



## Law amid Flux: The Economics of Negligence and Strict Liability in Tort

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# LAW AMID FLUX: THE ECONOMICS OF NEGLIGENCE AND STRICT LIABILITY IN TORT

MARIO J. RIZZO\*

THE economic efficiency approach to the analysis of the common law, particularly the law of torts, has been growing rapidly in recent years and shows no sign of abatement. Nevertheless, some very fundamental analytic problems have not even been recognized in this literature, much less solved. It is the purpose of this essay to raise these problems in the context of the perennial conflict between negligence and strict liability. The first and major part of this paper will consist of a detailed study of the efficiency rationale for negligence law. Next, we shall analyze some of the economic aspects of a system of strict liability. The overall conclusion is that efficiency, as normally understood, is impossible as a goal for tort law. The law cannot and should not aim toward the impossible. Consequently, both the normative and positive justifications for the efficiency approach to tort law must be rejected. Our reasons for this conclusion can be divided into static and dynamic considerations. The most important by far, however, are the dynamic factors: Precisely because we live outside of general competitive equilibrium and in a world of unpredictable flux, the efficiency case for negligence must fail. In such a world, it is impossible to compare alternative liability systems in terms of judicial cost-benefit analysis or "fine tuning." Instead, they must be analyzed in terms of institutional efficiency—the certainty and stability that these rules impart to the social framework. A static world of general equilibrium would make an efficient tort law possible, and yet render it unnecessary; in such a world, markets would be universal. A dynamic world, however, demands the certainty and simplicity of static law.

## I. NEGLIGENCE

Traditional, noneconomic definitions of negligence are generally based on such intrinsically vague concepts as the lack of "due care" or the absence of

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the level of care that *would* be undertaken by the "reasonable man." The economic efficiency approach attempts to make this concept more rigorous. Negligence can be defined in economic terms as the behavior of the utility-maximizing individual when he bears less than the full social costs of his activity. To make such a definition operational the analyst must be able to measure, with tolerable accuracy, the relevant social costs. This is no simple task; and if our thesis is correct, it is fundamentally intractable. Nonnegligence refers to the behavior that *would* be undertaken by the rational agent if he were made to bear the full social costs associated with his conduct. This formulation brings into sharp relief the counterfactual nature of the predictions involved. Hence, the kind of evidence that would shed light on these counterfactual hypotheses is, at best, indirect.

The efficiency approach requires not only the testing of hypotheses about the defendant's negligence, but also investigation into the (contributory) negligence of the plaintiff. If, however, the doctrine of contributory negligence is to be interpreted as a lesser-cost avoider defense,<sup>1</sup> our task is still not complete. If we find that both defendant and plaintiff have been negligent, we must still determine which party could have avoided the accident at less cost. Therefore, we are driven to compare two counterfactual hypotheses: if A were required to bear the full social costs attached to his behavior he would have avoided the accident at \$X, and if B bore the full costs he would have avoided it at \$Y. Now if \$X is less than \$Y, the efficiency framework implies that A ought to be made liable for the harm resulting from the accident. The issue is not to compare or evaluate what *has* happened but, rather, to speculate about what *might* have happened in two alternate worlds and then to compare the outcomes.

In purely formal terms, the efficiency reformulation of the law of negligence seems to make it more precise, but the *operational* precision of this approach hinges on the ease with which the empirical counterparts to the theoretical categories can be determined. Even so committed an efficiency theorist as Harold Demsetz has recently admitted that "it is so difficult to know what the underlying efficiency considerations are . . . ."<sup>2</sup> If, therefore, the promise of adding greater precision to the concept of negligence is to be realized, there must be some method of *testing* the relevant hypotheses. Although the recent literature has not formulated the central question in these terms, testing is, nevertheless, crucial. Let us briefly consider three possible methods of testing hypotheses about efficient liability assignment.

<sup>1</sup> Richard A. Posner, *Economic Analysis of Law* 123-24 (2d ed. 1977).

<sup>2</sup> Harold Demsetz, *Ethics and Efficiency in Property Rights Systems*, in *Time, Uncertainty, and Disequilibrium: Exploration of Austrian Themes* 97, 106 (M. Rizzo ed. 1979). Demsetz apparently believes, however, that it is still possible to at least approximate efficient outcomes.

The first and second we shall examine in greater detail later in this essay, and the third has been analyzed in depth elsewhere.<sup>3</sup>

The most attractive method of testing claims about negligence and cheaper-cost avoidance is to let the economic agents "speak" for themselves. Suppose that A may have been negligent in not undertaking certain precautions while driving; in economic terms, the (expected) value of the costs of such precautions may fall below the (expected) social benefits. The best way to test this hypothesis is to place liability for the harm which may ensue on A. A will be forced to internalize the relevant costs and to make a cost-benefit calculation based on information that his own self-interest has led him to acquire. However, testing the defendant's negligence precludes testing the plaintiff's negligence; this method will work only when, on other grounds, the nonnegligence of one party has already been established. These are the pure adaptation problems which we shall subsequently discuss.

The second method is probably far too loose and unsystematic to deserve designation as a testing method at all. It consists simply of looking at a situation and guessing what the underlying efficiency considerations might be.<sup>4</sup> Strictly speaking, this is merely the first step of a test—a conjecture which is in need of corroboration or refutation. It may be argued, however, that these are not merely wild guesses, but are based on common, everyday empirical observations. This is the crux of the problem: such data are totally insufficient and misleading. The serious *conceptual* problems in identifying an efficient assignment of liability make this kind of observation without much merit. Furthermore, the whole notion of efficiency has often been used so imprecisely as to inject a large arbitrary element in the specification of an efficient outcome. Both of these important points will later be elaborated.

The final method does not guide us in choosing the efficient liability assignment, but claims that *whatever* method is initially used only the efficient rules will survive.<sup>5</sup> This rests on the contention that inefficient rules will be litigated and, therefore, altered because of the utility-maximizing decisions of private litigants. Once a rule becomes efficient, however, litigation will cease. The test thus consists of imposing liability in a particular way and then observing whether the rule survives. If it does, it was efficient; if it does not, it was inefficient. A number of very significant objections, however, have been raised against this view.<sup>6</sup> In particular, it is clear that litigation of

<sup>3</sup> Mario J. Rizzo & Frank S. Arnold, *The Tendency toward Efficiency in the Common Law* (1978) (unpublished manuscript, New York Univ.).

<sup>4</sup> See Posner, *supra* note 1, *passim*.

<sup>5</sup> George L. Priest, *The Common Law Process and the Selection of Efficient Rules*, 6 J. Legal Stud. 65 (1977); and Paul H. Rubin, *Why Is the Common Law Efficient?*, 6 J. Legal Stud. 51 (1977).

<sup>6</sup> William M. Landes & Richard A. Posner, *Adjudication as a Private Good*, 8 J. Legal Stud. 235 (1979); and Rizzo & Arnold, *supra* note 3.

a legal rule depends on whether change in the rule is expected to be toward greater or lesser efficiency, which in turn, depends on the attitudes of the judiciary. To the extent that their "bias" is toward efficiency, many efficiency-enhancing litigation opportunities will emerge.<sup>7</sup> Therefore, the ability of a judge to recognize an efficient rule has an impact on this process, by providing, as it were, the proper environment for efficiency-enhancing litigation to occur.<sup>8</sup> Even this conclusion, however, is based on several stringent assumptions, including agreement of both plaintiff and defendant on the probability of a win or a loss in the given case.<sup>9</sup> In any event, we shall take as our working hypothesis that the "Darwinian" mechanism cannot be solely, or even mainly, relied upon to produce efficient legal rules. Therefore, the informational problems in identifying empirically optimum liability assignments are of crucial importance.

## II. SIMPLE NEGLIGENCE: ADAPTATION

This section will analyze some economic aspects of the simplest negligence cases: the pure adaptation problems,<sup>10</sup> which concern only the existence of a duty and not its location.<sup>11</sup> To be more precise, the only question is whether the defendant ought to have been more careful, not whether the plaintiff ought to have done anything differently. The issue is restricted in this way ultimately because of asymmetrical information. Suppose the court can more easily determine the negligence or nonnegligence of the plaintiff than of the defendant.<sup>12</sup> In some contexts, the costs of ascertaining whether due care had been undertaken might be lower with respect to the plaintiff's conduct.<sup>13</sup> When this is so and the plaintiff is considered nonnegligent, placing liability on the defendant can both yield valuable information and provide the economically proper incentives. We shall illustrate these points in four important cases.

In *Bolton v. Stone*<sup>14</sup>, a woman was struck on the head by a cricket ball as she was walking just outside of her house. The ball had emanated from a nearby cricket field which had never before been the source of such an

<sup>7</sup> See Rizzo & Arnold, *supra* note 3, at 12-13.

<sup>8</sup> As Priest denies. See Priest, *supra* note 5, at 72.

<sup>9</sup> See Rizzo & Arnold *supra*, note 3, at 20-21.

<sup>10</sup> Abraham Harari, *The Place of Negligence in the Law of Torts* 147-67 (1962).

<sup>11</sup> *Id.* at 101.

<sup>12</sup> The assumption that the court can easily determine the economic nonnegligence of any party is one that is made provisionally and only in this section. Later our critique becomes more fundamental and this assumption is accordingly dropped.

<sup>13</sup> Obviously, the ascertainment costs can be lower with respect to the defendant. However, this type of case is not being considered here.

<sup>14</sup> [1951] A.C. 850.

accident. Although treated by the court as an ordinary negligence question, it is more precisely an adaptation problem.<sup>15</sup> The woman is clearly viewed as a virtually passive bystander who could not conceivably be characterized as negligent. The only question is: should the defendant have done anything differently? Lord Reid's analysis here is particularly interesting. In determining whether the defendant had been negligent, it is proper to examine "not only how remote is the chance that a person might be struck but also how serious the consequences are likely to be if a person is struck."<sup>16</sup> This is merely the expected value of the harm and is perfectly consistent with one-half of the famous Hand formula.<sup>17</sup> However, Lord Reid continues immediately, "... but I do not think that it would be right to take into account the difficulty of remedial measures. If cricket cannot be played on a ground without creating a substantial risk, then it should not be played there at all."<sup>18</sup> The question of whether the "remedial" or precautionary measures cost more than their expected benefits (prevention of the harm) is not one with which the court should concern itself. If there is a "substantial risk," then the owner of the cricket field ought to make the cost-benefit calculation himself. If he is held liable for the harm, he may decide to put up a higher fence or even to stop playing cricket there at all. While Reid indicates that he would have held for the plaintiff had the risk been substantial, the fact that the risk was "extremely small" means that the plaintiff is not entitled to recover. The defendant's behavior was completely nonnegligent.

There are two inconsistent lines of thought in this decision. First, within the class of substantial risks the defendant ought to be made liable regardless of the "difficulty of remedial measures." Here the onus of the cost-benefit analysis is his. The second line of thought (and the actual holding) is that within the class of small risks, the plaintiff cannot recover. From this perspective, the court determines the reasonableness of the behavior.

In pure adaptation cases like this, placing liability on the defendant (the causal agent), regardless of degree of risks, provides a means of testing the hypothesis of nonnegligence. If the defendant had been held liable and continued to behave in the same way, the court's hypothesis would have been corroborated. If, however, the defendant began to increase his level of care, the hypothesis would have been falsified. A "strict liability" approach here would have obviated the need for a judicial cost-benefit analysis and, paradoxically, would have tested the claim of nonnegligence.

<sup>15</sup> Harari considers this a coordination problem rather than one of adaptation. See Harari, *supra* note 10, at 172.

<sup>16</sup> Bolton v. Stone, [1951] A.C. at 867.

<sup>17</sup> See U.S. v. Carroll Towing Co., 159 F.2d 169 (2d Cir. 1947); Richard A. Posner, A Theory of Negligence, 1 J. Legal Stud. 29 (1972).

<sup>18</sup> Bolton v. Stone, [1951] A.C. at 867.

*Re Polemis* is another important example of the adaptation issue.<sup>19</sup> Longshoremen, servants of the defendants, were unloading cargo on the plaintiff's ship. One of them dropped a plank into the ship's hold which contained benzine vapor. A spark created by the plank ignited the vapor, and the ship was destroyed by flames. The court held that the handling of the plank was negligent because *some* harm to the ship was foreseeable. Although the burning of the ship itself was not foreseeable, it was nonetheless the "direct" consequence of a negligent act. Therefore, the defendants were fully liable for the destruction of the ship. From the efficiency point of view, the decision would seem incorrect. Liability would not increase the defendants' precautionary activity because unforeseeable contingencies will not motivate behavior. The defendants should have been held liable for, say, a dent in the hold because against that contingency they would have exercised due care, but nothing would be accomplished by holding them liable for the fire.

Although the court couched its decision in terms of the "directness" of the harm, this case can be viewed as an effort to test the negligence hypothesis.<sup>20</sup> As long as there is any indication that the defendants were negligent, because of, say, the foreseeability of a dent in the hold, liability ought to be imposed on them for the ship's destruction by fire. The assertion that the fire was unforeseeable was only an *hypothesis* and, as such, is quite possibly incorrect. Whether the fire was foreseeable is something for which a test can be provided. If the defendants must pay, then they can strike the cost-benefit balance and determine for themselves the category of foreseeable harms. What is unforeseeable to the court may possibly be foreseeable to defendants anxious to avoid liability.

*Vincent v. Lake Erie Transportation Co.* raises the important adaptation issues in a somewhat different context.<sup>21</sup> The steamship Reynolds was held fast to a dock by the defendant's servants during a violent storm. The force of the wind and the waves constantly drove the ship against the dock. This resulted in \$500 worth of injury to the plaintiffs' dock. *Vincent* was not treated as a negligence case, nor as one in which the behavior of the defendant inflicted *net* social costs. Indeed, "the defendant prudently and advisedly availed itself of the plaintiffs' property for the purpose of preserving its own more valuable property."<sup>22</sup> The court, nevertheless, held that the defendant was liable for damages. The reasonableness of the defendant's behavior did not prevent recovery by the plaintiff.

<sup>19</sup> *In re Polemis and Furness, Withy & Co.*, [1921] 3 K.B. 560.

<sup>20</sup> Remember that there was never any question of the plaintiff behaving differently with respect to the harm.

<sup>21</sup> 109 Minn. 456, 124 N.W. 221 (1910).

<sup>22</sup> *Id.* at 460, 124 N.W. 222.

Although *Vincent* is generally classified as an intentional tort case, its implications go far beyond the narrow confines of that category; indeed for our purposes here, the distinction between intentional and negligent torts is largely illusory. In cases of the former variety, the harm inflicted may have a certain value of, say, \$500; in the latter cases it may have an *expected* value of \$500. Suppose the "offsetting" benefit of the activity is hypothesized to be worth more than \$500. In the (intentional tort) characterization of *Vincent* that hypothesis is subject to a test. Let the defendant bear the costs of his activity, and he will decide whether the benefits were truly offsetting. In a negligence characterization of similar facts, however, the court's assertion of the defendant's reasonableness would remain untested.

The differential treatment of similar patterns of facts in the laws of negligence and intentional harms gives rise to an unfortunate structure of incentives which has rarely been recognized. Consider that a rational defendant would substitute an expected harm of \$1,000 for a certain one of \$500 when the corresponding two different kinds of activities can achieve the same result worth \$5,000. This is because in the first case the defendant's behavior is nonnegligent (and therefore he is not liable) while in the second case he must pay in any event.<sup>23</sup>

*Vincent* can be seen, then, as an attempt to place the burden of the cost-benefit analysis on the defendant. As a pure adaptation problem (no one ever suggested the possibility of plaintiff negligence), liability ought to be placed on the causal agent of harm.<sup>24</sup>

*Rylands v. Fletcher* raises similar adaptation problems in the context of traditional strict liability.<sup>25</sup> In this case, the defendants erected a reservoir on their land, unaware that the coal under the land had been mined out. Due to this "defect," the water of the reservoir burst into the old shafts, eventually entered the plaintiff's nearby mine, and damaged it. The decision of the court was well-summarized by Lord Cranworth: "If a person brings, or accumulates, on his land anything which, if it should escape, may cause damage to his neighbour, he does so at his peril."<sup>26</sup> Clearly, *Rylands* is a pure adaptation case; there is no question of the plaintiff being able to avoid the accident at lesser cost.<sup>27</sup> Hence, the imposition of liability enables us to test either the direct negligence of the defendant or the defendant's possible negligence in choosing those who erected the reservoir. Paradoxically, a rule

<sup>23</sup> This assumes that in both the intentional and accidental cases the harm is a *byproduct* of the desired result; injury to the plaintiff is not the defendant's goal. An early recognition of the incentives problem can be found in Warren A. Seavey, *Negligence—Subjective or Objective?*, 41 Harv. L. Rev. 1, 8 n.7 (1927).

<sup>24</sup> This case will be dealt with again. See p. 316 *infra*.

<sup>25</sup> 3 H.L. 330 (1868).

<sup>26</sup> *Id.*

<sup>27</sup> See Harari, *supra* note 10, at 147-67.



of "strict liability" in adaptation cases can reveal the reasonableness or unreasonableness of the defendant's behavior. A *Rylands* analysis, then, can obviate the need for a negligence analysis.

A number of important conclusions can be drawn from the foregoing discussion. First, the conventional efficiency criterion does not yield a determinate result in cases like *Bolton*, *Vincent*, and *Rylands* where both the defendant and plaintiff acted reasonably. Furthermore, the efficiency criterion cannot explain the result in *re Polemis*. The defendants here were not economically negligent with respect to the harm that actually came to pass and hence ought not to have been held liable. Second, the imposition of liability can test the hypothesis of (economic) nonnegligence in cases in which one need not test the nonnegligence of the plaintiff.<sup>28</sup>

### III. STATICS OF NEGLIGENCE

#### A. *Incomplete-Markets Argument*

A fundamental prerequisite for economy-wide optimality in the sense of Arrow and Debreu is the existence of a separate market for every commodity, where the commodities are defined, not only by their usual properties, but also by the time and circumstances in which they are enjoyed.<sup>29</sup> Unless the economy is characterized by a complete set of markets (including futures markets), Pareto efficiency cannot be assured.

Much of the efficiency-based economics of law literature sees the tort law as an attempt, however crude, to approximate the outcomes of hypothetical markets.<sup>30</sup> Suppose, for example, there were a perfect market in accidents between automobiles and pedestrians. Then the driver of a car who was in a great hurry to get somewhere could pay pedestrians and other drivers for permission to subject them to increased risk of injury. Absent this market, it may seem that the law of torts ought to balance the costs and benefits and decide when driving has been "negligent." Yet even if this were done, it is not sufficient to deal only with the hypothetical accident market. There are a whole array of externalities that the law of torts must, on this view, consider. Often external costs (or benefits) cannot be measured in a way "which is acceptably objective and non-arbitrary." Calabresi and Melamed have called these costs "moralisms."<sup>31</sup> How, for example, can we accurately mea-

<sup>28</sup> It ought to be stressed that answering the question of whether the plaintiff ought to have done things differently need not proceed on economic grounds. There may be reasons of ethics or custom for insulating the plaintiff against liability that the law may wish to enforce.

<sup>29</sup> See generally Kenneth J. Arrow & Frank H. Hahn, *General Competitive Analysis* (1971).

<sup>30</sup> See Posner, *supra* note 1, at 119-59.

<sup>31</sup> Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 Harv. L. Rev. 1089, 1111-12 (1972).

sure the revulsion that some people would feel if others were allowed to make voluntary "slavery" contracts? How is the distaste for allowing the purchase and sale of babies revealed? How can the envy that my neighbor feels when I prosper be measured? These externalities cannot be dismissed merely because they are hard to measure. Minimization of social costs differs from the minimization of private costs precisely because there is an absence of complete markets, and this absence is exactly what makes measurement so difficult.

In general, economists explain behavior *as if* it were the minimization of certain costs. In particular, as we have seen, some of the economics of law literature has attempted to explain common law *as if* it aimed at the minimization of social costs. In view of the many difficulties of measurement, how does the analyst decide what constitutes a "social cost"? If we are willing to *postulate* the existence of certain costs, we can "explain" anything as the minimization of those costs. We would succeed in developing a construct to "predict" successfully the same body of legal rules we set out to explain. However, new forms of costs and benefits would have to be "discovered" continually to explain rules outside of that original set. In essence, we would have only constructed an elaborate tautology. The costs that we use to explain certain legal rules must be measurable outside of the "market" that produces those rules. This is the crux of the problem: in many cases the relevant social costs are revealed with any degree of accuracy only through the legal system they are relied upon to explain.

From a normative perspective, the difficulties in determining the relevant social costs to be minimized threaten arbitrarily to override *actual* market transactions. For example, restrictions on the sale of pornography can be justified in a social cost-benefit framework by the disgust some people feel at even the thought of others reading this material. If it could be shown that the "prudes" were willing to pay more to have the "perverts" stop reading pornography than the latter would pay to read it, then the attempt to duplicate a result on a hypothetical market would override an actual one. Frequently, however, quantification of such costs is not feasible, and it is not very useful to view the whole matter in a cost-benefit framework. The normative case for deciding these matters on efficiency grounds then fails because the measurement difficulties will preclude any clear-cut solution.

### B. *Time Frames*

In the previous section, we discussed the difficulties that the efficiency framework must face in deciding what will be considered a "social cost" and what will not. A related question is addressed here: if we place liability on the cheaper-cost avoider, within what time frame do we measure the relative avoidance capabilities of individuals? In this section, we will examine two

examples of the tension in the law that arises out of the practical difficulties in choosing among time frames. The efficiency framework in many cases cannot yield a determinate implication as to the correct time perspective.

1. *The Last Clear Chance*. The doctrine of the last clear chance provides an exception to the classical rule that contributory negligence by the plaintiff completely bars his recovery. Consider the following simplification of the facts in *Kumkumian v. City of New York*.<sup>32</sup> Suppose that the defendant was negligently operating a subway train while at the same time the plaintiff was negligently wandering on the tracks. Although "the accident might [have been] prevented at low cost if the trespasser [had] simply stay[ed] off the track, *at the moment* when the train is bearing down on him it is the engineer who can avoid an accident at least cost, and this cost is substantially less than the expected accident cost."<sup>33</sup> The trespasser is the longer-run, lesser-cost avoider, the trainman is the immediate-run, lesser-cost avoider. In principle, the choice between the runs might be determined by the liability assignment that minimizes the sum of deaths and other costs. The choice is not obvious, however, for it depends on several very difficult-to-measure quantitative relationships. It will be necessary to know how many additional plaintiffs would walk on the subway tracks if relieved of liability, how many of them would be saved by subsequently more cautious engineers, and how many of the additional trespassers saved would have wandered onto the tracks, even if they were liable. If the sum of the latter two factors exceeds the first, then fewer lives would be lost. This cannot, however, be determined *a priori*. Furthermore, the savings in lives would have to be measured against the additional costs of the engineer acting more cautiously at the first sign that something *might* be wrong. It is hard to see how in practice such data will be available to the courts or anyone else. Thus, cost minimization is unlikely to determine the choice between time frames.<sup>34</sup>

2. *Negligence of Third Parties*. The second example of the time-frame

<sup>32</sup> 305 N.Y. 167, 111 N.E.2d 865 (1953).

<sup>33</sup> See Posner, *supra* note 1, at 129 (emphasis added).

<sup>34</sup> Harold Demsetz, on the other hand, apparently thinks that the last clear chance rule is clearly efficient. This is because he believes that without the rule very few (if any) additional plaintiffs would wander onto the tracks. Hence, "[r]ecognizing that not much deterrent is lost by the last clear chance rule, the law weighs the likelihood of saving a man's life, and the value of doing so, as sufficiently great to warrant holding the railroad liable if it fails to take the last clear chance at warning the trespasser." See Demsetz, *supra* note 2, at 109. His low estimate of the deterrent value of this rule rests on the imperfect ability of the legal system to make whole the victim of physical injuries. *Id.* This, of course, proves too much. In the law of torts as a whole, the recovery obtained by the plaintiff is the cost imposed on the defendant. If recoveries are imperfect and hence have low incentive value, then the costs imposed on defendants will have suboptimal deterrent value. This then amounts to a general argument against the position that tort law can encourage defendants to undertake close to the optimal level of precautionary activity.

problem gives rise to what, from an efficiency framework, appears to be exactly the same set of issues. Yet in this case the law adopts a different position. The rule we wish to discuss has been succinctly summarized by Hart and Honoré: "In general the negligent act of a third party is not held to negative causal connexion."<sup>35</sup> Consider, for example, a situation in which the defendant negligently permitted gasoline to pour out on the street. A bystander lit a match, threw it down, and the gasoline ignited. The resulting explosion injured the plaintiff.<sup>36</sup> If the act of the third party were negligent rather than intentional, then the defendant would still be liable: the causal chain remains unbroken. Here again there are different cheaper-cost avoiders depending upon the time frame chosen. At the moment of the gasoline spill, the bystander is the cheaper-cost avoider. Prior to the spill, however, the defendant assumes that role. If the logic underlying the efficiency explanation of the last clear chance rule were to apply similarly to this time-frame problem, the bystander should be liable for the plaintiff's injuries. Yet the law has switched time frames and is now concerned with the longer-run avoider. The problems of determining the cost-minimizing solution in this case are conceptually identical to the previous one. The law's confusion as to the proper time frame reflects the enormous practical difficulties of choosing among them on cost-minimization grounds.

### C. *Second Best*

The general theory of second best poses, perhaps, the most profound of the static informational difficulties for those arguing that the tort law maximizes economic efficiency.<sup>37</sup> As should be obvious from many of the examples already discussed, most accidents occur in the course of otherwise productive activity. Suppose now that the price of output ( $X$ ) from one such activity is below its true social marginal cost because the producer is not liable for these accidents. Consider, for simplicity, the case where the producer is the cheaper-cost avoider. In a world of other distortions from general equilibrium prices, a simple application of the theory of second best states that imposing liability will not necessarily be an efficiency-improvement. It could even reduce efficiency. To see this, imagine two other outputs ( $Y$  and  $Z$ ) which are each complementary to  $X$ . Suppose that due to either monopoly or excise taxes, their prices *exceed* social marginal cost by

<sup>35</sup> H. L. A. Hart & A. M. Honoré, *Causation in the Law* 143 (1959).

<sup>36</sup> *Watson v. Kentucky & Indiana Bridge & Ry. Co.*, 137 Ky. 619, 216 S.W. 146 (1910).

<sup>37</sup> See generally R. G. Lipsey & Kelvin Lancaster, *The General Theory of Second Best*, 24 *Rev. Econ. Stud.* 11 (1957).

different proportions. Now raising the price of  $X$  to marginal cost through the imposition of liability may create further distortions. The supramarginal cost price of  $Y$  and  $Z$  reduces the output of  $X$  below its optimum (due to complementarity). To restore some semblance of the optimum output of  $X$  its price should be lower than the social marginal cost.<sup>38</sup> This is precisely the case when liability is "imperfect."<sup>39</sup>

Calabresi has attempted to minimize the importance of the second-best arguments by arguing, in effect, that if we hold constant the output of  $X$ , or if there is a very good substitute, then the whole issue boils down to a simple question: shall  $X$  be produced with greater or fewer accidents?<sup>40</sup> We cannot *always* assume, however, that there will be good substitutes, but this is an obvious objection. Putting it aside, Calabresi's reformulation of the issue is still misleading. Second-best arguments are relevant in a different way. Without producer liability in our previous example, the price of factor ( $A$ ), which if used to a greater extent could reduce the number of accidents, would be below its true social marginal product. If there are distortions in the prices of other factors ( $B$  and  $C$ ) such that their prices will exceed the social marginal products (perhaps because of negative externalities), and if each of these factors are, on an economy-wide basis, complementary to  $A$ , then to use more of  $A$  in the production of  $X$  will not be an improvement. Too many of the other factors are being used and hence, at a price equal to its social product, too many units of  $A$  would also be used. Now, if the marginal product of  $A$  facing the producer of  $X$  is reduced (by eliminating liability) fewer units of  $A$ , and consequently  $B$  and  $C$ , will then be used. This, of course, is clearly the direction of the desired change. Thus, the absence of liability can be a second-best optimum.

The purpose of the discussion in this section has not been to demonstrate that the absence of producer liability *is* a second-best optimum. Instead, we have sought to emphasize the enormous informational requirements in even fairly simple models for ascertaining whether (in the presence of other distortions) a given change is an efficiency improvement.<sup>41</sup> Further, the informational problems discussed here cannot be dismissed as merely limiting the *perfect* attainment of optimality while still permitting an approximation of that state. Far from approximating the results in a world of complete markets, judicial cost-benefit tinkering may well move us farther from it.

<sup>38</sup> See generally E. J. Mishan, *Cost-Benefit Analysis* 102 (2d ed. 1976).

<sup>39</sup> The degree to which it ought to be lower will approximate the weighted average of  $Y$  and  $Z$ 's excess of price over marginal cost.

<sup>40</sup> Guido Calabresi, *The Costs of Accidents* 87 (1970).

<sup>41</sup> The formal requirements are developed by H. A. J. Green, *The Social Optimum in the Presence of Monopoly and Taxation*, 29 *Rev. Econ. Stud.* 66 (1961).

## IV. DYNAMICS OF NEGLIGENCE

A. *Foreseeability: Legal Background*

In 1961, the famous case known as *The Wagon Mound* (No. 1)<sup>42</sup> overruled the "directness" test of *Polemis* and replaced it with a test of foreseeability of consequences. If some consequences of a defendant's negligence are reasonably unforeseeable, he ought not to be held liable for them. This result appears broadly consistent with the efficiency rationale for tort law. However, the issue is not as clear-cut as it may at first seem; questions of foreseeability are, unfortunately, extremely complex.

In an important English decision the following year, the court limited its opinion in *Wagon Mound*. *Smith v. Leech Brain & Co. Ltd.*<sup>43</sup> attempted to reconcile the foreseeability test with the thin skull rule by distinguishing between the *type* of injury and the *extent* of injury of a given type. Individuals ought to be held liable only for foreseeable types of injury but, within a foreseeable type, they must be liable for the complete extent of harm, however unforeseeable. Consider the facts of this case. Due to the defendant-employer's negligence, the plaintiff's deceased was burned on the lip at work by molten metal which splashed beyond its confines. The deceased had a predisposition toward cancer which was aggravated by the accident. He later did get cancer and died. The court allowed full recovery, citing the foreseeability test in *Wagon Mound* and the thin skull rule. Since the type of injury—the burn—was clearly foreseeable, it did not matter that the amount of damage suffered as a result of the burn—dying of cancer—was not foreseeable. Similarly, in *Hughes v. Lord Advocate*,<sup>44</sup> the defendant's servants placed paraffin warning lamps around a manhole which they had been using and then left the area unguarded. The plaintiff, an eight-year old, knocked one of the lamps into the manhole while he was playing in the area. As a result of atypical circumstances, the lamp exploded and hurt the plaintiff. The court held that the injury due to the explosion was a foreseeable type of harm. Although "it is said that, while a paraffin fire . . . was a reasonably foreseeable risk so soon as the pursuer got access to the lamp, an explosion was not. To my mind the distinction drawn between burning and explosion is too fine to warrant acceptance."<sup>45</sup> Here exploding is viewed as a mere variant of a clearly foreseeable type of risk: burning. The plaintiff was thus allowed to recover.

<sup>42</sup> *Overseas Tankship (U.K.) Ltd. v. Morts Dock & Engineering Co., Ltd.*, [1961] A.C. 388 (P.C. Aust.).

<sup>43</sup> [1962] 2 Q.B. 405.

<sup>44</sup> [1963] 1 All E.R. 705.

<sup>45</sup> *Id.* at 710.

*Doughty v. Turner Manufacturing Co., Ltd.*<sup>46</sup> will come as somewhat of a shock to those who accept the decision in *Hughes*. An object was negligently knocked into a vat of very hot solution of sodium cyanide. Although no one was hurt by the splash, the object later caused a chemical reaction that resulted in an explosion, hurling the dangerous solution at the plaintiff. The plaintiff, however, could not recover. "So it is said here that a splash causing burns was foreseeable and that this explosion was really only a magnified splash which also caused burns and that, therefore, we ought to follow *Hughes v. Lord Advocate* and hold the defendants liable. I cannot accept this. In my opinion, the damage here was of an entirely different kind from the foreseeable splash."<sup>47</sup> The reader has every right to be confused at this point. Consider that a burn and cancer are the same type of injury and that an explosion and burning are the same kind of risk. Yet a splash and an explosion resulting in a "splash" are "entirely different." It is doubtless an understatement to conclude that the classification of injuries and risks into different types or different extents of the same type contains a large element of arbitrariness. Merely by reclassifying a harm, the foreseeability requirement can be dispensed with or reinstated virtually at will.<sup>48</sup>

#### B. *Foreseeability: Economic Reconstruction*

An economic analysis of the important issues underlying foreseeability will clarify, not only the prerequisites for an efficient system of liability, but also the enormous obstacles to achieving such a system. As an example of the judicial attitude toward the foreseeability principle, the elusive nature of the type and extent of injury distinction discussed previously is paradigmatic.

For discrete notions of probability the distinction between the type of injury and the extent of injury is without economic significance.<sup>49</sup> Suppose, as in *Smith*, that the burn was foreseeable but that the extent of injury—cancer—was unforeseeable. From an efficiency perspective nothing is gained by holding the defendant liable for the unexpected cancer damages: no additional precautions will be undertaken. Efficiency demands that he be liable only for the foreseeable degree of harm.

The case law makes more economic sense when foreseeability is conceived in terms of continuous probability distributions. For each type of harm let us postulate a (continuous) probability distribution of the possible extents of

<sup>46</sup> [1964] 1 Q.B. 518.

<sup>47</sup> *Id.* at 529, Harman, L.J. concurring.

<sup>48</sup> As a consequence, judicial application of the foreseeability doctrine does not lead to predictable results.

<sup>49</sup> Mario J. Rizzo, Uncertainty, Subjectivity, and the Economic Analysis of Law, in Time, Uncertainty, and Disequilibrium, *supra* note 2, at 71, 76-77.

that harm. Further assume that there exists a one-to-one correspondence between these possible extents and the scenario or mechanism by which the harm occurs. Now due to the paradox of continuous distribution the probability of each scenario is zero. However, the probability of certain *intervals* of harm-extents (for example, the probability that the harm will be between \$200 and \$500) or of certain classes of mechanisms is obviously greater than zero.

From the economic efficiency perspective one could not refuse to hold the defendant liable because the precise scenario which actually occurred was unforeseeable. If this were done, the defendant would find himself immune to *all* liability and no precautions whatever would be taken against harmful outcomes. (Since only one event will actually occur, its probability is necessarily zero.) Thus, the defendant must be held liable even though the exact scenario will always be unforeseeable: liability must encompass unforeseeable extents of harm.

An unforeseeable type of harm, however, is one for which the individual does not "envisage" a probability distribution of extents.<sup>50</sup> These kinds of harm are not within the universe of perceived possibilities. To hold a defendant liable for unforeseeable kinds of damage will not encourage him to abstain from the harm-producing activity or to undertake any avoidance measures. Therefore, liability under such circumstances is genuinely without efficiency-enhancing value.

The foregoing discussion is probably the strongest argument that can be made for the efficiency rationale of the type-extent distinction, but even this is not sufficient to obviate the critical problems that distinction raises. Certain extents of a given type of harm may be unforeseeable in that a probability distribution is not defined over these quantities. Liability for these cannot be justified by the efficiency standard. Yet how can the court distinguish between truly unforeseeable events and those which have a zero or low probability because of the paradox of continuous probability distributions? It is hard to imagine a practical solution to this problem.

The difficulty of determining the degrees of harm that are foreseeable is, of course, only a subcategory of the problem of determining the reasonably foreseeable types of harm. The latter is no more tractable. Recall that the distinction between the two is largely arbitrary. By dubbing an injury a "degree" or an "extent" the law can obviate altogether the foreseeability requirement. By renaming all unforeseeable types of injury "mere extents," the courts could maintain a facade of foreseeability while having actually

<sup>50</sup> This corresponds to what Shackle and Loasby have referred to in a different context as unlistable outcomes. See generally, G. L. S. Shackle, *Epistemics and Economics* 365-67 (1972); and Brian J. Loasby, *Choice, Complexity, and Ignorance* 7-10 (1976).



abolished it. It all depends on how the harm is described, and there is no principled way to do it. Foreseeability, like its twin "cheaper-cost avoider", is not the unambiguous scientific concept many implicitly claim it is. To examine it is to watch it dissolve.

### C. *Coordination Problems*

The foreseeability test would not be necessary in a stationary world, for all events would mechanically repeat themselves and there would be no uncertainty. The concept of foreseeability arises precisely because events occur under dynamic conditions. It is ironic, then, that foreseeability cannot act as a test of liability outside of stationary equilibrium. Without established patterns of behavior we cannot say that harm is foreseeable from a particular act or omission.<sup>51</sup> Under conditions where the behavior of more than one individual can affect the outcome in a given situation, the question of coordination assumes considerable importance. Each individual must make some assumption about the behavior of others. This is especially true when "due care" exercised by any one of several people will be sufficient to prevent an accident. Therefore, if each party assumes that the others will be nonnegligent, it will not be possible to say that a given harm was the foreseeable result of a specific party's conduct. Accordingly, no one could be held liable for failure to exercise due care. If, however, each individual assumes the negligence of the other parties too much avoidance will be undertaken.<sup>52</sup> An individual's assumption of negligence or nonnegligence by other parties depends on the existence of established patterns of behavior. A prior pattern of responsibility or coordination is essential to the successful use of the foreseeability test. However, the very existence of that pattern makes the test redundant.

Suppose that three cars are driving along. A, because of his carelessness, swerves in front of B. B, as a result, loses control of his car and in turn hits C. B could have avoided loss of control, and thus also avoided crashing into C, had he not also been driving carelessly. C could have avoided being hit had he engaged in a proper level of caution. The entire three-car accident could have been avoided by any *one* driver exercising adequate care. With respect to whose conduct can we say that harm was foreseeable? If A, B, and C each make the assumption that the others will be nonnegligent, then none could

<sup>51</sup> See Harari, *supra* note 10, at 108.

<sup>52</sup> Landes and Posner claim that the assumption of negligence by other parties does not constitute an equilibrium under joint and several-party liability for concurrent negligence. This, however, requires not only that the due care standards be efficient but also that the relevant parties *believe* (or act as if they believe) them to be efficient. See William M. Landes & Richard A. Posner, *Joint and Multiple Tortfeasors: An Economic Analysis*, 9 J. Legal Stud. (forthcoming).

have foreseen injury due to his own conduct. There is thus no foreseeability basis for imposing liability on anyone.

*U.S. v. Carroll Towing Co.* is another interesting example of a coordination problem.<sup>53</sup> Due to the absence of a bargee during daylight hours, a barge broke away from her moorings and damaged some other boats in the harbor. In his famous analysis, Judge Hand held that the expected cost of damage was greater than the cost of taking adequate precautions. Therefore, the bargee should have at least been on board during the day to prevent the harm. This solution, however, avoids the coordination problem. Could any individual be held negligent if proper precautions (say, a bargee) on the other boats could have avoided the accident?<sup>54</sup> It would seem impossible to say that harm was reasonably foreseeable (that is, the expected value of the harm was significant) to any individual apart from an assumption that none of the others would exercise due care.<sup>55</sup>

#### D. *Technology and the Cheaper-Cost Avoider*

Could courts, convinced of the merits of the efficiency argument, place liability for accidents on the cheaper-cost avoider? In an earlier section of this essay, the problems of applying the correct time dimension, even in a static framework, were discussed. In the dynamic framework now under consideration, the problem of determining the time frame in which a given party is the cheaper-cost avoider becomes even more severe. A world in which technological change is permitted involves infinitely greater informational problems.

Consider a situation in which the expected loss arising out of a certain activity is \$100. A can avoid the accident at \$50 and B at only \$25. If courts place liability on B they will relieve A of the incentive to find cheaper avoidance methods.<sup>56</sup> In the longer run, A would possibly be the cheaper-cost avoider because he could reduce those costs to \$10, whereas B would have only been able to reduce his to \$20. Therefore, by imposing liability incorrectly the court did not minimize the total social costs of accidents. Obviously, this is not merely a question of finding the correct rate of discount to balance present and future cost savings (although that is obviously in-

<sup>53</sup> 159 F.2d 169.

<sup>54</sup> Richard A. Epstein, A Theory of Strict Liability, 2 J. Legal Stud. 151, 156-57 (1973) [hereinafter cited as Epstein, Strict Liability].

<sup>55</sup> Perhaps Learned Hand was a bit wiser than some of his disciples. He *implicitly* recognized these coordination difficulties in his reference to custom: "We need not say whether, even in such crowded waters as New York Harbor a bargee must be aboard at night at all; it may be that custom is otherwise . . . and that, if so, the situation is one where custom should control." [159 F.2d 169, 173].

<sup>56</sup> See Posner, *supra* note 1, at 138.

volved). It is more fundamentally a question of predicting the future course of technology under alternative incentive arrangements. Clearly, this is an impossibility because the growth of technology is essentially the growth of knowledge, and future knowledge, by definition, cannot be obtained in the present.<sup>57</sup>

It is perfectly possible to agree with what has been said above and yet to claim that all is not lost because we can apply probabilistic methods to the solution of the problem. In principle, it might seem reasonable to associate with each actor an *expected* value of cost savings due to technological advance under alternative incentive structures. Then, appropriately discounting future benefits, the court might place liability on the party able to avoid the accident at cheaper cost in the expected present value sense. Even if this option were feasible in view of the limited capacity of the court system, a conceptual difficulty makes the scheme implausible. The application of probabilistic methods assumes that all of the possibilities are known beforehand.<sup>58</sup> This may be plausible in situations like games of chance in which the rules set limits to the possible outcomes or in other more or less "static" contexts. Technological change, however, essentially involves unknown possibilities. Novel ideas or genuine surprises are not possibilities over which a probability distribution can be drawn: the sample space is incomplete and incompletionable.

These informational difficulties are clearly quite severe. There is no cost-benefit formula that can solve them. Even Richard Posner has admitted that trying to determine who has the greater long-run accident-avoidance potential is "an intractable question, in most cases."<sup>59</sup> Consequently, the overall

<sup>57</sup> Karl R. Popper, *The Poverty of Historicism* vi-vii (1957); Ludwig M. Lachmann, Professor Shackle on the Economic Significance of Time, 6 *Metroeconomica* 64, 71 (1959).

<sup>58</sup> See generally G. L. S. Shackle, *Decision, Order, and Time in Human Affairs* 47-113 (1961).

<sup>59</sup> Richard A. Posner, *Economic Analysis of Law* 93 (1st ed. 1973). See, however, Posner, *supra* note 1, at 139, where in the second edition he omits this phrase.

There is, of course, a possible counterargument. If a system which tries to place liability on the lesser-cost avoider does not always give the proper long-run incentives neither does the unassisted market (which lets losses fall where they may). (See Posner, *supra* note 1, at 138.) The implication is clearly that an efficiency-motivated negligence—contributory negligence standard will approximate optimality more closely since it enables us to make use of the information we do have. This is a defective argument for at least two reasons. First, the assertion of the superiority (in this respect) of a system of negligence cannot be falsified. Technologies never developed because of the lack of proper incentives cannot be compared with those actually developed. Hence it is not possible to say, for example, that by placing liability on A a lower-cost method of accident avoidance was developed than *would* have been the case had liability been placed on B. Second, to the extent that there are opinions as to the likely course of technological change, the courts have no method of choosing among them. It is doubtful that a court will be able to determine the *reasonably* foreseeable course of technological development when even the experts will disagree. Knowledge about these matters will not be homogeneous so that "society's" best guess can be chosen.

efficiency rationale for placing liability on (short-run) cheaper-cost avoiders must fail as we extend the time frame of analysis.

### E. *Disequilibrium Costs*<sup>60</sup>

Suppose that in order to avoid an accident with an expected cost of \$100, A must spend \$80 on resources which are disequilibrium-priced. B, on the other hand, must spend \$90 on similarly priced resources if he is to avoid the accident. If the court responds only to existing market prices and seeks to place liability on the cheaper-cost avoider, A will be held liable. However, existing market prices do not reflect true social opportunity costs when they are not at their general equilibrium values. The mere clearing of markets (Marshallian partial equilibrium) is inadequate because the quantity of resources produced may be either excessive or deficient relative to a state where returns are equalized (adjusting for risk) across all industries. Consequently, the imposition of liability on A may not minimize social opportunity costs. This will be the case, for example, if the general equilibrium (GE) price of A's resources is \$95 while that of B's (different) resources is \$85.<sup>61</sup> The divergence of actual market prices from their true social opportunity costs need have nothing to do with the issue of externalities: prices can deviate from their GE values because of imperfect adjustment to changes in the underlying economic data.

Consider, now, a variation on the first illustration in this section. In order to avoid the \$100 accident, either of two firms (A or B) must forgo some portion of its output. Assume further that all of the avoidance costs are in terms of output forgone evaluated at \$80 and \$90 respectively in current market prices. Clearly, the courts will value the outputs at these prices, which are quite likely not GE prices. If so, A will once again be liable on the cheaper-cost avoider rule. Suppose, however, A believes that the market has significantly undervalued its output so that the true GE value of its output forgone would be \$95, and B thinks that the market has overvalued its output such that its forgone output is really worth only \$85. For purposes

<sup>60</sup> See the previous treatment of this issue in Rizzo, *supra* note 49, at 78-82; see generally James M. Buchanan, *Cost and Choice* 49-50 (1969).

<sup>61</sup> It may be argued, nevertheless, that placing liability on A merely duplicates what would be the market outcome if transaction costs were not prohibitive. If liability were on B, he could pay A \$81 to undertake the precautions and save \$9 in the process. So A will do the avoiding anyway and the same resources will be utilized. This argument clearly presupposes that the courts can identify the relevant costs. If they cannot or if they are quite likely to make mistakes, then the argument must be reevaluated. (Our next example in the text will demonstrate one possibility in this regard.) However, even if the ability of the courts correctly to determine costs is conceded, the argument fails for another reason. What is the virtue of duplicating the market when it makes mistakes? Surely, the economic case for the market does not consist of elevating its mistakes but rather lies in the ability of competitive processes to *eliminate* error.

of illustration, we shall assert that both A and B are correct in their estimates. If these firms' market prices are expected to approach the GE values, then A may well be willing to pay B to avoid the accident.

The moral of the story is that costs are not easily measured by outside observers, especially where there is a subjective expectational component to the evaluation of the forgone outputs.<sup>62</sup> This has two implications: (1) judicial cost-benefit analysis cannot duplicate what the market result would have been merely by following objective market prices, and (2) if these market prices are not "correct" GE prices then the courts may push us *farther away* from optimality by imposing liability on the party which only appears to be the cheaper-cost avoider.

It may seem possible to argue, however, that market prices are society's best guess of general equilibrium values, and so to follow them will enable us at least to approximate an optimal allocation of liability. This counterargument is clearly wrong. Market prices are only the *marginal* buyers and sellers' best estimate of the worth of resources or final outputs. The market itself consists of divergent estimates. Even if each agent rationally bases "his anticipations on all the information at his disposal . . . this may include a great many facts and observations not available to others."<sup>63</sup> Markets are valuable precisely because the divergence of estimates gives rise to incentives to make correct predictions. If society places divergent and inconsistent estimates of the value of a good in the factor and in the commodity markets, opportunities for pure profit will emerge.<sup>64</sup> For example, if the relevant factors of production are underpriced and undercapitalized with respect to the values of their outputs, there will be arbitrage returns to those who narrow the gap. In general, economic agents will attempt to outguess market prices rather than follow them mechanically. The ability to know the extent to which market prices are incorrect is fundamentally an entrepreneurial skill, and the courts are not populated by entrepreneurs.

## V. STRICT LIABILITY

The recent literature contains several notions of strict liability each of which has different premises and different economic implications. In this section, we shall focus on the most highly developed system of strict liability,

<sup>62</sup> The problem of the subjectivity of costs is, of course, more severe where only nonpecuniary values are at stake as when the crops in the famous crops-sparks example have only "sentimental" value.

<sup>63</sup> Kenneth J. Arrow, *The Future and the Present in Economic Life*, 16 *Econ. Inquiry* 157, 164 (1978).

<sup>64</sup> See generally Israel M. Kirzner, *Perception, Opportunity, and Profit* (1979).

that analyzed and advocated by Richard A. Epstein.<sup>65</sup> At the outset of this discussion, it ought to be emphasized that the case for strict liability, as presented by Epstein, does *not* rest on its economic implications. The purpose of analyzing those here, however, is to show how such a system minimizes the problems encountered in our study of negligence and, despite its disdain for judicial cost-benefit calculation, may, in fact, promote efficiency by providing an institutionally more stable environment in which economic decision making can take place. In this context "efficiency" must be understood in a more general, long-run sense than in previous sections of this essay. Accordingly, use of the term "institutional efficiency" will emphasize that distinction.

### A. Causal Paradigms

Epstein divides his discussion of causation into four paradigms of causal relations: A hit B, A frightened B, A compelled B to hit C, and A created a dangerous condition which resulted in harm to B.<sup>66</sup> Liability in his system is established *prima facie* simply by showing the existence of one of these relationships. We shall examine each of them separately.

1. *A hit B.* Suppose a man (B) is minding his own business reading in a library. A comes up and punches him in the face. Who is the cause of the injury? Obviously, A is: A hit B. Implicit, however, in our statement that A was the cause of the injury is a notion that B's failure to prevent the accident is, *prima facie*, irrelevant. Clearly, B's failure may be considered a condition *sine qua non* of his injury. Had B not been sitting in the library reading in the first place, he probably would not have been injured. In a causal analysis, we take certain things like B's sitting in the library as constant or fixed and then observe the "marginal product" of A's behavior. The key question, of course, is what can be taken as fixed for the purpose of analysis? Inherent in our concept of man is a notion of the physical integrity of the individual which serves to mark off where one individual begins and another individual ends. It is clear that A's pushing of physical particles toward B is a violation of B's physical integrity. It is furthermore a violation of B's rights for A to act in this way, but it is not a violation of A's rights for B to sit in the library.<sup>67</sup>

<sup>65</sup> See Epstein, Strict Liability, *supra* note 54; Richard A. Epstein, Defenses and Subsequent Pleas in a System of Strict Liability, 3 J. Legal Stud. 165 (1974) [hereinafter cited as Epstein, Defenses]; Richard A. Epstein, Intentional Harms, 4 J. Legal Stud. 391 (1975) [hereinafter cited as Epstein, Intentional Harms].

<sup>66</sup> See Epstein, Strict Liability, *supra* note 54, at 166-89; see also Mario J. Rizzo, Introduction in Richard A. Epstein, A Theory of Strict Liability: Toward a Reformulation of Tort Law (Cato Institute reprint 1980).

<sup>67</sup> See generally Richard A. Epstein, Nuisance Law: Corrective Justice and Its Utilitarian Constraints, 8 J. Legal Stud. 49, 50-53 (1979). But see Richard A. Posner, Epstein's Tort

Hence, B's conduct is taken as given or fixed, and A is the cause of the injury.

Consider the famous case of the railroad operating near a farmer's land. The farmer has decided to let crops grow right up to the edge of his property even though this means that the sparks emitted by the train will destroy some of the crops. Should the farmer be allowed to recover for the damage to his crops? In a system of strict liability, there is no need for a problematic cost-benefit analysis of the value of more food versus the value of faster train service. The railroad's use of its property oversteps the *physical* bounds of that property by the emission of particles in the form of sparks. The farmer's use does not similarly overstep the physical bounds of his property, and his conduct can be taken as constant.

2. *A frightened B.* To the extent that the reactions of B "are in no sense volitional"<sup>68</sup> this causal paradigm raises no issues of principle that are different from "A hit B." The purely mechanical nature of the reaction provides the rationale for viewing B's behavior as "fixed" and hence the "product" (fright) as attributable to A's conduct. The only question worth touching on briefly is one already mentioned by Epstein—the case of the extrasensitive plaintiff.<sup>69</sup> Should a plaintiff be allowed to recover if he is frightened by an act of the defendant, even though most other people would not have been so affected? The answer, consistent with the thin skull rule, must be that he can recover. The defendant takes his victim as he finds him. There may be evidentiary problems here, but they ought not to be used to legitimate a general defense of extrasensitivity. In some cases, the preexisting sensitivity of the victim may be well documented.<sup>70</sup>

3. *A compelled B to hit C.* In a sense, this is not an independent causal paradigm but can be derived from the first. B hit C so, on the reasoning developed above, C has a *prima facie* case against B. It is also clear that A compelled B (say, by threatening him with a gun) to incur losses by hurting C. This is as much an interference with B's individual integrity as the relationship "A hit B." Therefore, C is entitled to recover against B, B is entitled to recover against A, and, by a transitivity argument, C can recover directly against A.<sup>71</sup>

From the efficiency perspective, this is indeed a difficult matter. B's be-

Theory: A Critique, *id.* 457, 465-71. For a reply see Richard A. Epstein, Causation and Corrective Justice: A Reply to Two Critics, *id.* 477, 498-502.

<sup>68</sup> See Epstein, Strict Liability, *supra* note 54, at 172.

<sup>69</sup> *Id.* at 172-73 n.65.

<sup>70</sup> The fact that it might be impossible to document most of the time, if true, should not be used to deny recovery when it can be substantiated. For some additional arguments on this subject see Rizzo, *supra* note 66.

<sup>71</sup> See Epstein, Strict Liability, *supra* note 54, at 174-76.

havior assumes a critical importance: *given* the conduct of A in compelling B, we want B to engage in the optimal amount of resistance. B ought to weigh the costs to himself and the benefits to C of refusing fully or partially to go along with A's commands. The situation can thus be analyzed in a negligence framework. If B failed to exercise due care in resisting A, then placing liability on B for C's injuries would provide the correct economic incentives. B is left, however, without a cause of action against A; for if B could, after paying C, turn around and collect from A, the incentive to engage in optimal resistance would disappear. Then A would not be made to bear the costs of *his* activity, and there would be "too much" compulsion. In principle, the courts could impose liability so as to minimize the number and severity of injuries. The identification of this optimal solution will depend on whether many injuries could be avoided by B's resistance which, in turn, will depend on just how severe A's compulsion is. The informational requirements will no doubt be substantial, and therefore such a system will likely impose significant uncertainty costs on society.

In a system of strict liability, not only would the *prima facie* case be much more straightforward but the equities of compensation would apparently work out more satisfactorily. If C sues B and B is judgment-proof, then C can always sue A. He has a greater chance of recovering for his injury. In an efficiency framework, if B were nonnegligent and if the optimal solution were to hold A liable, a judgment-proof A would be the end of the story for C.

4. *A created a dangerous condition that resulted in harm to B.* This is the most complex of the causal paradigms. Many of the important issues, including those relating to intervening factors, have been discussed elsewhere.<sup>72</sup> The question which we shall address, however, is whether "a dangerous condition" can be defined in a way that does not readmit issues of negligence. Consider a typical defective products situation. Negligence in a products liability context depends in part on two probability distributions of outcomes. First, there is the probability distribution of defective products given a certain production (construction) technique. Second, given that a product is defective in some way or to some degree, there is a probability distribution of injuries. Suppose, for simplicity, that the likelihood of a defective product can be summarized by a probability "*p*" which may be so small that no negligence is involved in the current production methods. On the other hand, the defective product, once produced, can result in harm. Suppose that possibility could be summarized by the conditional probability

<sup>72</sup> *Id.* at 180-89; for a general theory of multiple causation and apportionment see, Mario J. Rizzo & Frank S. Arnold, Causal Apportionment in Tort Law: An Economic Theory (1980) (unpublished manuscript, New York Univ.).



"*q*." Liability, however, need not be dependent on *either p* or *q*. The producer (A) of a product could have created a dangerous condition even though he was unlikely to have done so. Furthermore, that condition—a defective product—could result in harm even if *q* were low. Low values for *p* and *q* are still consistent with a causal relationship between A's activities and B's injury.<sup>73</sup> The irrelevance of both low avoidance costs and high probabilities of harm mean that we have not simply retraced the negligence analysis.

### B. Defenses

The defenses in a system of strict liability have two important characteristics: they are relatively simple and hence minimize, if not totally avoid, most of the difficulties encountered in our study of negligence, and they enter in a strict staged fashion so assertions and counterassertions are brought up only if and as they are relevant.<sup>74</sup>

Defenses are causal or noncausal. Causal defenses are merely adaptations of one or more of the other causal paradigms to overcome the one that constitutes the *prima facie* case.<sup>75</sup> These defenses have a strict order of priority as the following example will illustrate:

- (1) A hit B (good *prima facie* case)
- (2) B compelled A to hit B (good defense)
- (3) A frightened B into compelling . . . (sufficient plea to overcome defense).

The result is clear and simple compared to the impossible task set by the efficiency criterion. There is no issue of reasonableness or of relative costs of avoidance. B can recover from A. Case closed.

The noncausal defenses are, for our purposes, more interesting and so we shall concentrate attention on them. The way in which these defenses relate to the issues brought up in the traditional negligence analyses is important and will be the focus of the following discussion.

1. *Assumption of risk*. The unilateral form of this defense rests "on the ground that the plaintiff decided he would take the risk of a known and perceived danger in order to pursue some objective of his own."<sup>76</sup> The individual has voluntarily given up his right to be free from certain types of invasions of his integrity. This defense and the concept of negligence both deal with the possibility of harm in an uncertain world. In view of this, to

<sup>73</sup> Probabilities have a valid role in cases of *concurrent* causation. See Rizzo & Arnold, *supra* note 72.

<sup>74</sup> Richard A. Epstein, Pleading and Presumptions, 40 U. Chi. L. Rev. 556 (1973); Epstein, Defenses, *supra* note 65, at 166-67.

<sup>75</sup> *Id.* at 174-85.

<sup>76</sup> *Id.* at 187.

what extent do the problems in determining what is foreseeable reoccur in determining what risks were assumed; or, is not assumption of risk merely a form of (contributory) negligence? Three considerations reveal the important differences between these two modes of analysis.

First, the reasonableness of the particular risk that an individual assumes is immaterial. Therefore, the courts will not be forced into a cost-benefit analysis with its attendant uncertainties. There is no need to wonder whether a hypothetical construct (the reasonable man) would have, in similar circumstances, assumed the risk that the plaintiff did. It is clear from an efficiency framework that people have different degrees of risk preference, and it is suboptimal to compel an individual to assume only the level of risk a standard or reasonable man would assume.

Second, in a negligence system issues of risk arise twice: once in the *prima facie* case, and again in the defense of contributory negligence. A system of strict liability, however, minimizes such discussion because it is irrelevant to the *prima facie* argument. If A hit B, whether he did so under conditions of certainty, foreseeability or unforeseeability is immaterial. The case is made on the paradigm of force. Under most circumstances the assumption-of-risk defense will not even arise.

Finally, in a system of strict liability the (unilateral) assumption of risk defense is a narrow one, to be used only where the assumption is clear and obvious.<sup>77</sup> If it is not, then the *prima facie* case of plaintiff against defendant should be allowed to stand.

A system of strict liability thus minimizes the number of situations in which the complex problems of risk must be faced and, when they must be addressed, it considerably simplifies the subissues involved.

2. *Trespass*. The final defense we shall consider is that of the plaintiff's trespass. This is not an absolute defense in the sense that, once it is shown, it is totally impossible for the plaintiff to recover. Instead, consistent with the staged pleas of a system of strict liability, it acts "as an independent ground to *shift back* to the plaintiff the risk of accidents that occurred on the defendant's land, when *prima facie* he had no business being there at all."<sup>78</sup> Showing that the defendant intended to harm the plaintiff, and not merely to expel him, however, would be sufficient to shift liability back to the defendant.<sup>79</sup>

Let us examine from the efficiency perspective two famous cases that relate to plaintiff's trespass, one which was not decided in accordance with the principles of strict liability and another which was. *Ploof v. Putnam* is

<sup>77</sup> Carr v. Pacific Telephone Co., 26 Cal. App. 3d 537, 103 Cal. Rptr. 120 (1972).

<sup>78</sup> Epstein, Defenses, *supra* note 65, at 202 (emphasis added).

<sup>79</sup> Epstein, Intentional Harms, *supra* note 65, at 403.

the classic example of the former.<sup>80</sup> During a violent storm, the plaintiff moored his boat, which had been at sea, to the defendant's dock to protect his life and property. The defendant, in an act of expulsion, unmoored the boat, which was later driven out to sea. The boat was destroyed and the plaintiff injured. The court held that he could recover. *Vincent v. Lake Erie Transportation Co.* did not concern trespassing in the contemporary sense of the word (there was a contract between defendant and plaintiff in this case), but did involve "unauthorized" damage or trespass to the plaintiff's dock. This case was decided in accordance with the principles of strict liability. The defendant was liable for the damages he caused, regardless of the reasonableness of his behavior.

Richard Posner has attempted to reconcile these two cases by claiming they are both necessary to promote economic efficiency.<sup>81</sup> In *Ploof*, the value of being able to trespass was great to the plaintiff, but the cost of that trespass was low to the defendant. Since the act of trespass was value enhancing (to "society" but obviously not to the defendant), the plaintiff should be allowed to recover his damages. This, presumably, would provide an incentive for dock owners to allow such trespass in the future. On this rationalization, it is hard to imagine what the outcome in *Vincent* could possibly add. Given *Ploof*, is liability for damages to the dock "appropriate to encourage dock owners to cooperate with boats in distress"?<sup>82</sup> The dock owner will cooperate to the point where his expected costs equal the expected benefits (to the boat) because he is fully liable for the harm. Similarly, under *Vincent* the dock owner will be fully compensated for any losses he might incur by the trespass of the ship in trouble so it is hard to imagine why he would undertake the effort of expulsion in the first place. On efficiency grounds it may appear there is nothing to choose between these two approaches. The rule in *Vincent*, however, is superior, even on efficiency grounds, because here there will be some incentive for the shipowner (or other kinds of trespassers) to choose the least-cost method of ensuring its safety. This *may* not have been much of a problem in *Ploof*, but the principle is important. Merely to hold the dock liable for injuries to the ship places *all* of the burden on the dock owner.

The most important difference between *Ploof* and *Vincent* is not to be found on efficiency grounds. These cases really represent two vastly divergent philosophies: the former implicitly accepts the pseudo cost-benefit analysis or judicial "fine tuning," against which we have argued, while the latter represents an application of the principles of a system of strict liability.

<sup>80</sup> 81 Vt. 471, 71 A. 188 (1908).

<sup>81</sup> See Posner, *supra* note 1, at 129.

<sup>82</sup> *Id.*

## VI. INSTITUTIONAL EFFICIENCY OF STRICT LIABILITY

If we are correct in the central thesis of this paper that efficiency in the form of judicial cost-benefit analysis represents an impossible *raison d'être* for the law of torts, then it would seem that, *even on economic grounds*, a system of strict liability is to be preferred to one of negligence. In a dynamic world in which the uncertainties of technological change, the ambiguities of foreseeability, and the absence of a unique objective measure of social cost all conspire to make the efficiency paradigm a delusion, the importance of certainty in the legal order is clear. Strict liability obviates or minimizes the need for courts to grapple, if only implicitly, with such impossibly elusive problems as foreseeability, cheaper-cost avoider, social cost, and second best. It provides a series of basically simple, strict presumptions. The *prima facie* case is based on straightforward commonsense causal paradigms, whereas the defenses and later pleas minimize the number of issues which must be considered in a given case.

Having said farewell to the fleeting and sometimes superficial guesses about efficiency and having adopted the simple static framework of strict liability, we should find that there is considerably greater certainty about the locus of responsibility in accidents. This greater certainty promotes efficiency in the basic institutional sense because property rights, in effect, become more clearly or definitely defined.

It has been suggested, however, that the simplicity of strict liability may also be its undoing. While admitting that strict liability would simplify "the issues in a trial" and remove "an element of uncertainty," Richard Posner believes that it would increase "the scope of liability" and, hence, the absolute number of claims might rise.<sup>83</sup> It is a fundamental mistake to believe that strict liability would necessarily increase the scope of liability. The following example should make this clear. Consider:

1. A created a dangerous condition on his land that resulted in harm to B (*prima facie* case).
2. B entered on A's land (defense).

Unless B has a good reply (for example, A gave his permission or A compelled B to enter), the case is closed without any examination of the "reasonableness" of A's behavior: B cannot recover. The scope of liability is in these circumstances decreased, not increased. The primary effect of strict liability is to change both the instances and the rationale for liability. In addition, by simplifying the grounds on which cases are decided, the parties to a dispute are more likely to agree on the probabilities of the outcome. This

<sup>83</sup> Richard A. Posner, Strict Liability: A Comment, 2 J. Legal Stud. 205, 209 (1973).

will ensure less litigation and more out-of-court settlements.<sup>84</sup> Administrative costs will, therefore, be lower.

A more formal analysis of the certainty-enhancing aspects of strict liability would undoubtedly be worthwhile. Yet it already seems clear that since the “fine-tuning” paradigm is a mere delusion, the only basis on which the “efficiency” of systems can be compared is on a fundamental institutional level. The *central* question is then: which legal framework provides a more stable environment for individuals to pursue their own ends in harmony with each other? Ironically, it is precisely because we live in a dynamic world where the information needed by the “fine-tuners” is not available that the answer must be the antiquated and static system of strict liability.

<sup>84</sup> See Landes & Posner, *supra* note 6, at 272.