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Marshall S. Shapo

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# Tort Law and Environmental Risk

MARSHALL S. SHAPO\*©

## I. Introduction

It is plain that tort law cleans up messes. It provides remedies to those injured by the activities of others that fit into various categories of culpability and analogous classifications.

In performing this remedial function, tort necessarily involves the assessment of risk after the fact. It also provides guidelines to actors about the general categories of risk creation concerning which the law will provide remedies in the future. It does not, however, provide a systematic assessment of the risks of particular activities in a forward-looking way.

Despite this lack of a systematic, *ex ante* approach to risk assessment, tort is an important element in the social response to environmental hazards. Even with a proliferation of environmental laws and regulations, tort law is sometimes the first line of legal protection for persons threatened, or injured, by such hazards. When there is a meaningful regulatory base, tort plays a “gap-filling” role. Always, it provides a signal of the limits of propriety in the creation of chemical and other risks in the environment. In doing so, it incidentally provides a mirror of what our culture tolerates concerning injuries to resources that are either literally not renewable or are especially vulnerable to harm.<sup>1</sup>

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\* Marshall S. Shapo is Frederic P. Vose Professor at Northwestern University School of Law. The author appreciates research support from the Charles C. Linthicum Fund.

1. See generally Marshall S. Shapo, *In the Looking Glass: What Torts Scholarship Can Teach Us About the American Experience*, 89 N.W. U. L. REV. 1567 (1995).

A problem that tort law shares with its regulatory cousins — and that tort analysis shares with economics — is relativity of judgments about risk assessment. A 1996 issue of *Scientific American* includes an article dealing with the government's proposed storage of high-level radioactive waste under the Nevada desert ridge called Yucca Mountain. In the course of his analysis, the author observes that "[t]he question of whether nuclear waste can be safely stored at Yucca Mountain naturally prompts another query: What exactly is meant by 'safe?'" He points out that "[t]hat question cannot yet be answered," noting that "the DOE [Department of Energy] is working toward an as yet undefined standard."<sup>2</sup> What could be a more portentous example of the problem of risk assessment common to all participants in this discussion?

## II. The Common Law

A handful of liability theories provides both swords and shields for environmental interests menaced or injured by risky activity.

### A. Negligence

Negligence, a frequently used bandage for injury victims, is conduct that falls below the standard of care of reasonable persons in a particular activity. Courts apply the concept both independently and as a subcategory of the doctrine of nuisance. The very breadth of the doctrine renders it susceptible to a variety of interpretations, including those of risk-utility analysis, its sibling cost-benefit analysis, and a more distant cousin, that of cost-cost analysis.

Besides drawing on these tests, all redolent to one extent or another of ideas of efficiency and of putting resources to their highest and best use from a utilitarian point of view, negligence law necessarily draws on notions of morality. It asks not only what is efficient, but what is right. Its answers on that score may vary with reference to the game that is

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2. See Chris Whipple, *Can Nuclear Waste be Safely Stored at Yucca Mountain?* 274 *SCI. AM.* 72, 77 (June 1996).

being played — one with a damages stake or one where an injunction is at issue.

In seeking to determine whether conduct is reasonable, negligence law asks whether that activity has exposed persons to an unreasonable risk of harm.<sup>3</sup> It makes a judgment not only about the dollar value of injuries sued upon, but also about the worth of the activity at issue.<sup>4</sup> In this sense, although often it judges intuitively, it necessarily engages in an assessment of the character of a risk. That is, it makes value judgments. Arguably, these judgments are both prospective and retrospective. In deciding whether a defendant acted reasonably, a court will use foreseeability as an important measure. Thus, it will ask how the defendant would have assessed the risk before taking it. Yet there also is an opportunity for the court to make an *ex post* social judgment: to determine, after sifting through the event itself, whether the risk was a reasonable one.

### B. *Strict liability*

Strict liability doctrine under the *Rylands* model,<sup>5</sup> now extrapolated and more or less codified in sections 519 and 520 of the Second Restatement,<sup>6</sup> is a principal tool in the kit of tort remedies for environmental harms. The Restatement offers a catalog of factors as the matrix for decision.<sup>7</sup> Professor Christie has ably criticized this approach, complaining of the broad range of discretion it provides to courts.<sup>8</sup> There is, however, another side to the story. Factor analysis permits

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3. This general standard appears in RESTATEMENT (SECOND) OF TORTS § 282 (1965).

4. The Restatement specifies as one of the factors for determining "the utility of the actor's conduct for the purpose of determining whether the actor is negligent" "the social value which the law attaches to the interest which is to be advanced or protected by the conduct." RESTATEMENT (SECOND) OF TORTS § 292(a) (1965).

5. Originating in *Rylands v. Fletcher*, 3 L.R. - H.L. 330 (1868).

6. See RESTATEMENT (SECOND) OF TORTS §§ 519-20 (1977).

7. See *id.* § 520.

8. See George Christie, *An Essay on Discretion*, 1986 DUKE L.J. 747, 766-770 (1986).

judges to do what they are supposed to do — “to exercise judgment.”<sup>9</sup>

However broad the warrant of courts dealing with environmental complaints under the strict liability doctrine, they must engage in a rather delicate process that turns out to be a process of risk assessment. They must weigh factors that include the degree of risk, the likelihood of severe injury and the defendant’s “inability to eliminate the risk by the exercise of reasonable care.” Courts also must balance the value of the activity against its potential for harm, and assess its “appropriateness . . . to the place where it is carried on” as well as judging the “extent to which . . . [it] is not a matter of common usage.”<sup>10</sup>

I spell out this familiar list to emphasize what may seem an elementary point. I suspect that even rather sophisticated lay persons — maybe even academics without the academic side of their brain fully in gear — think of “risk assessment” as focused tightly on the character of the danger itself. But the perspective of tort law, just like the perspectives of economic theory and of formal regulation, assesses risk in context.

Tort may do surprisingly well in this regard. It outpaces economic analysis because it permits itself to crank more factors into the decision. Moreover, because of the intensity of focus it brings to bear on individual situations, it provides a specificity of analysis that even relatively precise regulations frequently cannot attain.

A Seventh Circuit case involving a chemical spill is an exemplar of the richness of argument that tort law fosters concerning the application of strict liability to the accidental release of toxic substances in the environment. At issue in *Indiana Harbor Belt R.R. v. American Cyanamid Co.*<sup>11</sup> was a leak of perhaps 5,000 gallons of acrylonitrile, a major industrial chemical described as “flammable at a temperature of 30

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9. See Helene S. Shapo & Marshall S. Shapo, *Law School Without Fear* 84 (1996)[hereinafter *Law School Without Fear*].

10. RESTATEMENT (SECOND) OF TORTS § 520.

11. *Indiana Harbor R.R. v. American Cyanamid Co.*, 662 F. Supp. 635 (N.D. Ill. 1987), *rev'd*, 916 F.2d 1174 (7th Cir. 1990).

degrees Fahrenheit or above, highly toxic, and possibly carcinogenic.”<sup>12</sup> The spill occurred in the IHB’s Blue Island freight yard near Chicago. The plaintiff was the railroad, which paid almost a million dollars in decontamination costs incurred by order of the Illinois Department of Environmental Protection. It sought reimbursement from Cyanamid, the shipper of the chemical.

The shadings in how one might describe the consequences of the accident are evident in the descriptions presented in the two reported opinions that dealt with the case. District Judge Moran, who held for the plaintiff on the basis of strict liability, characterized the spill as having “forced the temporary evacuation of about 3,000 people” and described it as having “contaminated not only the ground, but also the water beneath it, thus threatening the water supply” of several communities.<sup>13</sup> Judge Posner, who reversed the district court’s decision, pointed out that “[t]he evacuation lasted only a few hours.” Noting that the spill had not been as great as originally feared, he described the state agency’s cleanup order as having been issued because it was “[c]oncerned nevertheless that there had been some contamination of soil and water.”<sup>14</sup>

The two opinions identified different bases for what were, after all, their respective risk assessments. Judge Moran, noting that Louisiana law was relatively lenient concerning chemical spills, observed that “chemical plants such as Cyanamid’s . . . play an important part in Louisiana’s economy.”<sup>15</sup> He concluded, however, that “[t]he value of acrylonitrile did not outweigh the serious risk of harm to” the homeowners who lived near the Blue Island freight yard.<sup>16</sup>

Judge Posner, digesting statistics with relish, pointed out that acrylonitrile was “fifty-third most hazardous on the list” of “the 125 or most hazardous materials that are shipped

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12. *Indiana Harbor Belt R.R.*, 916 F.2d at 1175.

13. *Indiana Harbor Belt R.R.*, 662 F. Supp. at 637.

14. *Indiana Harbor Belt R.R.*, 916 F.2d at 1175.

15. *Indiana Harbor Belt R.R.*, 662 F. Supp. at 644.

16. *Id.*

in highest volume on the nation's railroads."<sup>17</sup> Identifying with equal relish what he saw as a weakness of the argument of plaintiff's counsel, he declared that to accept the district court's judgment would render the top 52 most hazardous chemicals subject to strict liability, and "quite possibly . . . the 72 that rank lower as well."<sup>18</sup> Noting that Chicago was a major railroad hub, Judge Posner stressed that it would probably involve "prohibitive cost" to reroute shipments of hazardous chemicals "around all the metropolitan areas in the country," an observation that he parlayed into the argument that it "weaken[ed] still further the case for imposing strict liability on shippers whose goods pass through the densely inhabited portions of the state."<sup>19</sup>

If there were risk assessments both implicit and explicit in this analysis, however, the most striking one appeared in Judge Posner's apparent delectation of the comparison of the alternatives of "rerout[ing] the shipment of all hazardous materials around Chicago" with "the relocation of homes adjacent to the Blue Island switching yard to more distant suburbs."<sup>20</sup> He commented that "[b]rutal though it may be to say it, the inappropriate use to which land is being put in the Blue Island yard and neighborhood may be, not the transportation of hazardous chemicals, but residential living."<sup>21</sup> This is risk assessment in the grand manner — that is, a value judgment about risks. At its best, tort law is very good at that.

### C. *Private nuisance*

"There is perhaps no more impenetrable jungle in the entire law," Prosser famously remarked, "than that which surrounds the word 'nuisance.'" The term, he continued, "has meant all things to all men."<sup>22</sup> In an analogous observation

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17. *Indiana Harbor Belt R.R.*, 916 F.2d at 1178.

18. *Id.*

19. *Id.* at 1180.

20. *Id.* at 1181.

21. *Id.*

22. See WILLIAM PROSSER, *HANDBOOK OF THE LAW OF TORTS* 571 (4th ed. 1971).

during an unusually discursive disquisition, a comment to the Second Restatement nuisance sections remarked that the term "frequently is used in several different senses."<sup>23</sup>

Whatever else it may mean, however, the phrase "private nuisance" connotes an "invasion of another's interest in the private use and enjoyment of land" that violates some legal standard defined in the traditional terminology of the law of torts. Specifically, the Restatement requires a plaintiff to show that the invasion was "either (a) intentional and unreasonable, or (b) unintentional and otherwise actionable under the rules controlling liability for negligent or reckless conduct, or for abnormally dangerous conditions or activities."<sup>24</sup> The concept of nuisance therefore is approximately as broad as the traditional culpability spectrum of tort law. However, with its concept of "intentional and unreasonable," it appears to create a kind of intentional torts-plus category. This is because it apparently requires the plaintiff to meet not only the requirement of "intent" as knowledge with substantial certainty that an invasion will take place but also the requirement that the conduct be "unreasonable."<sup>25</sup>

Especially given its inclusion of a separate strict liability alternative, the Restatement formulation provides room for plaintiffs to show that the risk created by the defendant went beyond socially acceptable limits. The conduct may be negligent, presumably incorporating the broad social definition of utility mentioned above.<sup>26</sup> Or it may be "abnormally dangerous," including among other things the notion of inappropriateness to the location mentioned in the Restatement's definition of such activities.<sup>27</sup>

The much-cited *Boomer* case<sup>28</sup> indicates how broad a warrant nuisance law gives courts with respect to the value judgments inherent in any risk assessment. In that case, there was a stipulation that the damage caused by the de-

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23. See RESTATEMENT (SECOND) OF TORTS § 821A, cmt. b (1979).

24. *Id.* § 822.

25. *Id.*

26. See *supra* note 4 and accompanying text.

27. See *supra* note 10 and accompanying text.

28. *Boomer v. Atlantic Cement Co.*, 257 N.E.2d 870 (N.Y. 1970).

fendant cement plant to the plaintiff landowners was \$185,000, which compared triflingly with the defendant's investment in its plant of more than \$45,000,000 and its payroll of more than 300 employees.<sup>29</sup>

Committed to denying a full-dress injunction, even one whose effective date was postponed to give the defendant a chance to eliminate the pollution by "technical advances," the court instead chose a compensation remedy.<sup>30</sup> It did issue an injunction, but one to be vacated on the payment of permanent damages.

Reviewing *Boomer* after more than a quarter century, one is struck by its broad frame of reference in terms of the subject of this panel. The court explicitly folds in the regulatory dimension with its observation that "the amelioration of air pollution will depend," in part, "on a carefully balanced consideration of the economic impact of close regulation."<sup>31</sup> It insists that "[a] court should not try to do this on its own as a by-product of private litigation."<sup>32</sup>

With this pronouncement, the court obviously sets limits. With its modest remedy, however, it defines potentialities. Perhaps speaking of "gap-filling" is insufficiently descriptive. At the least, tort becomes the spear, the point person — even, the irritant that provokes change. It is symbolic that *Boomer* was contemporaneous with the Clean Air Act of 1970,<sup>33</sup> which represented a quantum jump in federal control of air pollution.<sup>34</sup>

*Boomer* also blends in a pragmatic reference to what we now classify as "law and economics." Anticipating Calabresi and Melamed,<sup>35</sup> the court points out that "[t]he parties could

29. *See id.* at 873 & n.

30. *See id.*

31. *Id.* at 871.

32. *Id.*

33. *See* Pub. L. No. 91-604 (1970).

34. The Congressional Quarterly Almanac termed the legislation "the most comprehensive air pollution control bill in U.S. history." 1970 Congressional Quarterly Almanac 472.

35. *See* Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089 (1972) (classifying nuisance rules that include a property rule favoring the

settle this private litigation at any time if defendant paid enough money."<sup>36</sup>

At the time, the vogue for the application of economic analysis to law was only in early bloom. I recall vividly wandering into a panel at an AALS annual meeting in the early seventies. A young law professor was holding forth on law and economics in the environmental milieu. An older member of the panel sat listening with a beatific papal smile, or perhaps the smile of the proverbial cat that ate the canary. And that, my friends, was Ronald Coase. The insights of *Boomer* in both directions — its acknowledgment of the primacy of existing regulation and its quietly understated advertence to the importance of where one assigns the property right — have now been absorbed into the mainstream of legal thought.

Yet that is still only the beginning of the analysis. It appears that environmental law may yet have to come to terms with the fact that regulation waxes and wanes. While a crop of regulatory statutes may literally change the landscape for a time, new revolutions in government may gut enforcement if not eliminate the legislation. In that event, tort remedies — sometimes facetiously condemned for their asserted uncertainty — may actually provide an anchor where regulation proves a will-o-the-wisp.<sup>37</sup>

The main point with reference to this discussion is that when we speak of tort and environmental risk assessment, tort not only comprehends the insights of law and economics, but it also responds — because it must respond — to the problems of calculating and defining risk that are at the heart of our highly articulated systems of government regulation. *Boomer* illustrates the linkage between the identifica-

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plaintiff, under which presumably, the polluter must buy the plaintiff's property right in order to continue polluting, as well as a liability rule that permits pollution but requires compensation).

36. See *Boomer*, 257 N.E.2d at 873.

37. See A.B.A., The Special Committee on the Tort Liability System, TOWARDS A JURISPRUDENCE OF INJURY: THE CONTINUING CREATION OF A SYSTEM OF SUBSTANTIVE JUSTICE IN AMERICAN TORT LAW, REPORT TO THE AMERICAN BAR ASSOCIATION 10-190 (1984)(Marshall S. Shapo Rptr.) [hereinafter JURISPRUDENCE OF INJURY].

tion of risk and risk assessment. Through the unique prism of judicial remedies, it shows that risk assessment for one purpose, the injunctive remedy, may be different from that for another — the damages remedy. The risk is a given; at each level of law as well as through the lens of economic analysis, the assessment will vary.

#### D. *Public nuisance*

A quarter century ago I chaired a panel of this section that included commentary pivoting on the law of public nuisance.<sup>38</sup> One finds relatively little case law since on the subject — more's the pity, since the Restatement sections on the topic went to so much trouble to explore its conceptual nooks and crannies.<sup>39</sup> But whatever the popularity of the doctrine as a pleading vehicle, the Restatement's definitions make clear in both language and concept that public nuisance is a leading exercise in risk assessment. If you are the sort of lawyer whose instinct is to protect your wallet when you encounter a catalog of factors, you will want to make sure it is safely tucked away when you read that “[c]ircumstances that may sustain a holding” of public nuisance “include the following.”<sup>40</sup> You will become even more suspicious when you find that the catalog features language like “a significant interference with the public health, the public safety, the public

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38. The panel of the Torts Round Table Council for 1970 discussed a paper by Willard Pedrick entitled, “Nuisance Law: A Stave or a Reed?” The panelists were Professor William Rodgers, then as now a faculty member at the University of Washington School of Law, Charles Lettow of the general counsel's office of the Council on Environmental Quality, Chicago attorney Charles Whalen, and Dean John Wade, then assuming his duties as the second Reporter for the Restatement (Second) of Torts. See Association of American Law Schools, Proceedings of 1970 Annual Meeting, Part Two, at 13. In a letter to Mr. Whalen, I indicated my hope that, although the “point of departure” for the panel was “common law public nuisance theory,” I hoped that this would “trigger a free-for-all that will bring the discussion quickly to the intersection of public remedies with private law.” Marshall S. Shapo, letter to Charles E. Whalen, Nov. 24, 1970.

39. A dozen pages of commentary and examples accompany the blackletter on the substantive doctrine and the issue of who can recover in Restatement (Second) of Torts §§ 821B-821C (1979).

40. See *id.* § 821B(2).

peace, the public comfort or the public convenience,"<sup>41</sup> not to mention the words "the actor knows or has reason to know, has a significant effect upon the public right."<sup>42</sup> But this language — crafted by one of our greatest intellectual progenitors in the torts community — simply tries to spell out the painfully wrought result of a process of legal development that worked its way through centuries of common law.

### E. *Trespass*

It is incumbent on me to mention the doctrine of trespass, not only for the sake of categorical completeness among the common law doctrines, but because of its stark power as what might be described an anti-risk assessment theory. Trespass is the strictest of strict liability torts. One who intentionally causes something to go onto another's land — intent being defined according to the general definition of substantial certainty that "entry of the foreign matter" will result — is liable for trespass.<sup>43</sup>

Trespass provides a bracing contrast to "risk assessment," for it does not balance. It is interesting to find the single paragraph or two on trespass that typically appears toward the end of many convoluted CERCLA cases.<sup>44</sup> The significance of those paragraphs lies in the very fact that alongside the heavily lobbied balancing of CERCLA law — even compared with the law of negligence and Rylands-type strict liability — trespass is direct and brutal. One might call it pre-figured risk assessment.

## III. The Role of Tort in Environmental Risk Assessment

Because we think of tort in terms of cleaning up messes, and because we are taught from our professional birth as law students that private law does not do well as a comprehen-

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41. *Id.* § 821B(2)(a).

42. *Id.* § 821B(2)(c).

43. See Restatement (Second) of Torts § 158 & cmt. 1 (1965).

44. See, e.g., *United States v. Allied Chem. Corp.*, 587 F. Supp. 1205, 1209 (N.D. Cal. 1984).

sive regulator,<sup>45</sup> we may not give tort law sufficient credit for its contribution to risk assessment.

As we assess that contribution, we must remember how unavoidably value-laden is any process of assessing risks. Large scale regulatory structures seek to cast particularized assessments in stone. When one examines the level of detail in CERCLA<sup>46</sup> one is struck by how closely legislators and regulators do that job in situations that permit doing the job closely.

Where tort often helps to do justice is in precisely the most difficult of cases, in those with the most uncertain outcomes, and in those where regulation is least informative or even non-existent. As I explained in a brief critique of the gallant effort of the American Law Institute's Enterprise Liability Project to carry off an "institutional analysis,"<sup>47</sup> one cannot count on this rowdy and complex society to put tort-like events in neat institutional boxes and keep them there. I identified this as the "Problem of the Missing Tsar," pointing out the perfectly obvious fact that Americans have no Tsar.<sup>48</sup>

Let me now return to the case of nuclear waste and Yucca Mountain. Why, a decade after the Government decided on Yucca Mountain as its chosen repository, would a knowledgeable commentator say that the question of "[w]hat exactly is meant by safe?" "cannot yet be answered?" The reason is that scientific risk assessment may be as unavoidably value-laden as legal risk assessment. When well-qualified experts argue over whether the time limit for containment should be 10,000 years or "until [the reposi-

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45. For illustrative recognition of this point, see *Jurisprudence of Injury*, *supra* note 37, at 14-10 ("in many areas involving deliberate social resource allocation, tort law provides no more than useful analogies"); *Law School Without Fear*, *supra* note 9, at 11 (distinction between private law and public law), 99 ("courts generally are deemed best able to deal with 'interstitial' questions. . .").

46. See, e.g., *Florida Power & Light Co. v. Allis Chalmers Corp.*, 85 F.3d 1514, 1520 (11th Cir. 1996) (interpreting statutory definition of "facility").

47. See American Law Inst., *Reporters' Study, Enterprise Liability for Personal Injury* (1991), e.g., Vol. 2 at 3-15 (developing "comparative institutional perspective").

48. See Marshall S. Shapo, *The Problem of the Missing Tsar*, 19 *Hofstra L. Rev.* 185 (1991).

tory's] risk begins to decline — even if that means a million years<sup>49</sup> — then we know that the sort of risk assessment that torts teaches provides a model for the boiling down of decisional choices that must be made on the grandest scales.

Yucca Mountain is an evocative example of the power of the tort model, indeed the private law approach, to clarify analysis. The article to which I have referred reports that “[f]rom the very beginning . . . the state of Nevada has strongly opposed the project.”<sup>50</sup> However thin the tissue of risk on which opponents rely, one can imagine the public sentiment that underlies the political opposition. There is plenty of risk analysis literature that shows how seemingly “irrational” people can be about comparative risks,<sup>51</sup> but politics in a nuclear world must take account of a rationality kinked by the indelible image of the mushroom cloud.

A thoughtful professional ancestor of ours summarized the point aphoristically in an article on the technical question of nuclear licensing. Writing of a controversy over the siting of a reactor in a Pennsylvania county, he referred to an Atomic Energy Commission study's assertion that “in the long run, it is effective performance which is the firmest foundation for public confidence.” David Cavers' comment on this sugary statement was that “in the interim the people to the leeward of Peach Bottom are entitled to confidence that for them there will be a long run.”<sup>52</sup>

Now consider, if you will, a citizen suit — founded on one or more of the several centrally common law vehicles I have mentioned or based on the quasi-common law doctrine of public nuisance — to enjoin the storage of nuclear wastes at Yucca Mountain. Assume some appended claims from Ne-

49. See Whipple, *supra* note 2, at 77.

50. *Id.* at 72. The two United States senators from Nevada led opposition to a bill to establish the Yucca Mountain site, which produced 37 negative votes, enough to keep a predicted Presidential veto from being overridden. Warren Leary, *Senate Backs Atomic Dump; Veto is Likely*, N.Y. Times, Aug. 1, 1996, at A7.

51. See, e.g., William A. Freudenberg & Julie A. Rursch, *The Risks of “Putting the Numbers in Context”: A Cautionary Tale*, 14 *Risk Analysis* 949 (1994).

52. See David Cavers, *Administrative Decision Making in Nuclear Facilities Licensing*, 110 U. Pa. L. Rev. 330, 341 (1962).

vada landowners for the newly fashionable fear-of-disease tort. Invoking *Karen Silkwood*,<sup>53</sup> I will also ask you to assume that the plaintiffs are able to overcome any defense of federal preemption.

When that case reaches the highest court that writes an opinion, the technical infighting will be fierce. Some of the most fascinating punching and counterpunching will take place over the application of the discretionary function exception of the Federal Tort Claims Act.<sup>54</sup>

I suggest two things relevant to this discussion that will be evident when that court publishes its opinion. First, tort law is the ultimate refuge of the threatened citizen. Second, the decisive paragraphs in that opinion, whichever way it goes, will reduce to a tort-like formula the risk assessment that decides the case.

Let me close on a mischievous pedagogical note, perhaps one that you will privilege for a colleague who has taught torts — and thus necessarily taught environmental law — for 31 years. Since the decisive passage of the opinion I have described will probably be no longer than a typical bluebook answer to a one hour exam problem, I will give you an assignment. Sometime before January 6, 1998, write that passage.

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53. See *Silkwood v. Kerr-McGee Corp.*, 464 U.S. 238 (10th Cir. 1984).

54. A principal weapon for the government will be *Allen v. United States*, 816 F.2d 1417 (10th Cir. 1987) (applying discretionary function exception to injuries ascribed to atomic bomb tests).