

## Risk and the Legal System

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**ABSTRACT:** "Risk" and the "legal system" are ambiguous terms. Here they are clarified, then considered from the standpoint of the objectives, methods, and problems of legal intervention in a world of inevitable risk.

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THE terms "risk" and "legal system" are ambiguous, so let us begin by clarifying our topic.

#### THE MEANING OF "RISK"

Traditionally, "risk" has referred to the chance or probability that some (usually undesirable) event will occur, with the word "gravity" used to describe the event's consequences. In current practice, however, "risk" is taken to mean an expected value arrived at by multiplying consequences by the probability that they will occur. So, for example, we might say that the risk of some chemical is that its introduction into the marketplace will result in an expected cost of one excess death per year, that is, one more death per year than is experienced in the chemical's absence. Behind this statement there might be evidence suggesting, say, that if the chemical is used, there is a one-in-one-thousand chance of one thousand extra deaths annually.

So "risk" expresses something both about probabilities and about consequences. It is worth noting here that consequences are regarded in very different ways by experts, on the one hand, and laypeople, on the other.<sup>1</sup> We shall consider the significance of these differences later.

#### THE MEANING OF "LEGAL SYSTEM"

Laypeople tend to think of the legal system as comprising only courts and judges. Actually, though, the sys-

tem includes legislative and executive (administrative) bodies as well. Indeed, legislatures (including the U.S. Congress) and administrative agencies (including the U.S. Environmental Protection Agency) play a more significant role than do the courts with respect to many contemporary problems, including the problem of risk.

#### THE PROBLEM OF RISK: OPTIMAL RISK

What, precisely, is the problem of risk, at least from the standpoint of the legal system? Commonly, we use the word "problem" when we mean there is too much of something (like rain during a deluge) or too little (like water during a dry spell). So is the problem of risk a problem of too much risk or a problem of too little?

Strangely enough, on this question there are two schools of thought. Many people, educated laypeople in particular, think we experience too much risk in our daily lives. The risk of cancer, the health and environmental risks of new technologies, of contaminated landfills, and so on are commonly thought to be too high, too great. At the same time, however, there are other people—they tend to be people with considerable scientific training—who conclude that we have, in a way, too little risk.<sup>2</sup> How can that be?

Consider the idea of optimal risk, which is to say, just the right amount. The right amount of risk—the right amount of safety—might seem like a strange notion, but notice in this connection that when people say there is too much risk, they are usually also

1. See Clayton P. Gillette and James E. Krier, "Risk, Courts, and Agencies," *University of Pennsylvania Law Review*, 138:1027, 1070-86 (Apr. 1990).

2. *Ibid.*, pp. 1032-36.

saying, implicitly, that some lesser amount would be tolerable or perhaps even desirable. Not many of us want zero risk (absolute safety), and those of us who think we do can usually be talked out of the idea, for a very simple reason: zero risk or absolute safety is impossible to achieve. It is risky not to have some measure of risk or danger in society.

Consider as an example the risk of cancer from a new drug. That risk is a disadvantage of the drug, but presumably the same drug has advantages also (if it does not, then, of course, it should not be introduced into the marketplace). Suppose the drug guards against a serious disease more effectively than does the existing stock of drugs. If society decides that the drug is not to be used because it is risky, the cost of that decision is the incidence of disease that could have been reduced had the drug been employed; if the drug is used, the cost of that choice is an increase in the incidence of cancer. Should the drug be used or not?

Quite clearly, it depends on a comparison of the relevant risks and benefits. Since both risk and the absence of risk can be costly, what society should try to do is minimize the sum of the costs of risk and the costs of avoiding risk. In the case of our hypothetical drug, we want to approve the drug if the disease it helps cure is more serious than the increase in cancer that comes with the cure, and disapprove it otherwise. To express the idea in dollar terms, we want every dollar we spend on avoiding risk to yield a benefit larger than that dollar. Put differently, we want every dollar of risk that we introduce

to be offset by at least one dollar of some other risk avoided.

If this notion still sounds contentious, consider that it guides everybody's everyday activities. It is risky to cross the street, to drive a car, to fly in commercial (let alone private) aircraft, to eat peanut butter (a natural carcinogen), to have children. Yet we do cross the street, drive, and so forth, and with even less than perfect care, because giving up such activities, or even being very, very careful in how we conduct them, is at some point worse—more risky—than the alternative, a cure worse than the disease.

Now we can clarify the reason that some people, scientific experts in particular, tend to think we have too little risk. What they are saying is that society in general has irrational fears of new technologies and synthetic drugs and so on. Most such innovations, in the view of many experts, reduce old (background) risks in amounts greater than the new risks they introduce. Nuclear power, for instance, is certainly risky, but pollution from fossil-fueled power is, in one view, riskier yet, especially given the threat of global warming. If so, then nuclear power is the less risky of the two (necessarily risky) alternatives and also less risky than a world without power. (One would go on, of course, to consider other alternatives as well, such as solar power and hydropower, but few authorities believe that either or both of these are a sufficient power source.)

In sum, it seems clear enough, on a moment's reflection, that an optimal amount of risk—neither too little nor too much but always some—is

the appropriate objective. The problem of risk arises not so much in this connection but from the fact that people—laypeople versus experts in particular—disagree in given cases about where the greater risk lies.

#### MORE ON THE PROBLEM OF RISK: MARKET FAILURE

It is instructive to ask why market forces—considerations of supply and demand—do not effectively control risk. The market, after all, sees to it that, by and large, we do not have way too many tomatoes or too few, too much steel or too little. So why too much risk or too little?

This is an issue that economists discuss in terms of so-called externalities, meaning costs and benefits of activities that for some reason a relevant actor fails to take into account. For example, when a steel company makes steel, it considers the cost of inputs into the manufacture of steel: the cost of raw materials like iron and coal, the cost of operating the mill, the cost of labor, and so on. What the company is unlikely to consider, however, unless forced to do so, is another cost of making steel: air pollution and its adverse effects on neighbors of the steel mill. Air pollution is costly, and it is a necessary cost of making steel. If the company neglects that cost, it is likely to make too much steel, more than would be worthwhile were the costs of air pollution figured in, rather than left external to the steel company's deliberations.

How to force the company to consider the cost of air pollution? The cost of iron it considers because the iron mines charge a price that has to

be paid; so too for the coal, for electricity, for labor. Suppliers of these inputs will provide them only if payment is made, and they will withhold them otherwise; the price forces the steel mill to consider the costs of its decisions to others. But who in the marketplace can withhold the air from the steel mill's pollution? Air is something the company can take without paying, so it neglects the fact that air pollution imposes costs upon society.

In short, in the case of inputs like air and peace and quiet and, in our case, safety, the unregulated market might, in a word, fail.

#### THE CASE FOR INTERVENTION IN THE RISK MARKET

It is this problem of market failure that generally justifies intervention to control environmental pollution and also to control risk. Notice that not all kinds of risk require control outside the market. Chain saws might be risky, but we can count on consumers, given some instruction and common sense, to use them with due care—because the costs of carelessness will be visited on the consumer! But noise from chain saws is quite another matter. True, users of chain saws will consider the noise from the standpoint of their own interests—it can be easily avoided with earplugs and the like—but they might well ignore the interests of bystanders, who also value peace and quiet.

To deal with this noise problem, regulations have been instituted that require mufflers and other noise controls, whether producers and consumers want them or not, just as we see regulations that deal with the

risks of pollution. These regulations—these instances of intervention—are provided through the legal system.

#### THE OBJECTIVES OF INTERVENTION

Perhaps the chief objective of legal intervention in the risk market has already been suggested. If the ideal is an optimal level of risk, and if the unregulated marketplace ordinarily fails to yield this level, then the objective is to intervene in such a way as to achieve appropriate degrees of risk in the society. Where there is too much risk, deterrence is necessary; where there is too little, the objective is encouragement. Both amount to risk management, the purpose of which, ideally, is to minimize the sum of risk costs and risk avoidance costs.

Management is not the only objective, however. As much as we might try to manage risk wisely, there will be instances where risk falls, inappropriately, on victims. People can be risk victims simply because they are exposed to threats they should not have to endure: they might have to live, for example, knowing that one of their parents used a drug that can have serious negative effects on offspring, at some probability. People—and environments and so forth—can be risk victims because some threat eventually manifests itself: a drug that threatens to cause cancer actually does result in the disease in some drug users; a chemical that threatens to pollute the environment actually does enter, say, a body of water. As to these actual consequences, deterrence is beside the point because the harm has already occurred. But compensation is possible. Victims can be

awarded money or other goods and services to help provide for their loss; environments can be restored. Moreover, compensation bears a relationship to deterrence. If risk producers know that they will be liable for compensation to victims, the producers will tend to take that obligation into account in deciding how to do their business—they have an incentive to take due care. If victims know they have a right to compensation, they will have an incentive to enforce that right by bringing lawsuits, the threat of which, in turn, provides incentives for care on the part of producers.

#### THE MEANS OF INTERVENTION

As already suggested, society can and does draw on various legal institutions to manage risk and provide compensation. Putting the matter in the most general terms, it can resort to the courts, legislative bodies, and administrative agencies at both the state and federal levels.

Our focus here is on the courts, though we shall consider legislative and administrative activity toward the end of our discussion.<sup>3</sup>

#### RISK AND THE COURTS

Courts in the United States play two different sorts of roles in the regulation of risk. One role is to oversee administrative agencies to ensure that the agencies fulfill regulatory responsibilities prescribed by legislation. For example, the Sierra Club Legal Defense Fund might claim that the Environmental Pro-

3. These matters are covered in more detail in other articles in this volume.

tection Agency is not properly enforcing the laws regulating hazardous waste sites and sue the agency in federal court, asking the court to instruct the agency to proceed as directed. This, for our purposes, is a secondary judicial role that we will consider, but only briefly, in our later discussion of legislative and administrative activity.

The way the courts play a primary role is through what is called the law of torts, and here several kinds of lawsuits are of interest. First, risk victims might go to court seeking compensation (damages) from a risk producer, claiming that the producer acted unlawfully in a way that harmed victims. An example would be a claim that a factory let toxic chemicals seep into groundwater, leading eventually to health problems for neighbors.<sup>4</sup> Alternatively, victims might seek damages not for actual physical injuries but on the ground that the factory's operations have unlawfully exposed them to the threat—the risk—of future injuries.

For a variety of reasons, these sorts of lawsuits are troublesome for the courts. They commonly involve technical and scientific complexities thought by many to unduly tax the courts' capacities and also the victims' capacities. Generally speaking, victims must prove the risk producer's wrongdoing and the resulting injuries, meaning that the victims must show these things to be "more probable than not" (that is, a proba-

bility greater than 50 percent). Because of the uncertainty that surrounds modern risk problems, this burden of proof can be daunting. Moreover, there is the problem of just what injury the risk producer caused. Say some victims get cancer. They might have gotten cancer in any event, at some probability. Should the risk producer be liable for all the cancers that resulted, more probably than not, from its activities and for none of the other cancers, even though there might be a 49 percent chance that those cancers resulted also from the producer's activities? On this question the courts—and the experts—differ.<sup>5</sup>

The problem under discussion becomes even more difficult when victims seek compensation for risk alone, without manifested injury. Suppose a risk producer's activities result in a 20 percent increase in the expected number of cancers in a given area over the next 30 years (there will be 120 rather than 100). A 50 percent cutoff (based on the more-probable-than-not standard) would deny the award of damages in all cases, meaning too little compensation and too little deterrence. Yet, if the producer were required to pay for all 120 cancers, it would be held liable for cancers it did not cause. There would be too much compensation and deterrence. A contentious—and, to date, barely used—solution to this problem is to hold the producer liable for the additional 20 percent risk it creates for everyone, whether anyone gets cancer or not.<sup>6</sup>

4. Instead of or in addition to seeking damages, risk victims might ask for injunctive relief, a court order that the risk producer abate its risky activities. See Richard A. Epstein, *Cases and Materials on Torts*, 6th ed. (Boston: Little, Brown, 1995), pp. 714-15.

5. *Ibid.*, pp. 487-88.

6. See Glen O. Robinson, "Probabilistic Causation and Compensation for Tortious

At present, it is not at all clear how to resolve debates about the foregoing matters. People, mostly laypeople, who tend to think society is too risky would wish the courts to err in the direction of enhanced liability, whereas others, mostly experts, who believe we seek irrationally high levels of safety would want them to err in just the opposite direction. Given the great uncertainty surrounding the actual facts of the matter, one might believe that the general question is a political one, best solved by a political body like the legislature, with the solutions implemented through administrative agencies.

#### RISK LEGISLATION AND ADMINISTRATION

On this issue, too, the picture is murky, and we can see why by dwelling on the courts for just another moment.

Consider the obvious, that it is expensive for risk victims to bring lawsuits in the courts. Given this, it might well be that many victims do not find it worthwhile to proceed, the result being (again) too little compensation and deterrence. If risk is spread rather thinly over thousands (or more) of people, there could be huge aggregate risk costs that are never brought to bear on risk producers through the courts.

One might at first regard this as a powerful motivator for legislative and administrative intervention, but again the matter is complicated.

Most contemporary political theorists think that legislative and administrative bodies are driven to a significant degree by political pressures of various sorts. Political pressure, in turn, is largely a product of the ability of constituents to organize. If, then, risk producers are better organized than risk victims, legislative and administrative measures will go too easy on the producers; if victims are the better organized, the opposite is likely to hold.

Consider now that just as risk victims might not find it worth their while to bring costly lawsuits, so they might not find it worth the effort to organize political activity. The per capita stakes are usually relatively small, and in any event each victim will tend to reason that if other risk victims campaign for legislative and administrative protection, then passive victims will benefit as well. For example, legal measures that require safer workplaces will mean safer conditions for all employees, not just for those who helped to get the legal measures enacted. Finally, the experts in administrative agencies probably tend to disagree with the common lay view, mentioned earlier, that there is too much risk. The experts will look at expected mortality and morbidity statistics and see that many modern technologies are relatively safe. Laypeople, on the other hand, will look beyond the expected mortality and morbidity numbers at, for example, the worst possible case that could result in the event of a mistake. Nuclear power might look safer, on average, than fossil-fueled power, but at the same time a nuclear accident might be much worse than an acci-

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Risk," *Journal of Legal Studies*, 14:779 (1985); Bill Charles Wells, "The Grim Without the Cat: Claims for Damages from Toxic Exposure Without Present Injury," *William & Mary Journal of Environmental Law*, 18:285 (Spring 1994).

dent at a conventional power plant. Laypeople tend to focus on these worst-case possibilities and on other features of high technology that appear to be threatening.

A model like this suggests that just as the market and the judicial system might provide too little protection to victims, so, too, will the legislative and administrative systems. In this view, we should err, as with the courts, in the direction of enhanced protection. But opponents say we have already erred too much. They look at the large stock of legislative and administrative risk protection regulations in place and conclude that society has gone too far. It spends far too much money guarding against evils so unlikely to materialize as to be trivial. The opponents therefore urge legislative and administrative bodies to back away from stringent controls, in the name, ironically, of greater safety. In addition, they urge courts, when they are called on to review the actions of legislative and administrative bodies, to have more respect for expert views about how much safety is enough and what kind of safety is best.

Which, again, is the right outlook? Modeling exercises suggest, to me anyway, that over the long run, society will regulate too little. Hence it should tend to err, systematically, in favor of enhanced liability in court and in favor of stringent legislative and administrative regulations. At

the same time, however, it is a fact that the courts are often very hard on modern technology and that the existing legislative and administrative controls are oftentimes amazingly, perhaps foolishly, stringent.<sup>7</sup> Figuring out whether we are anywhere near the optimal point seems an almost foolhardy exercise.

So what do we do? There is considerable evidence that the legal system (or any other system) responds to uncertainty by stumbling along, making guesses some of which are right and some wrong, learning from mistakes, stumbling on again, and so on. Problems are resolved by trial and error, by "muddling through."<sup>8</sup> This method works well enough if the costs of mistakes are not too terribly high, but that condition becomes harder and harder to satisfy. Modern technology has an enormous capacity to make life on the planet better but also, in the worst case, to cause catastrophic losses. In such a situation, the legal system, and society in general, should pursue the prudent path. Unhappily, however, just what is prudent will often become clear only with experience, and the experience itself could prove very costly.

7. The reasons for this, having to do in part with the so-called salience of certain kinds of risk threats, are considered in other parts of this volume.

8. See Gillette and Krier, "Risk, Courts, and Agencies," pp. 1107-8.