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What's So Great About Lay Judgments? What's So Bad About Expertise?

PROFESSOR STEPHEN GILLES*

It is a great responsibility to be carrying the torch for law and economics. Unfortunately, not only am I not a trained economist, but some of what I have to say will horrify many of those who are. Economists too often want to stay within the narrow confines of their discipline, conceived as a social scientific enterprise that relentlessly tries to provide as thin and value-neutral a set of starting points as possible. That is not what this panel is or ought to be about, and it is not the kind of economistic thinking that I will try to bring to bear on the subject of risk. Let me start by defining the kinds of risk on which I want to focus. Environmental law is concerned not only with here-and-now risks to human health and safety, but also with risks to remote future generations, to different species, to nature, and to the biosphere. As fascinating as those other sorts of risk are, I intend to say nothing about the many issues of evaluation they present. Instead, I will adopt the simplifying assumption that tort law and environmental law are two overlapping modes of regulating risks to the health and safety of human beings in our society, and confine myself to that subset of risks.

What I want to talk about today is the widely perceived and much discussed divergence between the way that laypeople evaluate risks and the way experts (such as cost-benefit analysts, actuaries, and other risk analysts) evaluate them.\(^1\) I will begin by describing what appears to be cognitive com-

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mon ground between these groups. Cognitive psychologists have reported that both laypeople and experts often suffer from cognitive biases of various kinds.\(^2\) One leading example of such bias is "framing."\(^3\) The framing of a question about risk will profoundly affect the answer that is given. If you ask people to evaluate what is objectively the same set of choices in two different ways, they will give you two different answers depending on whether your phrasing highlights the upside risk or the downside risk. Cognitive biases can also take such forms as "availability:" risks that are familiar and come readily to mind tend to get over-evaluated.\(^4\) There are also thresholds for risks. People tend, in general, to overestimate the importance of low probability risks and underestimate the importance of substantial, yet familiar, everyday risks.

Now, there seems to be general agreement that each of these cognitive biases is just that - a mistake, a distortion, a failure to think rationally.\(^5\) Although a good deal of law review writing has discussed the public policy implications of these types of cognitive errors, very little attention has been paid to the question whether laypeople are significantly more prone to such lapses than experts. The implicit assumption in law review scholarship on these subjects seems to be that laypeople and experts are equally susceptible to cognitive biases.\(^6\) It would be interesting to explore whether this assumption is really warranted by the cognitive psychology literature.\(^7\) One would think, for example, that persons could

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\(^3\) See PAUL SLOVIC ET AL., REGULATION OF RISK: A PSYCHOLOGICAL PERSPECTIVE, IN REGULATORY POLICY AND THE SOCIAL SCIENCES 241, 250-56 (R. Noll ed. 1985); Gillette & Krier, supra note 1, at 1092-93.

\(^4\) See Gillette and Krier, supra note 1, at 1091-92.

\(^5\) See Pildes & Sunstein, supra note 1, at 61 (these psychological tendencies "can properly be viewed as cognitive errors").


\(^7\) For example, consider this statement from a leading cognitive psychologist: "'experts' judgments appear to be prone to many of the same biases as
be trained to identify and guard against cognitive bias, and that experts are more likely to receive that kind of training.\textsuperscript{8} Be that as it may, for present purposes I will assume that experts and laypeople are equally prone to the sorts of clearly erroneous cognitive bias above mentioned.

Given this assumption, cognitive bias cannot explain the observed divergence between the risk assessments of laypersons and the risk assessments of experts. What then might account for it? The prevailing view is that this divergence traces to the presence in our society of two competing versions of rationality — one to which lay persons tend to subscribe, and the other favored by most experts. For the typical expert, “a death is a death.”\textsuperscript{9} In contrast to the experts, laypeople are said to have a more complex and context-sensitive way of approaching risk evaluation. Laypeople, in evaluating risks, give weight to considerations such as whether the risk is “dreaded” or not; whether it is voluntarily assumed or involuntarily imposed; whether it involves potentially catastrophic losses or minor ones; whether the losses are concentrated or dispersed, controllable or uncontrollable, familiar or unfamiliar, distributively fair or unfair; and whether the risk will adversely impact on future generations. This catalogue is far from complete, but it contains many of the issues that are said to influence lay evaluation of risk.\textsuperscript{10} By which of these competing visions of rationality should public policy be guided? And by what criteria shall we answer that question? Justice Breyer has called for giving experts greater authority in matters of risk regulation, on the grounds that we would

\textsuperscript{8} Or people might gradually learn from experience to guard against these errors - and one would expect experts to have more experience with risk assessment than lay persons.

\textsuperscript{9} See Gillette and Krier, supra note 1, at 1072; Pildes & Sunstein, supra note 1, at 49-50.

\textsuperscript{10} See Pildes & Sunstein, supra note 1, at 57, and sources cited therein.
get more safety for less money. The more popular viewpoint among legal academics, however, seems to be the one expressed by Clayton Gillette and James Krier, and more recently by Cass Sunstein and Richard Pildes: lay perspectives on risk are often richer, more nuanced, and more contextual than those of experts, and should be given considerable weight both as a matter of democratic values and as a matter of reaching the right level of regulation. Gillette and Krier note that the resolution of which perspective is better is a matter of ethics and politics, not technical expertise, and they argue that lay judgments frequently make good ethical sense. Pildes & Sunstein suggest that public risk regulation should often incorporate the distinctive rationality present in lay thinking about risk. The layperson's rationality is one that rejects some conventional forms of cost-benefits balancing — and, say these authors for the most part justifiably so.

My thesis is that there is more to be said in favor of the expert perspective than even Justice Breyer recognizes, and that the problems with lay judgments are far more serious and potentially costly than scholars such as Gillette and Krier or Pildes and Sunstein have acknowledged. In an important recent book, Howard Margolis argues that many of the reasons lay people give for their supposedly rich and value-laden risk assessments are really rationalizations for what is actually a defensive, close-minded, better-safe-than-sorry stance toward certain risks. Building on some of Margolis's insights, I will suggest that there are, in many contexts, serious flaws in the use of the factors on which laypeople rely.

In making this argument, I intend to bear in mind the economic understanding of rationality, but I will not restrict

11. See Breaking the Vicious Circle, supra note 1, at 59-63.
12. See Gillette & Krier, supra note 1, at 1070-85; Pildes & Sunstein, supra note 1, at 55-64.
13. See Gillette & Krier, supra note 1, at 1071-73.
14. See Pildes & Sunstein, supra note 1, at 8.
myself to a supposedly neutral, scientific, rigorous definition of rationality that excludes most of what we normally do when we think and reason. Instead, like Gillette and Krier, and Pildes and Sunstein, I will appeal to our common intuitions concerning reasonableness without trying to give a foundational account of rationality. I will assume that we give weight to consequences, but not that we are thoroughgoing utilitarians; that we give weight to our convictions about right and wrong, but not that we are thoroughgoing deontologists; that we care about both private flourishing and public good, but not that we are thoroughgoing political liberals. My goal, in short, is to present a set of judgments about concrete examples in ways that a wide audience might find both intelligible and appealing. The common thread running through those judgments will be that, in many contexts, the considerations on which laypersons tend to rely are difficult to defend in pragmatic or ethical terms. This in turn suggests that the lay version of rationality may not be all that "reasonable." In other words, I want to engage directly on the point in controversy, namely which of these visions of rationality is more reasonable, and to suggest that, all things considered, the expert approach is preferable.

I have chosen several of my examples precisely because they have been used by others to illustrate the virtues of lay rationality — yet they seem to me to illustrate its pitfalls. Before turning to my examples, let me make two preliminary points. First, there is something appealingly egalitarian about the expert (which often means, the cost-benefit) version of rationality. The charge of elitism, sometimes thrown at people like Justice Breyer, is ironic in light of the egalitarian implications of the economic way of evaluating risks. For instance, when you say “a death is a death,” you rule out raw political judgments such as that an African American’s death is not as important as a Caucasian’s death.

Second, I readily will concede that experts are sometimes wrong, obtuse, bureaucratic, and so on. But to this acknowledgement I want to join the assertion that one of the virtues of the expert perspective is its \textit{perfectibility}, its openness to revision and incremental improvement in the pragmatic tra-
dition of the social sciences. As I've already mentioned, some risk analysts have been criticized for treating all statistical deaths as equivalent. The public fears death by cancer more than instant death. Experts of this persuasion seem to me wrong here for reasons that as experts (i.e., as social scientists) their own principles should compel them to concede. Obviously pain and suffering have negative value/utility, and cancer deaths are associated with lots of pain and suffering (psychological as well as physical). So here is an expert practice that is wrong, but readily correctable within the framework of cost-benefit analysis.

Now to my list of examples. The first, from Gillette and Krier, involves two pesticides. 16 The problem is the choice of which to use. Pesticide “A” will cause ten excess cancers per year. There is a 95% chance that Pesticide “B” will cause no excess cancers, and a 5% chance that it will cause one hundred excess cancers per year. On average, then, pesticide “B” results in five cancers per year while pesticide “A” results in ten. Gillette and Krier argue that it is perfectly reasonable to choose pesticide “A” even though its use results in ten cancers per year, because if 100 people died, there would be a special “regret” about having made a choice that led to a much larger number of deaths. 17 This seems very dubious as a moral matter. We would be allowing our fear of regret, our fear that we might discover in hindsight that we made a bad mistake, to cause us to make a decision now, ex ante, that is likely to lead to the death of ten people instead of five. What is so reasonable about giving decisive weight to our own possible future discomfort as against other people’s lives?

Example two involves the choice of whether to fly or to drive when travelling. In this example, we do not have a direct regulatory question, although one might surface with regard to things like child seats on airplanes. Flying is as voluntary an activity as driving, but many people perceive flying as more dangerous even though driving is, statistically

16. See Gillette & Krier, supra note 1, at 1083-84.
17. See id. at 1084.
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speaking, much more dangerous. Why is this? And does this perception deserve to be called rational?

The reason cannot be "catastrophic losses," because planes do not wipe out entire towns—occasional rock bands, but not entire towns. Rather, I suspect the decisive factor is our perceived lack of control over the risk. When a person is a passenger in an airplane, he or she is helpless as against the risks of turbulence, crashing, fire and so on—and that helplessness is stressful no matter what the statistics say. But it does not follow that the judgment to which this stress inclines us is rational. Indeed, I take one message of the cognitive psychology literature to be that people tend to be overly confident about the extent of their control, about the reliability of their cognitive powers, and even (I surmise) about their reflexes. Control is the mother of optimism: it makes us think we are safe when we are driving (even though, in fact, we have no control over many driving-related risks). But, on average, we are wrong. Flying really is safer, and our perception to the contrary is merely a persistent illusion.

My third example is from Pildes and Sunstein. They contend that society might rationally reject the ignition interlock, a mechanism that automatically disables cars from starting unless (at a minimum) the driver’s seat belt is buckled. Instead, society could reasonably prefer other regulations that do not interfere so pervasively with an individual’s choice, even if the ignition interlock would be more effective from the standpoint of cost per lives saved. But if we are truly confident that the ignition interlock will save significantly more lives because far more seat belts will be worn, the case against deferring to individual choices seems very strong.

First, the ignition interlock does not seem like such a big infringement on individual choice. Why can’t we look at this as a pre-commitment strategy in which we all know we are going to have moments of weakness? Pildes and Sunstein might answer that although people may have bad safety habits, part of our self-conception is that we should be the ones to

18. See Pildes & Sunstein, supra note 1, at 51-52.
change them, not the government. To this I would reply (using ideas Pildes and Sunstein themselves invoke) that it would be much more rational for society to decide to create a new norm in hopes of changing the social meaning of getting in your car, and in order to assist the people who would like to change their bad habits but have difficulty doing so.

Let me also mention a variation on this example. Assume a more ambitious version of ignition interlocks that will not allow the engine to be turned on until every passenger in the car is wearing a seatbelt. Now we are talking about saving kids from parents who might not have sense enough to strap them in. Consider, too, the situation of teenage drivers — a group we would predict to be at the low end of the scale in terms of seatbelt use. Finally, recall the externalities that even adult drivers create when they are injured or killed and (as is often the case) the public foots all or part of the bill. For all these reasons, the lay judgment against ignition interlocks seems, if not quite nonsensical, very difficult to defend.

Example four has to do with disasters: specifically, the Buffalo Creek Syndrome, named after the Buffalo Creek dam collapse in which 125 people were killed and 4000 people rendered homeless, triggering great psychological trauma to the survivors. Whole families were wiped out, relationships were destroyed, and the community that had provided the topographical basis for those relationships was obliterated. Some economists or other experts may have said, "well it is just 120 lives." But perceptive experts wouldn't make this mistake, because in addition to the 120 lost lives there is undeniably major harm to at least 4000 people who are now homeless and community-less, with all that entails. Here is another example where the solution may be a more careful and nuanced cost-benefit analysis.

Now, consider the potential problem posed by a categorical lay judgment that avoiding a disaster like Buffalo Creek should be a higher priority than avoiding larger but less con-

centrated risks. Suppose the risk of another disaster like Buffalo Creek were compared with the risk of 4,120 deaths spread diffusely across the entire country. At that point, I do not think that a judgment that gave greater weight to the possibility of a concentrated loss would be very easy to defend. To do so would be to suggest that the harm inflicted upon each of the traumatized Buffalo Creek survivors is greater than the harm inflicted upon each of those who died. Yet few of us would choose death over psychological trauma. What then would be gained by incorporating a lay view of this kind into public risk analysis?

Example five, from Justice Breyer, is asbestos removal from schools. I assume Breyer has the facts right. The mid-point estimate to take all the asbestos out of all the schools is a cost of $100 billion — that looks like several hundred million dollars per cancer avoided. Breyer says that is not a sensible evaluation. Some laypeople, one suspects, would criticize him for overlooking the fact that asbestos is dreaded. Indeed it is dreaded, but a couple of points must be made. Juvenile diabetes is dreaded by anyone who is familiar with it. Leukemia in children is dreaded. Sickle cell anemia is dreaded. The core economic insight of opportunity cost has an appropriate role to play here: there is a broad range of dreaded risks, and some of them can be reduced at far lower cost than others. If the same $100 billion were spent on reducing more tractable risks to children's health and safety, we could save far more statistical lives — that is, far more children. Why is it defensible to let dread drive us to spend huge sums to save some small number of unknown school children, when for the same money we could be shielding many more children from no less dreadful risks?

Example six takes me back to Professor Shapo's discussion of Yucca mountain and the more general topic of controversies over the siting of storage facilities for nuclear waste. Margolis offers a fascinating treatment of these situations. But let me start with what I think Pildes and Sunstein would say: that in many of these siting disputes, the Department of

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21. See Breaking the Vicious Circle, supra note 1, at 12-14.
Energy (DOE) has been obtuse.22 It has inflamed people’s distrust. The DOE treated people’s concerns as being the result of irrationality and ignorance, leading to a self-fulfilling result in which people lost their trust in the agency. The agency, in turn, lost its credibility and the situation is now very hard to repair.

This is a valid and important point. Politics is a constraint. Even if you think that as an expert you know better, you would be foolish to treat people disrespectfully rather than doing your best to try to persuade them that you are right. Here is where Margolis’s analysis comes in. It is not so easy to persuade people in these circumstances. In some contexts, and Margolis says this is emphatically one of them, people get locked into what he calls a “better-safe-than-sorry” frame of mind, in which the risk is very salient and “on screen” while the costs of doing something about the risks are “off screen.” In that frame of mind, Margolis suggests, people often are not amenable to argument or persuasion.23 The risk is seen as something “everybody knows” is real—that is, serious. Yet, along comes an expert trying to tell them that it is not real—that is, trivial. In those contexts, Margolis suggests that, as an empirical matter, lay people often get angry instead of engaging in an open-minded evaluation of the evidence. They do not want to hear evidence or argument that would force them to rethink their settled (and, in a sense, their collective) judgment.

How, then, might this resistance be overcome, so that lay people become amenable to discussion and persuasion by experts? Margolis suggests that when people face actual, concrete, immediate costs, they will reevaluate.24 He offers the example of asbestos removal in the New York City schools. Parents were up in arms, saying things like “get the asbestos out of our schools,” until school officials actually closed the schools so they could be inspected to locate where all the asbestos was located. At that point parents suddenly had to

22. See Pildes & Sunstein, supra note 1, at 91-92.
deal with kids staying home, disruption of the parents' working lives, risks to children playing out in the streets, etc. As Margolis tells it, people did a 180 degree flip, along the lines of, "forget about asbestos, open up the schools." This does not prove, of course, that people were right the second time. But to an economist, the telling fact is that parents changed their minds once some of the costs of removing asbestos fell on them. It suggests, I think, a connection between the "better-safe-than-sorry" mode and situations where lay people frame the decision in terms of how much the persons responsible for creating or dealing with the risk should have to do to eliminate it. Economists would not find it surprising that people will err wildly in the direction of too much safety when they think they are spending somebody else's money.

Margolis believes the same better-safe-than-sorry phenomenon is a major factor in the dispute over storage of nuclear waste. His claim (which I have not factually investigated myself) is that, in many siting disputes, the people at the immediate locale who are going to get the benefits of the jobs, economy and the like, are open to persuasion. They typically conclude that the risks from having the storage facility in their backyards are tolerable, and are worth going ahead with the project. Not everybody — but the local majority — tends to adopt this view. Who then are the people whose intense opposition succeeds in delaying or derailing these projects? They are the people who live in the same state, but not immediately around the site, who are not going to be getting the jobs and the benefits, but who might be exposed to some of the risks if there is a leak. When you have radioactive waste coming in by rail through Santa Fe, people in Santa Fe become upset. People in Carlsbad, in the immediate vicinity of the planned site, will go for it. Margolis calls this "the 'volcano' effect, where concern is highest in peripheral locations, not in the immediate vicinity of a risk."26

Now, isn't there a problem here from both a democratic and ethical standpoint? Perhaps Professor Shapo is right

25. See id. at 137-40.
26. See id. at 140.
that there are intractable difficulties in determining just how
safe is safe enough, whether at Yucca mountain or any other
site for nuclear waste storage. But as Gregg Easterbrook ar-
gues, it is far safer to store these wastes in remote under-
ground sites than to have them sitting on the premises of
nuclear plants in scores of metropolitan areas throughout the
country.27 We may never know what “safe” is, but we do
know that it is “safer” to get the waste out of urban areas.
Thus, we seem to have a situation in which the Nation is sub-
stantially better off because the urban risk is being elimi-
nated, the local people most affected by the residual risk are
better off because well-compensated for bearing it, and yet
the process is hijacked by persons elsewhere in the state, who
are bearing extremely small risks but who are locked in the
“better-safe-than-sorry” mode because they are not capturing
any of the benefits. Is that how democratic risk evaluation is
supposed to work?

My final example, also from Margolis, concerns
saccharin. We are all familiar with the warning on products — including, at one time, most diet sodas — that contain
saccharin: “Warning: this product contains saccharin, which
has been determined to cause cancer in laboratory animals.”
Most of us know that the rats in those studies were given
massive, not quite lethal doses of saccharin, equivalent to
something like 800 cans of soda per day for an adult
human.28 These studies are beset by serious questions about
cross-species inferences, about the assumption that effects
can be extrapolated as if they were linear, and so forth. But
those questions are just the tip of the iceberg. According to
Margolis, the same studies indicated that rats given smaller
doses of saccharin, equivalent to more like eight cans of soda
per day for a human, showed lower levels of tumors than the
control group.29 On the same assumptions about cross-spe-
cies validity and dose-responsiveness, then, the diet soda
“warning” ought to say that saccharin has been determined to

27. See Gregg Easterbrook, A Moment on The Earth: The Coming Age
29. See id. at 183-85.
prevent cancer in laboratory animals. (This would have been welcome news to one of my former co-clerks, who religiously drank at least eight cans of Tab per day in the face of the actual warning.) Perhaps it would be possible to construct meta-hypotheses to justify even the weirdly inconsistent evaluation of risks and benefits that underlies the saccharin warning. But any such attempts seem utterly speculative.

And yet, lay judgment is not in any simple sense the villain in the saccharin story. As Margolis points out, in the end it was laypeople — with their mundane concerns about being able (thanks to diet soda) to eat more, lose weight, or both — who prevented a ban on saccharin.\(^{30}\) It was the experts (more precisely, the government’s experts) who chose to skew their analysis by looking only at the possible cancer risk from consuming saccharin, while ignoring the cancers and heart attacks that would be avoided by saccharin-associated weight loss.\(^{31}\) So, saccharin also seems to be another example where, once laypeople faced the imminent costs of a saccharin ban, their judgments turned out to be reasonable.

What do these examples add up to? In closing, I will briefly suggest two conclusions. First, these examples suggest that lay judgments about risk are often flawed — understandable, yes; reasonable, no. In my judgment, the proponents of reliance on lay judgments have yet to come up with robust, concrete examples of how doing so would make for better risk evaluation. Second, the dichotomy between lay risk assessment and expert risk assessment should not be overdrawn. Lay people may look to a variety of considerations in evaluating risks, but at the end of the day costs and benefits seem quite salient in lay thinking — provided that the people in question are aware that they bear those costs and benefits. This leads me to a conclusion I think most economists, no matter how put off by anything else I have said, would strongly endorse: decision-makers, whether they are lay people or experts in risk assessment, tend to think least clearly when somebody else is paying for the precautions they

\(^{30}\) See id. at 172-73.

\(^{31}\) See id. at 177-78.
are empowered to choose. If we want better decisions about risk, we must find ways to give decision-makers (lay or expert) better incentives to evaluate reasonably.