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PRODUCT LIABILITY AND THE PASSAGE OF TIME: THE IMPRISONMENT OF CORPORATE RATIONALITY

JAMES A. HENDERSON, JR.*

In theory, the product liability system should induce manufacturers to invest in product safety at the socially optimal level, i.e., the level at which the marginal cost of the investment equals the marginal cost of product-related accidents thereby avoided. In reality, however, this inducement may be weakened by countervailing incentives, causing manufacturers in marginal cases to forgo investment that would appear to be cost-effective. Professor Henderson argues that in these cases corporate rationality has been "imprisoned" by two "real-world" phenomena. First, a manufacturer may postpone product improvements lest they be viewed by potential claimants and juries as a confession of fault with respect to accidents caused by products already on the market. Investment in product safety may not reach the optimal level because its marginal cost is inflated by a concomitant increase in liability exposure from old products. Second, this tendency to underinvest may be strengthened by conflicts of interest between the corporate manufacturer and the individuals who manage it. As in other areas of corporate life, the managers' short-term accountability may encourage them to defer long-term investment that may be in the best interests of the firm as a whole as well as of society. Professor Henderson concludes that the product liability system probably cannot free corporate managers from these restraints, but he suggests several ways to reduce the incentives that managers have, both as individuals and as representatives of their firms, to underinvest in product safety.

INTRODUCTION

Law review commentary is an optimistic art form. Law review writers identify legal problems, explore choices among alternative rules of substance or procedure, and offer solutions that will best achieve the underlying objectives of the legal system. The Articles in this symposium fit into this tradition—all of them, that is, except this one. This Article conforms to the first part of the model: it identifies problems connected with the passage of time and product liability. It does not, however, offer satisfying solutions to those problems. Instead, it suggests that only relatively minor adjustments in the product liability system, adjustments of doubtful efficacy, are available as solutions. Thus, if my assessment is accurate, the phenomena that I shall refer to collectively as "the imprisonment of corporate rationality" constitute largely unavoidable consequences of the passage of time for product liability.

In theory, exposure to liability for defective products should promote the general welfare by providing incentives for manufactur-

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ers to invest in product safety at a socially optimal level. That the reality falls far short of the ideal is obvious to anyone familiar with the product liability system. What may not be so obvious, and what this Article shall consider, is that exposing manufacturers to liability may, under certain circumstances, contribute marginally to the failure of the product liability system to achieve its goals: that is, under circumstances particularly related to the passage of time, exposing manufacturers to product liability may be counterproductive.[1] This Article explores the question of whether the liability system frequently discourages corporate managers[2] from reaching a socially optimal decision regarding product safety because such a decision would expose both the individual manager and his firm to greater liability than would a suboptimal decision. More specifically, this Article will argue that, with the passage of time, product liability imprisons corporate managers in patterns of "deep play"[3] such that the marginal incentives created by exposure to liability direct them away from, rather than toward, decisions that enhance the general welfare.[4]

I should make clear that I do not necessarily equate the imprisonment of rationality with irrationality. The corporate managers whose actions are constrained by liability rules act rationally, within the limits of their abilities,[5] when they place the welfare of their firms

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[1] I believe that this analysis has broader implications for other fields of legal liability; however, since this symposium relates to product liability, I have limited my discussion to that field.

[2] I refer to those individuals in the corporate management hierarchy who are responsible for making the sorts of decisions related to product safety discussed in this Article. I assume that corporations differ regarding the level of management at which such decisions are made, but that in most instances these decisions are made fairly high up in the chain of responsibility. Much of the corporate governance literature is based on the observed behavior of "middle management." See authorities cited in note 67 infra. I assume that the managers to whom I refer in this Article are part of "middle management."

[3] As used in this Article, "deep play" refers to the tendency of corporations and corporate managers to defer taking action that would enhance the safety of their products and thereby reduce their aggregate liability exposure, even though the costs appear to be outweighed by the benefits of taking such action. I borrow the phrase from Lon Fuller, who borrowed it from Jeremy Bentham. See L. Fuller, The Morality of Law 6 & n.5 (2d ed. 1969). Bentham used "deep play" to refer to the tendency of some players in a game, typically a wagering game combining skill and chance, to play longer and for higher stakes than would ordinarily be expected given their apparent financial circumstances.

[4] I should emphasize that these incentives are marginal rather than aggregate. Taken as a whole, the product liability system is not counterproductive; that is, exposing manufacturers to tort liability does not make society riskier in the aggregate than it would be in the absence of liability. I am focusing only on marginal aspects of the system, uniquely related to the passage of time, that cause the system to fall short of its goals.

[5] This Article does not examine the extent to which the product liability system falls short of its goals because of the limited ability of managers to understand and deal with the problems confronting them. The classic treatments of the principles controlling that aspect of the problem are Simon, A Behavioral Model of Rational Choice, 69 Q. J. Econ. 99 (1955); Simon, Rational

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ahead of society's welfare and their individual welfare ahead of both.[6] Rather, when I refer to the imprisonment of corporate rationality, I speak not of its abandonment but of its misdirection when judged from a broad social perspective.[7] I should also emphasize that my argument is based largely on informal observations rather than on systematic empirical inquiry. I draw on the growing literature dealing with theories of the firm and social control of corporate behavior; much of the following discussion, however, is admittedly conjectural.

This Article consists of three parts. Part I describes the manner in which manufacturers' exposure to product liability should, in theory, affect the behavior of rational corporate managers. Part II describes the extent to which real-world considerations, including the implications of the passage of time, cause the actual effects of the product liability system on corporate behavior to deviate from what might be expected in theory. In this part, I rely on insights drawn from the theory of the firm and the corporate governance literatures to suggest the extent to which conflicts of interest between managers and their corporate employers exacerbate that deviation. Part III explores what, if anything, can be done to minimize the deviation and its negative implications.

I

How Exposure to Liability Should, in Theory, Affect Rational Managerial Behavior

In a world of perfect competition and information, in which transaction costs were zero, socially optimal levels of product safety would be achieved through bargaining.[8] But in the real world, these

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Choice and the Structure of the Environment, 63 Psychological Rev. 129 (1956). For a recent summary of the literature, see March, Bounded Rationality, Ambiguity, and the Engineering of Choice, 9 Bell J. Econ. 587 (1978).

[6] Professor Stone has argued that managerial self-interest causes firms to behave "irrationally." See Stone, The Place of Enterprise Liability in the Control of Corporate Conduct, 90 Yale L.J. 1, 15-23 (1980). Whether one characterizes firm behavior under such circumstances as being "rational" or "irrational," the effect of this behavior on social welfare remains unchanged.

[7] I realize that the concept of imprisonment is somewhat ambiguous in this context. I shall use it only in a pejorative sense to indicate that managers are constrained to act against the interests of both their firms and society. It can also be used in a more general, nonpejorative sense: managers can be said to be "imprisoned" by tort law to act in socially responsible ways. Used in this more general way, however, the phrase "imprisonment of rationality" becomes redundant, since the rationality of every human actor is always constrained, in the sense of being directed, by inherent limits and surrounding circumstances. See generally authorities cited in note 5 supra.

[8] See Coase, The Problem of Social Cost, 3 J. L. & Econ. 1 (1960).

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conditions never obtain, and liability rules must supplement bargaining as a means of creating incentives for manufacturers to invest adequately in measures aimed at reducing the social costs of product-related accidents.

In theory, assuming that the liability rules are applied costlessly and infallibly, and that manufacturers can assess their exposures accurately, it should not matter from the standpoint of allocative efficiency whether the rule is one of negligence or strict liability.[9] In either event, a manufacturer will respond to threatened liability by investing in safety up to, but not beyond, the point at which the marginal costs of the investment equal the marginal costs of accidents thereby avoided.[10] If the liability rule is one of negligence, the manufacturer will escape liability altogether by so investing; if the rule is instead one of strict liability, the manufacturer will find it cheaper to incur liability for the remaining accident costs than to invest further in avoiding those costs.[11]

Of particular significance for the present analysis is the further assumption, implicit in the assumption of infallible application of the liability rule, that each decision by the manufacturer will be judged on its own merits, as of the time at which it is made, and will not be prejudiced by evidence that other decisions were made by the manufacturer at other times. Thus, under an infallibly applied negligence rule, a reasonable decision remains secure from attack even though the plaintiff can show that the same manufacturer subsequently reached the opposite decision based upon changed circumstances; moreover, if a later decision is reasonable, it will be found to be so at

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[9] This statement is true only if it is assumed that the same contributory fault rule, whatever it may be, applies in either case, and only if the focus is on the manufacturer's investment in product safety. See Posner, Strict Liability: A Comment, 2 J. Legal Stud. 205 (1973). The choice between a negligence and a strict liability approach, however, may affect the levels of production and consumption of various products and services. See Shavell, Strict Liability versus Negligence, 9 J. Legal Stud. 1 (1980).

[10] The statement in the text is couched in terms of "marginal costs vs. marginal costs" in conformance with Learned Hand's famous "B<PL" formula in United States v. Carroll Towing Co., 159 F.2d 169, 173 (2d Cir. 1947), where "B" is the burden of adequate precautions, "P" is the probability that an injury will occur, and "L" is the gravity of the resulting injury. It can also be translated into the more familiar "cost vs. benefit" terms, in which "accident costs avoided" are compared to "benefits derived." Thus, the manufacturer will invest in safety up to, but not beyond, the point where the marginal costs of such investment equal the marginal benefits in terms of liability costs avoided.

[11] For example, even a manufacturer held strictly liable for the costs of accidents caused by manufacturing defects will stop investing in quality control at the point at which the next dollar of investment will prevent (and thus save the manufacturer in liability costs, assuming liability rules are applied costlessly) only 99 cents in expected value of future accident costs.

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trial notwithstanding the plaintiff's efforts to discredit it with evidence that the manufacturer reached a different decision earlier.[12] Under a strict liability rule, there is less likelihood even in a fallibly administered system that Wednesday's decision will haunt Monday's, or vice versa, since the reasonableness of neither decision is at issue;[13] but the same assumption of infallibility obtains.[14]

Another important assumption implicit in this model of how liability rules should affect manufacturers' behavior is that cost-free monitoring of corporate managerial behavior by both those within the corporation and those without causes the individual interests of the managers who make safety-related decisions to be perfectly congruent with the interests of their firms. This assumption makes it possible to use the terms "corporate manager" and "manufacturer" interchangeably.[15] Given this assumption of perfect congruence, the firm can be treated as a "black box."[16] Corporate managers can be assumed to behave as they would if they were sole proprietors of the business enterprises they are employed to manage.[17]

Under this admittedly idealized liability regime, rational corporate managers are both constrained to invest adequately in safety, in the sense that failure to do so will cause liability to be imposed on their

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[12] The decision under attack is assumed to be reasonable. In the real world, whether a decision is reasonable is often a difficult question, and the fact that the opposite decision was reached by either the defendant or another manufacturer may be circumstantial evidence that the decision at issue was unreasonable.

[13] A good example is the manufacturer's strict liability for harm caused by manufacturing defects. An increase in quality control, even in the form of a voluntary product recall, will not affect a manufacturer's exposure to liability very dramatically because the defendant pays for defects regardless of the quality controls it chooses to implement. A product recall might help plaintiffs prove the existence of defects in marginal cases, but it would not be relevant in every case. Under a negligence rule, where liability in every case turns in part on a determination of reasonableness, an increase in quality control accompanied by a recall would, in a fallibly implemented system, increase the probability that the earlier quality control decision would be found to have been unreasonable.

[14] Generally, it is easier to prove that a product defect caused the plaintiff's injuries than it is to prove that the manufacturer was negligent. Even so, it is not always possible to establish causation by direct evidence. In these cases, proof of a product recall would be relevant to the causation issue. It follows that an assumption of infallibility is necessary for a strict liability system to reach optimal levels of product safety, even if it is comparatively less necessary for a negligence system.

[15] Although he does not go to the extremes described in the text, Judge (then Professor) Posner takes the view that monitoring will cause a fairly close congruence between the interests of manager and firm. See R. Posner, Economic Analysis of Law 235-37 (2d ed. 1977).

[16] For a treatment of firm behavior relying on the black box terminology, but criticizing its simplistic perspective, see Jensen & Meckling, Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, 3 J. Fin. Econ. 305, 306-07 (1976).

[17] For a critical description of this assumption, see Fama, Agency Problems and the Theory of the Firm, 88 J. Pol. Econ. 288, 295-96 (1980).

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firms, and free to do so, in the sense that reaching the optimal decision today will not lead to inappropriate imposition of a penalty based on a different decision made yesterday or tomorrow.[18] In this manner, tort liability provides appropriate incentives at every juncture for corporate managers to reach socially optimal decisions.

II

Real-World Considerations, Including the Imprisonment of Corporate Rationality by the Passage of Time

A. Maintaining the Congruence-of-Interest Assumption Supporting the Black Box Perspective

When we turn from the theoretical model of corporate behavior to an analysis of real-world behavior, we discover how frequently reality deviates from theory. To render manageable an analysis of real-world considerations, it will be useful to begin by maintaining the assumption that the interests of managers are congruent with the interests of their corporate employers; in the next section, I will relax that assumption. Even from this simplified perspective, however, the product liability system as it actually operates falls considerably short of achieving the objectives described above. In the real world, not every injured person with a valid claim pursues his right to recover; the high costs of proving claims deter some victims from making the attempt.[19] Moreover, courts never act on perfect information; judges and juries frequently must decide important issues on the basis of circumstantial evidence, drawing inferences of manufacturer or product shortcomings from a mix of surrounding circumstances. Determining whether a manufacturer's conscious design choices were reasonable, for example, is a difficult task, requiring the weighing of many interrelated considerations.[20] As a consequence, manufacturers' exposures to liability are almost certain to be either more substantial or less substantial than is required to achieve optimal levels of deterrence.

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[18] Again, I do not equate the constraints on managers in this idealized system with imprisonment. Instead, I stress their freedom to act in socially desirable ways without being improperly penalized. See note 7 supra.

[19] Cf. Stone, supra note 6, at 15-16 (discussing how substantive legal doctrines and the costs of proof insulate the manufacturer from liability for otherwise meritorious claims).

[20] See generally Henderson, Judicial Review of Manufacturers' Conscious Design Choices: The Limits of Adjudication, 73 Colum. L. Rev. 1531, 1534-42 (1973). Notwithstanding some courts' insistence that they are imposing strict liability on manufacturers for their unreasonably dangerous product designs, liability for product designs is fault-based. See Birnbaum, Unmask-

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And even if one were to assume that something approaching the correct level of exposure is achieved, rating practices in the liability insurance industry would tend to dampen the relative incentives among and between various manufacturers.[21]

An understanding of the fallibility of the application of liability principles in cases involving allegedly inadequate product designs is essential to an understanding of how corporate rationality may become imprisoned in the time dimension. Whenever a specific safety standard is available by which to condemn a product design as unreasonable, both judge and jury are tempted to substitute that standard in place of their own independently derived conclusions regarding what is reasonable.[22] When the specific safety standard substituted for the jury's judgment emanates from the legislature, this process of substitution is legitimate;[23] when the standard comes from any other source, such as the plaintiff's expert witness, the substitution is illegitimate.[24] But the temptation to defer improperly to nonauthoritative sources is sufficiently great to have drawn the attention and concern of both appellate courts[25] and scholarly commentators.[26]

My purpose in recognizing this substitution-of-judgment phenomenon is not to pursue it for its own sake but to use it as a bridge to the real subject of concern in this Article. The decisionmaker in a

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ing the Test for Design Defect: From Negligence [to Warranty] to Strict Liability to Negligence, 33 Vand. L. Rev. 593 (1980); Henderson, Renewed Judicial Controversy Over Defective Product Design: Toward the Preservation of an Emerging Consensus, 63 Minn. L. Rev. 773 (1979).

[21] See generally Morris, Enterprise Liability and the Actuarial Process—The Insignificance of Foresight, 70 Yale L.J. 554, 564-66, 569-74 (1961) (discussing how insurance rates are set on the basis of the aggregate accident experience of classes of manufacturers, rather than on the experience of the individual manufacturer).

[22] I have no empirical proof of this proposition, but it is fairly widely subscribed to by both courts and commentators. See notes 25-26 infra. My main reason for believing it to be true is the great difficulty triers of fact must encounter in attempting to reach their own independent judgments regarding the adequacy of complex product designs. See Henderson, supra note 20, at 1534-42; text accompanying note 20 supra.

[23] See Henderson, supra note 20, at 1555-56.

[24] See D. Louisell & C. Mueller, 3 Federal Evidence 692 (1979) ("[I]t is reasonable to suggest that certain kinds of [expert] testimony might induce the jury to give the matter no independent thought, to forgo its own scrutiny or analysis, and too quickly to accept the word of the witness."). Jurors may properly rely on these nonauthoritative sources for guidance, of course, as long as they do not substitute the sources' judgments for their own.

[25] For an example of the misuse by the jury of expert testimony, see Garst v. General Motors Corp., 207 Kan. 2, 484 P.2d 47 (1971) (unsubstantiated opinion of expert inadequate to support jury conclusion that defendant's design was unreasonably dangerous); for a discussion of possible jury misuse of subsequent design changes, see Grenada Steel Indus. v. Alabama Oxygen Co., 695 F.2d 883, 888 (5th Cir. 1983).

[26] For a discussion of the possible misuse of expert testimony, see Weinstein, Twerski, Piehler & Donaher, Product Liability: An Interaction of Law and Technology, 12 Duq. L. Rev. 425,

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difficult design case is never more tempted to substitute an external standard for his own judgment than when the source of the safety standard that condemns the defendant manufacturer's design is the defendant itself. Indeed, the confessional nature of such a standard seems almost to justify reliance on it—the defendant appears to have admitted that its design is inadequate.[27]

Of course, it is unlikely that a manufacturer would deliberately promulgate a safety standard that explicitly condemns its own product design. Nevertheless, a variety of decisions by the manufacturer, reached before, during, and after the commercial distribution of a particular product design, are admissible in evidence[28] and could be construed by a judge or juror so inclined to condemn that design by implication. To the extent that this sort of "confession by implication" occurs, marginal incentives are created for manufacturers to avoid introducing changes, however reasonable they may be, and to that extent, rationality becomes imprisoned in the time dimension.[29]

Specific examples clarify the way this imprisonment may occur. Suppose, for example, that a manufacturer were to take seriously the product liability system's implicit admonition to consider carefully the safety implications of product design choices.[30] Generally, a careful consideration of safety implications would include rigorous, self-criti-

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456 (1974); for a discussion of possible jury misuse of subsequent changes in product design, see Note, Products Liability and Evidence of Subsequent Repairs, 1972 Duke L.J. 837, 850-53.

[27] See, e.g., Phillips v. J.L. Hudson Co., 79 Mich. App. 425, 426-27, 263 N.W.2d 3, 4 (1978) (admission of proof of subsequent design changes to show that the original design was inadequate might be construed by the jury as an admission of prior culpable conduct); see also Grenada Steel Indus. v. Alabama Oxygen Co., 695 F.2d 883, 888 (5th Cir. 1983); Note, supra note 26.

[28] For example, some jurisdictions generally admit evidence of post-distribution changes in product design. See cases cited in note 100 infra. And even those jurisdictions that otherwise exclude such evidence, see cases cited in note 99 infra, will admit this type of evidence for the purpose of proving the feasibility of an alternative design. See, e.g., Cunningham v. Yazoo Mfg. Co., 39 Ill. App. 3d 498, 500, 350 N.E.2d 514, 516 (1976). Exceptions other than proving feasibility are also recognized. Thus, rule 407 of the Federal Rules of Evidence allows evidence of subsequent remedial measures not only when offered to show feasibility, but also when offered to prove ownership or control. Fed. R. Evid. 407. I submit that exceptions other than feasibility have no place in a product liability case. In any event, defendants can avoid their application by not controverting those issues.

[29] Confession by implication can also negatively affect manufacturers in the markets in which they sell their products and in which they raise investment capital. This Article, however, will assume that the incidence of this phenomenon in these markets is negligible, except insofar as these markets react to the fact that manufacturers are being held liable for earlier design choices. Of course, these market effects may not always be negative. See text accompanying notes 62-66 infra.

[30] See generally Twerski, Weinstein, Donaher & Piehler, Shifting Perspectives in Products Liability: From Quality to Process Standards, 55 N.Y.U. L. Rev. 347 (1980).

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cal analysis of the possible shortcomings of every proposed product design.[31] Assuming that such a self-critical analysis by the defendant manufacturer were admissible in a later tort action brought by someone injured by the design,[32] might not the triers of fact be tempted to rely on such evidence to condemn that design, even if the defendant reasonably chose it after careful consideration of the points raised by the analysis?[33] An infallible product liability system would not penalize the manufacturer in this way; but might not the real-world system do so?

An even clearer example of how a decision made at one time may haunt decisions reached at other times is presented by the subsequent design change issue.[34] Suppose that a manufacturer adopts a design that is, under the circumstances, reasonably safe for use or consumption. Suppose further that circumstances subsequently change and that the defendant reasonably decides to alter the design to reduce certain risks. Assuming that evidence of this alteration is admissible,[35] might not a plaintiff injured by the original design be able to convince judge and jury that the design was unreasonable by relying on this evidence that the defendant itself subsequently decided to make the design safer?[36] In addition, might not the same substitution of judg-

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[31] See id. at 365-68.

[32] Perhaps the most vivid example in recent years of a court's admitting evidence pertaining to the defendant's design process is the Ford Pinto case. See Grimshaw v. Ford Motor Co., 119 Cal. App. 3d 757, 774-78, 790-92, 174 Cal. Rptr. 348, 359-62, 369-71 (1981).

[33] I have argued elsewhere that this would likely happen. See Henderson, Should a "Process Defense" Be Recognized in Product Design Cases?, 56 N.Y.U. L. Rev. 585, 606-10 (1981); see also Owen, Problems in Assessing Punitive Damages Against Manufacturers of Defective Products, 49 U. Chi. L. Rev. 1, 16-19 (1982). The result described in the text is not inevitable, of course; jurors might be impressed with the thoroughness and integrity of the defendant's design review process. But jurors might also view the defendant as a cold-blooded profit maximizer. Thus, at the least, this sort of design review raises the stakes of the liability game for the manufacturer.

[34] After a product causes injury, manufacturers will often take remedial measures that, if taken previously, would have made the event less likely to occur. Typical changes include altering the design, adding safety devices or warnings, or recalling the product. Whether or not the subsequent repairs or improvements should be admitted into evidence has given rise to much commentary. See generally Costello & Weinberger, The Subsequent Repair Doctrine and Products Liability, 51 N.Y.S.B.J. 463 (1979); Davis, Evidence of Post-Accident Failures, Modifications and Design Changes in Products Liability Litigation, 6 St. Mary's L.J. 792 (1975); Note, The Admissibility of Subsequent Remedial Measures in Strict Liability Actions: Some Suggestions Regarding Federal Rule of Evidence 407, 39 Wash. & Lee L. Rev. 1415 (1982); Comment, The Case for the Renovated Repair Rule: Admission of Evidence of Subsequent Repairs Against the Mass Producer in Strict Products Liability, 29 Am. U.L. Rev. 135 (1979).

[35] See note 28 supra.

[36] See authorities cited in note 27 supra.

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ment occur at trial with regard to changes in the warnings accompanying products?[37]

To the extent that increases in exposure to liability are likely to flow from reasonable efforts by manufacturers to make their products safer, they discourage manufacturers from engaging at the margin in precisely the sorts of activities that tort law purports to encourage. The message sent to manufacturers by the product liability system, therefore, is more ambiguous than one might otherwise have assumed. From the perspective of the manufacturer's self-interest, some inquiry into the safety implications of its conscious design choices must be undertaken, but the inquiry ought not be vigorously self-critical or well-documented.[38] The manufacturer must give some attention to improving design safety, because the longer a dangerous product continues to be distributed, the greater will be its long-run liability exposure. But it will avoid making some marginal improvements, even if otherwise cost-effective, because of their possible negative implications for tort claims involving older designs.[39] Thus, this linkage of decisions made at different times increases the manufacturer's marginal costs of making safety-related changes and counsels the manufacturer to maintain the status quo in some instances when, from a broad societal perspective, it might be more advantageous to alter course.

In addition to these pressures to defer implementation of design changes, manufacturers are exposed to the reality that an offer to settle one claim based on an allegedly defective product design or inadequate warning may have implications for other claims. Many factors enter into a manufacturer's decision to offer to settle a given case.[40] The manufacturer's assessment of whether it or its product is at fault is one factor, but by no means the only one. Thus, even if a

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[37] For decisions reflecting concern over potential jury misuse of evidence of subsequent changes in product warnings, see cases cited in note 102 infra.

[38] See generally Henderson, supra note 33, at 608-10. For a treatment of problems created by corporate defendants destroying documents of this sort, see Oesterle, A Private Litigant's Remedies for an Opponent's Inappropriate Destruction of Relevant Documents, 61 Tex. L. Rev. 201 (1983).

[39] Once again, I am referring to marginal incentives. Obviously, the longer the manufacturer delays in making an otherwise cost-effective change, the greater will be its aggregate, long-run exposure. The California Supreme Court in Ault v. International Harvester Co., 13 Cal. 3d 113, 120, 528 P.2d 1148, 1152, 117 Cal. Rptr. 812, 816 (1974), concluded that this factor of increased aggregate liability would almost always cause the manufacturer to take action, a conclusion with which this analysis strongly disagrees.

[40] Cf. H. Ross, Settled Out of Court 18-19, 41-66 (1970) (discussing reasons why insurance companies settle automobile collision claims).

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defendant manufacturer believes that it was not at fault in designing and marketing the product and that it may very well win at trial, it may be in the best interest of the parties, and of society, for the defendant to offer to settle and for the plaintiff to accept.[41] Even when settlement would be advantageous to the parties, however, the manufacturer may decline to settle because such a conciliatory gesture may be misinterpreted by both the plaintiff and potential plaintiffs as a confession of fault.

Under existing law in most jurisdictions, evidence of offers to settle made in the same case[42] or in other cases arising out of the same underlying facts[43] is excluded. But this exclusionary rule protects the defendant only from unwarranted inferences by the jury. It cannot prevent the plaintiff to whom the offer is made from improperly inferring that the defendant is at fault, nor would it prevent would-be plaintiffs from doing so.

I am again describing a factor that operates at the margin to influence a manufacturer's relevant decisions. Undoubtedly, manufacturers offer to settle many claims notwithstanding the confessional aspect of settlement, but this aspect may cause a manufacturer to refuse to settle some claims that otherwise would, and on balance should, be settled.[44]

Other factors combine with the fallible implementation of the liability rules to increase the tendency of manufacturers to engage in patterns of deep play, deferring until tomorrow changes in product design and offers of settlement that might, and from a broader societal perspective should, be implemented today. One such factor is the impact of high discount rates, which play an especially significant role in light of the refusal of most courts to award prejudgment interest in cases involving unliquidated tort claims.[45] Thus, given the levels that

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[41] The most significant advantage of settling, of course, is the opportunity for both sides, and society, to avoid the costs of obtaining a formal judicial resolution of the dispute. Other factors include risk averseness on the part of the parties to the controversy and the adverse publicity that would, from the defendant's perspective, accompany a trial on the merits.

[42] See, e.g., Perzinski v. Chevron Chem. Co., 503 F.2d 654, 658 (7th Cir. 1974) (dictum); Fed. R. Evid. 408.

[43] See, e.g., Sun Oil Co. v. Govostes, 474 F.2d 1048, 1049 (2d Cir. 1973); Grady v. deVille Motor Hotel, Inc., 415 F.2d 449, 451 (10th Cir. 1969).

[44] To some extent, of course, experienced plaintiffs' lawyers understand that offers of settlement often reflect the factors described in note 41 supra. But those lawyers must receive approval from their clients, who may not share that understanding. Moreover, in any given instance, it may be difficult for even an experienced plaintiffs' lawyer to determine what factors are motivating the defendant in making an offer to settle.

[45] See generally Restatement (Second) of Torts § 913(2) & comment c (1979).

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discount rates reached in the late 1970's and early 1980's, to have deferred a liability for six or seven years beyond the time when it otherwise would have been incurred was to avoid a substantial part of that liability.[46] It follows that any changes in corporate behavior that accelerate the bringing of claims, such as changes in product designs that tend to reveal or even to suggest inadequacies of earlier designs, may be detrimental to the manufacturer's interest, even if such changes would reduce both the costs to society and the manufacturer's aggregate liability in the long run.[47]

Another factor that may tend to discourage manufacturers from taking action that increases tort liability immediately is the possibility of escaping part or all of their responsibility in the long run as a result of government intervention. The most spectacular form of intervention would be a direct financial subsidy to help defray the costs of otherwise crushing liability.[48] Less spectacular, and therefore more likely to occur as a practical matter, would be remedial legislation retroactively reducing the firm's exposures to liability.[49] More rou-

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[46] Assuming prejudgment interest is disallowed, the present value of a $100,000 liability cost to be incurred nine years hence, discounted at 12%, is only $36,060.00. The present value of incurring the same liability cost two years hence, at the same discount rate, is $79,720.00. Thus, by successfully deferring the liability cost for seven years (nine minus two), the manufacturer saves $43,660.00. To be sure, by engaging in deferral tactics the manufacturer may increase the number of claims eventually to be paid. But the discount factor gives the manufacturer a considerable cushion with which to play.

[47] If the actual cost to the plaintiff and society in the example in note 46 supra were to be deferred, rather than merely the liability cost to the manufacturer, the decision to defer would benefit the manufacturer, the plaintiff, and society. In reality, however, the plaintiff and society incur the full costs of the accident when it occurs; by deferring liability the manufacturer reduces the proportion of societal accident costs it must bear.

[48] The most publicized example in recent years of the federal government bailing out a private manufacturer from financial, although not product liability related, catastrophe is the $1.5 billion loan guarantee to Chrysler Corporation made in December, 1979. See N.Y. Times, Dec. 20, 1979, at Al, col. 6.

[49] For a summary and criticism of recent attempts at federal legislation, see Twerski, National Product Liability Legislation: In Search For the Best of All Possible Worlds, 18 Idaho L. Rev. 411 (1982). For a summary of recent legislation by the states, see id. at 412 nn.7-11; see also Phillips, Product Line Continuity and Successor Corporation Liability, 58 N.Y.U. L. Rev. 906 (1983); Schwartz, New Products, Old Products, Evolving Law, Retroactive Law, 58 N.Y.U. L. Rev. 796 (1983). The suggestion in the text that these statutes reduce manufacturers' liabilities retroactively requires explanation. Clearly, there are limits to the extent to which a legislature may enact retroactive legislation. See generally Hochman, The Supreme Court and the Constitutionality of Retroactive Legislation, 73 Harv. L. Rev. 692 (1960). But these limits need not be tested for product liability legislation to have significant retroactive effects in the context of the present analysis. Thus, even if a change in the law favorable to manufacturers applies on its own terms only to causes of action that accrue after the statute's effective date, the statute can significantly reduce the firms' exposure to liability for products already distributed but not yet involved in accidents or made the subject of legal claims. For an example of this phenomenon, see Dague v. Piper Aircraft Corp., 418 N.E.2d 207 (Ind. 1981).

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tinely, government intervention could take the form of bankruptcy and reorganization proceedings, during which the manufacturer's outstanding and potential liabilities might be redefined and reduced in amount.[50]

While factors such as high discount rates and the prospect of government intervention exacerbate the difficulties caused by the fallibility of the product liability system, their effects are not entirely dependent on that fallibility. Even in an infallible system, these factors would encourage a manufacturer to defer taking socially optimal action because they would reduce the expected cost of the firm's liability exposure. Nevertheless, given the imperfections of the liability system, these factors magnify the deviation between social and firm welfare.

In order to clarify the foregoing analysis, let me offer some actual examples of the sorts of disincentives that can accompany the passage of time with regard to product liability.[51] The first example involves an admittedly atypical "manufacturer"—an insurance company—and an atypical "product design"—a manufacturer's liability insurance policy—but the dynamic that this example reveals is very similar to that described in the foregoing analysis. Controversy has raged among manufacturers and liability insurers in recent years concerning the appropriate interpretation of standard language in insurance policies covering product-related risks.[52] At stake are billions of dollars in coverage relating to claims against asbestos product manufacturers. The problem stems from the fact that a number of insurers wrote liability insurance over the period during which the claimants developed illnesses and injuries from exposure to asbestos.[53] The question at

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[50] See generally Epstein, Manville: The Bankruptcy of Product Liability, Reg., Sept.-Oct. 1982, at 14; Note, The Manville Bankruptcy: Treating Mass Tort Claims in Chapter 11 Proceedings, 96 Harv. L. Rev. 1121 (1983).

[51] Although these examples appear to involve effects of the liability system on the firms from a black box perspective, it is impossible to know with certainty whether or to what extent the behavior of the firms was influenced by conflicts of interest between the corporate managers and their firms. For further discussion of manager conflicts of interest, see text accompanying notes 67-74 infra.

[52] See generally Ingram, Insurance Coverage Problems in Latent Disease and Injury Cases, 12 Envtl. L. 317, 339-46 (1982); Note, The Calculus of Insurer Liability in Asbestos-Related Disease Litigation: Manifestation + Injurious Exposure = Continuous Trigger, 23 B.C.L. Rev. 1141 (1982); Note, Liability Insurance for Insidious Disease: Who Picks Up the Tab?, 48 Fordham L. Rev. 657 (1980).

[53] In the typical case, the plaintiff is an insulation worker employed for many years installing insulating material containing asbestos. See, e.g., Migues v. Fibreboard Corp., 662 F.2d 1182 (5th Cir. 1982). Plaintiffs also include pipe fitters, carpenters, and factory workers. See, e.g.,

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the heart of the controversy is which insurers should now be determined to be "on the risk" for any given set of claimants: insurers who wrote the liability coverage during the period in which the claimants were exposed to the asbestos,[54] or insurers who wrote the coverage at the time the resulting injuries first manifested themselves.[55] Or should some other criterion or combination of criteria be employed?[56] The standard policy language used during the relevant periods is sufficiently ambiguous to support several different interpretations, and courts have reached inconsistent results.[57]

This controversy is interesting from our present perspective not because it arose in the first place but because it may be deliberately perpetuated by insurers into the indefinite future. Although it is difficult to determine their actual motivations, the insurance companies appear to be concerned, at least in part, that, if they agree to new policy language, their position in the existing controversy[58] might be prejudiced for reasons similar to those developed in this Article.[59]

Hardy v. Johns-Manville Sales Corp., 681 F.2d 334 (5th Cir. 1982). See generally Mehaffy, Asbestos-Related Lung Disease, 16 Forum 341 (1980); Note, The Causation Problem in Asbestos Litigation: Is There An Alternative Theory of Liability?, 15 Ind. L. Rev. 679 (1982).

[54] This group of insurers would be held liable under the exposure theory of liability. See the discussion of this theory in Insurance Co. of Am. v. Forty-Eight Insulations, Inc., 633 F.2d 1212 (6th Cir. 1980), cert. denied, 454 U.S. 1109 (1981):

> [Advocates of the exposure theory] argue that when asbestosis manifests itself has nothing to do with when "bodily injury" took place. They emphasize that the medical testimony establishes that tissue damage starts to occur shortly after the initial inhalation of asbestos fibers and that the tissue damage worsens as the victim breathes in more and more asbestos fibers. The advocates of the exposure theory characterize asbestosis as a series of continuing injuries to the body which accumulate to cause death or disability. Under this theory, asbestosis is a "continuing tort" and all insurance companies which provided coverage from the time of the worker's initial exposure to time of the manifestation of the disease are jointly and severally liable to defend and to indemnify . . . [the manufacturer] if liability is found.

Id. at 1217.

[55] The "manifestation theory" reflects a judgment that bodily injury cannot be deemed to have occurred until the claimant knows or should have known that he has contracted a disease, or until the condition is medically diagnosed, whichever occurs first. See, e.g., Eagle-Picher Indus., Inc. v. Liberty Mut. Ins. Co., 682 F.2d 12 (6th Cir. 1982), cert. denied, 103 S. Ct. 1279 (1983).

[56] See, e.g., Keene Corp. v. Ins. Co. of N. Am., 667 F.2d 1034, 1047 (D.C. Cir. 1981) ("We have defined 'bodily injury' to mean any part of the injurious process that begins with an initial exposure and ends with manifestation of disease."), cert. denied, 455 U.S. 1007 (1982).

[57] See cases cited in notes 54-56 supra.

[58] Obviously, no insurer is entirely on one side or another in this controversy—they all must have written insurance at different times during the relevant period. But I think it safe to assume that each insurer nets out one way or another, so that each believes it has something to gain or lose, on balance, with regard to any given interpretation of the policy language. See Bus. Wk., Sept. 20, 1982, at 33, 34.

[59] To the extent that the insurers believe that agreeing to new language might prejudice their positions with respect to existing controversies, they are acting very much as my analysis would

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Thus, it is possible that the insurance companies will maintain the status quo and remain committed to inadequate policy language that may continue to cause problems for years to come.

As an example of what can happen when a manufacturer decides to settle claims based on generic product hazards, consider the decision by Olin Chemical Corporation to settle approximately 1,200 cases arising from toxic contamination in Triana, Alabama, associated with its DDT products.[60] Within less than a year of the announcement of settlement, over 7,000 additional claims were filed by a different class of claimants, presumably in response to the defendant's confession of fault.[61]

These examples are dramatic, but the same dynamic probably is present, albeit in less dramatic form, in the more typical context of manufacturers' exposure to product liability. Any act by the manufacturer, however sensible, that can be interpreted as a confession of error may result in a net increase in the manufacturer's exposure in the short run. Thus, safety-related changes in product designs, including product recalls, are likely to generate immediate increases in liability for injuries associated with older designs. Resolving to settle certain categories of claims, or even manifesting a willingness to consider settlement, may have the same effect, insofar as such conciliatory behavior implies that the manufacturer realizes that it has acted unreasonably. Frequently the safest course in the short run, especially if the manufacturer's exposure extends across a fairly broad range of similar products or product applications, is to admit nothing, alter course as little as possible, and offer to settle with no one.

Johnson & Johnson's forceful recall efforts in response to the Tylenol poisoning episodes[62] are not inconsistent with my analysis.

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have predicted they would act. To the extent that they are primarily concerned about future liabilities, however, their behavior has little to do with my analysis. This latter concern may be that courts might interpret new language defining the occurrence giving rise to insurer liability broadly so as to expand all insurers' exposure from now on. An evidentiary exhibit in the *Keene* litigation, Keene Corp. v. Ins. Co. of N. Am., 667 F.2d 1034 (D.C. Cir. 1981), cert. denied, 455 U.S. 1007 (1982), suggests that in September, 1963, an insurance industry joint drafting committee recommended that the ambiguous language that has since caused so much controversy and that predated the 1963 recommendation be retained with only slight modification for the reasons stated in this footnote. Trial Transcript at 01006-07.

[60] Freeman v. Olin Corp., No. CV-80-PT-5057-NE (N.D. Ala. Mar. 14, 1980).

[61] Wilhoite v. Olin Corp., No. CV-83-C-5021-NE (N.D. Ala. Jan. 11, 1983).

[62] By October 1, 1982, seven persons in the Chicago metropolitan area had died from cyanide poisoning after taking Extra-Strength Tylenol capsules. The Food and Drug Administration (FDA) chemically analyzed capsules taken from bottles of Extra-Strength Tylenol in the possession of the victims and found them to contain lethal dosages of potassium cyanide. Government authorities and the manufacturer of Tylenol, McNeil Consumer Products, a division of Johnson & Johnson, conducted an investigation to determine the manner in which the

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That company knew that it faced only a handful of potential product liability actions.[63] It also realized that nothing short of a dramatic response could rebuild public confidence in its products.[64] Thus, Johnson & Johnson's unprecedented action was aimed at solving a marketing problem, not a liability problem. Consistent with my analysis, the most significant, and perhaps the only, problem the company will confront in liability litigation will be explaining why its ex post response to the poisonings should not, by implication, condemn its failure ex ante to adopt tamper-resistant packaging.[65] In any event, the important points for purposes of this discussion are the uniqueness of the situation confronting the manufacturer and the uniqueness of its response. I am confident that, if similar episodes should recur on a steady basis, manufacturers' behavior would realign itself with the patterns I have described in this Article.[66]

B. Relaxing the Assumption of Congruent Interests: Looking into the Black Box

Up to this point, I have assumed a perfect congruence between the interests of corporate managers and the manufacturing firms they represent. Thus, I have focused on time-related factors that cause manufacturers, viewed as black boxes, to avoid socially optimal commitments to product safety. But firms are not black boxes. Conflicts of interest exist between managers and their firms that may exacerbate the tendency of firm behavior to diverge from the socially optimal behavior that the product liability system tries to engender—that is,

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capsules had become contaminated. The investigation revealed that the capsules were manufactured in separate plants, one in Pennsylvania and one in Texas. Based on plant inspections, the FDA concluded that the contamination was the result of tampering after the capsules had been shipped to distribution points and most likely after they had reached the retail shelves. See 47 Fed. Reg. 50442 (1982).

[63] Seven deaths were reported to have been caused by tampering with Tylenol. These deaths were tragedies for the families involved but from a manufacturer's perspective do not compare with mass disaster situations. Cf. notes 60-61 and accompanying text supra.

[64] "By the end of the first day . . . the company couldn't take the chance that the whole lot had not been poisoned and recalled all 93,000 bottles scattered across the country, an expensive process for which the telegrams to doctors, hospitals, and distributors alone cost a half million dollars. McNeil also suspended all advertising for Tylenol." Moore, The Fight to Save Tylenol, Fortune, Nov. 29, 1982, at 44, 47.

[65] I assisted defendant's counsel in briefing the motion for summary judgment in the first Tylenol case to come to trial, and this was the central issue in the case.

[66] Were product tampering to become commonplace, methods of coping less costly than massive recalls would have to be relied on. Once those alternative methods were exhausted, however, our society would have to accept the residual levels of risk in the same ways that it accepts other forms of recurrent criminal behavior.

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conflicts of interest may encourage managers to engage in deferral tactics to a greater extent than is justified in terms of their own corporate employers' welfare. Before considering these aspects of the problem, I should acknowledge the existence of a rich and growing literature dealing with the behavioral and legal implications of corporate structures and governance.[67] Much of this work has focused on the impact of public law regulation on firm behavior, including antitrust and environmental law. To my knowledge, the implications of this literature for the area of product liability have yet to be developed.

The place to begin in looking into the black box is with empirical studies of the attitudes and behavior patterns of corporate managers. These studies reveal that those whose responsibilities include risk management tend to be significantly more risk averse than their counterparts who do not deal on a regular basis with the possibility of sustaining substantial losses.[68] At first blush, these studies might suggest that managers would avoid engaging in behavior that would increase their firms' long-term exposure to risk of loss or raise the long-term stakes of the games in which their firms are engaged, but several factors appear to counterbalance such a tendency. For example, in recent years the performance of managers has been increasingly judged on the basis of short-run results. This phenomenon suggests that managers who defer taking necessary action may reasonably assume that they will be rewarded for the short-run benefits derived from their deferral tactics and that they will have been promoted to another position, possibly with another corporation, by the time the negative, long-run implications of their tactics have fully materialized.[69] Thus, they may reasonably expect to escape most, if not all, of

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[67] See authorities cited in notes 16-17 supra; see also Coffee, "No Soul to Damn: No Body to Kick": An Unscandalized Inquiry Into the Problem of Corporate Punishment, 79 Mich. L. Rev. 386 (1981) [hereinafter Corporate Punishment]; Coffee, Beyond the Shut-Eyed Sentry: Toward a Theoretical View of Corporate Misconduct and an Effective Legal Response, 63 Va. L. Rev. 1099 (1977); Weiss, Social Regulation of Business Activity: Reforming the Corporate Governance System to Resolve an Institutional Impasse, 28 U.C.L.A. L. Rev. 343 (1981). The literature is collected in Oesterle, Limits on a Corporation's Protection of Its Directors and Officers From Personal Liability, 1983 Wis. L. Rev. 513, 514 n.4.

[68] See generally Dickson, A Comparison of Attitudes Toward Risk Among Business Managers, 54 J. Occupational Psychology 157 (1981). See also Breit & Elzinga, Antitrust Penalties and Attitudes Toward Risk: An Economic Analysis, 86 Harv. L. Rev. 693, 704-06 (1973); Clutterbuck, Are Today's Managers Risk-Shy?, Int'l Mgmt., May 1982, at 10.

[69] See generally Clutterbuck, supra note 68; Coffee, Corporate Punishment, supra note 67, at 393-400; Weiss, supra note 67, at 364-70. Professor Weiss distinguishes between "operating managers" and "top managers" and suggests that the former have a shorter-run perspective. The managers that make the decisions of concern in this Article are assumed to be what Weiss would

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the blame for the losses eventually incurred by their deferral tactics.[70] Their escape will depend, of course, on the extent to which the managers' selfish behavior can be monitored from either within or without the firm.[71] But there are reasons to believe that substantial limits inhere in efforts to monitor managers' behavior.[72]

It follows, then, that even for the risk-averse manager, the safer course may be to avoid incurring losses in the short run. Thus, to the extent that the individual interests of corporate managers conflict with those of their firms, they appear to do so in ways that exacerbate the tendency to maintain the status quo. The decision that is best for the manager may not be best for the firm, but to the extent that managers can advance their own interests and avoid scrutiny, that circumstance will not affect their decisions.

When we consider the implications of these divergences in interest between managers and their firms together with the factors that affect firm behavior in black-box fashion, it is hardly surprising that with the passage of time exposure to product liability may imprison the corporate manager's rationality in patterns of deep play.[73] Indeed, what would be surprising would be to discover that, notwithstanding these factors, such patterns were other than commonplace.

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call operating managers. See also the speech by Securities and Exchange Commission Chairman Harold M. Williams, Jan. 22, 1981, reported in Sec. Reg. & L. Rep. (BNA) No. 588, at AA-4 (Jan. 28, 1981). Thus, even though the risk-averse manager would prefer, all things being equal, to incur a certain cost now rather than run a risk of incurring a greater cost later, the possibility that he will escape personal responsibility for part of the latter cost even if it is incurred by the company reduces the cost that the manager is willing to incur in the short term.

[70] They will be blamed to some extent for the losses resulting from the deferral tactics of their predecessors, of course, but that will not affect their own decisions to engage in deferral tactics.

[71] See generally authorities cited in notes 15-17 supra.

[72] Admittedly this question is controversial. Although their analysis is not empirical, Jensen and Meckling assume that monitoring costs are significant and that there will always be a "residual loss" in the form of harm to the firm from divergence of the manager's interests from those of the firm. See Jensen & Meckling, supra note 16, at 308. Fama, on the other hand, concludes that the fact that the corporate form has survived in good health suggests that substantial control over managerial behavior is being accomplished by a process of "wage revision," in which a manager's past deeds are reviewed and taken into account, for better or worse, when the manager moves from one position to another. See Fama, supra note 17. For recent articles reflecting the view that efforts to monitor managerial behavior fall considerably short of their goal, see, e.g., Anderson, Conflicts of Interest: Efficiency, Fairness and Corporate Structure, 25 U.C.L.A. L. Rev. 738, 769-70 (1978); Klein, The Modern Business Organization: Bargaining Under Constraints, 91 Yale L.J. 1521, 1555-59 (1982); Levmore, Monitors and Freeriders in Commercial and Corporate Settings, 92 Yale L.J. 49 (1982). For further sources, see Oesterle, supra note 67, at 530 n.39. For the view, in a somewhat different context, that outside controls over management behavior are lacking, see C. Stone, Where the Law Ends: The Social Control of Corporate Behavior 88-110 (1975).

[73] See note 3 supra.

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Before considering solutions to these problems, I would like to identify two possible sources of confusion. First, this analysis neither condemns nor excuses the behavior of managers in responding to the incentives created by the product liability system. The approach I take is instrumental—product liability aims at affecting the behavior of corporate managers in socially desirable ways but ends up affecting that behavior in some ways that are counterproductive. I do not mean to imply that managers are prone to conspire to thwart the law. Some writers appear to have reached this conclusion,[74] but my analysis does not take me that far. Indeed, the imprisonment of rationality concept suggests that managerial behavior is constrained by the law, rather than the other way around. Second, as I have tried to indicate throughout this Article, I do not mean to suggest that the undesirable disincentives I have described are the most important factors influencing the behavior of corporate managers in the relevant contexts. Manufacturers do implement safety-related changes in product designs, presumably at least partially in response to pressures from the product liability system. They also settle claims based on allegedly defective designs, notwithstanding the disincentives I have described. Thus, the imprisonment of which I speak occurs in close cases; it is relative and marginal rather than absolute and invariable.

III

Are Solutions Possible?

A. Radical Solutions

Several radical changes in the product liability system would probably solve the problems described in this Article. The most dramatic change would be to grant the manufacturing community a substantial degree of immunity from liability for allegedly defective product designs. Given that the imprisonment of rationality I describe is a result of product liability exposure, it follows that corporate managers could be freed from that imprisonment by substantially reducing such exposure. A similar opportunity to avoid potentially counterproductive reactions to threats of tort liability is presented in cases involving tort claims based on alleged medical malpractice; there, courts have responded by granting substantial immunity from

[74] See, e.g., Armstrong, Social Irresponsibility in Management, 5 J. Bus. Research 185, 194-210 (1977); Vaughan, Toward Understanding Unlawful Organizational Behavior, 80 Mich. L. Rev. 1377 (1982).

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liability to the medical profession.[75] Courts are unlikely to react in the same manner, however, in the context of product liability. According to the traditional view, the medical profession may be trusted to invest adequately in safety even while enjoying a measure of immunity from tort liability;[76] the same probably cannot be said of manufacturers. Thus, it is both highly improbable and inadvisable for courts to attempt to solve the problems described in this Article by granting the manufacturing community substantial immunity from product liability.[77]

Another radical solution would be to replace that portion of the fault-based product liability system covering generically dangerous products with a system that provides injured plaintiffs with compensation regardless of fault.[78] I have described elsewhere the practical problems that would accompany attempts to establish a comprehensive no-fault liability system for generically dangerous products.[79] Although a no-fault system would presumably reduce the difficulties associated with implied confessions of fault,[80] this solution appears too problematic to have much chance of being implemented.[81]

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[75] Individual doctors are held liable for deviating from the standards established by the profession; but, traditionally, the professional standards themselves are not reviewed by the courts. See generally McCoid, The Care Required of Medical Practitioners, 12 Vand. L. Rev. 549, 606-09 (1959); Pearson, The Role of Custom in Medical Malpractice Cases, 51 Ind. L.J. 528 (1976) (discussing, among other decisions, Helling v. Carey, 83 Wash. 2d 514, 519 P.2d 981 (1974), which refused to accept the professional standard). McCoid's explanation for this judicial deference to the medical profession closely parallels the analysis in this Article: "A large measure of judgment enters into the [medical] practice . . . [If the physician is] to be judged by some outsider who relies on after-acquired knowledge of unsatisfactory results or unfortunate consequences in reaching a decision as to liability, the medical judgment may be hampered and the doctor may become hesitant to rely upon his developed instinct in diagnosis and treatment." McCoid, supra, at 608.

[76] See Pearson, supra note 75, at 536-37.

[77] See generally Henderson, supra note 20, at 1556-57 & n.108.

[78] Professor O'Connell has recently proposed a limited no-fault system in which all tort defendants, including product manufacturers, would be given the option of barring actions in tort by offering to settle with injured claimants for their net economic losses over and above amounts received from collateral sources. See O'Connell, Offers That Can't Be Refused: Foreclosure of Personal Injury Claims by Defendants' Prompt Tender of Claimants' Net Economic Losses, 77 Nw. U.L. Rev. 589 (1982).

[79] See Henderson, The Boundary Problems of Enterprise Liability, 41 Md. L. Rev. 659 (1982). It will be observed that the approach suggested by Professor O'Connell, described in note 78 supra, circumvents many of these difficulties by allowing the defendant to decide whether or not to settle on a case-by-case basis. Thus, tort defendants, rather than statutory draftsmen, decide who will receive benefits.

[80] See note 13 and accompanying text supra.

[81] For a discussion of some of the reasons why even limited no-fault proposals have failed to gain ground among manufacturers and health care providers, see O'Connell, supra note 78, at 598-600.

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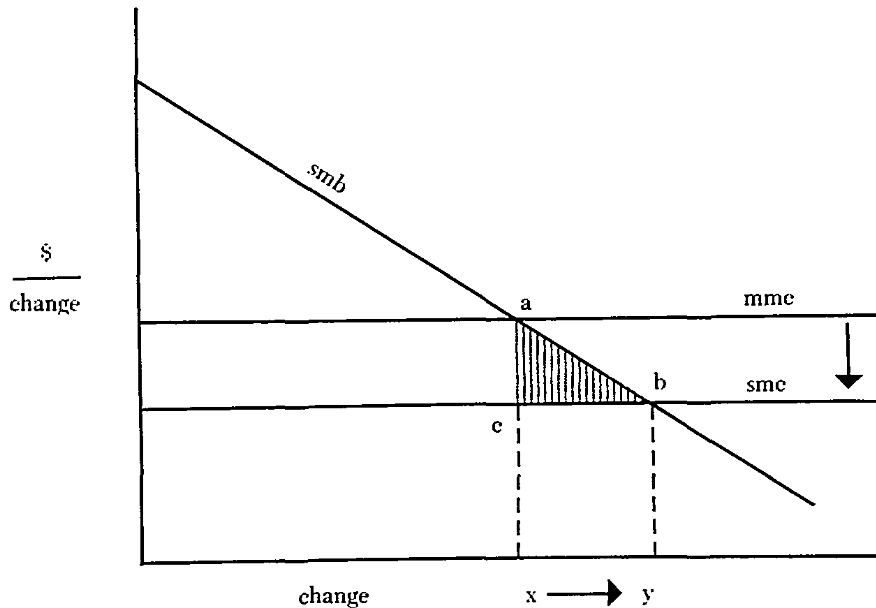
B. Less Radical Solutions

As I have suggested, the imprisonment of corporate rationality occurs on two levels: that of the firm and that of its corporate managers. Solutions to the problem of imprisonment may similarly be addressed on two levels. We might alter product liability rules in order to affect corporate welfare, or we might adopt other kinds of rules designed to influence managers personally or to make their interests congruent with those of their firms. I shall consider each of these approaches in turn.

1. *Measures Based on the Black Box Perspective: Adjustments in the Rules Governing Manufacturers' Liability*

Two basic types of incremental adjustments in liability rules are theoretically available by which to reduce the tendency of manufacturers to defer taking decisive, socially beneficial, risk-reducing action: adjustments aimed at lowering the marginal costs to manufacturers of reasonably implementing safety-enhancing product changes and making sensible settlement offers;[82] and adjustments in the form

[82] Limiting our focus to the implementation of safety-enhancing product changes, these adjustments may be indicated graphically as follows:



In this graph, the curve *smb* represents the marginal benefit curve, for both the manufacturer and society, for safety-enhancing product changes. Curve *smc* is the social marginal cost curve for such changes. Curves *smb* and *smc* intersect at *b*, which corresponds to *y* units of change, the

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of penalties aimed at raising the marginal costs of unreasonably maintaining the status quo.[83] The second of these suggested approaches appears more problematic and will be considered first. Several changes in existing liability rules might in theory counterbalance the incentives under existing law for manufacturers to defer implementa-

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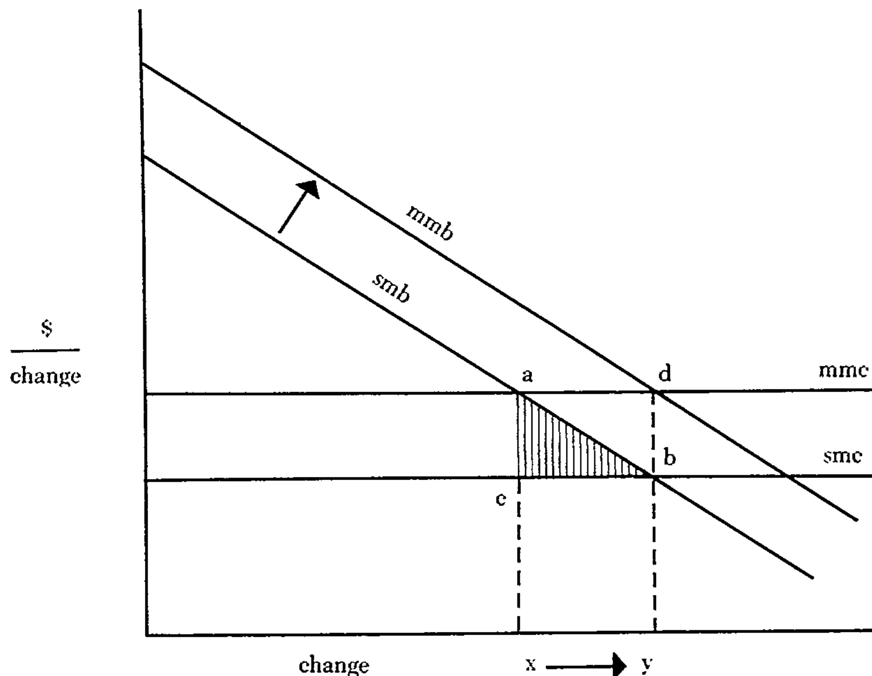
social optimum. Curve *mmc* is the manufacturer's marginal cost curve, which is higher than the social marginal cost curve for the reasons outlined in this Article. Curves *smb* and *mmc* intersect at point *a*, corresponding to *x* units of change. The difference between *y* units of change (the optimal) and *x* units (the actual) results in reduced welfare represented by the shaded triangle *abc*. By adjusting existing liability rules to lower the curve *mmc* to coincide with curve *smc*, the changes implemented by the firm will increase from *x* to *y* and the welfare triangle *abc* will be captured.

[83] Once again limiting our focus to safety-enhancing product changes, imposing additional penalties on manufacturers' unreasonable refusals to make such changes would raise the marginal benefits to manufacturers (in the form of penalties avoided) of making such changes. This can be illustrated graphically as follows:



In this graph, as in the graph in note 82 supra, curve *smb* is the marginal benefit curve under existing law, for both society and the manufacturer, for safety-enhancing product changes. Curves *smc* and *mmc* are the social and the manufacturer's marginal cost curves, respectively. Here, unlike the situation described in note 82 supra, *mmc* remains higher than *smc*. Properly imposing additional penalties would have the effect of moving the manufacturer's marginal benefit curve from *smb* to *mmb*, causing the manufacturer's marginal benefit and cost curves to intersect at *d*, instead of at *a*. Although the manufacturer's benefit and cost curves are both higher than the corresponding social benefit and cost curves, the points of intersection (points *d* and *b*) both correspond to *y* units of change, the social optimum. Thus, as in the situation described in note 82 supra, the shaded welfare triangle *abc* is captured.

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tion of design changes and offers of settlement that are, from a social viewpoint, cost-effective. For example, new incentives to implement design changes might be created by imposing punitive damages whenever it appears at trial that the defendant manufacturer unreasonably deferred making such changes and that such deferral resulted in harm to the plaintiff.[84] Similarly, incentives to settle worthy claims might be created by awarding prejudgment interest at rates that exceed the rates of return that manufacturers are likely to receive on their capital investments.[85]

Both of these suggestions present difficulties. Awarding punitive damages whenever a manufacturer unreasonably defers implementation of a safety-related product design change would significantly broaden the legal basis for allowing such damages.[86] Although this measure might to some extent counterbalance the incentives described earlier,[87] it would as a practical matter exacerbate a growing problem in product liability law. Even under traditional tests for imposing punitive damages, courts appear unable to reach fair and sensible results.[88] Furthermore, no method has yet been devised to coordinate the award of punitive damages in independent actions against a single manufacturer for the same product design so as to achieve the appropriate aggregate level of damages.[89] Thus, broadening the legal basis for awarding punitive damages would probably create more problems than it would solve.[90]

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84 For recent treatments of punitive damages, see Ellis, Fairness and Efficiency in the Law of Punitive Damages, 56 S. Cal. L. Rev. 1 (1982); Owen, supra note 33. See generally Symposium on Punitive Damages, 56 S. Cal. L. Rev. 1 (1982).

85 See generally Comment, Prejudgment Interest: An Element of Damages Not to Be Overlooked, 8 Cum. L. Rev. 521 (1977); Comment, Judgments: Interest on Judgments—Limitation on Recovery of Prejudgment Interest, 56 Minn. L. Rev. 739 (1972); Comment, Prejudgment Interest: Too Little, Too Much, or Both? 10 U.C.L.A.-Alaska L. Rev. 219 (1981).

86 Although the criteria for the assessment of punitive damages vary among jurisdictions, no jurisdiction awards punitive damages for mere negligence. See generally Ellis, supra note 84, at 20; Owen, supra note 33, at 20-35.

87 Again, I am deferring consideration of manager-firm conflicts of interest until the next section. See text accompanying notes 116-25 infra; see also note 83 supra.

88 See generally Ellis, supra note 84; Owen, supra note 33, at 1-7.

89 Judge Friendly recognized the possibility that punitive damages awarded in separate actions might reach catastrophic levels in Roginsky v. Richardson-Merrell, Inc., 378 F.2d 832, 840-41 (2d Cir. 1967) (setting aside an award of punitive damages in a product liability case). See generally Owen, supra note 33, at 52-53.

90 In his comprehensive review of punitive damages in product liability actions, Professor Owen reaches the following conclusion: "[T]he experience of the past several years has raised questions whether the punitive damages doctrine is being abused in products cases, whether some manufacturers are being punished who should not be, and whether penalties, though appropriately assessed, are sometimes unfairly large." Owen, supra note 33, at 59. Professor

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Awarding prejudgment interest would offset the effects of high discount rates but would not address the other sources of concern identified above.[91] Moreover, for prejudgment interest to accomplish adequately even that limited objective, it must accrue from the time the inappropriate deferral of corporate action occurs—an approach that would be difficult to apply on a case-by-case basis.[92] Whether a rule that is easier to apply, such as one allowing interest from the time of filing the claim, would accomplish enough to warrant adoption is not clear.[93] In any event, prejudgment interest would address the imprisonment of corporate rationality problems only peripherally, and I shall leave further consideration of it to other commentators.[94]

Finally, both of these suggestions share at least one additional deficiency: even if the creation of counterbalancing incentives were to succeed in bringing the behavior of manufacturers closer to the social optimum, the liability system would continue to impose inappropriately high levels of liability for generically dangerous products, increasing the costs to society of using and consuming products.[95]

Twerski has concluded, "In short, the risk of crushing liability as a result of punitive damages is too great. It threatens the business community with the legal equivalent of an atom bomb." Twerski, supra note 49, at 475-76.

[91] Prejudgment interest might, of course, serve the same purpose as punitive damages if it were awarded from the time of the manufacturer's unreasonable refusal to settle and at significantly higher than normal rates.

Some jurisdictions already allow plaintiffs to recover prejudgment interest. See, e.g., Mich. Comp. Laws Ann. § 600.6013(1)-.6013(4) (West Supp. 1983) (interest allowed from date of filing of complaint). A number of other jurisdictions will allow recovery of prejudgment interest in a limited class of cases. See, e.g., Kennedy v. George Cully Real Estate, Inc., 336 So. 2d 484, 486 (Fla. Dist. Ct. App. 1976) (per curiam) (allowing recovery for tortious interference with business relationship where amount of damages was "fixed and recoverable" as of date contract was breached), cert. denied, 345 So. 2d 424 (1977); Klug & Smith Co. v. Sommer, 83 Wis. 2d 378, 265 N.W.2d 269 (1978) (allowing recovery where amount of damages in contract action was "ascertainable or determinable prior to judicial determination").

[92] With respect to settlements, for example, it would be necessary for the plaintiff to prove not only that the defendant manufacturer unreasonably refused to make an offer that the plaintiff would have accepted, or that it unreasonably refused to accept an offer by the plaintiff, but also the time when such refusal occurred. This issue might be manageable enough in situations where the defendant refused to accept the plaintiff's reasonable offer, but would be quite difficult in cases where the defendant failed to make an offer that the plaintiff would have accepted. See generally Comment, Allowance of "Interest" on Unliquidated Tort Damages in Pennsylvania, 75 Dick. L. Rev. 79, 94 (1970).

[93] For an example of a statute providing for the imposition of interest from the date of filing of the complaint, see Mich. Comp. Laws Ann. § 600.6013(1)-.6013(4) (West Supp. 1983).

[94] See authorities cited in note 85 supra.

[95] The point in the text is made clear by comparing the graphs in notes 82-83 supra. The two different techniques described therein achieve the same levels of safety when judged on a per-product basis, but the penalties approach described in note 83 supra does so at demonstrably higher cost. It might be argued that a penalties-based system would at least serve a compensation objective even if the added liability did not achieve socially beneficial deterrence. But the

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A more promising approach might be the first one described above: to reduce the marginal costs to manufacturers of making safety-related changes, that is, to adjust the existing liability system to reduce the negative short-run implications of reaching decisions concerning product safety that are more nearly socially optimal.[96] One adjustment, which has been considered by many courts[97] and commentators,[98] would be to refuse to allow plaintiffs to rely on evidence of subsequent changes in product designs or warnings to prove the unreasonableness of a prior design or warning. Many courts already enforce such a proscription;[99] the rest should fall in line.[100] Of course, proof regarding subsequent change remains relevant to the question of the technical feasibility of an alternative design and arguably should be admissible for that limited purpose. If the evidence is admitted for this ancillary purpose, however, factfinders may ignore the court's instructions and succumb to the temptation to rely on such proof to resolve the ultimate issue of reasonableness.[101]

To avoid this problem, courts might exclude such proof altogether, a solution that may unfairly handicap plaintiffs in their attempts to show that a safer alternative design was feasible. A rule approaching an outright proscription of proof of subsequent changes in failure to warn cases is appropriate because feasibility is not ordinarily an issue in these cases.[102] But such a proscription in design cases would go too far.[103] Thus, rather than excluding evidence of subse-

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product liability system extracts too much in the way of transaction costs to be justified on the ground of compensating accident victims. See generally Owen, Rethinking the Policies of Strict Products Liability, 33 Vand. L. Rev. 681, 703-07 (1980).

[96] See note 82 supra.

[97] See cases cited in notes 99-100 infra.

[98] See authorities cited in note 34 supra.

[99] See, e.g., Cann v. Ford Motor Co., 658 F.2d 54, 59-60 (2d Cir. 1981), cert. denied, 456 U.S. 960 (1982); Bauman v. Volkswagenwerk Aktiengesellschaft, 621 F.2d 230, 232-33 (6th Cir. 1980); Phillips v. J.L. Hudson Co., 79 Mich. App. 425, 426-27, 263 N.W.2d 3, 4 (1977).

[100] See, e.g., Unterburger v. Snow Co., 630 F.2d 599, 603 (8th Cir. 1980) (evidence of subsequent design change admissible in strict liability action); Ault v. International Harvester Co., 13 Cal. 3d 113, 117-21, 528 P.2d 1148, 1150-53, 117 Cal. Rptr. 812, 814-17 (1974) (same); Good v. A.B. Chance Co., 39 Colo. App. 70, 78-79, 565 P.2d 217, 223-24 (1977) (same).

[101] See, e.g., Grenada Steel Indus. v. Alabama Oxygen Co., 695 F.2d 883, 888 (5th Cir. 1983); Note, supra note 26, at 850-51.

[102] See, e.g., Josephs v. Harris Corp., 677 F.2d 985, 990-91 (3d Cir. 1982) (evidence not admitted in failure-to-warn case where feasibility was not controverted); Werner v. Upjohn Co., 628 F.2d 848, 853, 854-55 (4th Cir. 1980) (same), cert. denied, 449 U.S. 1080 (1981); Smith v. E.R. Squibb & Sons, Inc., 405 Mich. 79, 91-93, 273 N.W.2d 476, 480-81 (1979) (evidence excluded in failure-to-warn case without discussion of feasibility issue). But see Sterner v. U.S. Plywood-Champion Paper, Inc., 519 F.2d 1352, 1354 (8th Cir. 1975) (admitting evidence to show feasibility of giving detailed warnings).

[103] Inescapably, the question of feasibility is central to the issue of whether the defendant's design was or was not unreasonable, and evidence of a subsequent design change can be highly

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quent design changes in every case, courts should be sensitive to the possibility of misuse of such evidence by jurors and should weigh carefully the likelihood of prejudice to the manufacturer against the utility to the plaintiff of admitting such evidence.[104] This solution is imperfect, but it is probably the most that can be accomplished with this approach.

This discussion of the admissibility of proof of subsequent design changes reveals, as did the earlier discussion of the possibility of granting substantial immunities to manufacturers, the essence of the dilemma confronting policymakers concerned about the negative effects of liability exposure on corporate decisionmaking. On one hand, if courts admit such evidence liberally and if factfinders are prone to misuse it, manufacturers will tend to become imprisoned in commitments to the status quo that may prove harmful to society in the long run. On the other hand, if such evidence is excluded altogether, the incentives created by tort for manufacturers to invest adequately in product safety may be undercut, to the detriment of those exposed to the risks of product-related injury. Moreover, the middle ground in this instance—admitting just the right amount of such evidence and relying on it in just the proper manner—is probably impossible to attain.[105]

We have yet to consider problems associated with the fact that conciliatory gestures by the manufacturer after accidental injury to the plaintiff, including offers to settle, tend to be construed by the plaintiff and potential plaintiffs as confessions of fault. As stated earlier, offers to settle are not admissible in the same case[106] or in other cases arising out of the same factual circumstances.[107] Is there any way that these protections might be extended to insulate manufacturers more broadly—might techniques be developed by which conciliatory

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probative on the question of feasibility. See, e.g., Caterpillar Tractor Co. v. Beck, 624 P.2d 790, 794 (Alaska 1981). Whenever the plaintiff has other ways of proving feasibility available, courts should be reluctant to admit proof of subsequent design changes. But I have found no decision embracing an across-the-board proscription of such evidence.

[104] A good example of this approach is to be found in the Fifth Circuit's decision in Grenada Steel Indus. v. Alabama Oxygen Co., 695 F.2d 883, 888 (5th Cir. 1983). See generally Note, supra note 34.

[105] The middle ground has been sought before in other contexts of product liability law. See, e.g., Epstein, Products Liability: The Search for the Middle Ground, 56 N.C.L. Rev. 643 (1978); Twerski, Seizing the Middle Ground Between Rules and Standards in Design Defect Litigation: Advancing Directed Verdict Practice in the Law of Torts, 57 N.Y.U. L. Rev. 521 (1982).

[106] See authorities cited in note 42 supra.

[107] See cases cited in note 43 supra.

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gestures could be insulated more broadly from the ultimate question of the reasonableness of the defendant manufacturers' previous product design and marketing decisions?

One such technique has been proposed in the context of personal injury claims against health care providers. Professor O'Connell has suggested that offers to settle cases of serious injury be extended to patients routinely before they receive medical treatment.[108] These offers would provide for limited benefits on a no-fault basis and would have to be accepted by the injured claimant within a specified period of time after injury in order to bind the provider. In this manner, the confessional implications of post-injury offers to settle negligence claims against hospitals would be reduced, and perhaps eliminated, by extending the offers on a pre-injury, no-fault basis.[109]

The greatest source of difficulty with such a proposal in the product liability context is the significant role played by user misconduct in cases involving generically dangerous products.[110] Any scheme involving pre-injury offers to pay benefits on a no-fault basis would generate significant problems of adverse selection, in which multitudes of claimants with no chance of recovery under the present system would accept the offers readily,[111] while those with stronger claims would proceed in tort.[112] This approach might be more successful in a limited area of product liability—prescription drugs, for example—where user misconduct plays a less important role.[113] But even there it constitutes a radical departure from traditional ap-

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[108] In the article cited in note 78 supra, Professor O'Connell proposes a plan in which the health care provider has a post-injury option of whether or not to extend the offer, and in which the claimant is bound to accept if the offer is made. At a recent Association of American Law Schools meeting in Boston (June 6-10, 1983), Professor O'Connell described a proposal similar to the one set forth in his article, but in which the offer by the health care provider would be irrevocable, up until the date of expiration, and in which the claimant would be free to refuse the offer and proceed in tort. Since I assume that the plan described at the Boston meeting reflects Professor O'Connell's latest thinking on the subject, I will refer to that version hereafter. Professor O'Connell has indicated in private conversations with me that he intends to extend his proposal to other categories of potential tort defendants.

[109] Professor O'Connell stressed this feature in his remarks at the Boston meeting. See note 108 supra.

[110] Professor O'Connell recognizes this distinction in his analysis. See O'Connell, supra note 78, at 615 & n.115; see also Henderson, supra note 79, at 666 & n.24.

[111] For example, the claimant who cuts himself with a knife manufactured by the defendant would gladly settle for a no-fault recovery, since his chances in tort are nonexistent. For this reason, Professor O'Connell must give the defendant, rather than the plaintiff, the option of making the nonrefusable offer of no-fault payments. See O'Connell, supra note 78, at 605-06.

[112] Presumably, the decision by the claimant would be made by comparing the expected values of the no-fault and tort claims, taking into account the claimant's risk averseness.

[113] I considered this possibility in an earlier article. See Henderson, supra note 79, at 665-66.

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proaches and is unlikely to appeal to manufacturers unsure of its implications.[114]

Self-help measures may be available to mitigate the effects that an offer to settle one product liability case may have on the expectations of other claimants. For example, defendant manufacturers could include provisions in settlement agreements requiring plaintiffs to refrain from disclosing the terms of settlement.[115] Beyond this type of measure, however, there is little that can be done. Moreover, from a practical standpoint, it is difficult to keep the fact that a settlement has been reached, or information regarding its terms, from being disseminated.

2. *Measures Aimed at the Managers Themselves: Penetrating the Black Box*

As discussed earlier, a number of writers have looked into the black box of the firm in order to examine the likely effects of various public law liability rules on corporate behavior;[116] these commentators have reached different conclusions. Some believe that, with reasonable monitoring of managerial behavior, adequate levels of corporate compliance with societal objectives can be achieved by adjusting the liability rules along the lines suggested in the preceding section despite the inherent conflicts of interest between the corporation and its management.[117] Other observers, despairing of the likelihood of adequately reaching managers through liability rules aimed at their corporate employers, have suggested a variety of penalties, typically criminal in nature, aimed at managers individually.[118] Such penalties presumably would take the form of uninsurable fines designed to raise the marginal costs to managers of engaging in the sorts of socially suboptimal deferral tactics described in this Article.

I believe, however, that imposing such penalties on corporate managers would be ill-conceived.[119] Not only may one doubt the

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[114] See note 81 and accompanying text supra. In a personal conversation, Professor O'Connell has indicated that several manufacturers have shown interest in limited versions of his plan for health care providers.

[115] Manufacturers frequently include these types of provisions in settlement agreements. See, e.g., N.Y.L.J., Aug. 23, 1983, at 1, col. 1, 2.

[116] See authorities cited in notes 16-17 supra.

[117] See, e.g., K. Elzinga & W. Breit, The Antitrust Penalties: A Study in Law and Economics 115, 134-35 (1976).

[118] See, e.g., Coffee, Corporate Punishment, supra note 67; Stone, supra note 6, at 28-35.

[119] Cf. K. Elzinga & W. Breit, supra note 117, at 132-33 (rejecting imposition of fines on corporate managers responsible for antitrust violations because of the "practical problems of

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wisdom of imposing criminal penalties for conduct only mildly culpable,[120] but it is also difficult to predict what the effects of such an approach would be on managerial behavior. On one hand, firms might be willing and able to hold managers harmless in ways that would frustrate the underlying intent of such a rule.[121] On the other hand, to the extent that managers were exposed to such penalities individually, the vagueness of the product liability standard might cause more skillful, responsible individuals to refuse to continue as managers, leaving the field of corporate risk management to risk-preferring "gunslingers" willing to play for high stakes.[122]

A more plausible alternative to imposition of criminal penalties might be adjustment of the relevant rules of corporate law to support more effective monitoring of managerial behavior. Corporate managers might, for example, be required to disclose more fully the long-run implications of maintaining the status quo, so that monitors both inside and outside the firm could judge their performance more accurately.[123] To some extent, of course, disclosure of long-run implications might be interpreted by claimants and potential claimants as confessions of error in the same way that changes in corporate behavior are so interpreted. But insofar as these disclosures would present management with an opportunity to justify its course of action and to refute any unwarranted inferences that might be drawn from that course, this danger would be mitigated. The most significant problem with a full disclosure rule would be adequate enforcement. Writers who have considered possible methods of controlling corporate managers have expressed doubts about the efficacy of disclosure requirements as mechanisms of control.[124]

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implementation"); C. Stone, supra note 72, at 58-69 (expressing skepticism that use of criminal sanctions against "key" employees would modify corporate behavior).

[120] See generally H. Packer, The Limits of the Criminal Sanction 127-29, 354-63 (1968); Allen, The Criminal Law as an Instrument of Economic Regulation, Int'l Inst. Econ. Research (Orig. Paper 2, 1976), excerpted in S. Kadish, S. Schulhofer & M. Paulsen, Criminal Law and Its Processes 990-93 (4th ed. 1983).

[121] See C. Stone, supra note 72, at 64-65; Bishop, Sitting Ducks and Decoy Ducks: New Trends in the Indemnification of Corporate Directors and Officers, 77 Yale L.J. 1078 (1968); Oesterle, supra note 67.

[122] Stone, supra note 6, at 34 n.133; see also Coffee, Corporate Punishment, supra note 67, at 409 & n.71 (asserting existence of risk-preferring managers).

[123] See Brauson, Progress in the Art of Social Accounting and Other Arguments for Disclosure on Corporate Social Responsibility, 29 Vand. L. Rev. 539 (1976); Sonde & Pitt, Utilizing the Federal Securities Laws to 'Clear the Air'! Clean the Sky! Wash the Wind!, 16 How. L.J. 831 (1971).

[124] See, e.g., E. Herman, Corporate Control, Corporate Power 278-80 (1981); Weiss, Disclosure and Corporate Accountability, 34 Bus. Law. 575, 600-01 (1979).

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A variation of this approach would be to attempt, by law, to adjust reward structures within manufacturing firms so that managers no longer perceive that they will be penalized for reaching safety-related decisions that are sensible from a long-run, societal perspective. This type of adjustment would reduce the marginal costs to managers of reaching socially preferable decisions. Suggestions to this effect have been advanced in different contexts[125] and obviously would require fundamental reforms in the rules of corporate governance that would be difficult to implement. Should these suggestions ever be put into place, they might help to eliminate the problems I have described in this Article; but these problems are not serious enough, in and of themselves, to justify sweeping legal changes in the basic structure of the American business corporation.

Conclusion

Addressing the implications of the passage of time in product liability, this Article has argued that liability for generically dangerous products tends to imprison corporations and corporate managers in patterns of deep play in which changes in firm behavior that are cost-effective from a long-run, societal perspective are deferred because of the negative, short-run liability effects that such changes generate. One key to understanding this tendency is to appreciate the extent to which outside observers, including claimants, potential claimants, judges, and jurors, can and do interpret such changes in firm behavior as confessions of fault. Thus, for a manufacturer to introduce a safety-related change into an existing product design is to condemn, by implication, its earlier design as unreasonably unsafe. Similarly, if the manufacturer indicates a willingness to consider the possibility of settling a claim based on an allegedly defective design, it may be, at least by implication, admitting legal responsibility to a broad range of potential plaintiffs. This phenomenon of confession by implication, together with other factors such as high discount rates and the possibility of downstream governmental intervention, encourages manufacturers to defer taking socially desirable action.

Moreover, when one looks into the black box, questioning traditional assumptions of congruence between the interests of managers and their corporate employers, one discovers that the individual managers charged with making the relevant decisions may tend to engage in deferral tactics even when such tactics harm their employers. This

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[125] See, e.g., Weiss, supra note 67.

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phenomenon results from incentive structures within and without the firms and the difficulties of monitoring self-serving managerial behavior. Thus, for a combination of reasons, corporate managers are tempted to adopt strategies that reduce exposures to liability in the short run, even though those strategies should be rejected from the perspective of the long-run welfare of both the firm and society. To the extent that managers succumb to these pressures and defer taking socially beneficial action, both their rationality and the rationality of their corporate employers may be said to have been imprisoned by the consequences of the passage of time.

True to my word at the outset, I do not have satisfactory solutions to the problems I have described. Increasing the marginal costs to manufacturers of unreasonably maintaining the status quo, through more liberal awards of punitive damages or awards of prejudgment interest, presents serious difficulties. Moreover, this solution raises the stakes of corporate risk management without addressing the underlying imperfections in the liability system. More promising, at least from a theoretical perspective, is the possibility of reducing the marginal costs to manufacturers of introducing socially beneficial changes. Here again, however, the practical realities cause me to be pessimistic regarding the chances for success. The objective should be to prevent any given change in firm behavior from improperly condemning actions taken earlier and/or later. The admissibility of evidence of subsequent design change, much debated in law journals, is an important issue in this context. My analysis suggests that courts should be more sensitive to the highly prejudicial nature of this evidence; but beyond relying on the good sense of judges, a workable middle ground resolution is probably impossible to achieve.

An interesting aspect of the problems addressed in this Article is the extent to which they might be ameliorated by imposing penalties on managers personally or by adjusting the organizational structures of the business corporations that manufacture most of the products in our society. Relying on the work of other scholars in somewhat analogous contexts, I have concluded that there is probably little that can be accomplished along these lines. If and when broad reforms in the basic corporate structure should be implemented, they may serve to release both managers and their firms from the imprisonment of which I speak. That day, however, may be a long way off.

On these pessimistic notes, I conclude my observations regarding the implications of the passage of time for product liability law. As I acknowledged at the outset, law review commentary is almost always optimistic. This Article can serve as the exception that proves the general rule.

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