorists, who are both less-experienced drivers and driving in more risky areas, and thus are likely to have more accidents. Higher expected liability, accordingly, will discourage many poorer young urban motorists from driving, a disproportionate number of whom will be minorities. In many cities a person who does not own a car is seriously disadvantaged in the job market, however. The impact of insurance on poor young urban drivers accordingly should concern us. See GUIDO CALABRESI, IDEALS, BELIEFS, ATTITUDES AND THE LAW 33-34 (1985). This observation, however, is not in itself a valid criticism of tort liability. Eliminating tort liability is not the best way to assist poor young urban motorists, because it would have too many other undesirable effects. A far better approach would be to retain the deterrent effects of the tort system and find a more direct way to aid those drivers who society decides are in special need of assistance—for example, by providing government subsidized insurance for poor motorists who maintain good driving records.

72. For a description of the Quebec system, see Jeffrey O'Connell & Charles Tenser, *North America's Most Ambitious No-Fault Law: Quebec's Auto Insurance Act*, 24 SAN DIEGO L.

found that bodily injury accidents increased by 26.3 percent a year after the adoption of the scheme, and fatalities increased by 6.8 percent.<sup>73</sup> This report attributed the increase in injuries and fatalities in significant part to the impact of no-fault on activity levels: specifically, the increase in the number of high-risk drivers resulting from the dramatic reduction in the cost of their automobile insurance.<sup>74</sup> The conclusion that Quebec's no-fault plan led to an increase in fatalities was confirmed by a subsequent study, which concluded that the increase in fatalities could be attributed to both the reduction in motorists' care levels and the increase in activity levels resulting from the adoption of no-fault.<sup>75</sup> These studies confirmed that no-fault increases expected accident costs—notwithstanding the fact that no-fault does reduce the number of uninsured drivers on the road.<sup>76</sup> The empirical evidence, accordingly, supports the claim of the present analysis that adopting the "choice" no-fault plan will increase expected accident costs.

Professor O'Connell and his co-authors claim that they need not consider deterrence concerns because the proper goal of a no-fault system is to provide compensation for victims; the goal of deterring risk should be left to government regulation. This argument, however, is not persuasive. First, introducing a no-fault system cannot be justified as a means of providing compensation to injured victims: if victim compensation is an important social goal, there is no particular reason why victims of highway accidents should receive special treatment.<sup>77</sup> Additionally, deterrence con-

---

REV. 917 (1987). For a review of the empirical evidence on no-fault in the United States, New Zealand, and Canada, see Trebilcock, *supra* note 46, at 28-33.

73. Marc Gaudry, *The Effects on Road Safety of the Compulsory Insurance, Flat Premium Rating and No-Fault Features of the 1978 Quebec Automobile Act*, in REPORT OF THE INQUIRY INTO MOTOR VEHICLE ACCIDENT COMPENSATION IN ONTARIO app. (Ontario: Queen's Printer 1988). See also Trebilcock, *supra* note 46, at 28-33 (discussing Gaudry's analysis).

74. Gaudry, *supra* note 73. In a subsequent study, Gaudry confirmed his finding that the no-fault system in Quebec led to an increase in road accidents, but concluded that it was not possible to determine whether this increase was caused by the compulsory insurance requirement and the provision of flat insurance rates (not experience-rated premiums)—both of which reduce incentives to exercise care—or by the elimination of the tort system. Marc Gaudry, *Measuring the Effects of the No-Fault 1978 Quebec Automobile Insurance Act with the DRAG Model*, in GEORGES DIONNE, CONTRIBUTIONS TO INSURANCE ECONOMICS 417, 494 (1992).

75. Rose Anne Devlin, *Liability Versus No-Fault Automobile Accident Insurance Regimes: An Analysis of the Experience in Quebec*, in DIONNE, *supra* note 74, at 499; see also Rose Anne Devlin, *Some Welfare Implications of No-Fault Automobile Insurance*, 10 INT'L REV. L. & ECON. 193 (1990).

76. See Trebilcock, *supra* note 46, at 28-33.

77. See Epstein, *supra* note 69, at 788. See *supra* note 71 (discussing possible solutions to the impact of tort liability on the poor).

cerns cannot be ignored because government regulation is not necessarily an effective mechanism for deterring risk. In general, and for the reasons discussed above, there is no reason to expect that government action will be efficient.<sup>78</sup> Moreover, regulation is a particularly poor substitute for liability in the case of automobile accidents. It is difficult to control care levels of drivers in advance, making *ex ante* regulation of care virtually impossible; and *ex post* regulation through criminal prosecutions is not as effective as *ex post* regulation through civil liability, largely because civil actions are more likely to be brought.<sup>79</sup>

Accordingly, both a theoretical economic analysis and the existing empirical evidence suggest that we should expect a switch from the present system to the proposed no-fault system to result in an increase in the number of accidents because (i) the number of drivers will increase, (ii) the frequency of driving will increase, and (iii) the drivers on the road can be expected to use less care than under a negligence system. This is a significant cost that must be taken into account before deciding whether to adopt such a system. In determining whether the new no-fault proposal should be adopted, it must be acknowledged that the system has significant benefits—lower administrative costs being the most notable. The question is whether the costs of the system exceed the benefits. This is a question that, at present, the proponents of the system are not in a position to answer because their analysis ignores the effect of their system on expected accident costs. Accordingly, prudence dictates that this proposal should not be implemented until its costs and benefits have been fully analyzed. Should empirical analysis reveal that the new no-fault system's costs exceed its benefits, it should not be implemented—even though failing to implement the

---

78. See *supra* text accompanying notes 40-46.

79. See Kornhauser, *supra* note 13, at 1041. This conclusion is consistent with the available empirical evidence on the effects of criminal and regulatory alternatives to the tort system. This evidence suggests that most of these regulations—with the exception of mandatory seatbelt laws, highway design measures, and car design—have had little effect on the traffic accident rate. See Dewees & Trebilcock, *supra* note 16, at 74-77; see also Epstein, *supra* note 69, at 787 (arguing that criminal laws governing motorists are not adequately enforced, and consequently, tort liability provides valuable additional incentives to reduce risk); Adam Gelb, *Georgia's Drunk Driving Scandal: The State Can't Get Drunks Off the Road*, ATLANTA J. & CONST., Nov. 3, 1991, at A1 (noting that despite stringent drunk driving laws, Georgia has tens of thousands of repeat offenders, and that judges do not take away drivers' licenses even when the driver has 15 drunk-driving convictions).

proposal means living with high insurance rates.<sup>80</sup> High insurance rates reflect, in large part, the enormous costs to society of driving an automobile; reducing insurance rates at the expense of increasing the accident rate is not desirable. Should society conclude that for some people—for example, the poor—current insurance rates impose an undue burden, this problem can better be remedied by programs aimed specifically at low-income drivers, than by a general reduction in liability that disproportionately benefits high-risk drivers.<sup>81</sup>

### III. INJURIES TO CUSTOMERS AND WORKERS

Tort liability generally, and recovery for nonpecuniary losses in particular, stands on a very different footing when we shift our focus from accidents between strangers to accidents between people who

---

80. Should we chose to rely on negligence liability rules to govern automobile accidents, the rules governing the defendant's liability and the victim's recovery would need to be reformed. If negligence rules function perfectly, then the optimal system would base damage awards on the amount necessary to induce efficient deterrence—which, under a negligence rule, implies that recovery should be based on the cost of taking due care (divided by the probability of being held liable), and not on the cost to an individual victim of being injured. See Arlen, *Efficient Tort Rules*, *supra* note 1, at 100-03. If driver inadvertence is a serious issue, however, and negligence liability in effect functions as a rule of strict liability, see Arlen, *supra* note 31, at 418-19, then the damage award should be based on the social cost of the risks each motorist imposes on others, not on the cost of care. A social cost-of-harm award also would be preferable from the standpoint of reducing motorists' activity levels toward the efficient level. Moreover, neither award would depend on the individual characteristics of any particular victim, and thus, would not be subject to the same problems of fraud and abuse that Professor Schwartz has found currently plagues nonpecuniary loss awards under compensation systems. See Schwartz, *supra* note 43.

Whichever award is used, the damage award could be greater than or less than any given victim's pecuniary loss, which presents the possibility that damage awards will preclude efficient risk-spreading by victims. See *supra* text accompanying notes 27-35. In the bilateral risk context, however, this possibility is less likely than it might first appear, because under negligence liability for bilateral risks the damage award that effects caretaking decisions exceeds the award that affects risk-spreading decisions. Accordingly, in the bilateral risk context, it may be possible to induce both efficient caretaking and efficient risk-spreading. See Arlen, *supra* note 31, at 422-24 (presenting this analysis in detail). Moreover, it is possible to provide optimal incentives by providing the victim with compensation (net of costs) equal to her pecuniary losses, and having the defendant pay an additional amount to the state (which could be used to improve roads or to provide compensation for indigent victims). See, e.g., Michael Spence, *Consumer Misperceptions, Product Failure and Product Liability*, 64 REV. ECON. STUD. 561 (1977) (suggesting this approach); Polinsky & Che, *supra* note 33, at 563 (same); SHAVELL, *supra* note 13, at 233 (same); but see *supra* text accompanying notes 49-50.

81. See *supra* note 71. Similarly, a possible partial solution to the uninsured motorist problem is to increase the costs of being uninsured by increasing the resulting fines and by precluding those motorists who drive without insurance from seeking tort recovery from other motorists.



have a consensual, or market, relationship—such as doctor-patient, manufacturer-consumer or employer-employee. Accordingly, the legitimacy of compensation systems in “nonstranger” cases—such as Professor Rabin’s compensation system as applied to mass product-related torts—must be analyzed separately from proposals for compensation systems for injuries resulting from accidents between strangers.

The present analysis reveals that there is much to recommend in Professor Rabin’s proposal to consider bringing products liability cases under an administrative compensation scheme. Professor Rabin’s compensation system would lower administrative costs. Moreover, limiting each victim’s recovery to her pecuniary losses would promote efficient risk-spreading by victims. The central problem with Professor Rabin’s proposal as applied to product-related injuries, however, is that it is not designed to provide producers with efficient incentives to reduce risk. Professor Rabin’s system does not ensure that producers’ financial contributions to the compensation system on the risks they create: initially, producers’ contributions would not be experience-related, and basing contributions on expected liability to victims will not provide adequate incentives to reduce risk. Furthermore, Professor Rabin does not address the impact of liability on producers’ incentives to obtain, and to reveal, information about product risks. Given that this may be the most important impact of the tort system on product markets, we should be reluctant to adopt any proposal before the impact of liability on information acquisition and dissemination has been addressed.

#### *A. Mass Tort Recovery as an Insurance Market*

Operating on the assumption that tort liability does not effectively deter the risks of mass torts, Professor Rabin has designed his system around the goal of victim compensation. Interestingly, Professor Rabin’s argument that deterrence does not matter is consistent with some of the economic analysis of products liability literature, although he has his own reasons for rejecting deterrence concerns. Economic analysis suggests that, in certain circumstances, deterrence is not a valid concern of products liability law because market forces will ensure both that manufacturers engage in optimal care in manufacturing their products and that the activity level (the quantity produced) is efficient.<sup>82</sup> This literature con-

---

82. A manufacturer that produces a product which imposes risk on its purchasers will take into account the cost to consumers of this risk even if it is not liable in tort for

cludes, as does Professor Rabin, that the central function of allowing victims to recover for product-related injuries is to provide them with compensation. This compensation is best viewed as a mandatory insurance policy because manufacturers pass their expected liability costs on to consumers in the form of higher product prices.

Ironically, eliminating deterrence as a central goal of allowing recovery for product-related injuries effectively eliminates the most persuasive argument for allowing such recovery: absent a deterrence rationale, both products liability and a mass tort compensation system are very difficult to justify. First, if Professor Rabin's goal is simply to compensate victims by providing them with mandatory insurance, there is no particular reason to set up an elaborate compensation system. Most potential victims can purchase first-party insurance against such losses, and a general system of social insurance could take care of the rest. This system would, arguably, be more equitable than the one proposed by Professor Rabin because it would not favor victims of product-related injuries over other victims, and it might well be less expensive because the administrative costs of first-party insurance are considerably lower than the administrative costs of a compensation system.<sup>83</sup> Accordingly, a mass tort compensation system—and products liability—can be justified on compensation grounds alone only if it can be shown that the system is a significantly more effective mechanism for providing insurance than is either first-party insurance or a broader government-provided social insurance policy. This is not the case.

Previous analysis of this issue reveals that products liability is not a good mechanism for providing insurance.<sup>84</sup> Most of the problems with products liability as an insurance market also would

---

consumers' losses, as long as consumers are perfectly informed and rational. This is because the consumers will treat the risks of the product as part of the effective product price. Accordingly, in an effort to minimize the cost of the product, manufacturers will take the efficient level of care. See generally SHAVELL, *supra* note 13, at 5-46. Similarly, market forces will result in the manufacturer engaging in the efficient level of the activity. This is because each consumer will consider the effective cost of the product price to be the actual product price plus his expected accident losses associated with the product. All those consumers whose willingness-to-pay exceeds this amount will purchase the product; those who do not derive sufficient benefit from the product will not. Thus, market forces will result in efficient activity levels. See *id.* See *infra* text accompanying notes 92-117 (discussing efficient deterrence when markets are not perfect).

83. See Weiler, *supra* note 5, at 925-926 (noting that first-party health insurance spends between 5 and 10 cents of each claim dollar on administration, whereas no-fault workers' compensation spends roughly 20 cents of each claim dollar on administration).

84. This issue has been analyzed in detail elsewhere, and thus will not be discussed in great depth here. See, e.g., VISCUSI, *supra* note 18, at 170-72; Richard A. Epstein,

plague an administrative compensation scheme designed to provide insurance. For example, one justification for providing mandatory insurance through a compensation system is that consumers may underestimate the risk of accident.<sup>85</sup> In this situation, potential victims faced with accurately priced insurance coverage may well view the price of insurance as too high, because they perceive their expected accident losses to be less than they are in fact.<sup>86</sup> This problem, to the extent it exists,<sup>87</sup> is not eliminated by providing mandatory insurance through a compensation system, however. Any consumer who would refrain from purchasing first-party insurance because she underestimates the product risk—and therefore overestimates the cost of the coverage—also would overestimate the cost of the insurance component of the product price under a compensation system. Accordingly, the demand for the product still would be below the efficient level.

Moreover, Professor Rabin's system would only exacerbate the market distortions produced by mandatory insurance because, under his system, manufacturers' liability to the system is not based on the expected social cost of the product's risk. Initially, under his system, each manufacturer will be assessed a flat amount. Under such a system, the "insurance premium" component of the price of many lower-risk products would exceed the premium justified by the resulting expected accident costs. Similarly, the "insurance premium," and thus the product price, of high-risk products would be

---

*Products Liability As An Insurance Market*, 14 J. LEGAL STUD. 645, 669 (1985); Priest, *supra* note 29, at 1525.

85. Imperfect consumer risk-perception is not the only problem plaguing insurance markets. Two other problems with first-party insurance are "adverse selection" and "moral hazard." Providing mandatory insurance through either the tort system or through a compensation system does not eliminate these problems, however, but only exacerbates them. For a more detailed discussion of the impact of adverse selection and moral hazard on the effectiveness of products liability as an insurance market see Richard A. Epstein, *The Legal and Insurance Dynamics of Mass Tort Litigation*, 13 J. LEGAL STUD. 475, 495-506 (1984); Priest, *supra* note 29, at 1553-63; see also Janusz A. Ordover, *Products Liability in Markets with Heterogeneous Consumers*, 8 J. LEGAL STUD. 505, 519 (1979) (considering the problem of selection of liability rules when consumers of a product differ with respect to some relevant characteristic). In fact, the moral hazard problem—that potential victims fail to exercise due care if they are fully insured because they bear all the costs of care and receive none of the benefits—would be heightened under Professor Rabin's compensation system because his proposal would eliminate the last vestiges of contributory negligence as a defense.

86. See Kornhauser, *supra* note 13, at 1033 n.22.

87. The psychological evidence on risk perceptions suggests that people may over- or under-estimate risk of injury to themselves. VISCUSI, *supra* note 18, at 64-65; Dewees & Trebilcock, *supra* note 16, at 67; see Daniel Kahneman & Amos Tversky, *Judgment Under Uncertainty: Heuristics and Biases*, 185 SCIENCE 1124 (1974).

too low. Accordingly, consumers would buy less than the efficient amount of low-risk products and more than the efficient number of high-risk products. The compensation system would, consequently, undermine the efficiency of the product market, resulting in too many high-risk products. The other problems associated with first-party insurance—for example, moral hazard and adverse selection—also would plague Professor Rabin's compensation system.<sup>88</sup>

Furthermore, the case against both products liability and mass tort compensation systems as mechanisms for providing victims with insurance becomes even stronger once the special features of insurance for mass product-related torts are considered. Many mass tort product-related injuries involve risks that were unforeseen at the time the product was made, as well as long latency periods between the time of exposure and the time of injury. This uncertainty makes it difficult to determine the proper amount to charge for "insurance" under either the tort system or Rabin's compensation system. Either overcharging or undercharging for the insurance provided by the manufacturer will distort the market for the product and lead to an inefficient activity level. Moreover, the long latency period may lead to a breakdown of the market altogether: a long lag between the time at which the premium is paid and the time at which the risk is realized may sever the link between the product price and the insurance provided to such an extent that the products liability (or compensation system) insurance market will not be viable. A manufacturer may not have sufficient information to charge the original consumers the correct amount to cover its costs; it cannot charge current consumers an extra sum to cover its liability to the earlier consumers because current consumers will not be willing to pay for insurance provided to someone else.<sup>89</sup> By contrast, long latency periods will not create the same problem for first-party insurance markets because each year the potential victim purchases insurance for injuries that may occur during that year. Accordingly, both potential victims and the insurance company need only be able to estimate the victim's risk of injury for that next year. As information about a product's risks becomes known, both potential victims and the insurance company will be better able to price the value of insurance coverage against that risk.<sup>90</sup> Accordingly, first-party insurance, with

---

88. See *supra* note 85; see also *infra* note 90.

89. See, e.g., VISCUSI, *supra* note 18, at 158-60.

90. See, e.g., VISCUSI, *supra* note 18, at 158-60; Rabin, *supra* note 3, at 977. In addition, a critical element of a functioning insurance market is that the risk the insurer has insured must be independent. Insurers are able to stay in business by collecting premi-

all its problems, may be preferable to both products liability and compensation systems as a mechanism for compensating victims.<sup>91</sup> The case for a mass tort compensation system—to the extent one can be made—must be based, therefore, on the premise that deterrence is a central goal of such a system, and the system must be designed to serve this goal.

### B. *Mass Tort Recovery and Deterrence*

Manufacturer liability to a compensation system in fact may be justified as a method of efficiently deterring risk creation. Although, in theory, market forces provide manufacturers with efficient incentives to reduce risk when consumers are perfectly informed and perfectly rational, markets will not provide manufacturers with the proper incentives to reduce product risks when consumers are uninformed about the risks or do not properly perceive the risks they have been informed about. In these situations, manufacturer liability—either through a compensation system or through products liability—may be justified on deterrence grounds in order to induce manufacturers to inform consumers optimally about product risks and/or to circumvent the market failure resulting from consumer misperceptions of product risks. Employing a compensation system to provide manufacturers with efficient incentives to reveal, and/or reduce, product risks would, however, require a number of important changes in Professor Rabin's proposal. Designing a compensation system properly also would require considerably greater understanding of product (and information) markets than exists at present.

For markets to function effectively, consumers must be fully in-

---

ums from many different people on the expectation that not all of them will be injured. Thus, not all insureds will collect. In the products liability context, however, the losses produced by product failure often are not independent. For example, in the case of a drug, the risk of most concern to a manufacturer is that, over time, the manufacturer will discover that the drug caused serious injury to some of its consumers. This is not an independent risk. If this risk is not realized, no consumers will require compensation. If it is realized, then hundreds of the drug's consumers may require compensation, if not all of them. In this situation, the "premiums" collected may well be insufficient to cover the expected losses. To avoid this problem, the manufacturer will have to purchase insurance, thereby introducing an additional level of administrative costs. See Epstein, *supra* note 84, at 649-50 (discussing the concept of risk diversification). First-party insurance by customers is preferable in this context.

91. To the extent that some people cannot afford insurance, providing low-income persons with government-funded coverage might well be preferable to implementing a compensation system that provides all people with mandatory insurance, but only for products-related injuries.

formed of product risks.<sup>92</sup> This in turn requires that products be tested properly to determine the specific risks associated with each product,<sup>93</sup> and that consumers be informed about material product risks—both risks that the manufacturer knew at the time of sale and risks that the manufacturer learns of after the sale. Markets alone may not be sufficient to provide these incentives, however. Manufacturers may not have adequate incentives to discover and reveal product risks if they expect that consumers do not know the possible risks and will not discover the risks on their own.<sup>94</sup> Manufacturers do not benefit from proving that their product is free from a risk—if indeed it is—if consumers do not expect the product to be risky in the first place.<sup>95</sup> Accordingly, imposing liability on manufacturers may be necessary to provide them with the requisite incentives to test products properly and to reveal to consumers information about the risks of products currently on the market as that information becomes available.<sup>96</sup>

---

92. It is not necessary that all consumers be perfectly informed in order for markets to provide the right incentives. What is necessary is that the marginal consumers—those that determine the market clearing price—be fully informed.

93. Efficiency does not require that products be tested for every possible risk. Testing should be done when the expected benefit of the test (in terms of the probability of finding a risk and the expected injuries prevented as a result) equals or exceeds the expected cost of the test.

94. The current debate over whether certain products—e.g., Bendectin, DES, Breast Implants, Agent Orange, pesticides—harm consumers, and if so, what harm and to which persons, provides some insight into how difficult it may be to accurately attribute a victim's injury to the proper causal source. *Cf.* *Daubert v. Merrill Dow Pharmaceuticals, Inc.*, 113 S. Ct. 2786 (1993).

95. The expectation that consumers will not learn of the risk over time also mutes market incentives to the extent that reputational concerns might otherwise cause a firm to test its products to ensure that they do not present unnecessary risks.

96. *See* Walter Oi, *The Economics of Product Safety*, 4 BELL J. ECON. & MGMT. SCI. 3, 26 (1973) (suggesting that consumers cannot get enough product information because sellers lack incentives to produce such information). It might appear that determining which risks to test for, and reveal, is a task better performed by the Food and Drug Administration (FDA) and other regulatory agencies. These agencies cannot be relied on to provide the requisite incentives to obtain information about risks, however, because regulators are subject to capture. *See supra* text accompanying notes 40-46. The costs of relying on regulatory agencies to control product risks are particularly great for those who are not members of an effective interest group—women, fetuses, infants, Blacks, and American Indians. For example, although the FDA requires pharmaceutical companies to test their drugs extensively before they are marketed, the FDA generally has not challenged the industry's practice of excluding women of child-bearing age from most drug trials, even when the drugs—such as common heart medications—will eventually be marketed to such women. For years, Lupron was widely prescribed to treat infertile women even though the only safety studies had been conducted on men with prostate cancer. To date, the National Institutes of Health have commissioned only one drug trial on women, and that study was expressly designed to examine only post-menopausal women. Similarly, infants and minorities are not adequately protected by the cur-

To provide the requisite incentives to test products and reveal information, however, a compensation system must be designed with this goal in mind. Professor Rabin has not attempted to do this, perhaps in part because at this point far too little is known about the effects of liability on information acquisition and dissemination to serve as the basis for designing an efficient system.<sup>97</sup> But this lack of information in and of itself suggests that it may not be desirable to implement a mass tort compensation system at present.<sup>98</sup>

Moreover, the analysis that has been done suggests that a central feature of Rabin's system—the provision of absolute manufacturer liability—may be inconsistent with providing manufacturers with efficient incentives to reveal information. Specifically, absolute liability may undermine manufacturers' incentives to warn consumers about risks the manufacturer discovers after the product has been marketed.<sup>99</sup> Under a compensation system based on absolute liability, warning consumers of product risks has two opposing effects on a manufacturer's expected costs. On the one hand, warning future consumers of product risks reduces a manufacturer's expected liability—that is, future premiums—by reducing the expected number of consumers who will use the product. On the other hand, issuing a warning may increase the manufacturer's expected liability by increasing the number of existing consumers who

---

rent federal drug regulation. See ROBERT L. HOTZ, *DESIGNS ON LIFE* (1991); Robert L. Hotz, *A Risky Fertility Revolution*, ATLANTA J. & CONST., Oct. 27, 1991, at D1. Given the federal government's reluctance to even obtain the appropriate data on the risk of products for members of various groups, the threat of tort liability may serve as a crucial incentive for companies to conduct the necessary tests and issue the appropriate warnings. Arlen, *supra* note 39, at 2171-72; cf. Dewees & Trebilcock, *supra* note 16, at 101-04 (arguing that the empirical evidence suggests that regulation has not proven to be an effective way to reduce product-related injuries).

97. Among the only articles to address the issue of the impact of liability on incentives to obtain and reveal information about risk include SHAPELL, *supra* note 13, at 77-79, 93; Alan Schwartz, *Products Liability, Corporate Structure and Bankruptcy: Toxic Substances and the Remote Risk Relationship*, 14 J. LEGAL STUD. 689, 695-705 (1985); Steven Shavell, *Liability and the Incentive to Obtain Information About Risk*, 21 J. LEGAL STUD. 259 (1992); see also Jennifer Arlen, *When Should Corporations Be Criminally Liable*, 23 J. LEGAL STUD. (forthcoming 1994) (examining the impact of strict criminal liability on corporations' incentives to learn about crimes committed by their employees); Richard Craswell, *Precontractual Investigation as an Optimal Precaution Problem*, 17 J. LEGAL STUD. 401 (1988); Richard Craswell, *Performance, Reliance, and One-Sided Information*, 18 J. LEGAL STUD. 365 (1989).

98. See *supra* note 12.

99. For example, manufacturers may learn of these risks through law suits. Also, pharmaceutical manufacturers may learn about risks through reports to them (and to the FDA) by doctors about side-effects that doctors notice in their patients.

file claims with the compensation system because, without the warning, some consumers would not discover that their illness resulted from their use of the product.<sup>100</sup> Similarly, some consumers whose illness did not result from the product may successfully use the warning (and admission of risk) as evidence that the product produced their harm.<sup>101</sup> If this latter effect is sufficiently strong, manufacturers may decide not to reveal information of product risks as they learn of it in an attempt to avoid liability—thereby increasing the amount of harm produced by the product.<sup>102</sup> If this should prove to be a serious concern, Professor Rabin should evaluate the merits of employing a more fault-based standard, under which manufacturers are not liable to any consumers who purchased the product after the manufacturer issued an adequate warning (provided the product had been adequately tested).<sup>103</sup> Certainly, more attention should be given to the question of whether Rabin's system will provide manufacturers with the requisite incentives to test products and reveal information about risks before any attempt is made to implement a mass toxic tort compensation system.<sup>104</sup>

Providing manufacturers with incentives to discover and reveal information about product risks is not the only way in which manufacturer liability may promote efficient deterrence. Manufacturer liability also may be necessary to induce efficient deterrence when product risks are known if the market does not function properly because consumers misperceive the risks.<sup>105</sup> Empirical evidence suggests that consumers do not always properly evaluate known risks, and in fact underestimate certain risks, particularly those of

---

100. Cf. Arlen, *supra* note 97. This effect will be particularly strong if the manufacturer can reasonably expect that some previously valid claims will not be valid after the passage of a sufficient period of time—for example, because the statute of limitations may run.

101. See Calfee & Rubin, *supra* note 29, at 392-98 (discussing the problem of liability for risky products that reduce the risk of disease).

102. Cf. Arlen, *supra* note 97.

103. Of course, this problem could be eliminated by using a system in which insurance is not experience-rated. This is not a desirable solution, however, because insurance that is not experience-rated undermines manufacturer's incentives to take efficient care in producing their products, and results in consumers being charged a product price which does not correspond to the product's costs, thereby resulting in inefficient activity levels. See *infra* text accompanying notes 105-108.

104. See *supra* notes 96, 97.

105. See, e.g., Victor Goldberg, *The Economics of Product Safety and Imperfect Information*, 5 BELL J. ECON. & MGMT. SCI. 683 (1974); Oi, *supra* note 96 (justifying enterprise liability based on systemic consumer misperceptions); Spence, *supra* note 80 (same).



more common injuries.<sup>106</sup> When consumers underestimate a product's risks, they will underestimate the full cost to them of purchasing the product. Accordingly, if manufacturers are not liable, consumers will purchase too much of the product; this excessive activity level in turn leads to excessive risk.<sup>107</sup> Under these circumstances, imposing absolute liability on manufacturers promotes efficient deterrence because manufacturers will include their expected liability in the product price. If the manufacturer's expected liability equals the expected social cost of the risks created by each product, the product price will equal the total social cost of the product (including the product's risk) and consumers will make the correct decision about how much of the product to purchase. The activity level therefore will be efficient.<sup>108</sup>

The liability system that induces efficient activity levels differs in significant respects from the one proposed by Professor Rabin, however. Inducing efficient behavior thus would require amendments to Rabin's proposal.<sup>109</sup> Most important, Professor Rabin argues that manufacturer liability generally should be limited to the victim's pecuniary losses. Yet to induce manufacturers to produce the efficient amount of the product, each manufacturer's liability must equal the expected social cost of the risk it creates.<sup>110</sup> As previously

---

106. Studies show that people have a tendency to overestimate the low-probability events and underestimate larger risks. See Viscusi, *supra* note 18, at 64. For example, people tend to underestimate more-common risks—such as the risk of dying from heart disease, stroke or cancer—and overestimate greatly the risks of being hit by lightning or killed in a tornado. *Id.*

107. See Spence, *supra* note 80. Imperfect information also may cause manufacturers to not take the efficient level of care if consumers misperceive the effect of changes in care on the product's quality (riskiness). Imposing liability on the manufacturer will not necessarily correct this problem. See Schwartz, *supra* note 97.

108. Shavell, *supra* note 14; but see Calfee & Rubin, *supra* note 29, at 392-98 (discussing efficient compensation for product-related injuries resulting from products that reduce the victim's risk of death). Under certain conditions, liability rules also will induce manufacturers to take the efficient level of care. *Id.*; see *supra* note 107 (discussing the impact of imperfect information on care levels). Caretaking will not necessarily be efficient, however, if consumers differ in their preferences for risk and manufacturers cannot distinguish between consumers of different types. See Oi, *supra* note 96; Ordoover, *supra* note 85, at 505.

109. One might object by arguing that regulation is a better way of deterring product risk. This argument is subject to all the standard criticisms of proposals to rely on government regulation. See *supra* text accompanying notes 40-46; see *supra* note 95.

110. See *supra* text accompanying notes 18-19. But see Calfee & Rubin, *supra* note 29, at 392-98 (discussing efficient compensation for product-related injuries resulting from products that reduce the victim's risk of death). This conclusion must be modified to the extent that tort actions provide consumers with accurate information about risks. If tort actions result in better-informed consumers—and thus more nearly efficient markets—then inducing tort actions may induce efficient caretaking and activity levels. Once con-

explained, this amount exceeds manufacturer liability based on victims' pecuniary losses.<sup>111</sup>

Accordingly, to provide efficient incentives, the rule on which manufacturer's liability is based should be changed. Moreover, if the administrative compensation scheme involves the purchase of insurance by each manufacturer, efficiency requires that each manufacturer's premiums be based on expected costs.<sup>112</sup> As for the amount of recovery, however, proper concern for efficient risk-spreading suggests that each victim's recovery probably should be limited to her pecuniary losses, as Rabin suggests.<sup>113</sup> If fraud and abuse are a serious concern, however, it may be preferable to implement a recovery schedule based on expected losses, rather than basing each victim's recovery on her actual pecuniary losses.<sup>114</sup> Furthermore, the present analysis suggests that, unlike in Rabin's system, certain products should be excluded from the system altogether (unless so doing would be too costly): (1) products for which the market appears to be functioning effectively, and (2) products with risks that consumers are likely to overestimate significantly—such as products with low probability of causing injury or highly publicized risks<sup>115</sup> (provided that manufacturers' care levels are not a concern).<sup>116</sup> Finally, the present analysis suggests that it may not be possible both to provide efficient incentives to acquire and reveal

---

sumers are informed, market forces will induce manufacturers to take the efficient level of care and produce the efficient amount of the product. In this situation, tort liability would not need to force manufacturers to bear the full costs of the risks they create—at least in those situations where we are not concerned with providing manufacturers with additional incentives to obtain and disseminate information about product risks. Rather, the efficient level of manufacturer liability is the level just sufficient to generate enough tort claims to inform consumers of product risks. See PAUL RUBIN, *TORT REFORM BY CONTRACT* 50 (1993). The efficient amount of manufacturer liability may exceed the amount necessary to induce consumers to sue, however, in those situations where it is necessary to provide manufacturers with adequate incentives to obtain and reveal information about product risks. See *supra* text accompanying notes 92-104.

111. See *supra* text accompanying notes 7-35.

112. See *supra* Section I; see also VISCUSI, *supra* note 18, at 176-79 (discussing the requirements for an efficient workers' compensation system); compare with Rabin, *supra* note 3, at 977-78.

113. See *supra* text accompanying notes 13-19.

114. See *supra* text accompanying note 50; see also RUBIN, *supra* note 110, at 44-46 (discussing this problem and possible solutions). Additionally, it must be recognized that any system where the manufacturer's expected liability per victim exceeds the victim's recovery will result in each consumer paying more for "insurance" than the mandatory insurance is worth. This will reduce demand for the product below the efficient level.

115. Cf. VISCUSI, *supra* note 18, at 64.

116. See *supra* note 94.

information and induce efficient activity levels, because absolute liability may be necessary for the latter goal but inconsistent with the former. This tension deserves considerably more attention before any proposal to reform the present system should be implemented.<sup>117</sup>

#### IV. MEDICAL MALPRACTICE

The final compensation scheme proposal presented in this Symposium is Paul Weiler's proposal for no-fault medical liability. Like products liability and workplace injuries to employees, medical malpractice cases involve victims who have a consensual or market relationship with the injurer. The previous analysis of products liability would appear to suggest that either the market will provide doctors with adequate incentives to take due care or that imposing liability directly on doctors will provide the requisite incentives. This is not the case, however. As Professor Weiler explains, the market does not provide adequate incentives because consumers do not know the risks associated with individual doctors and hospitals, and cannot easily obtain that information.<sup>118</sup> Moreover, most patients have health and disability insurance,<sup>119</sup> and consequently, do not bear the full costs of either the medical services they receive or of the risks associated with this service.<sup>120</sup> Accordingly, market forces do not provide doctors with adequate incentives to take care.

As Professor Weiler reveals, this market failure is not solved by the current system of imposing medical malpractice liability directly on the doctors or other health care workers responsible for a patient's loss.<sup>121</sup> The problem for negligence liability arises in large part from the prevalence of liability insurance. This medical malpractice liability insurance is not experience-rated.<sup>122</sup> Accordingly, because doctors know that their insurance company will bear the cost of any liability, malpractice liability does not provide doctors with adequate incentives to take due care. The deterrent effects of the present system are further muted by the fact that victims of negligent medical treatment often do not file claims.<sup>123</sup>

---

117. Cf. Arlen, *supra* note 97 (exploring the conflict between efficient activity levels and efficient monitoring under a rule of absolute liability).

118. See generally Weiler, *supra* note 5.

119. *Id.* at 915.

120. *Id.*

121. *Id.* at 917.

122. *Id.* at 914-915.

123. See *id.* at 913.

In an attempt to solve the two central problems of the current medical malpractice system—that doctors are not adequately deterred from being negligent and deserving victims are not compensated for their injuries—Professor Weiler proposes that we replace the current system of fault-based liability with a system under which hospitals, not doctors, are absolutely liable for patients' injuries caused by medical treatment performed at the hospital.<sup>124</sup> Weiler's explicit focus on deterrence distinguishes his proposal from the two other plans presented in this Symposium. Under his system, a victim's recovery would be based on her pecuniary losses (as they arise over time), and would include some recovery for nonpecuniary losses (determined by a compensation schedule).<sup>125</sup> The program would be administered by a specialized tribunal that would develop criteria and schedules to determine compensable events and appropriate payments for nonpecuniary losses.<sup>126</sup> It is expected that hospitals and health care organizations subject to this system would self-insure.

Adopting Professor Weiler's system would solve many of the problems plaguing the current system of fault-based liability. Shifting liability from doctors (who do not bear the costs of their negligence because of liability insurance) to hospitals and health care organizations might well dramatically increase the deterrent effects of medical malpractice liability. Imposing absolute liability on hospitals would provide them with incentives to monitor the doctors they employ: those doctors who fail to take adequate care would be sanctioned or removed from the hospital. Moreover, switching to absolute hospital liability could be expected to result in more accurate determinations of whether a doctor was negligent, because hospitals probably are better qualified than the courts to make such determinations.<sup>127</sup>

Professor Weiler's system also would better serve the goal of victim compensation than the current system because under his system people injured on account of medical treatment would not need to show fault in order to recover; those injured and in need of compensation would receive it. Moreover, Professor Weiler's proposal

---

124. Professor Weiler specifically targets hospitals and other health care organizations under whose auspices the patient was treated (including all care rendered by doctors affiliated with the hospitals). *Id.* at 920.

125. *Id.* at 922-924.

126. *Id.* at 935.

127. Hospitals subject to absolute liability can be expected to investigate whether the health care provider was at fault in determining whether to sanction the health care provider whose actions resulted in the patient's injury.

that nonpecuniary loss recovery be determined by a compensation schedule would solve many of the problems of fraud and abuse that, as Gary Schwartz shows, currently plague nonpecuniary loss recovery under administrative compensation systems.<sup>128</sup>

Accordingly, there is much to recommend in Professor Weiler's proposal: its central goals of deterrence and compensation are the appropriate central goals of a liability system and the means he has chosen to achieve these goals generally are consistent with them. Despite these strengths, concerns remain about the deterrent effect of his system; additional amendments to his system might be required in order to address the remaining concern of fraud and abuse.

*A. Impact of Strict Liability on Hospitals' Incentives to Monitor*

One possible problem with Professor Weiler's proposal is his decision to employ absolute liability. Professor Weiler intends for his system to induce hospitals both to monitor for doctor negligence and to sanction doctors who regularly fail to take due care. Imposing absolute liability on hospitals often will provide hospitals with the desired incentives to monitor for doctor negligence. There are circumstances where absolute liability may not achieve this goal, however. For hospitals to control excessive risk taking by doctors, and to sanction those doctors who are negligent, hospitals must keep records and act upon the information they have about doctor misfeasance. Under Weiler's system, keeping this information may increase the hospital's expected liability, however. This is because under his system a hospital is not liable for every injury a patient suffers while under its care, but rather only those injuries attributed to the medical treatment given to the patient. A patient cannot always determine, on her own, whether her injury resulted from a pre-existing condition or from the treatment she received.<sup>129</sup> Accordingly, absent additional information, some patients who could pursue claims against the hospital may choose not to, believing that their injuries resulted from pre-existing conditions. Patients at hospitals that keep detailed records may be more likely to pursue claims, however, because they may be able to obtain hospital records regarding their medical treatment and any associated disciplinary proceedings, providing the requisite information on whether their injuries resulted from the treatment they received. This possi-

---

128. See generally Schwartz, *supra* note 43.

129. Weiler, *supra* note 5, at 913.

bility that hospital records might be used to establish a hospital's liability to the patient will act as a disincentive to hospitals to monitor doctors appropriately. If these records increase the likelihood of a hospital being found liable by more than the amount that monitoring decreases the expected amount (and cost) of patient injuries, then a hospital subject to absolute liability may respond by not monitoring and disciplining its doctors.<sup>130</sup> This possibility must be considered and addressed before any attempt is made to implement Professor Weiler's proposal, and amendments to the proposal designed to remedy this problem should be considered.

One possible solution to the problem that warrants consideration is to impose a fine on any hospital that does not engage in optimal record keeping and monitoring. A properly designed fine should provide hospitals with the requisite incentive to monitor their employees. An obvious problem with this solution, however, is that it transforms Professor Weiler's relatively simple no-fault system into a system where fault is an issue, thereby increasing administrative costs and the possibility of error.

There is another possible solution to this problem, however, which should be explored. This would be to permit—and encourage—hospitals to shift their liability to the responsible medical personnel if the hospital can show, through its records, which of its health care professionals was responsible for the patient's injury. Enabling the hospital to shift its liability to the individuals responsible for the patient's harm would provide the hospital with an incentive to monitor its agents: any increase in the hospital's expected liability as a result of monitoring would be reduced, if not eliminated, by the effect of monitoring on the hospital's ability to shift its liability to the responsible parties. Certainly, this possibility warrants consideration. Moreover, a system in which hospitals attempt to impose liability on the health care workers responsible for patients' harms probably would be more accurate than the current system in which patients (and juries) attempt to determine who is responsible for their injuries, because the system would encourage hospitals to obtain and reveal information. Whether in the end this solution is worth pursuing depends on whether the concern that strict liability will not provide adequate incentives to monitor is a serious one, and on whether imposing liability on doctors and health care workers for the injuries they cause would have other un-

---

130. See *supra* text accompanying notes 99-100; Arlen, *supra* note 97, at 5-6.

desirable consequences.<sup>131</sup>

### B. *Efficient Damage Awards*

Even if the preceding problem can be solved, another problem remains: under Professor Weiler's proposal, hospitals' liability is not sufficiently high to provide them with efficient incentives to reduce risk. Standard economic theory concludes that in order to provide hospitals with efficient incentives to reduce risk, hospitals must internalize the full social cost of the risks imposed on patients. Accordingly, in order to provide a hospital with efficient incentives, a hospital's expected liability should at least be equal to the full social cost of the injuries its patients suffer as a result of medical treatment.<sup>132</sup> Under Professor Weiler's proposed recovery rule, however, a hospital's total expected liability is based largely on its patients' pecuniary losses. This amount, as previously shown, is less than the social cost of the risk of patient injury—this being the amount that would compensate each member of the affected population for the risk imposed on them.<sup>133</sup> Accordingly, each hospital's expected liability under Weiler's system is not sufficiently high to deter risk creation efficiently.

Nor will Professor Weiler's system result in efficient risk-spreading by victims. This is because under his system the recovery awarded to victims of serious injuries exceeds their pecuniary losses, and thus appears to exceed the efficient amount of insurance coverage.<sup>134</sup> In addition, allowing victims to recover for pecuniary losses as they arise creates a moral hazard problem and increases the likelihood of fraud. A victim who is guaranteed compensation for her pecuniary losses has little incentive to minimize those losses by limiting her medical treatment to necessary treatment and by returning to work as soon as possible. In addition, as Gary Schwartz reveals, unethical health care professionals may take advantage of this system to run up large fees for unnecessary services.<sup>135</sup>

---

131. Whether this solution would work also would depend on whether the doctors' insurance under such a system would be experience-rated.

132. See *supra* text accompanying notes 13-19; but see Arlen, *supra* note 97 (suggesting that under enterprise liability, damages might need to exceed the social cost of the harm when the purpose of enterprise liability is not to induce efficient monitoring).

133. One estimate of the value of life based on this measure is \$3-6 million. See *supra* text accompanying notes 13-19. The amount of the victim's recovery also would be less than the full cost to the victim of the actual harm suffered, and thus would not force the hospital to internalize the full cost of the harms actually suffered. See *supra* note 19.

134. See *supra* note 33 and text accompanying notes 26-33.

135. See generally Schwartz, *supra* note 43.

Altering the recovery rule to provide the correct incentives is more difficult than it might first appear, however. Under a system of absolute liability, a single recovery rule must induce both efficient deterrence and efficient risk-spreading (assuming hospitals self-insure). This is not possible, however, because the damage award necessary for efficient deterrence exceeds the award that permits efficient risk-spreading by victims.<sup>136</sup> Accordingly, under an absolute liability rule, it would be necessary to implement a recovery rule that compromises between the two goals. The conflict between deterrence and risk-spreading could be reduced, however, by altering the structure of the system. For example, it might be desirable to introduce a central insurance system: hospitals would contribute to the system based on the social cost of the risks they create and victims could recover an amount equal to their total pecuniary losses, with the remaining sums going to administrative expenses and to providing compensation to victims of insolvent institutions.<sup>137</sup> Consideration should be given to whether the victim's recovery should be awarded in a lump-sum amount, based on expected future pecuniary losses, as opposed to periodic payments over time as the losses arise. An obvious disadvantage of a lump-sum payment is that it is less accurate than periodic awards because it requires courts to estimate victims' future losses. Nevertheless, lump-sum payments have a considerable advantage: they provide victims with a strong incentive to refrain from obtaining unnecessary medical treatment—because each victim must pay for this treatment herself—and to return to work as soon as possible. Similarly, lump-sum awards make it somewhat more difficult for health care providers to defraud hospitals by charging the hospital's victims for unnecessary medical expenses. Victims who know that the doctor's fees will come out of their lump-sum awards will monitor the doctors more carefully than they would otherwise.<sup>138</sup> To further deter fraud, compensation for medical services provided after the victim's injury and before recovery is awarded should be limited to reasonable fees for the services

---

136. See *supra* text accompanying notes 29-33 and notes 29, 33.

137. See *supra* text accompanying notes 29-33.

138. The risk of fraud may be somewhat less in the medical malpractice context than in the case of products liability or workers' compensation because (1) hospitals can reduce the risk of fraud by offering to provide the services themselves for free, and (2) they are in a good position to monitor other doctors for fraud. Nevertheless, lump-sum payments still might be preferable because they provide victims with incentives to minimize other pecuniary losses, such as lost wage income.



rendered.<sup>139</sup>

### C. *Public versus Private Hospitals*

Finally, it must be recognized that the deterrent arguments in favor of Professor Weiler's proposal may not apply to public hospitals, whose directors are not necessarily driven primarily by profit maximization concerns. To the extent that directors of public hospitals are driven by political concerns—and not profit maximization—Professor Weiler's system will not provide them with adequate incentives to reduce risks.

Moreover, there is an additional problem with applying Professor Weiler's system to public hospitals. Imposing liability on hospitals in essence transforms hospitals into insurers of their services. This is likely to increase the cost of medical services, because each hospital will include its expected liability costs in the price it charges for its services. This may reduce the quality of care for certain low income people, who are too poor to afford this additional cost (and are too wealthy to get free medical services) and who thus may not be able to afford any medical treatment at all. Moreover, imposing absolute liability on hospitals also will increase the cost to local and state governments of providing medical services for the indigent because they will have to pay to provide both medical treatment and medical treatment insurance. Accordingly, although few would deny that doctors at public hospitals should be induced to provide the poor with good medical treatment, the issues of whether absolute hospital liability will create the correct incentives when applied to public hospitals—and at what cost in terms of restricting the number of patients the hospitals will be able to serve—warrant additional consideration.<sup>140</sup>

---

139. See Schwartz, *supra* note 43, at 988-89 (explaining that workers' compensation's provision of full recovery for the injured employee's actual medical expenses has encouraged the creation of "workers' compensation mills," which provide workers with the legal assistance and medical evidence necessary to press a claim, with the mills profiting from the recovery for the excessive bills for medical services).

140. These concerns might appear to be solved by Professor Weiler's conclusion that his system should be purely voluntary: each hospital should offer patients the option to elect no-fault coverage. Weiler, *supra* note 5, at 944. This option will not solve the problem of medical liability driving poor patients from the market, however, if the alternative to electing no-fault medical liability is for doctors to remain under the current system of fault-based medical malpractice. In this situation, doctors are likely to put considerable pressure on hospitals to elect no-fault medical liability.

## CONCLUSION

Each of the proposals presented in this Symposium would be an improvement over the current system in a variety of ways. Each system probably would have lower administrative costs. In addition, the amount of victim compensation generally would induce efficient risk-spreading by victims, which currently often is precluded by the substantial damages awarded under the tort system.

But the tort system has an additional central goal: deterrence. This goal cannot be ignored in designing a compensation system, at least not one intended to replace the tort system. Efficient deterrence imposes certain requirements on a compensation system, requirements that each of the systems satisfy in part, but not in full. Specifically, to deter risk-creation efficiently, each risk-imposer's expected liability to the compensation system should equal the expected social costs of the risk she creates.<sup>141</sup> In addition, the recovery awarded to victims should be structured to provide victims with proper incentives to reduce the cost of the harms they suffer, and to deter fraud. Moreover, in some cases, more analysis is needed on the impact of the compensation system on injurers' incentives to obtain and reveal information about risks. Additional analysis is also needed on the impact of strict liability on a principal's incentives to monitor risk taking by its agents. Only when these issues are fully examined will it be possible to design a compensation system capable of providing the correct incentives. Finally, additional analysis is needed on the real-world functioning of compensation systems, such as that presented by Professor Schwartz.

This is not to say that in the meantime nothing should change. Given the enormous costs of the current tort system, in some circumstances it may be preferable to switch to a compensation system, although the compensation system should be designed with deterrence concerns in mind. Mass environmental torts and medical malpractice may be areas where a compensation system (properly designed) is preferable to the tort system. The case for a compensation system for mass product-related torts is somewhat less clear. Perhaps surprisingly, however, automobile accidents appear to be one area where the current tort system—with all its flaws—may well be preferable to a compensation system.

---

141. Moreover, the issue of how to provide proper incentives to obtain information about risk must be considered in more detail.

## APPENDIX

This Appendix demonstrates that the cost to each motorist of driving is higher under a system where each individual is fully compensated for her own losses but is fully liable for the pecuniary and nonpecuniary losses of anyone she injures, than it would be under a system where each individual only pays her own costs, insuring against pecuniary but not nonpecuniary losses. Accordingly, this Appendix shows that the cost to motorists of driving would fall were the "choice" no-fault plan to be adopted. This fall in costs would increase activity levels above their current excessive levels.

## I. THE MODEL

Assume that there are two identical risk-averse motorists, and each individual is endowed with wealth,  $W$ ;<sup>142</sup> to simplify the analysis, it is assumed that  $W$  includes the benefit to each individual of driving (and that care levels are fixed).<sup>143</sup> Each motorist faces a risk of being involved in an accident with the other motorist. To simplify the analysis, it is assumed that the probability of an accident is given by  $p$ .<sup>144</sup> Should an accident occur, a number of things may happen: both individuals may escape injury, both may be injured, or one may be physically injured and the other may not. It is assumed that the probability that the first motorist will be physically injured is  $q$  and the probability that the second motorist will be physically injured is  $r$ .

Consistent with Professor O'Connell's analysis, it is assumed that each individual risks suffering the same serious permanent physical injury. This physical injury has two distinct impacts on the victim: first, it results in a pecuniary loss, and second, the injury directly alters the victim's utility function. These effects are represented mathematically as follows. The purely pecuniary loss is represented as a reduction of  $m$  in the injured individual's wealth, where  $m$  is measured in dollars. The direct impact of the injury on the victim's utility function is represented in this model by the use of

142.  $W$  can be thought of as being composed of both the monetary value of the bundle of all other commodities possessed by the individual and the net present value of the individual's expected lifetime income.

143. Care levels are assumed to be fixed to show that Professor O'Connell's proposal will increase expected accident costs even if, as he asserts, his proposal has no impact on motorists' caretaking.

144. The assumption that the probability of an accident is fixed is employed only to simplify the math in order to allow us to consider the impact on an individual's welfare of eliminating nonpecuniary losses.

the term  $U_h(W)$  to describe the utility function of the individual when healthy and  $U_i(W)$  to describe her utility function once injured. It is assumed that an individual is better off healthy than injured: that is, that  $U_h(W) > U_i(W)$ .<sup>145</sup> As for the impact of the injury on the victim's marginal utility of wealth, Professor O'Connell's claim that individuals only insure for purely pecuniary losses requires the assumption that  $U_h'(W) = U_i'(W)$ .<sup>146</sup> Finally, it is assumed that not being injured, in other words being healthy, is a "normal good," which in turn implies that the wealthier an individual is, the more she will be willing to spend to avoid being injured.<sup>147</sup>

Both individuals and courts are assumed to possess perfect information which is costlessly obtained.<sup>148</sup> Litigation and settlement costs are assumed to be zero. As in the current tort system, it is assumed that damages are paid only if an individual suffers a physical injury and that people with identical injuries collect identical damages. To spread risks, people can purchase first-party insurance coverage ("accident insurance"),  $A$ , and third-party insurance ("liability insurance"),  $L$ , in fair insurance markets.<sup>149</sup> It is assumed that the collateral-source rule applies (thus, the tort victim's receipt of insurance benefits does not affect the amount of damages she can collect from the tortfeasor).<sup>150</sup>

## II. THE ANALYSIS

Consider now Professor O'Connell's argument that shifting to a first-party system with no recovery for nonpecuniary losses will not

145. See, e.g., Arlen, *Efficient Tort Rules*, *supra* note 1; Robert Cooter, *Towards a Market in Unmatured Claims*, 75 VA. L. REV. 383, 388-91 (1989); David Friedman, *What is 'Fair Compensation' for Death or Injury?*, 2 INT'L REV. L. & ECON. 81, 85-86 (1982); SHAVELL, *supra* note 13, at 228-35, 245-54; see also Cook & Graham, *supra* note 27, at 146 (describing the impact on the utility function of the loss of an irreplaceable commodity).

146. This is a common assumption. See, e.g., Priest, *supra* note 29, at 1546-47 (explaining that individuals will not insure themselves against nonpecuniary losses); Schwartz, *supra* note 29, at 366 ("[T]here is no good reason to suppose that, apart from causing pecuniary harm, accidents commonly increase persons' marginal utility for money."). For an analysis of the validity of this assumption, see the sources cited *supra* note 29.

147. See Cook & Graham, *supra* note 27, at 147 & n.9.

148. This assumption is more favorable to O'Connell's no-fault proposal than is the alternative assumption that courts often err. See *supra* note 65.

149. In other words, it is assumed that the insurance company sets the premium equal to its expected liability under the policy.

150. In effect, this means that the insured's premium will be based on the assumption that the insurance company does not incur any costs if the insured is fully compensated by the other party to the accident.

affect a motorist's total expected costs because the motorist is simply paying the full costs of the injury to herself rather than paying the full cost of the injury to someone else. The motorist's expected utility when she only bears her own accident costs is given by:

$$EU = (1-pq) U_h(W - pqm) + pqU_i(W - pqm)$$

where  $pqm$  equals the accident insurance premium paid by the motorist. The motorist's expected utility if she must fully compensate anyone she injures, but receives full compensation if she is injured is:

$$EV = (1-p)U_h[W - pqrA - p(1-q)rL] + p(1-q)(1-r)U_h[W - pqrA - p(1-q)rL] + p(1-q)rU_h[W - pqrA - p(1-q)rL - D + L] + pq(1-r)U_i[W - pqrA - p(1-q)rL - m + D] + pqrU_i[W - pqrA - p(1-q)rL - m + D - D + A].$$

Assuming that  $D$  fully compensates the victim for her loss,<sup>151</sup> and that the victim only insures against purely pecuniary losses, this implies that:

$$EV = (1-pq) U_h[W - pqrm - p(1-q)rD] + pq(1-r)U_h[W - pqrm - p(1-q)rD] + pqrU_i[W - pqrm - p(1-q)rD].$$

The question is, which is greater,  $EU$  or  $EV$ . We know that the motorist with expected utility  $EU$  could obtain expected utility  $EV$  by fully insuring against any injury to herself resulting from an accident where she is injured and the other party is not. Assuming that  $U_h'(W) = U_i'(W)$ , however, the individual would not purchase this coverage because the utility she derives from the money she would have to spend on premium payments exceeds the utility she would derive from the additional coverage she would receive if injured. Accordingly,  $EU > EV$ . This implies that the cost to an individual of driving is lower under O'Connell's plan, in which case switching to his plan will lower costs, thereby increasing motorists' activity levels above the already excessive current levels—in turn, increasing expected accident costs.

---

151. This implies that:  $U_i[W - pqrm - p(1-q)rD - m + D] = U_h[W - pqrm - p(1-q)rD]$ .