RIGHTS AGAINST RISKS

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I. Modern Risks

The admonition "do no harm" has been thought to be a natural duty all persons owe to others.¹ That duty expresses our deep respect for the integrity of others. In simple cases, like assault or murder, the duty seems both right and its immediate achievement desirable. We can imagine a world without assaults and murders. In fact many would say achieving such a world would realize one of the highest aims of human beings.

Modern technology injures people as surely as these other human actions, and thus prompts us to ask why we so often seem unwilling or unable to apply this same natural duty to technological agents of harm. While the criminal law categorically prohibits assaults and murders, society permits risky technologies to operate. This Article explores the application of the aspiration that we cause no one harm to the realities of modern technology. It argues that permitting some risky actions is consistent with conceptions of justice that place the utmost importance on the sanctity and autonomy of individuals. The argument does not amount to a reason to give up the aspiration that we do no harm. It suggests that attempts to wall off individuals behind some impervious barrier of rights against risk misconceive the claims of justice to which such rights might otherwise appeal.

A. Modern Technology and the Problem of Statistical Deaths

Regulating risk of serious harm and death caused by technology, while a traditional governmental function, has acquired a contemporary urgency.² In the past fifteen years the federal government has ex-

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A large number of individuals have contributed to this Article through discussions and comments on earlier versions. George Rutherglen suffered through a very disorganized draft and offered valuable suggestions. Sara Beale, Walter Dellinger, Willie Fletcher, Wes Magat, Steve Munzer, Steve Shiffrin, and Gary Schwartz raised questions about different parts of the argument that prompted reconsiderations and revisions. Donald Horowitz and Paul Mishkin have been especially generous with encouragement, sound advice, and extremely careful reading at several different stages of the project.


2. The laws of nuisance, trespass, and tort have always been concerned with the propriety of imposing risk on others or their property. For surveys of the law of nuisance particularly relevant to modern risky actions, see W. Rodgers, Handbook on Environmental Law 100–50 (1977); Winner, The Chancellor’s Foot and Environmental Law: A Call for Better Reasoned Decisions on Environmental Injunctions, 9 Env'l. L. 477 (1979); Note, Imminent Irreparable Injury: A Need for Reform, 45 S. Cal. L. Rev. 1025 (1972). Legislative regulation of risk also has a substantial lineage. By 1875, for instance, public inspectorates existed within the British Home Office for risky enterprises
panded tremendously its intervention into technological activities in the name of preventing risk of harm. Such regulation has surged ahead even as confidence in government's "old" forms of regulation has declined. A most striking feature of modern governmental regulation is that statutes reflect our wide disagreement over what constitutes a regulable risk. Statutes employ standards for regulatory action ranging from prohibitions of actions that impose unreasonable risk to requirements that human health be protected with an ample margin of safety. Debate rages about many questions: over whether cost-benefit analysis can be used in risk regulation and, if so, how human health can be monetized; over the ethical obligations of polluters; over whether


4. The Interstate Commerce Commission epitomizes the old regulation, through which an administrative agency regulates a specific industry, generally controlling entry and prices. The newer variety of regulation addresses a specific problem, rather than a specific industry, and its jurisdiction may cut across a considerable number of industries. The EPA is an example of an agency operating under the new regulatory format. See M. Weidenbaum, Business, Government, and the Public 16–22 (2d ed. 1981). The deregulation movement has concentrated on eliminating instances of the old regulation, see Magat & Schroeder, Administrative Process Reform in a Discretionary Age: The Role of Social Consequences, 1984 Duke L.J. 301, 307, while the newer regulation has primarily been the target of efforts to reform, rather than eliminate it, see, e.g., R. Litan & W. Nordhaus, Reforming Federal Regulation 6 (1982).


7. Compare, e.g., Kelman, Economic Incentives and Environmental Policy: Politics, Ideology, and Philosophy, in Incentives for Environmental Protection 291, 315 (1983) ("Few environmentalists are willing to be nonjudgmental. They condemn polluting behavior. Indeed, it is at the heart of being an environmentalist to believe, and to propagandize the belief, that one ought to have preferences that give a clean environment strong weight.") and Sagoff, Economic Theory and Environmental Law, 79 Mich. L. Rev. 1393 (1981) (environmental legislation expresses people's highest sense of values), with Ruff, The Economic Common Sense of Pollution, in Microeconomics: Selected Readings 595, 595 (3d ed. 1979) ("We are going to make very little real progress in solving the problem of pollution until we recognize it for what, primarily, it is: an economic problem, which must be understood in economic terms.").
pollution is a crime and polluters criminals;\textsuperscript{8} over whether all pollution is wrong or is wrong only in suboptimal amounts;\textsuperscript{9} and over whether every individual is entitled to the same risk protection as everyone else and, if so, what that level ought to be.\textsuperscript{10}

What is more, public choice theory has intensified the search for justification of risk regulation. Public choice theory attacks post-New Deal government as lacking a coherent set of principles to justify its role in society. It depicts regulation through administrative agencies as the spoils of a political system that responds to interest group pressures and panders to constituencies.\textsuperscript{11} Thus, all government regulation, including the regulation of risk, is characterized as inherently unprincipled. Unless one is willing to concede that regulation is based exclusively on physical, monetary, or electoral muscle, some explanation of the bases for public coercion in mediating risk disputes between individuals and groups is necessary.

Equity has provided a limited answer to the question of acceptable

\textsuperscript{8} Many environmental statutes have criminal penalty provisions, see, e.g., Federal Water Pollution Control (Clean Water) Act, 33 U.S.C. § 1319(c) (1982), but the penal provisions are seldom invoked. However, acts of reckless endangerment that involve modern risks have begun to be the object of criminal punishment, as witnessed by the recent conviction of corporate executives of Film Recovery Systems Corporation after a worker had been wrongfully exposed to cyanide in a chemical reprocessing plant. See Murder in the Front Office, Newsweek, July 8, 1985, at 58.


\textsuperscript{11} Concern that governmental power might be seized by self-serving interest groups, or "factions," has influenced debates over governmental structure and operating principles for centuries. The classic account of the dangers of factions in the period of the Constitution's enactment is James Madison's Federalist 10. Public choice theory extends the assumption of self-interested behavior to government itself, arguing that legislators and bureaucrats must also be viewed as self-serving actors in the governmental process, with legislators employing their office to maximize votes for re-election and bureaucrats seeking to maximize their budgets, influence, and further job prospects. See Grain & McCormick, Regulators as an Interest Group, in 2 The Theory of Public Choice 287 (1984); Peltzman, Toward a More General Theory of Regulation, 19 J.L. & Econ. 211 (1976); Stigler, The Theory of Economic Regulation, 2 Bell J. Econ. & Mgmt Sci. 3 (1971). In its positive form, public choice explores the predictable effects of these assumptions on the uses of governmental power, sometimes concluding that what results is a "government of clients and cartels." The Politics of Regulation x (J. Wilson ed. 1980) (introduction by editor). The earliest public choice models, including the "capture" theory and others, conclude that well-organized economic interests inevitably dominate regulation, bending it to their self-serving interests, but these theories have had difficulty explaining the rise of consumer and environmental protection regulation. See, e.g., R. Litan & W. Nordhaus, supra note 4, at 39–44. More complicated theories have been developed to explain how hard-to-organize groups can be politically successful. These incorporate further considerations of the distribution of benefits and costs of regulation, as well as of ideological commitments to regulatory ideals, but they retain the core idea that the actors in the process possess self-serving motivations. See Wilson, The Politics of Regulation, in The Politics of Regulation, supra, at 357–58.
risk. The traditional doctrine of injunctions against tortious behavior holds that courts may enjoin behavior that is virtually certain to harm an identifiable individual in the near future.\textsuperscript{12} This body of law, however, focuses more on avoidance of harm to specific persons than on regulation of risk.\textsuperscript{13} It is thus inapposite to the questions of modern technological risk, risk that is quite unlikely to injure any identifiable individual in the short-term, but that carries severe consequences that are certain to occur to someone in the medium to distant future. Consider the paradigm of the Acme Chemical Company:

Acme Chemical Company is discovered to be storing chemical wastes on its land in such a way that seepage containing traces of those wastes are entering an underground water system that serves as the sole drinking water supply for a town several miles away. One of the chemicals has been classified as a carcinogen in laboratory experiments on mice. Although extrapolating from these results to predictions of human carcinogenicity is somewhat controversial, federal agencies routinely do so. Under one of a number of plausible sets of assumptions, a concentration of ten parts per billion (ppb) in drinking water is estimated to increase a human's chance of contracting cancer by one in one hundred thousand if the human is assumed to consume a normal intake over the course of twenty years. Analyses show that the current concentration in the underground aquifer near Acme's plant is ten ppb.

This case exhibits the typical features of risky actions associated with modern technology. The probability of risk to any individual is relatively small while its severity is substantial, perhaps fatal. Risk is being imposed on individuals who have not consented to it in any meaningful sense. Finally, risk is unintentional in the sense that imposing risk on others is not an objective of Acme's plan.\textsuperscript{14} We may assume its executives in fact would be tremendously relieved if they could avoid the risk.

A great many of the recent controversial cases of toxic exposure exhibit this structure: by all accounts exposures to benzene in the workplace,\textsuperscript{15} low level radiation in the atmosphere,\textsuperscript{16} ordinary air pol-

\textsuperscript{12} See Note, supra note 2, at 1025.

\textsuperscript{13} The technological risks discussed in this Article substantially overlap the class of risk Toby Page has labelled "environmental risks." See Page, A Generic View of Toxic Chemicals and Similar Risks, 7 Ecology L.Q. 207 (1978). At their extreme these risks exhibit the 'zero-infinity dilemma': a virtually zero probability of a virtually infinite catastrophe." Id. at 211. In sufficiently minute doses, or sufficiently controlled exposures, many technological risks approximate the zero-infinity dilemma; at larger doses they manifest still low, but increasing, probabilities of severe health effects. As exposure extends to wider and wider populations, some harm becomes a probabilistic certainty. See infra note 22.

\textsuperscript{14} It is often intentional, however, in the sense that a person intends the actual consequences of his actions. See infra notes 121-27 and accompanying text.

\textsuperscript{15} The EPA has estimated the maximum lifetime risk of leukemia from benzene exposure for individuals living within 20 kilometers of a maleic anhydride plant vent to be 7.6 chances in 100,000. EPA, National Emission Standards for Hazardous Air Pollu-
lution, and asbestos-like fibers in drinking water pose small risks to any single individual. Yet the size of the exposed population or the lifetime exposure of single individuals makes "statistical deaths" or "statistical carcinomas" virtually certain. These technological risks, exemplified by the Acme Chemical Company case, are the objects of regulation to be examined here.

B. The Collapse of the Equity Doctrine and the Emergence of Probabilistic Assessments of Risk

The foundation of the traditional equity doctrine seems delightfully self-evident: individuals possess certain rights, and the violations of those rights are wrong. If possible, such violations ought to be prevented. Frequently the law lacks the ability to anticipate and prevent harms in advance, so damage actions provide second-best solutions. For instance, it is wrong for one to strike another without provocation or excuse, but, since the constable is seldom in a position to stop the assault in advance, the law is limited to providing for damages retrospectively. Nonetheless, in cases where the equivalent of the cocked fist can be halted before it reaches the face, it is manifestly appropriate to do so. An injunction of a threatened nuisance or trespass can be issued when halting the cocked fist seems possible. When it is not likely that

tants; Benzene Emissions from Maleic Anhydride Plants, Ethylbenzene/Styrene Plants, and Benzene Storage Vessels; Proposed Withdrawal of Proposed Standards, 49 Fed. Reg. 8386, 8389 (1984). On the basis of this assessment, the EPA has proposed not regulating benzene, a known carcinogen, because its public health risk is insignificant. Id. at 8388.

16. Uranium mills produce the highest level of noncatastrophic releases of radioactive into the atmosphere. The EPA has estimated that a mill operating for 50 years and releasing .1 curies per year of radioactivity produces a risk of adverse health effects of approximately one in one million for each member of an assumed population of 54,000 living in its vicinity. For a discussion of the problem, see Marnicio, Regulation of Ionizing Radiation, in Quantitative Risk Assessment in Regulation 157 (1982). Recently, residents of Utah and Nevada successfully asserted liability claims against the federal government for the effects of low-level radiation exposure from nuclear weapons testing in Nevada. See Allen v. United States, 588 F. Supp. 247 (D. Utah 1984).

17. For a study of the adverse health effects of ordinary air pollution, see L. Lave & E. Seskin, Air Pollution and Human Health (1977).

18. See Reserve Mining Co. v. EPA, 514 F.2d 492 (8th Cir. 1975). In the Reserve Mining litigation, the court took preventative steps without any evidence of adverse health effects and in "the absence of any significant empirical evidence that directly implicated [Reserve's] mill tailings in the causation of disease." R. Bartlett, The Reserve Mining Controversy: Science, Technology, and Environmental Quality 155 (1980).

19. Cf. Rosenberg, The Causal Connection in Mass Exposure Cases: A "Public Law" Vision of the Tort System, 97 Harv. L. Rev. 849, 878 (1984) ("A right not to be wrongfully interfered with is fundamentally different from a right to compensation after the fact. Transgressions of victims' rights offend the victims' human dignity regardless of whether their material losses are 'fully' compensated."). But cf. infra text accompanying notes 131-139 (challenging the view that all "rights" are appropriately enforced through preventative injunctions).

20. Most successful injunctions against nuisances are obtained against continuing
a harm would occur from a particular action, however, as when the action seems more like driving a car within the speed limit than the forward motion of a fist, the injunction is inappropriate.\textsuperscript{21}

An increasingly sophisticated understanding of the probabilistic consequences of risky actions threatens to collapse the distinction between cocking a fist and driving a car. Once the probability of harm associated with a risky action can be gauged, an axiom of statistical theory holds that a sufficient number of repetitions of that action practically guarantees that the harm actually will occur.\textsuperscript{22} When a risky action—say, exposing someone to a known carcinogen—is repeated often enough, whether through repetitions on that same individual or by increasing the size of the exposed population, the entire set of actions becomes, probabilistically, virtually certain to produce the feared harm. By generalizing from the discrete action to the class of actions, the situation takes the shape of an enjoinable offense because, taken collectively, the group of actions is as likely to cause harm as the cocked fist. If it is appropriate to stop the cocked fist, is it not then appropriate to stop the group of actions that will cause as certain a harm, even if the probabilities of any single or discrete action—an isolated carcinogen exposure—causing harm are vanishingly small?\textsuperscript{23}

 nuisances, where some damage has already occurred and seems certain to continue. See infra note 28 and accompanying text. In such cases, the cocked fist has already struck once. See, e.g., Whalen v. Union Bag & Paper Co., 208 N.Y. 1, 101 N.E. 805 (1913).


\textsuperscript{22} One definition of probability states that the probability of an outcome occurring is the limit of its relative frequency. That is, it is the ratio of the number of times that outcome occurs to the number of times the test is performed that might have that outcome, as the number of tests approaches infinity:

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Pr(\epsilon) = \lim_{n \to \infty} \frac{n(\epsilon)}{n}
\]

where \(Pr(\epsilon)\) is the probability of outcome \(\epsilon\), \(n(\epsilon)\) equals the number of times \(\epsilon\) is the outcome, and \(n\) equals the number of times the test is performed. See, e.g., T. Wonnacott \\& R. Wonnacott, Introductory Statistics 32 (2d ed. 1972). Given this definition, the occurrence of any outcome with a nonzero probability will approximate its probability as \(n\) increases. For a relatively small \(n\), the chances of the adverse outcome not occurring can be significant. For instance, if the chance of contracting cancer from an exposure is \(1\) in \(100\), the chance that none of one hundred people exposed will contract cancer is \(37\%\). The probability of no harm decreases as \(n\) increases: if \(200\) people are exposed, the no harm probability falls to \(13\%\).

\textsuperscript{23} A fundamental objection to the idea that some fraction of the population might be allowed to die because of exposure to a risk that is viewed as acceptable is expressed in an argument called "the murder of the statistical person." If the identity of the 50 people who died annually as the result of a [one in one million] risk were known, there is little doubt that much greater effort would be expended to reduce the risk. Objections to the idea of society deciding that some risks are negligible are raised by those who consider that statistical people as well as identified people deserve protection.

Furthermore, even though harm becomes certain only when an entire class of risky actions are taken together, any one of those risky actions might actually cause harm. If the harm anticipated is sufficiently great, why must one wait to stop the action until one is virtually certain the harm will occur? Unable to produce a satisfactory answer to this question, courts have modified the traditional doctrines, recognizing that the "magnum of risk sufficient to justify regulation is inversely proportional to the harm to be avoided."24

When carried to its logical extreme, this argument can raise questions about even very ordinary actions. Many, perhaps all, common actions generate some risk of serious harm to others. Driving a car down the street might lead to a fatal third-party accident; mowing a lawn might kick up a rock that kills a neighbor; pushing a child on a swing might result in another child’s death if the swing clips the back of his head. As individual acts, these are common, but somewhat risky actions. When they are amalgamated into a set of like actions, the set becomes virtually certain to produce the feared harm. Once one begins thinking this way, every action can be construed as but a member of a set of actions—which set is the equivalent of the cocked fist—and subsequently every risky action that might be an action that really will cause harm becomes a candidate for regulation.25

This probabilistic perspective has been successful in dislodging the earlier unstinting devotion to freedom of action that supported the virtually-certain-to-occur standard. The earlier standard embodied a view of the individual liberty of risk creators that resisted restrictions until an offsetting rights violation could be conclusively presented.26 The

24. Ethyl Corp. v. EPA, 541 F.2d 1, 19 (D.C. Cir.), cert. denied, 426 U.S. 941 (1976). Statutory provisions authorizing agencies and courts to intervene to prevent the risk of harm rather than only the harm itself have accelerated the modern tendency beyond the pace set by the common law. Compare Village of Wilsonville v. SCA Serv., Inc., 66 Ill. 2d 1, 25–26, 426 N.E.2d 824, 836 (1981) (applying common law rule that an injunction against hazardous waste site is appropriate only if there exists a "dangerous probability" that the threatened injury will occur), with Reserve Mining Co. v. EPA, 514 F.2d 492, 520, 598 (8th Cir. 1975) (actual harm is not more likely than not, but Federal Water Pollution Control Act was intended to work in a "precautionary or preventive sense, and, therefore, evidence of potential harm as well as actual harm comes within the purview of that term").

25. Cf. C. Fried, supra note 23, at 155 ("The issue of risk is pervasive because every choice affects, however slightly, the probability of death. . . . I am not sure how to define deliberate killing so as to set it off clearly from cases of imposing risk.").

26. Experience has demonstrated that a meddlesome, interfering policy represses the spontaneous energy and many-sided activity, which arises naturally from self-interest . . . and constitute[s] the true springs of progress. The spirit of our laws is chary about regulating conduct or restricting action.
virtually-certain standard was taken to mark the proper point of constraint that protected others and ensured a like liberty for all. Lately, the expansion of technological risks has forced reappraisal of the substantial interests of the risk bearer. The norms for preventing risky action have been unmoored from the relatively well-defined, if extreme, virtually certain standard, and the appropriate accommodation between risk creator and risk bearer has swung decidedly toward increased protection of the risk bearers.

Attention to risk as the probabilistic anticipation of harm also introduces important new complications to the analysis of appropriate prevention. Proof of imminent harm under the traditional injunction requirements appeals to common sense understanding of cause and effect. For instance, injunctions against continuing nuisances constitute the bulk of successful actions. In these cases the conclusion that the defendant's actions tomorrow will cause approximately the same harm they caused yesterday under nearly identical circumstances can be drawn confidently so long as no affirmative reasons exist to doubt the accuracy of relatively simple causal connections. In contrast, when we assess technological risk, causal links and accurate predictions of the harm that will eventually be caused become much more controversial and much less the province of common sense. By their very nature, probabilistic estimates take relatively few variables as critical to prediction. They abstract from the highly particularized fact situations of injunction proceedings, thereby opening continuing debate on the propriety of ignoring the omitted variables. They also frequently rely

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27. This excludes the anarchistic approach to the problem of freedom, which still insists on "like liberty," but denies the legitimacy of any constraints. See, e.g., J. Feinberg, Social Philosophy 22-24 (1973). Liberal approaches, in contrast, acknowledge that people can abuse other people in ways that violate the legitimate claims of the other, and that the state accordingly has a legitimate role in restraining such action. The recognition of the state, and the need to distinguish legitimate and illegitimate coercion, generates the central problem of liberal theory.

28. "[A] common method of proving a threat of a future tort is by proving a past tort under conditions that render its repetition or continuance probable." Restatement (Second) of Torts 933 comment b (1979); cf. Rondeau v. Mosinee Paper Co., 422 U.S. 49, 59 (1975) ("[T]he usual basis for injunctive relief is 'that there exists some cognizable danger of recurrent violation.' " (quoting United States v. W.T. Grant Co., 345 U.S. 629, 633 (1953)). Injunctions of merely threatened harms are regarded as exceptional extensions of a general rule granting injunctions only against existing harms. See, e.g., Fink v. Board of Trustees, 71 Ill. App. 2d 276, 281-82, 218 N.E.2d 240, 243-44 (1965).

29. Risk modelling derives from the general policymaking school of comprehensive rationality, whose methodology reduces choice to an analysis of the efficacy of available alternatives to achieve predetermined goals. See Diver, Policy-Making Paradigms in Administrative Law, 95 Harv. L. Rev. 393, 396-99 (1981). This approach to social decisions inevitably entails simplification, both in the specification of goals and in the modelling methods employed to predict the extent to which alternatives achieve them. Id. at 430. The major policymaking alternative is incrementalism, which avoids global
on experimental data from animal studies for conclusions about human health effects, using only point estimates of dose-responses. These point estimates cannot be translated into estimates of risks at low exposures without making controversial and arbitrary assumptions.30

These and other elements of modern risk assessment create numerous disputes over the amount and kind of risks actually associated with risky actions. Such disputes commonly dominate the public debate over specific regulatory proposals.31 While these debates must continue, disagreement over the riskiness of any specific action should not totally obscure a separate issue: assuming risk information is precisely known, what should we do? Ignoring some cognitive uncertainty helps sharpen the normative questions that must be faced if a comprehensive risk prevention strategy is to be justified. This Article assumes that the probability distribution of harms associated with actions can be ascertained. Thus the Article is about risk rather than uncertainty.32


31. See, e.g., Rodgers, Benefits, Costs, and Risks: Oversight of Health and Environmental Decisionmaking, 4 Harv. Envtl. L. Rev. 191, 193 (1980) ("Decisions of whether to regulate, and to what degree, often depend as much upon what to do when facts are unavailable as upon assessment of statutory criteria.").

32. Analysts distinguish between risk, "where the precise outcome cannot be predicted but a probability distribution can be specified," and uncertainty, "where one does not even know the parameters of the outcomes." Wildavsky, The Political Economy of Efficiency, Cost-Benefit Analysis, Systems Analysis, and Program Budgeting, in Political Science and Public Policy 55, 61–62 (1968).

Professor Bohrer has described uncertainty as the "most nettlesome characteristic of modern technology." Bohrer, Fear and Trembling in the Twentieth Century: Technological Risk, Uncertainty and Emotional Distress, 1984 Wis. L. Rev. 83, 92. By this account, the simplifying assumption in the text eliminates the most important aspect of the risk regulation issue. Bohrer’s approach, however, is to classify risks according to three states of knowledge, which he claims are the only ones possible: (1) cases of known and substantial risk of serious harm to particular people, (2) cases of known and trivial risk, and (3) cases where the risk is uncertain or unknown. Id. at 88–89. Category 1 produces injunctive relief, category 2 produces no injunctive relief, and category 3, which represents most technological risks, produces little chance of injunctive relief (although Bohrer believes relief is clearly appropriate). Id. at 89. This approach treats
C. Approaches to Regulating Modern Risks

Efforts to justify exercises of governmental power typically revolve around the two major traditions in American jurisprudence and political theory: the utilitarian tradition of Jeremy Bentham and John Stuart Mill, carried forward into modern policy discussions by welfare economics, cost-benefit analysis, and the law and economics movement, and the "rights" tradition of John Locke and Immanuel Kant, currently argued by scholars as diverse as John Rawls, Robert Nozick, and Ronald Dworkin. These traditions dominate the risk regulation field as well, and provide a starting point for analysis.33

the division between category 1 and category 2 as nonproblematic, whereas I treat it as a crucial issue.

Even in cases where the amount of risk is uncertain, we must make a decision to treat the situation as a category 1 or a category 2 problem on the basis of what we know. Our current regulatory efforts generally proceed by attempting to make estimates of risk in the face of uncertainty, through the techniques of risk assessment, even though such judgments will require subsequent revision in the light of new information. On methods for arriving at estimates of probability on the basis of imperfect information, see H. Raiffa, Decision Analysis: Introductory Lectures on Choices Under Uncertainty (1968). Because we generally attempt to categorize all situations as either cases appropriate for prohibition (hence of substantial risk) or not appropriate for prohibition (hence of trivial risk), explicating the distinction between category 1 and category 2 is crucial.

"Uncertainty costs"—the fear and feeling of vulnerability associated with not knowing whether one will be injured in the future—may be a major explanation for the recent tremendous increase in environmental consciousness and in the demands for stricter risk regulation. See, e.g., Michelman, Book Review, 80 Yale L.J. 647, 684 (1971). The increasingly popular idea that fear and emotional distress associated with technological risks ought to be recognized as separate items of compensable damages suggests that such uncertainty costs reflect cognizable interests to be evaluated in resolving the risk regulation issue. See, e.g., Bohrer, supra, at 88–92. Concentrating on risk rather than uncertainty does not predetermine any arguments over the role of such uncertainty costs, because for any individual the eventuality of harm is still uncertain even when the probabilities are known. It is only for an entire population that a risk assessment is possible. See, e.g., Delgado, Beyond Sindell: Relaxation of Cause-In-Fact Rules for Indeterminate Plaintiffs, 70 Calif. L. Rev. 881, 881–83 (1982). Analyzing the appropriate role of uncertainty costs in a decision to regulate any particular risk is beyond the scope of this Article, although such costs obviously are relevant to that decision.

33. The field of environmental ethics, which has expanded tremendously during the "environmental era," might be thought to provide guidance on matters of risk regulation because much of environmental legislation has been aimed directly at reducing technological risks. However, the principal preoccupation of environmental ethics has been a debate over whether traditional, homocentric ethics can and should be replaced in contemporary times by a biocentric ethic. That preoccupation is central to Aldo Leopold's classic formulation of environmental responsibility: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise." A. Leopold, A Sand County Almanac and Sketches Here and There 228 (1968). See also Callicott, Animal Liberation: A Triangular Affair, 2 Env'tl. Ethics 311, 324 (1980) (in environmental ethics, the ecosystem is not just a good, but the summa bonum); Ethics and the Environment 3 (D. Scherer & T. Atig eds. 1983) (introduction by editors) ("Writers on environmental ethics have challenged the traditional human-centered paradigm by asking whether the environment has more than instrumental value and how humanity might be more intimately related to its
1. Utilitarianism. — Utilitarianism and its modern cousin, welfare economics, supply a basis for a risk regulation program that seems highly congenial to the nature of democratic decisionmaking in general and environmental legislation in particular. Utilitarianism emphasizes that risks are worth taking because of the potential gains associated with them. This perspective leads naturally to defining justifiable risk in terms of weighing risks against potential gains. It also appears to address the most important aspect of the risk regulation issue very well, that legitimate human interests are at stake on both sides of the risk question, and these interests clash at probabilities of harm far less than that required to meet the virtually-certain-to-occur standard. Deferring unequivocally to the desires of risk creators at lower probabilities is no longer an acceptable strategy. There is no justification for permitting the imposition of large scale risks in pursuit of marginal goals or programs. Yet the interests of risk creators cannot be discounted entirely.

A rush to the conclusion that utilitarianism provides society with the appropriate structure with which to analyze the risk regulation question encounters substantial headwinds. The public seems roundly to reject its modern cost-benefit variant. Opinion poll data consistently reflect the public's desire to place environmental protection above considerations of countervailing cost. The public's two lawmakers bod-

environment."); Rolston, Is There An Ecological Ethics?, 85 Ethics 93, 94 (1975) (environmental ethic's fundamental principles must be responsive to environmental considerations). The current issues of risk regulation pressing most strenuously for legislative resolution remain homocentric, since they involve issues of what human technologies ought to be allowed to do to other humans. This Article assumes that the most sensible approach to risk issues is to develop a resolution for the homocentric question, and then to expand the issue to include responsibilities to the biosphere. Because environmental ethics disputes this premise, it provides little concrete guidance on the topic of this Article.

34. The extent of the relationship between utilitarianism and welfare economics is hotly contested, but that debate will not be pursued here. For purposes of this Article, they are sufficiently similar to be equated. For more on the relationship between utilitarianism and economics, see B. Barry, Political Argument 41 (1965); Kornhauser, A Guide to the Perplexed Claims of Efficiency in the Law, 8 Hofstra L. Rev. 591, 598–99 (1980); Posner, The Ethical and Political Basis of the Efficiency Norm in Common Law Adjudication, 8 Hofstra L. Rev. 487 (1980).


36. See infra notes 80–97 and accompanying text.

37. See supra note 24.

38. For example, a 1983 Harris Poll shows over 80 percent of Americans opposed
ies—the legislature and the jury—also demonstrate aversion to cost-benefit balancing. For instance, despite the academic penchant for treating Judge Learned Hand’s much-quoted negligence standard as a utilitarian formula, jurors in the Ford Pinto litigation were outraged when they learned that Ford had performed a cost-benefit analysis when deciding whether to move the Pinto’s gas tank to a safer location. Such actions did not represent a misapplication of the appropriate ethical standard, but manifested a “callous indifference” to the sanctity of human life.

Congress has also often rejected cost-benefit balancing in enacting environmental laws. In substantial measure, the legislation that provides much of this country’s risk regulation refutes the view that environmental lawmaking is grounded in utilitarian theory. Instead, the legislation seems to vindicate “rights.” The statutes reflect a view of “social harms,” including environmental harms, “as violations of moral rights.” Environmentalists have sought to act against such harms be-


Objections in principle to cost-benefit analysis and objections to the values used in specific cost-benefit calculations are often difficult to distinguish. It is possible, for instance, that jurors in cases like the Ford Pinto litigation accepted cost-benefit analysis in principle and just thought Ford had used an inappropriately low value for human life. This interpretation, however, hardly seems consistent with the tone of outrage in Grimschaw and other cases.


44. For a discussion of this thesis as applied to the Clean Air and Clean Water Acts, see Schroeder, Foreword, A Decade of Regulation of the Chemical Industry, Law & Contemp. Probs., Winter 1983, at 1.
cause of "values [they hold] to be transcendent and absolute," not because of some cost-benefit ratio. Thus, worker protection laws were enacted to affirm the "inalienable rights" of workers to a safe workplace, and air pollution statutes embody the right of citizens to breathe clean air. The public often views cancer as a proxy for all modern technological risks, and some have claimed that "[e]very person has a basic human right not to have cancer inflicted on him by the action of other persons." This right, furthermore, "is perhaps too obvious to need any justificatory argument." In general, just as the government cannot order every thousandth citizen to be placed before a firing squad, it cannot stand by as citizens are exposed to environmental hazards. It must enforce a citizen's "right to be protected against the hazards to health and life from technology and pollution." The result of this rights-consciousness is a package of single-mindedly protectionist legislation, that treats "each practice that creates a risk of violating a right [as] an unqualified wrong.

Cost-benefit adherents continually protest that this legislation lacks common sense. To date, however, the basic environmental regulatory structure has remained remarkably intact, even though the current administration is plainly hostile to federal regulation that fails to meet cost-benefit criteria.

The resilience of anti-cost-benefit and anti-utilitarian attitudes and legislation reflects a serious and ineradicable flaw in utilitarian-based theories. None of these theories adequately addresses a major anxiety of modern society: the fear that each individual inevitably will be overborne by society's pursuit of collective goals.

From the individual's point of view, the balancing of costs and ben-

51. Id.
56. For a brief description of the Reagan administration's efforts to impose cost-benefit analysis even on legislation that prohibits use of such analysis in setting standards, see Litan, supra note 38.
efts that utilitarianism endorses renders the status of any individual risk bearer profoundly insecure. A risk bearer cannot determine from the kind of risk being imposed on him whether it is impermissible or not. The identical risk may be justified if necessary to avoid a calamity and unjustified if the product of an act of profitless carelessness, but the nature and extent of the underlying benefits of the risky action are frequently unknown to the risk bearer so that he cannot know whether or not he is being wronged. Furthermore, even when the gain that lies behind the risk is well-known, the status of a risk bearer is insecure because individuals can justifiably be inflicted with ever greater levels of risk in conjunction with increasing gains. Certainly, individual risk bearers may be entitled to more protection if the risky action exposes many others to the same risk, since the likelihood that technological risks will cause greater harm increases as more and more people experience that risk. This makes the risky action less likely to be justifiable. Once again, however, that insight seems scant comfort to an individual, for it reinforces the realization that, standing alone, he does not count for much. A strategy of weighing gains against risks thus renders the status of any specific risk victim substantially contingent upon the claims of others, both those who may share his victim status and those who stand to gain from the risky activity.

The anxiety to preserve some fundamental place for the individual that cannot be overrun by larger social considerations underlies what H.L.A. Hart has aptly termed the “distinctively modern criticism of utilitarianism,”58 the criticism that, despite its famous slogan, “everyone [is] to count for one,”59 utilitarianism ultimately denies each individual a primary place in its system of values. Various versions of utilitarianism evaluate actions by the consequences of those actions to maximize happiness, the net of pleasure over pain, or the satisfaction of desires.60 Whatever the specific formulation, the goal of maximizing some measure of utility obscures and diminishes the status of each individual. It reduces the individual to a conduit, a reference point that registers the appropriate “utiles,” but does not count for anything independent of his monitoring function.61 It also produces moral requirements that can trample an individual, if necessary, to maximize utility, since once the net effects of a proposal on the maximand have been taken into account, the individual is expendable. Counting pleasure and pain equally across individuals is a laudable proposal, but counting only pleasure and pain permits the grossest inequities among individuals and the

trampling of the few in furtherance of the utility of the many. In sum, utilitarianism makes the status of any individual radically contingent. The individual's status will be preserved only so long as that status contributes to increasing total utility. Otherwise, the individual can be discarded.

2. Liberal Theories in the "Rights" Tradition. — A second group of theories avoids the modern criticism of utilitarianism by making the individual central. Contemporary theorists as diverse as John Rawls, Robert Nozick, Richard Epstein, Charles Fried, and Ronald Dworkin continue a tradition variously described as the Kantian, natural rights, or "rights" tradition. They all define the requirements of justice in terms of recognizing and preserving the essential characteristics of individuals as free and autonomous moral agents. In this approach, the individual is defined prior to articulating the terms under which that individual can be acted upon or interacted with, and those terms are consequently specified so as to protect and preserve what is essential to the individual. In this context, rights have been called "trumps" since they constrain what society can do to the individual.

These theories all aspire to make the individual more secure than he is under utilitarianism. In the rights tradition, the crucial criteria for assessing risks derive from the impact of those risks on risk victims, and the criteria are defined independently of the benefits flowing from risk creation. To be plausible, such a program cannot totally prohibit risk creation, but the ostensible advantage of this program over utilitarianism is that risk creation is circumscribed by criteria exclusively derived from considerations of the integrity of the individual, not from any bal-

62. Modern rights theories have frequently been termed "Kantian," more to reflect an inheritance of outlook than to indicate that Kant's writings are being closely followed. See, e.g., B. Ackerman, Private Property and the Constitution 71–72 (1977); J. Murphy & J. Coleman, The Philosophy of Law: An Introduction to Jurisprudence 106 n.6 (1984); Posner, Utilitarianism, Economics and Legal Theory, 8 J. Legal Stud. 103, 104 n.4 (1979) (citing Ackerman). The term is used in this Article in the wider sense, rather than to distinguish theories within the rights tradition derived from Kant and those derived from Locke. See, e.g., Mashaw, Administrative Due Process: The Quest for a Dignitary Theory, 61 B.U.L. Rev. 885, 907–08 (1981); Shiffrin, Liberalism, Radicalism, and Legal Scholarship, 30 UCLA L. Rev. 1103, 1118–30 (1983).


64. See R. Dworkin, Taking Rights Seriously xi (1977); see also C. Fried, Right and Wrong 81 (1978) (rights as categorical absolutes that cannot be violated for any reason); R. Nozick, Anarchy, State, and Utopia ix (1974) ("individuals have rights, and there are things no person or group may do to them . . . ."); J. Rawls, supra note 1, at 3 ("Each person possesses an inviolability founded on justice that even the welfare of society as a whole cannot override.").
ancing or weighing process. The root idea is that nonconsensual
risks are violations of "individual entitlements to personal security and
autonomy." 

This idea seems highly congruent with the ideology of environ-
mentalism expressed in our national legislation regulating technologi-
cal risk. Indeed, two scholars have recently suggested a modern
rendering of Kant's categorical imperative: "All rational persons have
a right not to be used without their consent even for the benefit of
others." If imposing risk amounts to using another, this tradition
seems to be the place to look to secure the status of the individual.

D. Rights and Consequences

In modern society, the overwhelming power of centralized author-
ity, whether of the state or of other large institutions, looms over every
individual. Utilitarianism is a philosophy that legitimizes that power
and countenances the anxiety that comes with it so long as total utility
is increased. In the process of that legitimization, utilitarianism fails to
accommodate society's deeply held moral ideals concerning the special
sanctity of human life. "[W]e prefer to think of [lives] as beyond
price. . . . To the extent that our lives and institutions depend on the
notion that life is beyond price . . . a refusal to save lives is horribly
costly." Cost-benefit analysis flaunts the legitimacy of placing a price
on life. The depth of hostile reactions to the utilitarian tradition that
has been displayed in the environmental era cannot fully be compre-
hended until the antipathy to this aspect of that tradition is understood.

Theories in the rights tradition resonate with ideals regarding life
and its sanctity. These theories, however, can provide a reliable guide
to risk regulation only if they can fit their analysis of rights against risk
with other legitimate values to comprise a coherent theory of govern-
ment. It is the thesis of this Article that the notion of a right against
risk that trumps all considerations of countervailing values cannot be so
validated by any theory in the rights tradition.

Despite the appealing absolutist language of nonutilitarian theo-
ries, the countervailing benefits of risky actions persistently return and

65. Wrongs against individuals must be understood within a context that first de-
finest the boundaries of the individuals' claims exclusive of society:
The picture is of a status quo, a baseline which the actor disturbs. Behind [this]
idea is Nozick's, Kant's, Locke's conception of a private domain which defines
the individual's discretionary space, within which he can work out his concep-
tion of happiness. It is the state's, the law's duty to protect this privacy . . . .
C. Fried, Is Liberty Possible?: The Tanner Lectures on Human Values III 89, 120
(1982).

66. Rosenberg, supra note 19, at 877; see also Huber, Safety and the Second Best:
The Hazards of Public Risk Management in the Courts, 85 Colum. L. Rev. 277, 283
(1985) (criticizing theories treating technological risks as violations of entitlements).


demand consideration. This is so at the level of practical politics, where the years after passage of our major environmental statutes have witnessed creative maneuvers by courts, agencies, and Congress to avoid actually implementing absolute rights against risk whenever the substantial costs of achieving extremely low levels of risk become undeniable.\textsuperscript{69} It is also true at the level of theory. Once one looks beyond the glitter of catchphrases to examine their accounts, seemingly absolutist nonutilitarian theories do not support absolute rights against risk.

Any defensible theory of risk regulation must acknowledge the relevance of countervaluing interests and values. Given the modern attack on utilitarianism,\textsuperscript{70} a proposed theory must also avoid comparing benefits and risks in a way that collapses the theory into utilitarianism. Unfortunately, "absolutist" rhetoric applied to risk regulation is so obsessed with avoiding the error of utilitarianism that it commits an opposite mistake by obscuring the interests of risk creators. Environmentalists, as well as others concerned about risk regulation, ought to divorce themselves from much of the popular language of rights as absolutes because the terminology evokes a misleading expectation of a theoretical justification for risk rules that cannot in fact be supplied. An attempted justification fails if it ignores the legitimate interests of risk creators and others who benefit from the creation of risk. Still, a nonabsolutist understanding of risk must preserve the essential moral insight of the rights tradition that individuals matter as autonomous moral agents worthy of respect. This Article moves in the direction of such an understanding by examining the nature of the conflict between the interests of risk creator and risk bearer, and how modern rights theories deal with that conflict.

Part II begins by elaborating on the nature of the conflict between risk bearer and risk creator once one treats both as autonomous moral agents. Part III critically examines four well-known, but divergent, theories in the rights tradition—those of Charles Fried, Richard Epstein, Ronald Dworkin, and John Rawls—and demonstrates that none support government protection of rights against risk regardless of the adverse consequences. Part IV then sketches some of the considerations for completing the task of constructing a justification for the regulation of technological risks.

II. THE CONFLICTING INTERESTS OF RISK BEARERS AND RISK CREATORS
A. Preliminaries

In evaluating any particular risky venture, consequences are material to the analysis. In one noncontroversial sense, there are no rights against risks that hold regardless of the consequences. One seldom observes a rule strictly for its own sake. Every rule aims at accomplishing

\textsuperscript{69} See Schroeder, supra note 44, at 28–38.
\textsuperscript{70} See supra notes 57–61 and accompanying text.
a purpose, so that one can always say it is necessary in evaluating a rule to
determine whether it has the consequence of effectuating that purpose.
Conceding this point causes anti-consequentialists no problem.
When I say the consequences matter, I refer to the consequences
experienced by the risk creator and by persons benefiting from the risky
action. The consequences of enforcing rights against risks typically are
detrimental to those individuals. Thus, the interests of the risk creator
are at odds with the interests of the risk bearer. Both sets of interests
must affect the amount of risk imposition permitted. Throughout this
Article I refer to such consequences as the adverse consequences of a
right against risk, or sometimes simply as the adverse consequences.

If adverse consequences matter, then it makes a difference whether
the chemical being produced by Acme Chemical Company is a life-sav-
ing drug, the glue for tiles on the space shuttle, or an ingredient in
plastic for hula hoops. Greater risk must be tolerated by risk bearers as
the benefits of risk creation increase. Of course, many other consider-
ations are also relevant. Among the most obvious are alternative loca-
tions or means of production that impose less risk, the possibility of
removing victims from exposure areas, and the availability of reason-
able substitutes. These complicate without changing the fundamental
structure of justifying risk regulation: the competing claims of risk
bearer and risk creator, each in their own right legitimate, must be
compared with each other such that an increase in the urgency of one
claim, ceteris paribus, will tilt the risk regulation toward that claimant.71

At first glance, this structure may seem vulnerable to two different
objections. First, any proposal to compare or balance competing inter-
ests can be criticized as leading ineluctably back to some form of utilita-
rianism (perhaps a "utilitarianism of rights").72 If the adverse
consequences of a right must be weighed in some manner against the
benefits of the right, how can any barriers against loss of autonomy

71. This Article thus shares some common ground with Huber, supra note 66, who
also insists on taking into account the interests of the risk creators as well as others
benefited by their actions. Huber, however, focuses exclusively on whether a public risk
removes more aggregate risk than it creates. Id. at 294. While the question of the net
effects on total risk is important to any risk policy, see infra notes 88–90 and accompany-
ing text, Huber’s argument is both too broad and too narrow. It is too broad in that
interests or values other than risk itself can count against a public risk (for example, the
claim that nuclear power reinforces centralized, autocratic concentrations of political
and economic power, and hence is inferior to other electrical technologies even if those
others produce more health-related risk). It is too narrow because some public risks
might be acceptable even though they increased aggregate risk if they also vindicated
other values (for example, the claim that using America’s coal resources to make elec-
tricity, thereby improving the nation’s energy independence, may make its use correct
despite the risks from air pollution created by burning fossil fuels). In short, more than
risks must be evaluated. Finally, nothing in this Article should be read as endorsing
either Huber’s excessive reliance on quantitative method or his specific criticisms of the
courts’ role in modern risk management.

72. R. Nozick, supra note 64, at 28.
survive? There will always be some concatenation of consequences that those bent on overcoming the right will assert outweighs the claim of the individual. Does not this kind of relativism ultimately degenerate into some reconstituted version of utilitarianism, effectively leveling the moral landscape into continual balancing exercises?

The answer lies in the distinction between the considerations relevant to formulating a rule and the considerations relevant to its application. One of the purposes of formulating a rule is to eliminate from further consideration some of the arguments or factual aspects of choices one must make. For example, a rule that pedestrians walking on country roads must walk on the side facing oncoming traffic, if it is followed unreflectively, eliminates from consideration other arguments or facts that might otherwise bear on the choice of sides, such as (1) differences in terrain; (2) the presence of a large, vicious-looking dog tied to a fence post on one side; (3) an upcoming sharp left curve with large trees on its inside radius that will obscure the vision of oncoming drivers; or (4) a desire to pick wildflowers growing on the other side. Rules vary in specificity and scope and are formulated for a variety of reasons, but generally they all limit the arguments and facts that bear on choice.

Under this concept of rules, rules may intervene to preclude or limit the consideration of consequences, and thus such consideration will not inevitably collapse all issues of moral choice into a case-by-case cost-benefit analysis. Any theory intent on maintaining individual integrity and autonomy will likely generate some rules that protect individuals from the radical contingency associated with utilitarianism. Autonomy implies some moral space within which an individual can make choices even if those choices do not maximize utility.

"Rights" in theories emphasizing individual autonomy function as rules providing individuals with moral space. They eliminate from consideration of the justness of an action some arguments and factual aspects that might otherwise bear on that judgment. Notice that this idea of rights is consistent with taking consequences into account. Consequences can be taken into account at the rule formulation stage. If a rule then makes certain consequences irrelevant to its subsequent application, these "rights regardless of consequences" ignore conse-

73. The modern classic on this distinction is Rawls, Two Concepts of Rules, 64 Phil. Rev. 3 (1955), reprinted in Theories of Ethics 144 (P. Foot ed. 1967). See also Scanlon, Rights, Goals and Fairness, in Public & Private Morality 95, 94 (1980) (arguing for a two-tier moral system "that gives an important role to consequences in the justification and interpretation of rights but which takes rights seriously as placing limits on consequentialist reasoning at the level of casuistry").


75. See, e.g., id. at 1690–94 (criminal rules primarily aimed at deterrence, formal rules of contract aimed at ensuring accurate expressions of parties' intentions).
quences only because the consequences of granting those rights had been taken into account when the rights were formulated.

Within a nonutilitarian theory, then, there is a valid distinction between weighing the consequences of a risky action and weighing the consequences of a rule regulating risky actions. One point this section makes is that this distinction cannot plausibly result in a rule that risks should be regulated regardless of consequences, but that fact alone does not demonstrate that either the structure of the arguments supporting this conclusion or the norms of behavior derived from them are simply reformulations of utilitarianism.76

Even if the proposal to take consequences into account does not reproduce a form of utilitarianism, a second objection may be voiced. It might be thought that the proposal embodies the same fundamental mistake that has resulted in criticism of utilitarianism. Once again an individual's security will become contingent upon the consequential value to others of actions affecting that individual's vital interests. Although the problem of contingency is real, the criticism of utilitarianism outlined above cannot be leveled against the manner in which contingency has been reintroduced. This is because, notwithstanding the current fashion of equating "consequentialism" with "utilitarianism,"77 utilitarianism is a unique subset of consequentialism, and arguments aimed at it cannot simply be appropriated to indict all theories that consider consequences to be relevant. Utilitarianism's special use of consequences isolates a single consequential aspect of actions—contribution to the maximand—and assesses the propriety of action exclusively by that measure. It is this feature of utilitarianism, not the

76. To forestall misunderstanding, nothing in this defense of a role for rights in ethical analysis commits one to some version of rule utilitarianism, a theory that does have to struggle mightily to avoid collapsing into simple act utilitarianism. Rule and act utilitarianism share a commitment to utility as the sole determinant of right action. See W. Frankena, Ethics 30–32 (1973); infra note 78. The argument in the text allows for moral considerations such as autonomy, freedom, and prior obligation to figure directly in the assessment of consequences, and hence in the justification of rules or rights. Rule utilitarianism is thus just a special case, and not a particularly cogent special case, of this more general argument in defense of rules.

77. The term "consequentialism" apparently entered the modern lexicon through an article by G.E.M. Anscombe. See G. Anscombe, Modern Moral Philosophy, 33 Phil. 1 (1958). Consequentialism has been defined as any moral system that judges the morality of an action by its consequences. See Barry, Book Review, 88 Yale L.J. 629, 629–30 (1979). Equating utilitarianism with consequentialism becomes easier as one is less and less precise about defining utilitarianism's particular brand of consequentialist reasoning. See, e.g., Theories of Ethics, supra note 73, at 13 ("[W]e may take . . . as a general definition of utilitarianism . . . the thesis that actions are made right or wrong by their good or bad consequences."). Utilitarianism is, however, a very special consequentialist theory, see infra note 78, and the modern criticism is addressed to these special aspects, rather than the general feature of consequentialism.

For an argument that this kind of glossing over of important distinctions within a group of theories is a regular stage in the development of rival systems, see Barry, supra, at 631–34.
simple ingredient of considering consequences, that makes it vulnerable to the charge of ignoring individuals.78

It is perfectly feasible to construct moral theories that employ consequences in their evaluation of the rightness of actions without thereby endorsing utilitarian reductionism.79 In specific cases, one individual might be given his “rights” by a second individual only at the second individual’s great discomfort, inconvenience, and perhaps even risk of life. As an illustration, suppose Smith had agreed to meet Jones at 7:30 to deliver some jewels Jones had purchased. At 7:00 Smith’s son, lying near death in the hospital, requires a blood transfusion. The blood bank is out of the son’s blood type, and only a direct transfusion from Smith, who shares his son’s blood type, can save the boy’s life. Smith begins the transfusion at 7:15 and misses the meeting with Jones. While acknowledging that Jones has some right to performance by Smith, one would also be willing to grant an excuse to Smith under these circumstances. Excuses based on the difficulty or undesirability of performance incorporate an assessment of the consequences along with an evaluation of the nature and the urgency of the right being asserted. Such an ethic need not inevitably collapse into simple utilitarianism. It could honor rights in cases where utility calculations might deny them. It would not do, for instance, for Smith to miss the 7:30 appointment because his son was playing in a little league baseball game that Smith wanted to watch, even if the happiness of Smith and his son would outweigh the inconvenience or disutility to Jones of not getting the jewels until the next day. Furthermore, the excuses could be based on considerations of consequences limited to those immediately implicated in some pertinent sense, rather than on a universal calculation of consequences. It might not count in Smith’s deliberations, nor in our assessment of them, that Smith’s giving the transfusion might save the hospital from major malpractice liability because it had negligently allowed the blood bank to become depleted.

Once consequences are incorporated into the articulation of rights, there may not be a single correct formulation of rights. Certainly I am not here defending as precisely accurate any of the informal suggestions of the previous paragraph. Nevertheless, the foregoing discus-

78. Utilitarianism exhibits three distinct features: (1) it relies exclusively on consequences to judge actions; (2) it requires that those consequences be judged exclusively in terms of the utility to individuals; and (3) it requires that the utility information about actions simply be added. See Sen, Evaluator Relativity and Consequential Evaluation, 12 Phil. & Pub. Aff. 113, 120–21 (1983). The modern criticism of utilitarianism is directed at the second and third features, for they are responsible for reducing other aspects of individuality to insignificance.

79. See Shiffrin, supra note 62, at 1124 n.80, 1127 n.91; Williams, A Critique of Utilitarianism, in Utilitarianism: For and Against 93 (1973) (distinguishing between taking consequences into account and the idea that everything depends on consequences); Munzer, Book Review, 77 Mich. L. Rev. 421, 426 (1979).
sion shows that the modern criticism of utilitarianism does not stand in the way of all proposals to take adverse consequences into account.

B. Conflicting Interests

This section develops the view that adverse consequences must be taken into account in defining rights against risk by examining possible methods for avoiding that conclusion. In defending any rule whose application disregards consequences, three general argumentative strategies are available to a follower of the rights tradition. The strongest strategy asserts that adverse consequences are disregarded because they are irrelevant to the rights of autonomous moral agents. Because this position alone truly maintains that rights can be defined a priori without reference to consequences, refuting it will go far toward establishing that the basic structure of justification for risk regulation necessitates consideration of consequences.

In contrast, both the second and third strategies concede that adverse consequences matter at some stage either in the formulation of risk rules or in the application of those rules. The second possibility claims that even though consequences in general are relevant to the justification of rights, rules for the class of technological risks can ignore consequences because in every case of technological risk we should willingly tolerate those consequences in order to achieve risk reduction. Finally, the third strategy acknowledges that consequences matter and that they actually override risk reduction benefits in some cases of technological risk. The strategy argues that the costs of distinguishing cases favoring the risk creator from those in which the balance tilts the other way exceed the gains from making that discrimination, so that adopting consequences-invariant rights to apply to the entire class of risks is a superior strategy. The merits of either of these latter two arguments turns on an empirical assessment—what the consequences and the risks are likely to be—together with a normative evaluation comparing risks and consequences.

1. Consequences Irrelevant. — Within modern theories in the rights tradition, rights as trumps restore some recognition of the moral significance of the individual above and beyond her capacity to increase some social welfare total. One implication of this effort is that there must be some actions that are wrong even if social welfare would be increased by them, just because an individual would be wronged by them.80 The function of rights is to locate and identify these actions.

In defining those rights, it seems natural to begin by stating clearly which aspects of an autonomous individual require protection from consideration of utility maximization. The rights in the system constrain the behavior of others that might harm these aspects of the individual. One might begin with the idea of preservation. Securing the

80. See R. Dworkin, supra note 64, at 269.
moral significance of the individual should at least center on preserving that individual’s life. Preservation ought then to be extended to include the broader concept of physical or bodily integrity, because many physical assaults short of death can so damage or injure an individual as to reduce dramatically the quality of that individual’s life. Rights should at least prevent substantial invasions of bodily integrity.

Because questions of technological risk ultimately are questions of risk to bodily integrity, some observations can be made without developing any full theory of justice.\textsuperscript{81} If a theory of justice actually could specify the line dividing actions that invade bodily integrity from those that do not by simply reflecting on what is necessary to preserve the bodily integrity of the risk victim, “wrong” actions could indeed be read off by observing whether the action will cross that boundary. Adverse consequences to other parties as a result of the actions not being taken would be irrelevant to this determination.\textsuperscript{82}

However, no theory of justice starting with bodily integrity can succeed in drawing a clear line between acceptable and unacceptable actions. Although a simple appeal to utility maximization has been ruled out, it is not clear how other appeals to adverse consequences can be denied. Certain actions that harm or threaten harm to an individual may produce consequences that prevent the bodily integrity of others from being invaded. For example, the initial use of DDT prevented malaria epidemics among United States troops in the Second World War and later among populations throughout the equatorial regions.\textsuperscript{83} DDT residue in the environment is a bodily-integrity threatening pollutant.\textsuperscript{84} To ban its production or use as a rights violation ignores the individual claim of potential malaria victims to have their bodily integrity respected.\textsuperscript{85} Any argument that violations of bodily integrity from

\textsuperscript{81} Of course, rights to bodily integrity are only a part of any theory of justice. Additional ingredients, such as a theory of distributive justice, will also be required by any theory that contests the legitimacy of natural endowments and inherited positions in society. See, e.g., J. Rawls, supra note 64.

\textsuperscript{82} This is equivalent to saying that society ought to have a rule that excludes such consequences from influencing whether the rule should be followed. Because rules apply regardless of the urgency or weight of all they exclude, they can be called “absolute” or “categorical.” See, e.g., C. Fried, supra note 64, at 11–12.


\textsuperscript{84} See R. Carson, Silent Spring 29–33 (1962). Because of Carson’s and others’ efforts to expose the hazards of DDT, the EPA cancelled DDT’s registration for American use. See Environmental Defense Fund, Inc. v. Ruckelshaus, 439 F.2d 584 (D.C. Cir. 1971).

\textsuperscript{85} The DDT example is far from unique. Actions we take frequently have both beneficial and detrimental effects of the same quality, and the intermingling of health effects is common in the assessment of environmental risks. For example, nitrates are useful, perhaps essential, in the curing of meat to control the botulism bacillus; but those same nitrates are believed to be precursors of nitratesmines, suspected carcinogens. When the FDA considered banning saccharin it faced another example: obesity may not be everyone’s problem, but neither was everyone who used saccharin expected to get cancer from it. Cf. Gori & Richter, Macroeconomics of Disease Prevention in the United
DDT residue are wrong because caused by human agency, while violations caused by malaria are not wrong because they arise from natural causes seems to put far too much weight on the distinction between actions and nonactions. Why should a system that accepts bodily integrity as paramount view the preventable death of individuals as an event of moral irrelevance?

Bodily integrity undoubtedly constitutes a fundamentally important part of any definition of the individual; it may even be first among equals. It is the necessary predicate of any other attribute of individuality. Yet even survival has seldom been elevated to a status lexically prior to those other attributes of the person, and the demand that bodily integrity be absolutely secured before any resources or attention is paid to those other values has not motivated a political philosophy since Hobbes. First, according bodily integrity absolute status produces the paradox mentioned above: some actions directed at preserving that interest themselves produce consequences that threaten it, so that serving bodily integrity concerns absolutely results in either paraly-
sis or the weighing of consequences. Second, in any plausible society, maintaining the basic health of members is quite likely to exhaust resources totally, so that according bodily integrity absolute status would virtually threaten to enslave everyone in the service of that single objective. Finally, even on the relaxed view that not killing rather than not letting die is the value recognized as absolute, recognition of the concept of risk leads to the same conclusion: avoiding risk to other human beings in a society and environment in which risk is a concomitant of many human actions may necessitate such a substantial sacrifice of freedom of action and initiative as to indenture all of us.

Thus, even when one isolates the single characteristic of bodily integrity as the sole attribute of an individual that requires protection with absolute rights, adverse consequences enter into determining whether a given action is permissible. Isolating bodily integrity is itself a highly questionable starting point, however, and once those aspects of individuality that a theory of justice must recognize and preserve are expanded to a more comprehensive set, the case for defining rights without considering consequences is thoroughly destroyed.

Actually, expanding the idea of preservation to include bodily integrity on the basis of quality of life considerations has already pointed the way to a more realistic statement of those individual characteristics worth protecting. The same considerations of quality of life counsel recognizing some freedom of action and initiative within the definition of the morally relevant aspects of the individual. Doing so is consistent with a long political and philosophical heritage. Deeply ingrained in practically all theories of the rights tradition is the vision of a person as capable of forming and entitled to pursue some individual life plan. Given this vision, placing survival or bodily integrity absolutely above all other ends would be tantamount to saying that the life plan that one ought to adopt is that of prolonging life at all costs. That idea is unacceptably authoritarian and regimented. It would be extremely anomalous for a theory supposedly centered on the autonomy of the individual to result in a conception of justice that constrained all individuals to a monolithic result.

Individual human beings want more from their lives than simple

88. See supra notes 83-86 and accompanying text.
90. See, e.g., J. Locke, The Second Treatise of Government 5 (T. Peardon ed. 1952) (Because men are equal and independent, "no one ought to harm another in his life, health, liberty or possessions"); The Declaration of Independence (U.S. 1776) (mankind entitled to "Life, Liberty and the pursuit of Happiness").
91. See, e.g., J. Feinberg, supra note 27, at 21 (attributing a theory that defines the highest good for man as a dynamic process of growth and self-realization to "Von Humboldt, Mill, Hobhouse, and many others").
bodily integrity, and the conception of an individual, of what defines and constitutes a person, as so limited is peculiarly impoverished. Individuals are capable of formulating and pursuing life plans, of forming bonds of love, commitment, and friendship on which they subsequently act, of conceiving images of self- and community-improvement. Some of these may directly advance interests in human survival, as when dedicated doctors and scientists pursue solutions to cancer or develop chemical pesticides with a view to assisting agricultural self-sufficiency in developing countries. Some may dramatically advance the “quality of life,” rather than survival itself, as when Guttenberg’s press made literature more widely available or when Henry Ford pioneered the mass production of the automobile. However, even individual initiatives of much less demonstrable impact on the lives of others constitute a vital element that makes human life distinctively human. A just society ought to understand and value this element both in the concrete results it sometimes produces and in the freedom and integrity that are acknowledged when individual liberty to conceive and act upon initiative is respected.92

The observations just advanced can be generalized to reach all rights theories, even those that do not start with the single and simple notion of preserving the individual as a physical being. Adverse consequences cannot be ignored in determining the propriety of an action because those consequences, no less than the action itself, happen to individuals. So long as the theory concerns promoting the interests of individual human beings, it is hard to see how one can defend a method of rights analysis that systematically ignores some of those interests.93 When the argument is made that rights trump appeals to improvements of the public welfare, the allure of the argument has been slipped in via that impersonal abstraction “public welfare.”94 The “public” whose interests constitute the elements of the general welfare is itself a collection of individuals.95 Every right granted to individuals, whether a

92. See, e.g., A. Gewirth, Reason and Morality 135 (1978); A. Gutmann, supra note 63, at 6.

93. “[U]nless rights are to be taken as defined by rather implausible rigid formulae, it seems that we must invoke what looks very much like the consideration of consequences in order to determine what they rule out and what they allow.” Scanlon, supra note 73, at 93; see also Lyons, Utility and Rights, in Nomos XXIV: Ethics, Economics and the Law 107, 117 (1982) (“[A person’s freedom] must give some respect to the interests of others, and what others may justifiably do is determined in part by the effects of their conduct upon people generally.”).

94. Dworkin acknowledges that all individuals, including individuals in the political majority, have rights that may well count against an opposing claim of right, even though the majority as such may have no such rights. R. Dworkin, supra note 64, at 194. His idea that rights trump collective goals, however, is subject to misinterpretation because expressions such as “collective goals” or the “public welfare” obscure the individuals who benefit from attaining collective goals or advancing the public welfare.

95. To make this claim, it is unnecessary to dispute the idea that “the public interest” can have an independent meaning; one merely needs to see that individuals make
right guaranteeing an individual certain goods or one securing an ability to allocate those goods, to that extent diminishes the ability of other individuals to advance their interests.\textsuperscript{96} A theory of rights as trumps must justify those rights by arguing that the resulting configuration of benefits and burdens, or powers and disabilities, advances some conception of justice better than its competitors can.\textsuperscript{97} No such argument can be complete that does not take into account the consequences to others of granting the right under dispute.

2. \textit{Consequences Outweighed.} — No good reason exists a priori to conclude that risk reduction must invariably be preferred to countervailing values—such as opportunities for self or community well-being and risk reduction for risk creators—especially if the sacrifice of those values is substantial or severe. Perhaps, however, those values are substantially implicated in at most a very few situations of technological risk. If so, consequences could be acknowledged as relevant, but they would be routinely outweighed by the risk reduction benefits. Thus, rules or rights could be formulated that provide absolute protections to risk victims.

Actions that produce risk are so multifarious, however, that it is foolhardy to stipulate in advance of specific cases that consequences can never matter.\textsuperscript{98} While we might be prepared to prohibit even extremely low levels of risk if the actions producing them are nearly valueless to the individual taking the action, it is entirely consistent with an emphasis on autonomous moral agents to resist that judgment if the action forecloses a broad range of important opportunities or benefits to others. Again, direct reductions of other kinds of risk are among the most compelling countervailing considerations.\textsuperscript{99} Even Robert Nozick, perhaps the sternest proponent of the view of rights as absolute trumps, is driven by such considerations to acknowledge that when actions are “generally done, play an important role in people’s lives, and are not forbidden to a person without seriously disadvantaging him,” but are nonetheless forbidden because they might cause harm, “then those who forbid in order to gain increased security for themselves

\textsuperscript{96} The point was driven home by Hohfeld: “To the extent that the defendants have privileges the plaintiffs have no rights; and conversely, to the extent that the plaintiffs have rights the defendants have no privileges...” Hohfeld, Some Fundamental Legal Conceptions as Applied in Judicial Reasoning, 28 Yale L.J. 16, 37 (1919).

\textsuperscript{97} See Scanlon, supra note 73, at 93.

\textsuperscript{98} For instance, one can experience a one in one million risk of death through any of the following activities: (1) 11 hours of firefighting; (2) smoking two cigarettes; (3) flying across the country and back. R. Wilson & E. Crouch, Risk/Benefit Analysis 174–75 (1982). Case studies of technological risk and their attendant benefits are too numerous to recite. See, e.g., sources cited supra notes 15–17.

\textsuperscript{99} See supra notes 85–86 and accompanying text.
must compensate the person forbidden for the disadvantage they place him under."\textsuperscript{100} Whatever the merits of Nozick's precise criteria, he admits here that adverse consequences matter; risk victims must either endure the risk or compensate certain actions. This is a far cry from absolute protection.

Eliminating risk from technological actions forecloses important opportunities for benefits, because we cannot excise that risk from actions without eliminating attendant benefits. When statistical relations between an activity and future harm define the limits of our causal knowledge, we lack the ability to identify and segregate the "innocent" aspects of an activity from the harm-causing aspects. Not all toxic exposures cause cancer, but we cannot predict which do and which do not, so a control strategy must operate on the entire toxics production, distribution, and disposal process. This contrasts technological risks with other dangerous activities such as automobile driving. While statistical correlations between vehicle miles travelled and accident fatalities can be constructed, different subcategories of the activity, such as negligent and nonnegligent driving, can also be identified. By attributing the vast majority of fatalities to negligent driving we avoid a visible conflict between the interests of risk creator and risk bearer, because we perceive negligent driving as having little personal value in comparison to the gains to be had from more care.

If we pursued a toxics strategy for automobiles, we would reduce vehicle miles travelled to some predetermined level, perhaps by rationing gasoline. This strategy would lead to immense public resistance because it would cut deeply into driving as a generic activity, sweeping both negligent and nonnegligent driving within its net. Just this kind of generic strategy is all that is available to reduce many technological risks, and this brings the conflict between the risk creator's interests and those of the risk bearer into prominence, requiring a less absolutist appraisal.

3. Prophylaxis. — Sometimes a rule is structured to ignore in its application facts acknowledged to be relevant to otherwise valid purposes. This may be justified if incorporating those further facts would severely impair attaining one or more of those purposes thought to be paramount. Such a rule is called prophylactic: it prohibits a class of actions, some of which do not by themselves merit prohibition in light of one's complete set of aims, in order to ensure that those actions whose prohibition is desired actually are prevented. In general prophylaxis is a plausible strategy whenever: (1) most, but not all, acts belonging to the class are wrong, and (2) attempts to pick right acts in the class from wrong ones are unreliable.\textsuperscript{101}

The inability to distinguish between right and wrong actions can

\textsuperscript{100} R. Nozick, supra note 64, at 81.
\textsuperscript{101} See, e.g., R. Sartorius, Individual Conduct and Social Norms 59–68 (1975).
arise for various reasons. Such discrimination may require a precise knowledge of subtle characteristics which are frequently unascertainable by regulators, judges, or juries. Private individuals acting in good faith also may find it hard to distinguish right from wrong actions, so a prohibition is written in broad terms to foreclose the need to make fine distinctions.

The preceding section argued that adverse consequences cannot be ignored across the entire range of possible risk prevention rules. At some point the adverse consequences of attaining further risk reductions would forestall imposing further risk reduction. However, a prophylactic argument may support some risk rules that apply without regard to case-by-case comparisons of adverse consequences, and these rules may seem to ensure a certain categorical freedom from risk that ignores adverse consequences across a broad range of activities. Prophylactic arguments have played this role in the formation of environmental legislation. ¹⁰² For instance, prior to 1972, efforts to control water pollution proceeded by attempting to correlate discharge levels from specific polluters to water quality objectives for the receiving water, then imposing pollution control responsibilities on individual sources commensurate with their proportionate contributions to the problem. These efforts floundered because of the complexity of establishing the causal relationships between polluters and water quality levels. In 1972, Congress circumvented the problems of causation entirely by stipulating that all point sources must install the best practicable technology available for controlling water pollution. ¹⁰³ This required that some sources that could not be shown to be causing detectable water pollution damage (for example, sources dumping modest amounts into the Pacific Ocean) must abate to the same degree as an otherwise similar plant whose pollution was demonstrably causing damage. ¹⁰⁴ The legislation was justified because the overall gains from abatement were thought to outweigh the adverse consequences, and a more precise regulatory structure was unworkable.

Such a prophylactic argument, however, does not pretend to be indifferent to the configuration of consequences and benefits at the level of specific actions. It supports a categorical rule by a conviction that efforts to assess adverse consequences and benefits at the level of specific cases are likely to produce larger errors than they cure. Moreover, the process of error comparison itself logically presupposes a commitment that adverse consequences matter, for the conviction that

¹⁰². The next several paragraphs summarize an argument made in Schroeder, supra note 44, at 21–26.
¹⁰⁴. Cf. Crown Simpson Pulp Co. v. Costle, 642 F.2d 323 (9th Cir.) (upholding EPA veto of state-issued variance to the discharge limits imposed by the Clean Water Act because effects on receiving water quality were made irrelevant by the Act), cert. denied, 454 U.S. 1055 (1981).
the categorical rule will encompass actions that are right despite the fact that they exhibit the same rule-relevant criteria as actions that are wrong presupposes that the omitted aspects of an action, the adverse consequences and the benefits, could make a decisive difference in some cases.

Two different kinds of instability threaten any risk rule premised on the prophylaxis principle and both rely on the relevance of consequences. First, since the rationale for a categorical rule depends upon a conviction that more specific case-by-case analysis is likely to produce error, extreme cases where the adverse consequences and benefits seem patently imbalanced present compelling instances for exceptions. A prophylactic rule continually faces pressure for a variance procedure that relieves at least the most obvious cases from the operation of the rule.105 The basis for such a variance is a showing as to the factual aspects that the rule purported to make irrelevant, namely benefits and adverse consequences.106 Second, the soundness of prophylaxis is vulnerable to changes in our confidence in detection technology. Should confidence in assessing benefits improve, and hence make the relationship between adverse consequences and benefits easier to see, the judgment that a prophylactic rule is the best error-reducing rule decays, and the rationale for the rule may be undermined altogether.107

For these reasons, prophylaxis, while a legitimate argument in defense of absolute rules, hardly supplies a firm grounding for general risk rules that ignore adverse consequences.


106. In the case of the Clean Water Act's transition from water quality based standards to "prophylactic" standards based on the best that technology could accomplish, it is crucial that the technology-based standards do not in practice cause massive dislocations of industry. This implies that risk levels are being set at levels that do not substantially impair countervailing interests recognized by the Congress. Technology-based standards constitute a kind of hybrid: they avoid any direct weighing of benefits against adverse consequences, but they also are not set on the basis of some analysis of what risk levels are necessary to protect bodily integrity.

Some have argued that prophylactic technology-based standards impair the ability of industry or entrepreneurs to innovate, suggesting that interests we may have in products yet undiscovered are being adversely affected, and that we underestimate those adverse consequences in formulating policy because they are more speculative and not yet as connected to specific individuals' material interests as consequences that affect present workers' jobs or the present beneficiaries of manufactured products. See, e.g., Huber, supra note 66, at 278.

III. Theories in the Rights Tradition

Part II adduced some of the general arguments for the view that society ought to regulate risks with rules that take into account the adverse consequences of risk reduction. These may be sufficient to make the point, but the position can be established in other ways as well. In this section a single question will be put to each of four contemporary rights theories: what rules regulating risks does the theory support? I shall argue that each theory can be consistent with its own premises only by endorsing rules that weigh consequences against risk reduction benefits. Given the rhetoric of absolute rights and rights as trumps surrounding these theories, this conclusion seems surprising. Yet these specific analyses show the deepest principle of the rights tradition is actually more compatible with the view that consequences matter than with the position that rights are absolute trumps to be applied without regard to those consequences.

A. Indirect Approaches

The rights tradition must affirm that a plurality of human interests merit protection from strictly utilitarian calculations. Because of this, some risky actions must be permissible. As we have seen, one method for dividing permissible from impermissible risky actions does so on the basis of the benefits flowing from each such action. It is also possible to proceed indirectly, however, by identifying some characteristic other than consequences that makes a significant distinction between classes of risky actions. Having divided risky actions into two or more categories, one category might then be absolutely prohibited, while the other(s) would remain permissible. Such an indirect approach might preserve some substantial sphere for freedom of action, thereby vindicating that interest, while absolutely prohibiting some categories of risky actions, thereby retaining the quality of rights as trumps that is so attractive as a defense against radical contingency of the kind utilitarianism produces.108

The literature of moral philosophy reveals two such indirect approaches for constructing absolute rules.109 The first distinguishes between one's direct intentions in acting and the side-effects and further

108. The technology-based standards so prevalent in environmental statutes are regulatory examples of an indirect approach to accommodating risk and adverse consequences. They permit industry to continue to discharge some risky pollution when it would be too restrictive on industry to demand more reduction (for example, when numerous plants would be shut down), but ostensibly they absolutely prohibit any pollution above the technology-based limits. See EPA v. National Crushed Stone Ass'n, 449 U.S. 64 (1980). This compromise proves controversial whenever the amount of pollution remaining after compliance is substantial or, conversely, whenever compliance with the standard seems unnecessarily costly. See cases cited supra note 105. In either situation, more explicit risk-versus-consequences comparisons are demanded.

consequences of one's actions. A rights theory might absolutely prohibit actions when the actor directly intends to expose other individuals to risk, but not those where risk is only a side-effect or further consequence. The second differentiates positive actions from negative actions or omissions. A rights theory might construct absolute rules concerning harm caused by positive acts, but not those resulting from omissions.

Charles Fried has articulated a theory employing a version of the first distinction, and Richard Epstein promotes a variant of the second. This section uses each theory as a vehicle to analyze its alternative. In the final analysis, neither provides a consequences-invariant rule applicable to the paradigm of modern risky actions issues, namely whether the Acme Chemical Company should be prevented from discharging waste.

1. Fried. — In Right and Wrong Charles Fried outlines a theory of absolute, categorical norms that the moral individual should never violate. The freedom of an actor to refrain from doing wrong and to maintain his moral integrity is a paramount value in Fried's universe. A personal right exists when the "underlying moral theory requires not only that certain things be judged wrong, but also that this judgment is fully realized only if we put the reins of the wrong into the (potential) victim's hands, only if we recognize his right in the premises." Assuming that recognizing a personal right against the risk of harm will advance the right's full realization, we can examine whether Fried's analysis produces an absolute right against risks.

One can start with the simplest absolute norm that might apply to risks, namely an absolute right never to be harmed. If support can be found for this norm, it may form the basis for a right against the risk of harm. Fried, however, persuasively demonstrates that a truly absolute right against harm is impossible to defend. No such norm can be defined solely in terms of the prohibited effects on victims, because if the norm were literally stated, "it is wrong for innocent humans to be seriously injured," its reach would extend beyond individuals who perform harmful acts to include the rest of society who might either prevent or redress such occurrences. An absolute claim would encompass remote or presently unknown future occurrences of innocent injury as well as cases of imminent injury. The moral life of all would be obsessed in the guaranteeing of a single moral objective.

Beyond this obsession, such an absolute norm also leads to contradiction. Searching for innocent victims in order to prevent their harm will necessitate action, and any action carries with it some possibilities of injuring someone else. An innocent-victim inspector may hit a pe-

110. C. Fried, supra note 64.
111. Id. at 2-3.
112. Id. at 108.
113. Id. at 14-16.
destrian on his way to an inspection site, or he might trip and fall while snooping around a suspected injury location, knocking into someone else in the process. If the norm truly applies absolutely, the very actions that are required to obey it must be avoided because they also carry the possibility, perhaps the statistical certainty, of violating it. Such a categorical norm is contradictory and incoherent. These difficulties suggest why absolutist systems are greatly preoccupied with drawing a sharp distinction between action and nonaction: to avoid contradiction one needs a safe haven from the absolute demands of the norm, and the realm of nondoing may supply such a haven.

Richard Epstein's theory sharply separates culpable actions from nonculpable actions and nonactions as a way to avoid these difficulties. Epstein does so by coupling a very narrow view of causation to the view that one should prohibit only actions that cause harm. Fried, on the other hand, thinks Epstein's causal definition is unsound. For Fried, any action, however innocuous, sits in a chain of events that might conceivably lead to injury, death, or some other prohibited adverse effect. That alone is sufficient to generate the "traps and absurdities" of absolutism. "[E]verything I do carries some risk that it will contribute to the death of an innocent person. Indeed, we cannot even save the situation by limiting our calculations to foreseeable consequences, for the limits of the foreseeable are set by what we are obliged to look out for." In Fried's view, inaction may still be a safe haven, but it permits us to do far too few constructive things, because if the undesirable effect is absolutely prohibited when it results from an action by us, we may be enjoined to do nothing at all.

Fried raises an additional problem. He views causation as useful primarily to identify the range of consequences for which a person can be held liable after the fact, while a moral theory should provide criteria for moral choice in advance of acting. This much about Fried's approach is propitious for the question of risk, since the criteria for appropriate rules preventing risk exposure from occurring lie at the core of the technological risk dilemma. Extraordinarily, the answer Fried gives to the rights question dashes all hopes for an absolutist solution and returns us again to some kind of consequentialist balancing. Unlike Epstein's theory, Fried's theory endorses a state of mind limitation on what actions are absolutely forbidden. Fried limits absolute norms to intentional actions, and he adopts a very strict version of intentionality. He embraces the principle of double effect, which distinguishes between "intended and unintended but possibly foreseen consequences." "[O]ne intends a result if that result is chosen

114. Id.
115. Id. at 17.
116. Id. at 15.
117. Id. at 21.
118. Id.
either as one's ultimate end or as one's means to that end."119

Double effect requires a close specification of the consequences of an action. In some cases, a counter-factual test suffices to distinguish the intended from the unintended: if the consequence under investigation could be prevented and the events were otherwise allowed to follow their expected course, would the actor still act as he did? If so, the consequence is unintended and therefore not within the ambit of any categorical prohibition. Fried provides the following example: "A, seeking to free his friend from prison, explodes a charge under the wall, knowing that a guard stationed on top of the wall will be killed in the explosion, though this death is immaterial to his plan."120

Although acknowledging that the counter-factual test is unsatisfactory in extremely hard cases, Fried claims it is not "incorrect," but only "defective." Apparently he wants to conclude that it adequately covers relatively easy cases like the one just given, so that the death of the guard can be adjudged the foreseen but unintended (and therefore not absolutely prohibited) consequence of the plan.

Double effect secures absolutism against the absurdities and pitfalls that would attend the more conventional usage of the term "intentional," as in "a man is presumed to intend the natural and foreseeable consequences of his actions."121 This latter standard cannot be absolute, Fried argues, since the limitation of foreseeability would either be unavailing,122 or would open the argument to surreptitious consequentialism. This is so because limiting the range of foreseeability (for example, enjoining only those consequences that are substantially foreseeable) requires judgment to balance the magnitude of the harm, the possibility of its occurrence, the importance of other ends being pur-

119. Id. at 22.
120. Id. at 23.
121. Id. at 23–24.

Thus, the negative liberties that Fried's system generates, limited as they are to protections against intentional harm, do not establish absolute barriers against technological risk. Fried's analysis of the positive liberties shows that reliance on them for absolute protection is also unavailing. Appealing to an "essentially Kantian" ground, he finds a positive duty in the idea that "respect for physical and intellectual integrity implies a claim to the conditions under which a sense may develop of oneself as a free, rational, and efficacious moral being." Id. at 118, 125. Since physical and intellectual integrity are necessary to the free pursuit of autonomous moral plans, the essential characteristic of Kantian personhood, a claim to the precondition of such integrity has great prima facie strength. Yet here, unlike the case of negative duties, one must face the prospect of an inexhaustible demand that supplying all individuals with some objectively defined level of physical and financial wherewithal can easily generate. Id. at 122. A claim of positive entitlement to absolute protection against risk threatens the same exhaustion of resources. In order to avoid insatiability, positive claims must be moderated by consideration of their onerousness. "[W]e cannot draw the conclusion that a person has a positive right to the fair satisfaction of his needs without regard to the burden this puts on others." Id. at 123. On the distinction between positive and negative liberties, see supra note 86.

122. See supra note 116 and accompanying text.
sued through the action, and other factors.\textsuperscript{123} The judgment could avoid such criteria only if it used a nonconsequentialist definition of substantiality, perhaps defining a 99\% certainty of occurring as "substantially foreseeable." However, this approach makes a difference in moral kinds—that is, the difference between absolutely wrong actions and all other actions—turn on an arbitrary distinction. This is an unpalatable circumstance for any moral theory.\textsuperscript{124}

This account of Fried's absolutist structure shows that the hunt for some absolute rule to guide technological risk decisions ends in a cul-de-sac. The device that makes his system of absolutes work, the principle of double effect, is highly dubious. Granted that there may be relevant differences between ends intended as conscious objects of an actor's design and those known or suspected to eventuate from carrying the action out, the distinction must bear enormous weight if absolute rules are to be maintained.\textsuperscript{125} Furthermore, even if one accepts the distinction, technological risk creators do not normally fall within the absolute standards that the distinction arguably justifies. Although the actions of Acme Chemical satisfy many legal definitions of "intentional" conduct, they do not under Fried's system. Like \( A \) seeking to free a friend in prison, Acme would escape absolutism through the double-effect test: injuring other people forms no essential part of its plan for storage of waste, and it would be perfectly satisfied by its decision if, miraculously, no one were injured as a result of it.\textsuperscript{126}

What does Fried have to say about the standards applicable to prevention of risk-creating situations? He says only that adverse consequences must be taken into account in deciding what to prevent: "[I]t is wrong to expose the person or property of another to undue risk of harm, but what risk is undue is a function of the good to be attained and the likelihood and magnitude of the harm."\textsuperscript{127}

2. \textit{Epstein}. — Richard Epstein's theory of corrective justice begins with two ideas: first, rights should be defined in advance and independently of consideration of reasons others might have for interfering with those rights; and second, redress should be provided whenever other individuals violate those rights.\textsuperscript{128} This scheme excludes appeals to the greater advantage the other person may have gained as a result of the rights violation. Furthermore, Epstein rejects any role whatso-

\begin{itemize}
\item\textsuperscript{123} C. Fried, supra note 64, at 18 n.\textdagger.
\item\textsuperscript{124} Id.; see also Munzer, supra note 79, at 428–31 (criticizing ad hoc boundaries as an attempt to avoid considerations of consequences).
\item\textsuperscript{125} See, e.g., J. Mackie, supra note 109, at 166. For criticism of the doctrine of double effect, see, e.g., Bennett, Whatever the Consequences, 26 Analysis 83 (1966); Thomson, Rights and Deaths, 2 Phil. & Pub. Aff. 146, 150 n.4 (1973).
\item\textsuperscript{126} See supra notes 14–15 and accompanying text.
\item\textsuperscript{127} C. Fried, supra note 64, at 12.
\item\textsuperscript{128} See Epstein, supra note 107, at 49–50, 68–69; see also infra note 130.
\end{itemize}
ever for intent. Instead, he endorses a system of strict liability.\(^\text{129}\) Under strict liability technological risk creators will be financially liable for any damages they cause, regardless of the adverse consequences of enforcing that rule. Having invaded a right of another, their action constitutes a legal wrong.

By fixing on issues of retrospective responsibility for damages after harm has occurred,\(^\text{130}\) the principles of Epstein’s theory are unequipped to explain or justify a right-regardless-of-consequences to have risks prevented. Corrective justice speaks in the past tense—it corrects harms suffered, mistakes made, and wrongs done. Prior to these occurrences, there is nothing on which corrective justice can operate, nothing to correct. No plaintiff yet exists to invoke corrective justice because no one has been harmed.\(^\text{131}\) The defendant’s actions have simply increased the probability that an injury will occur some day in the future. Sufficient unto that day are the mechanisms of corrective justice, but not a day sooner.

Liability for damages under the Epstein theory does not imply a rule regarding prevention, because the justification for a damages rem-


\(^{130}\) Two of Epstein’s central cases are Vincent v. Lake Erie Transp. Co., 109 Minn. 456, 124 N.W. 221 (1910), involving defendant’s ship that battered plaintiff’s dock during an intense storm, and Morris v. Platt, 52 Conn. 75 (1864), in which the defendant had accidentally shot an innocent bystander while attempting to defend himself from third parties. His treatment makes the retrospective nature of the theory evident:

In [my preceding] discussion of Vincent the argument proceeded on the assumption that the defendant must bear the costs of those injuries that he inflicts upon others as though they were injuries that he suffered himself. The argument applies equally to cases where there is only the risk of harm. If the defendant in cases like Morris took the risk of injury to his own person or property, he would bear all the costs and enjoy all the benefits of that decision whether or not it was correct. That same result should apply where a person “only” takes risks with the person or property of other individuals. There is no need to look at the antecedent risk once the harm has come to pass; no need to decide, without guide or reference, which risks are “undue” and which are not. If the defendant harms the plaintiff, then he should pay even if the risk he took was reasonable just as he should pay in cases of certain harm where the decision to injure was reasonable.

Epstein, supra note 129, at 159–60 (emphasis added) (footnote omitted).

\(^{131}\) Given the simplifying assumption that toxic exposures present only known risks, it might be argued from the perspective of the group of exposed individuals that imposition of harm is a virtual certainty if the toxic dumper is not stopped. No individual’s right may be violated at the time of exposure, but the right of the group not to be subjected to certain serious harm is. However, it would be hugely anomalous for a theory of justice that lays such great stress on the separateness of individuals to champion a system of justice that resulted in the designation of group rights. The idea of such group rights may indeed capture an important component of our objections to toxic exposure, but such an idea requires a different theory of justice than the individualistic one Epstein offers. For a discussion of the role of group considerations in assessing risk levels, see McCarthy, A Review of Some Normative and Conceptual Issues in Occupational Safety and Health, 9 B.C. Envtl. Aff. L. Rev. 773, 775–77 (1981).
edy is ambiguous. On the one hand, damages could be a second-best remedy for an action that was wrongful when taken but was unpreventable because of a failure in the detection and prevention system for wrongs. If that were the underlying rationale for damages awards, doctrines fixing liability for damages would be relevant to judging the rightness of actions in advance of their commission, at least where advance detection was feasible, as in the case of predictable harm from risky actions. On the other hand, damages could be the remedial component of a liability rule that fixed responsibility for the financial consequences of an action, but did not thereby extend to enjoining that action. Such a rule could be justified as a device that decentralizes the decision whether to refrain from actions or accept the financial consequences of harm caused by the action without condemning every individual decision that figures to result in harm.

With now standard terminology, these two interpretations of a damages remedy can be expressed by distinguishing between the locus of interest or concern to be protected from others—the entitlement—and the kind of protection afforded in defense of that interest—the remedy. Entitlements might be protected by a property rule, in which case they are secure against all but voluntary transfers by the holder. Deprivations of entitlements protected by property rules will be enjoined if they are discovered in advance, and if the deprivations are not discovered in advance, the taken entitlement will be ordered returned. If an entitlement cannot be returned, money damages provides a second-best recompense to correct the wrong. In other cases, entitlements might be guarded by a liability rule. Anyone violating the entitlement will become liable for money damages. Nominally identical entitlements can be protected by applying different rules to different agents. For example, we protect the entitlement to use, possess, and enjoy real property with a property rule against private parties but with a liability rule against governments exercising the power of eminent domain. Different circumstances might also affect the kind of protection afforded. We use a property rule to protect a dockowner's entitlement by supporting his refusal to permit a ship to dock, even if the shipowner offers a fee to cover damages, but in an emergency, we change the protection to liability and refuse to let the dockowner cast off a ship that had put in from a storm.\(^{133}\)

People's "rights" vary depending on circumstance and remedy. An entitlement taken alone is radically incomplete without adding the kind of protection being claimed, against whom, and under what circumstances. Because liability and property rules are analytically independent, and because different arguments can support each, the

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validity of a liability rule simply cannot be invoked to justify a property rule.

Epstein's corrective justice theory does not grapple with this complexity. It unevenly recognizes the importance of distinguishing among alternative remedies in the articulation of rules. At one point, Epstein states that acts "become tortious only when the chattel or land is owned by one person and its damage or destruction is attributable to another." If damage is required, acts causing risks of damage or destruction would not be tortious at all, and no wrong triggering the corrective devices of justice would yet have occurred. However, in another place he seems to acknowledge the problem of risk-creating activities, albeit almost as an afterthought. Wanting to distinguish invasive from noninvasive actions that cause damages, he argues that we must draw a "sharp distinction between those diminutions in land value that are attributable to physical invasions and those that are attributable to other activities of the defendant that fall short of [physical] invasion—or to make the argument complete—threats of such invasions."

This addition of threats of invasion does not make the argument complete. Rather, it indicates the need for a new argument. There is nothing in Epstein's logic to settle the question of what actions are properly preventable. Epstein mistakenly concludes that "[t]he question of whether anticipatory relief should be given is one of the most difficult questions in the law precisely because it goes, not to the definition of the right, but to the choice of the remedy for well-defined violations." The issue of damages versus injunction cannot be treated as merely a residual problem of remedies because the existence of a liability rule does not necessarily imply a property rule. From the ex post

134. Epstein, supra note 107, at 51.
135. Id. at 57 (footnote omitted).
136. Id. at 57 n.27.
137. Although the entitlement-remedy taxonomy illuminates why arguments in support of liability rules are not necessarily arguments in support of property rules, it ultimately proves ambiguous when applied directly to risk rights. A question of risk allocation can be alternatively described as raising an issue of entitlement assignment, namely an entitlement to a certain amount of risk imposition (or freedom from risk) or an issue of remedy application, namely at what level of risk or threat to bodily integrity will a remedy apply. Treating the matter as a question of remedy application, it might seem to collapse into a burden of proof issue, to which the standard civil dispute answer would be that one must show that the objectionable action is more likely than not to injure bodily integrity. However, risk rights raise more complex concerns. Burdens of proof deal with the problem of how certain a court must be that some injury will occur in order to justify intervention. Risks, however, can be viewed as distinct concerns in and of themselves; whether or not harm eventually befalls someone, he may prefer to avoid the risk. As distinct interests to be protected or not, risk rights might initially be better analyzed as a matter of entitlement assignment. But the assignment of the entitlement appears to depend partially on the remedy to be provided. For example, property rule protection of an entitlement to be free from risk would produce the intolerable situation of allowing no risk-creating actions at all, whereas liability rule protection might be more tolerable. Defining the entitlement to risk is intertwined with the question of remedy,
perspective of corrective justice, it is an open question whether an ex ante preventative rule even exists.

Injunction cases pose a difficulty for Epstein’s theory, because they expose a vexing problem of proportionality and of mediating between the conflicting principles invoked on each side of a conflict that the logic of Epstein’s theory cannot accommodate. That logic is this: Individuals are radically separate entities. So long as an individual does not harm another, he is absolutely at liberty to harm himself and to do so without interference by other individuals. Whenever an individual takes risks with his security, his property, or himself in order to secure some further good, he runs the risk of suffering harm. Should that harm occur, no wrong has been committed, because the individual who stood to gain has suffered the loss. Individuals can even take risks according to a utilitarian calculation that would be rejected if applied to society as a whole. However, the individual commits a wrong if he harms another. In that case, pursuit of a social maximization ideal ignores the separateness of persons by ignoring the reality of how harm and benefit are distributed: individual A captures the gain from an action while individual B suffers the harm. An action with its attendant risks is morally acceptable so long as losses suffered from those risks are visited upon the individual receiving the gain. Corrective justice operates to restore the appropriate separation of individuals by requiring each individual to pay for the harm suffered by others when the individual acts on his own behalf. The payment of damages thus transforms an unjust situation—benefit received by A, harm received by B—to a just one—benefit received by A, harm suffered by A.

In defining a damages remedy, this argument maintains a built-in proportionality between the actor and the victim. A has deflected harm from himself to B. Payment of damages redresses this evil by transferring to B the monetary equivalent of his harm, thus making A the bearer of B’s loss. But it does no more than this. In particular, it does not prevent A from taking an action that would meet A’s own calculations for want maximization even after externalized harms for the action had been paid for by A. The structure, in other words, does not deny A the benefits of his action; it only requires A to be responsible for the harms of those actions inflicted on other people. As always, the fixing of responsibility may have an effect on the actions A takes, since anticipation of full financial responsibility will alter the conclusion of any self-inter-

perhaps to a degree that makes misleading the treatment of entitlement and remedies as distinct and separable issues. See Calabresi & Melamed, supra note 132, at 1090–92; see also Eisenberg, Donative Promises, 47 U. Chi. L. Rev. 1, 32–33 (1979) (Questions of what kinds of promises to enforce and the extent to which they should be enforced interact. “On a deeper level, the issues of kind and extent may be virtually inseparable.”).

138. This logic underlies Epstein, supra note 129; see also Fletcher, The Search for Synthesis in Tort Theory, 2 Law & Phil. 63, 65 (1983) (presenting a similar summary).
ested calculation $A$ would perform in advance of acting; but the remedy ultimately imposed on $A$ will not prevent every action that might harm $B$, since $A$ might well be willing to pay the full costs for some of those.

This built-in proportionality vanishes if $A$'s action is enjoined. $A$ is now denied the benefits of his action whether or not he could pay for $B$'s harm from the proceeds of that action. From the corrective justice perspective this is remedial overkill. Rather than protecting $B$'s rights, enjoining actions for which $A$ would willingly assume full responsibility would seem to violate $A$'s liberty. The only actions a corrective justice theory could justify enjoining are those in which the benefits to $A$ would not exceed the harm suffered by $B$. If more actions were enjoined, $A$ could rightly object that he is being treated worse for having inflicted a harm on $B$ (for which he is willing to pay) than he would be had he suffered the harm himself. This goes beyond corrective justice, which can only require that $A$ "treat the harm he has inflicted upon others as though it were inflicted upon himself."139 In sum, corrective justice authorizes at most preventing actions that would in some sense produce a net loss, taking into account both the benefits to $A$ and the harm to $B$. This plainly requires an analysis of adverse consequences.

3. Conclusion. — One could pause to consider whether Epstein's theory is acceptable even as to what it purports to explain, namely the rules under which persons are obligated to provide compensation for injuries they cause to others. I have my doubts.140 For present purposes, however, we can conclude that neither Fried's nor Epstein's program comes close to supporting rights respecting risky actions that avoid an assessment of adverse consequences. Both these systems aspire to overcome utilitarianism's disregard of the moral significance of the individual. Purportedly, they remedy this deficiency by accenting the separate, autonomous nature of individuals. They articulate this by describing sharp boundaries that make tangible and secure the separateness that we all supposedly experience and want to maintain. We are now coming to see that this view of autonomy is mistaken. We are not all simply independent spheres knocking around, occasionally intruding into another person's orb. Nor is it even plausible that we should always ascribe financial or other responsibility to the "active" party whenever two such spheres clash. Risks of harm are ubiquitously produced by human action, the more so as the degree of interdependence of humans and the rate and scale of their activities increase.

139. Epstein, supra note 129, at 158.

Technological risks are merely the most stark manifestation of our interdependence and of the growth in scale of risk-creating activities. The most minute discharges of chemicals into the environment create risks that are literally inescapable and antecedent to severe losses. Eradicating all risks of such harms, however, seems likewise guaranteed to work substantial hardships on innumerable individuals. This is not a conflict that is amenable to resolution on the basis of some simple one-sided conception of autonomy.

B. Direct Approaches

Even if they were acceptable bases for sharply differentiating moral claims, neither the doctrine of double effect nor the corrective justice theory of strict liability supports a standard for technologically risky actions that makes adverse consequences irrelevant. Neither John Rawls nor Ronald Dworkin employs either of these distinctions in his theory of justice. Both analyze the direct influence of rights on the interests of all members of society, Dworkin through his insistence that everyone is entitled to equal concern and respect and Rawls through the construction of his "original position." Both are also frequently cited as supporters of the trumping power of rights. Yet, as this section will demonstrate, neither of these theories can consistently support a right against risks that holds regardless of consequences.

1. Rawls. — The object of A Theory of Justice\textsuperscript{141} is to define the social structure of a society ruled by principles of justice. Its orientation is thus entirely prospective,\textsuperscript{142} and should face none of the problems caused by the retrospective outlook of corrective justice.\textsuperscript{143}

Under Rawls' theory, society offers a structure for the cooperation of individuals for their mutual advantage, including the production of greater material benefits than could be achieved independently. Our experiences with technological risks demonstrate the importance of also having a just structure for the distribution of the adverse effects of production. A theory whose main object is to build just rules of cooperation ought to address the significant problems of distributing risk burdens.

The major device of the theory, the original position, equates the problem of social justice with the problem of equally free and rational

\textsuperscript{141} J. Rawls, supra note 1.

\textsuperscript{142} Id. at 11.

\textsuperscript{143} For the most part, Rawls omits the problems of corrective justice in the main body of his theory. See id. at 8. Corrective justice problems arise only in societies experiencing injustice. A "partial compliance" theory is necessary to examine and resolve issues of injustice; Rawls' primary efforts concentrate on building a full compliance theory. Furthermore, although Rawls does not speak often of rights as such, a theory of justice, and especially a theory distinguishing what is right from what is merely good, fairly contains "a comprehensive theory of rights within [its] terms." Fried, Book Review, 85 Harv. L. Rev. 1691, 1697 (1972).
beings bargaining toward a contract to govern their interactions.\textsuperscript{144} The special conception of justice that emerges from the original position maintains the fairness of the basic structures\textsuperscript{145} in society by limiting deviations from equality to those that can be justified from the vantage point of the worst-off member. The parties come to "regard the distribution of natural abilities as a collective asset so that the more fortunate are to benefit only in ways that help those who have lost out."\textsuperscript{146} Therefore, in accordance with the principles of justice, individuals cannot unilaterally withhold the fruits of significant assets from redistribution to others less well-positioned or endowed. For example, the freedom of action so important to the theories of Fried and Epstein is vindicated only insofar as it fits within a conception of justice sensitive to the implications of such vindication on other members of society. In comparison to such theories, Rawls' theory is much more redistributive. He treats many more human assets as communal rather than as controlled by one who comes to possess them by accident of birth. Rights are established from a footing that weighs competing claims of all parties, and thus the pitfalls of absolutism should be avoided.

Accordingly, no defense of an absolute right to freedom from risk could be built on the foundation of Rawls' ideas. Rawls plainly rejects the strategy of a priori holding consequences irrelevant. He believes that any ethical theory not taking consequences into account "would simply be irrational, crazy."\textsuperscript{147} However, his argument from the original position does seek to exclude certain appeals to consequences, namely any appeals grounded in violations of the principles of justice. By placing the search for the right prior to the good, the parties in the original position will have agreed "not to press claims which directly violate [the principles of justice]."\textsuperscript{148} Rawls argues that any claims to greater satisfaction that would flow from acts of injustice would therefore be disallowed by the prior agreement of the parties.\textsuperscript{149} In a just

\textsuperscript{144} See J. Rawls, supra note 1, at 17. A veil of ignorance enforces equality by concealing from these individuals their own eventual positions in society, as well as their eventual endowments of natural assets and abilities and their own propensities and conceptions of the good. These strictures reflect the moral arbitrariness of such factors: because no one has earned or merits either his natural abilities or the social position into which he is born, these elements ought not play an important role in determining distributive justice, and because such factors are frequently deterministic of distributions of wealth, income, power, and advantages in society, the parties must bargain from behind such a veil to eliminate the arbitrary distortions the factors would produce. Id. at 18, 19.

\textsuperscript{145} The "basic structure" refers to the manner in which the major institutions of society distribute primary goods. See infra notes 189–90 and accompanying text.

\textsuperscript{146} J. Rawls, supra note 1, at 179.

\textsuperscript{147} Id. at 30.

\textsuperscript{148} Id. at 31.

\textsuperscript{149} "[T]here are interests requiring the violation of justice have no value. Having no merit in the first place, they cannot override its claims." Id. (footnote omitted).
society it does no good to appeal to the costly consequences of complying with justice; any argument resting on consequences would have been assimilated and considered in the course of determining the principles of justice themselves.\footnote{150}

Is preventing risk exposures in excess of some previously determined amount implied by the principles of justice? If so, all objections to measures designed to achieve that objective could be resisted on the ground that from the original position the parties would have agreed not to press such claims. In short, if such excessive risk exposures can be shown to violate the conditions of equality that are built into the original position and give it its character, the principles of justice would require preventative actions without further regard to their adverse consequences. This might be costly to others, but not unfair, since their interests would have been accorded the appropriate consideration in the formulation of the rules of justice.

The special conception\footnote{151} of justice that emerges from Rawls’ account contains two principles:

\begin{itemize}
  \item \textbf{Liberty principle:} Each person is to have an equal right to the most extensive total system of equal basic liberties compatible with a similar system of liberty for all.
  \item \textbf{Difference principle:} Social and economic inequalities are to be arranged so that they are . . . to the greatest benefit of the least advantaged . . . \footnote{152}
\end{itemize}

The liberty principle is “lexically prior” to the difference principle in that it must be satisfied before considerations of social and economic inequalities are considered. Among other things, lexical priority means that the system of liberties can only be restricted in order to provide a

\footnote{150. Rawls’ argument is a version of the second general strategy. See supra notes 79-80 and accompanying text. Consequences not contained in the original rule formulation should be ignored because considering them would yield injustice, a greater cost to society than enduring the adverse effects.}

\footnote{151. A general conception of justice emerges from the original position: “All social values—liberty and opportunity, income and wealth, and the bases of self-respect—are to be distributed equally unless an unequal distribution of any, or all, of these values is to everyone’s advantage.” J. Rawls, supra note 1, at 62.}

\footnote{152. Id. at 302. The difference principle is more complicated than indicated in text. It also recognizes a “just savings principle” that requires attention to the intergenerational effects of inequalities and an “equality of opportunity principle” that requires any unequal advantage in the system must only be attached to offices and positions that are open to all. Neither of these enter into an analysis of toxics problems that treats immediate health effects as the first-order issue to be resolved, although the just savings principle resonates with long-range ecosystem concerns that may from case to case play an important, even dispositive role in environmental policy.}
greater system of liberties for all. The difference principle captures the idea that equal distribution of other important social goods is also the norm, but also permits some inequalities, provided they work to improve the lot of the least advantaged members of the unequal society.

Together these principles set the expectations each individual has of receiving primary social goods. Primary goods are "things which it is supposed a rational man wants whatever else he wants," and which Rawls classifies as "rights and liberties, opportunities and powers, income and wealth." These assets enable any person to pursue his own conception of the good, which consists of a long-term plan of life that best satisfies his interest, given the conditions that confront him.

Avoidance of exposure to risk of serious harm or death can plausibly be considered a primary good. The treatment it receives under the principles of justice initially depends on whether this primary good is subsumed under the liberty principle or the difference principle. The liberty principle seems more promising as well as more alluring. The notion of risk avoidance suggests a "liberty" in an everyday sense. If the liberty principle embraces this liberty among the others that a just society distributes equally, we may have found a claim of right that does not depend on weighing countervailing arguments. If the liberty principle secures a determinate level of freedom from risk exposure, that level can justify governmental action to prevent all cases of exposure that exceed it.

Because the claim to liberty attaches to individuals as such and not to aggregates of pleasure or satisfaction, it may support expensive protections regardless of the number of people to be protected, with protection uniformly available to all citizens of the well-ordered society under the liberty principle's equality condition. A number of environmental protection statutes provide this kind of risk prevention. For example, uniform ambient standards have been a prominent feature of the federal air and water pollution legislation for the past fifteen years, much to the consternation of welfare economists who insist

153. Id. at 250. I am omitting the possibility of unequal liberties. These are permissible in the limited circumstance that they would be acceptable to the citizens with less liberty than others. Id.
154. Id. at 92.
155. Id. The bases for self-respect are also primary social goods. Following Rawls, the discussion in the text omits it for simplicity. Id.
that environmental policy should be concerned primarily with the total amount of pollution damage.\textsuperscript{157} Under cost-benefit principles pollution levels can, for instance, be higher in rural areas with small populations than near metropolitan areas. The liberty principle provides a rival conception of justice to the welfare economics viewpoint, one that is broadly consistent with the legislative attraction to uniformity. Can that conception support absolute protections against risk?

In evaluating liberties, Rawls maintains a distinction between a liberty and its worth.\textsuperscript{158} A liberty expresses a complex of rights and correlative duties to refrain from interfering with or to facilitate in performing the action protected by the right.\textsuperscript{159} The conception of liberty thus refers to a formal, legal entitlement, whereas the value of liberty expresses any individual's ability to take advantage of that liberty.\textsuperscript{160} Liberty to purchase bread on the open market is worth much less to someone without money than to someone of means. Freedom to climb a mountain is of little value to an individual who has a fear of heights (unless the freedom is restricted to a few, and he can sell his entitlement). The liberty principle applies to liberties themselves, not to their value.\textsuperscript{161}

The problem, as has been noted by others, is in making the search for the most extensive "system of liberties" intelligible while preserving this distinction.\textsuperscript{162} At first glance, the mission of identifying the most extensive system of liberties without regard to the worth of liberties seems doomed by incoherence and indeterminancy. Consider the liberties of freedom from risk exposure and freedom to pursue ends that require risk generation. Both a system that granted all individuals an absolute right to pursue any risk-creating activities at all and an opposite system granting all individuals an absolute right to be free from risk seem to satisfy the liberty principle. Under each system, all individuals would be given the most extensive liberty (of one kind or the other) compatible with an equal amount of liberty for all.\textsuperscript{163} This result cannot be what Rawls has in mind, for he recognizes that liberties can clash

\textsuperscript{157} See, e.g., W. Baxter, People or Penguins: The Case for Optimal Pollution (1974); A. Freeman, R. Haveman & A. Kneese, The Economics of Environmental Policy (1975); Ruff, supra note 7.

\textsuperscript{158} See J. Rawls, supra note 1, at 204.

\textsuperscript{159} Id. at 202–03.

\textsuperscript{160} Id. at 204.

\textsuperscript{161} Id. It is the function of the difference principle, among other things, to ensure that inequalities of means are not so disparate as to create wide variations in the value of the system of liberty across the population. Id. at 204–05.


\textsuperscript{163} Feinberg, supra note 162, at 1022–23.
with one another.\textsuperscript{164} He wants to find a means for considering an entire system of liberties, not each liberty seriatim. "While it is by and large true that a greater liberty is preferable, this holds primarily for the system of liberty as a whole, and not for each particular liberty."\textsuperscript{165}

Rawls argues that the problems of balancing competing liberties to determine the greatest system of liberties cannot be solved by parties in the original position. They lack sufficient knowledge of the society they shall enter to identify the most extensive package. Therefore, he formulates a multi-stage sequence under which the original parties resolve what principles they can, and then pass the remaining issues forward to other stages of government, where further information is available. Each successive stage is bound by the decisions made earlier, and must seek to determine the greatest system of equal liberties within those constraints, aided by further knowledge about society. Throughout, the scheme of liberties is assessed from the standpoint of the representative equal citizen: "From the perspective of the constitutional convention or the legislative stage (as appropriate) we are to ask which system it would be rational for him to prefer."\textsuperscript{166}

These ideas can be illustrated by the case of rules of order in speech and debate.\textsuperscript{167} Since the constant prospect of interruption by others would greatly diminish the profitable use of an equal right to free speech, regardless of the point of view one wishes to express, some restrictions on the freedom of speech in the form of reasonable rules to control order and timing are justified to strengthen the system of liberty for all. In the original position, citizens might lack sufficient knowledge to fix unanimously upon one set of rules, but as the problem moves forward, eventually a system should be established. The reasonableness of any solution is tested by whether the representative equal citizen would resolve the clash of liberties in such a manner.

Unfortunately, it is doubtful this technique is satisfactory for rules against risk. Even in the speech and debate example, there are many reasonable rules of order and timing, and it is difficult to see how the injunction to search for the greatest system of liberty from among the available options can yield a unique selection. Each possible solution will involve some sacrifice of the liberty to interrupt for the sake of the liberty to speak effectively. It is erroneous to describe this situation as seeking that combination that somehow yields the "greatest" unitary system of liberties.\textsuperscript{168} That idea might become intelligible if the concept of the \textit{value} of these liberties to the representative equal citizen were introduced, but that is not permitted. The speech and debate case appears resolvable only because any of a range of solutions seems satis-

\textsuperscript{164} J. Rawls, supra note 1, at 203.
\textsuperscript{165} Id. at 203.
\textsuperscript{166} Id. at 204.
\textsuperscript{167} Rawls himself uses this example. See id. at 206.
\textsuperscript{168} See the example in Hart, supra note 162, at 239–40.
factory in the face of the patent necessity for some such set of rules. Total speech anarchy would be worthless to almost everyone with ideas to express.\textsuperscript{169} However, not all liberty conflicts exhibit such a dominant need to reach a decision that any of a wide range of solutions is acceptable. In the case of risks, the precise amount of risk permitted can be a matter of great significance, both for the populations exposed and in terms of the costs of compliance.

If, with all due respect to Rawls, the value of liberties is factored into the analysis, another problem arises. Now it is not clear how parties to the constitutional convention or the legislature could define a noncontroversial measure of the competing liberties. Reasonable people may differ over the value of these liberties for the pursuit of rational life plans. It is not that any reasonable person will not recognize some trade-off between risk creation and risk avoidance liberties; surely everyone will. The problem is how the "representative equal citizen" would determine what precise trade-off is proper.\textsuperscript{170} Citizens in life situations that stand to benefit from risk are going to prefer relatively more risk creation, even if some of it falls on them, while others will prefer less. The imagery of the representative equal citizen has coherence in cases like the debate case, where some dominant solution (or some set of dominant solutions whose internal variances seem relatively immaterial) makes it sensible to believe that unanimity could be achieved among all reasonable individuals in the original position. Where, however, the selection of competing values is so heavily contingent on unknowable circumstances, it appears that the most reasonable agreement that could be expected is an agreement to disagree. That will not do, because it would leave the parties with an important part of the liberty structure undetermined. That could cause the entire enterprise of structuring the well-ordered society to collapse.

A possible solution, and one that attracts Rawls at many junctures, is to seek agreement on a procedure for resolving subsequent conflicts over competing liberties,\textsuperscript{171} once they arise in specific enough circumstances to permit their adjustment. Yet a procedural solution abandons the hope for a right to some particular amount of risk exposure protection. With a just procedural system, the results reached will be just, however things turn out, but they will also be unknowable until the procedure has been used.\textsuperscript{172} If a democratically elected legislature is that procedure,\textsuperscript{173} one cannot appeal to some prior justice principle to tell

\textsuperscript{169} Indifference should not be total, however. For example, someone with minority views on important issues may favor relatively more generous filibuster provisions.

\textsuperscript{170} See Hart, supra note 162, at 240–44.

\textsuperscript{171} See, e.g., J. Rawls, supra note 1, at 83–88.

\textsuperscript{172} See id. at 275; see also id. at 86 ("A distinctive feature of pure procedural justice is that the procedure for determining the just result must actually be carried out . . . .").

\textsuperscript{173} This is not a situation of pure procedural justice, in which any outcome reached is fair. An actual legislature is not a decisionmaking mechanism whose results
the legislature what result should be reached. The only constraint that may apply is that whatever solution is determined must be formally

are accepted just so long as the background procedures for selecting legislators under conditions of equal liberties have been followed, the proper internal procedures for passing legislation observed, and no explicit constitutional restrictions violated. See id. at 198, 356. The product of the legislature is always properly subject to scrutiny to determine whether it comports with substantive political principles. Still, a pivotal constraint on the product of the legislature is that its work be conducted with the spirit and intention of conscientiously implementing the principles of justice that have been articulated at the prior stages of structuring the well-ordered society. "The legislative discussion must be conceived not as a contest between interests, but as an attempt to find the best policy as defined by the principles of justice." Id. at 357. Deliberations within the legislature under this constraint allow a pooling of knowledge and opinion, which augment the ability of the legislature to implement conscientiously the principles of justice over time. Their work remains always subject to scrutiny by citizens who adopt the same stance, and who may "try to show that [the laws the legislature enacted] would not be chosen under . . . ideal procedure." Id.

The very intelligibility of substantive criticism disappears, however, when the legislature's assignment is itself unintelligible. The idea of a representative equal citizen loses meaning in cases where one must weigh competing liberties that different people will value differently, and thus it is impossible to judge the legislature's product against a coherent standard. See Hart, supra note 108, at 44; supra notes 106–71 and accompanying text.

This difficulty has a counterpart in every justification of legislative authority that appeals to some set of inchoate "public values" or objective ends toward which society should be striving. Such theories are sometimes offered as explanations and arguments for environmental legislation. See, e.g., L. Caldwell, Environment: A Challenge for Modern Society (1970); W. Ophuls, Ecology and the Politics of Scarcity (1977); Sagoff, At the Shrine of Our Lady of Fatima or Why Political Questions Are Not All Economic, 23 Ariz. L. Rev. 1283 (1981); Sagoff, supra note 7. Under this view of legislation, the majority decision is legitimate not on the utilitarian ground that society can legitimately prefer the greater interests and preferences, but because that decision reflects society's best judgment about the values it should be advancing; arrived at through a deliberative process in which each elector operates as an expert. See K. Arrow, Social Choice and Individual Values 81–86 (2d ed. 1963); J. Rawls, supra note 1, at 357–60; Michelman, Political Markets and Community Self-Determination: Competing Judicial Models of Local Government Legitimacy, 53 Ind. L.J. 145, 149–50 & n.22 (1978). If, however, the system of public values toward which society is supposed to be heading does not have any intelligible description against which the product of the legislature can be judged, there is, practically speaking, no way to criticize the majority for committing even good-faith mistakes in articulating those public values. Then the dispute between the disserter and the legislature cannot be subjected to reasoned testing against an agreed upon principle: it will be the dissenter's opinion against the majority.

Reliance on majority rule might be acceptable (even inevitable) for one who felt that there were public and objective values toward which society should be trending, but no way to articulate those values outside of the process of community deliberations. This view places tremendous weight on the good faith conduct of elected officials, since by hypothesis there is going to be absolutely no way to tell whether each official's vote reflects a conscientious effort to discover what was truly good for society, or merely his own and his constituency's self-interest. In addition to the prospect of bad faith, complete reliance on the procedure of majority rule must be wary of the tendency that one's sense about what is good for society is subconsciously shaped by what is good for one's own interest group. Critics of environmentalism relish pointing out the comfortable coincidence of many environmental programs and the self-interest of a rising middle
available to all. But even a cost-benefit decision rule granting every individual the right to risk avoidance when the costs of prevention are less than the benefits from it satisfies that formal requirement.

While this analysis of the liberty principle has yielded no principled defense of a right to freedom from risk, the difference principle remains. This analysis, furthermore, has suggested a number of reasons to believe the difference principle is better equipped to handle risk questions. First, the value of an asset like freedom from risk bears crucially on comparing it to competing assets. Quantitative measures necessary for valuation seem more compatible with the difference principle, which deals both with conventionally measurable items, such as income and wealth, along with assets obviously disparate from these, such as power and authority. For the difference principle to be coherent, some mechanism to value these potential competitors is needed, and that mechanism may also enable risk rights to be valued.

Second, analysis of the liberty principle led to the legislative stage of Rawls' sequence for implementing the principle of justice. Rawls states elsewhere that the major business at this stage is implementing the difference principle since the liberty principle will have been largely accounted for at the prior constitutional convention. Finally, rights against risk seem well-conceptualized as a problem of the primary goods other than liberty. An interest in health unimpaired by the functioning of society assimilates easily with other social and economic assets that make life more desirable and better enable one to pursue one's conception of the good. Health, in other words, might be construed as contributing to the value of liberties, rather than being a distinct liberty.

Under the difference principle, social structures are to be evaluated from the perspective of a representative member of the least-advantaged class in terms of that individual's expectations for obtaining primary goods over his lifetime. Those expectations are defined by the "index of primary goods." Index values permit comparisons of different bundles of primary social goods. By conceding the requirement of an index, Rawls notes the expected existence of different packages of primary goods, each containing different amounts of dis-

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174. See J. Rawls, supra note 1, at 199:

The first principle of equal liberty is the primary standard for the constitutional convention. . . . The second principle comes into play at the stage of the legislature. It dictates that social and economic policies be aimed at maximizing the long-term expectations of the least advantaged. . . . At this point the full range of general economic and social facts are brought to bear.

175. Id.

176. Id. at 95–100. Of the primary goods, the difference principle is initially responsible for opportunities and powers, income and wealth. Id. at 151–52.

177. Id. at 92–95.
crete primary goods that can only be compared according to some common measure. The indexing problem is similar to the valuation difficulty under the liberty principle. Under the difference principle there may be hope for a well-defined method for handling it because the problem has been expressly recognized.

Because inequalities are acceptable only insofar as they improve the position of the worst-off class, Rawls needs a method for dividing the population into classes so that the worst-off group can be identified. If the method produced a very large number of different social classes the search for the worst-off group would become endless, controversial, or incoherent. Hence Rawls engages in a certain abstraction from reality; he identifies only relatively large groups such as farmers or blue collar workers despite the obvious fact that there exist subgroups such as dairy farmers, cattle farmers, unionized and nonunionized workers, and so on. Given these broad divisions, Rawls suggests two methods for identifying the worst-off class: one using qualitative divisions (for example, unskilled workers), the other using quantitative statistical measures (individuals receiving less than the median income).

This abstraction is acceptable because the principle subject of the theory of justice is the “basic structure” of society, which is “the way in which the major social institutions distribute fundamental rights and duties and determine the division of advantages from social cooperation.” It is these primary organizations and institutions, Rawls believes, that fundamentally affect the life prospects of every individual in the society. Under such a broad structural view, we can ignore specific but relatively temporary or secondary influences on primary goods, such as whether the market for milk products is depressed in comparison to that for hogs, or whether the current economies of scale provide significant advantage to larger tracts of land. Accordingly, individuals can be grouped based on more fundamental divisions within society.

With a procedure in hand for identifying the worst-off class, we can assess the impact of the basic structure on that class. Here Rawls makes a crucial assumption: the primary goods of income and wealth are co-variant with the others, so that people with less income are likely to have less power and authority and less self-respect. If this assumption holds, Rawls can largely ignore the problem of assigning an index
to a package of varied primary goods. Because more income and wealth will mean more of the other primary goods, any package of primary goods can be compared to other packages simply by noting whether it has more or less income and wealth than the others.

Whatever the general plausibility of this assumption, it seems to hold for only a subset of technological risks. Within the sphere of toxics exposure, for instance, some subcategories of exposure do indeed co-vary with income. Workers in chemical and allied product industries, for instance, are among the groups in society exposed to the highest levels of risk. In fact, workers generally are exposed to levels of hazardous pollutants an order of magnitude or more above those that a nonworker experiences. While it is true that some highly exposed groups may well be highly paid skilled workers and that, conversely, the larger share of low-paid unskilled workers work outside the chemical industry or other technologically risky industries, one might still concede a rough judgment that among occupationally related exposures, exposure varies with income or social class.

Outside this subset and perhaps one or two others, however, toxics exposure and other technological risks do not vary with other primary social goods sufficiently to avoid the indexing problem. Many toxics problems strike indiscriminately at citizens with incomes above and below the national median. Widespread problems such as underground aquifer contamination affect entire cross-sections of the population. Even more isolated incidents such as localized seepage from toxic dumps or gaseous exposure from such dumps often affect individuals with incomes on either side of the median. Without a reliable method of indexing different combinations of toxics risk together with the other primary goods, exposure problems cannot be addressed under the difference principle. In other words, someone subjected to a greater amount of toxics exposure does not self-evidently have a "rights" claim bottomed on the difference principle, since the incidence of excessive exposure \textit{vel non} does not demonstrate membership in the worst-off class.

If toxics exposure does not correlate with other attributes of social position, one might try explicitly adding the primary good of toxics exposure to income and wealth as a way of defining the worst-off class. The least advantaged, for instance, would now be those receiving below the median on a toxics-exposure/annual-income index. This, unfortunately, exposes the indexing problem that the assumption of co-variance sought to avoid. Other than intuition, we have no guidance in resolving the problem of the index, now made necessary and

\begin{itemize}
\item[185.] See Puzrath, Dinman & Campbell, Occupational and Environmental Exposures, in \textit{Toxic Torts: Litigation of Hazardous Substance Cases} 52, 64 (1984).
\item[186.] In 1980, the median means for a family in the United States was \$23,141. U.S. Dep’t of Commerce, Bureau of the Census Statistical Abstract of the U.S., 1982–83 at 434 (Table 717) (1983).
\end{itemize}
inevitable.\textsuperscript{187} The same indexing difficulty infects the analysis of whether any risk reduction would improve the lot of the worst-off.\textsuperscript{188} Does eliminating

\begin{quotation}
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\textsuperscript{187} For other discussions of the indexing problem, raising additional complications that appear once one accepts multiple criteria for determining the least advantaged class as well as a challenge to the entire class-based enterprise, see B. Ackerman, supra note 89, at 266–72 & n.24; Michelman, supra note 89, at 330–51.

Risks raise many of the same difficulties for a Rawlsian structure that a provision for "basic needs" as a social minimum does. Both freedom from risk and satisfaction of basic needs require an output measure: programs for supplying these social goods are evaluated in terms of their ability to deliver a certain output or result. This distinguishes them from assets like income and wealth, which are input-measured goods: goods that can subsequently be used to purchase other desired goods. Tension exists between an emphasis on output-measured goods and the idea that social distribution should be determined on the basis of the difference principle being applied to input-measured goods such as income. It may be extraordinarily expensive to produce the required result for specific individuals. For instance, severely impaired individuals require consumption of tremendous amounts of money for medical technology and services to produce very little output-measured improvements. Likewise, some risks are tremendously more expensive to reduce than others. Social floors established on the basis of output measures have the potential for totally exhausting the social surpluses that society can generate. See supra note 89 and accompanying text.

\textsuperscript{188} It may be that Rawls would say that "those exposed to greater than equal toxic risk" are themselves a separate, single-factor social position, against which the fairness of the specific institution of risk spreading is to be judged. He adopts this approach when unequal basic rights are founded on "fixed natural characteristics," such as sex, race, or caste. See J. Rawls, supra note 1, at 99. If that is so, then any inequality is justified only if this least-advantaged group is gaining as a result of the inequality. Putting aside the case of workers, it seems that in many cases, a group subjected to greater risk does not benefit from inequality of risk exposure. People who suffer from toxic exposure generally have no immediate gain from the toxics-creating activity.

This treatment of toxic risks presents difficulties. First, it is not obviously analogous to the examples Rawls employs, as exposure does not relate to a "fixed natural characteristic." Second, we cannot look at specific instances of toxic exposure, but must focus on the institutions that govern risk exposure—that is, the rules determining lawful and unlawful activities. Whether the institution of permitting some unequal risks benefits those exposed to the greater amounts can only be answered over the long run, and only by considering the distribution of benefits that flow from those activities. Suppose the rules of risk creating permit only those actions that produce net benefits. Then appraising the long-term participation in those benefits by individuals episodically exposed to risk becomes a complex and perhaps indeterminate exercise. It seems plausible that if the net gain were great enough, and the amount of excessive risk low enough, and the background social and economic institutions fair enough, some unequal risk exposure would satisfy the principles of justice. That view is strengthened when one considers that the nature of activities creating toxic risks seems to produce unequal distributions of risks. Strict adherence to the objective of equal risk distribution would shut down many beneficial activities because their risks could not be spread uniformly.

Third, although focusing on the high-exposure class tends to isolate risk as the comparative measure, the package of primary goods is actually the relevant consideration. Thus, the alternative of compensation for risk must be considered as an option to risk prevention. See infra notes 190–91 and accompanying text. The problems raised in assessing the overall effects of the institutions of risk spreading bear a family resemblance to the problem of considering just compensation as an issue to be addressed under the principles of justice. See Michelman, Property, Utility, and Fairness: Com-
toxics exposure to workers in smelters, with the result that the plant
closes, improve the lot of the worst-off class or not? Do stringent terti-
ary treatment requirements for public water systems that also drive up
the costs of drinking water improve the conditions of the unemployed
in those communities or not? Do strict environmental laws that put
domestic factories at competitive disadvantages to foreign sources of
manufactured goods aid those workers or not? Situations where those
benefited and those disadvantaged are different subgroups of the
worst-off class are complicated to resolve. Does a state-of-the-art tech-
ology requirement that reduces downwind exposure to unskilled
workers in their homes yet also reduces job opportunities for other un-
skilled workers in the plant raise or lower the representative individ-
ual’s expectations along the primary good index?

These difficulties reveal a deep incompatibility between the ven-
ture on which Rawls has embarked in developing his difference princi-
ple and the search for rights to protection from risk. Organizing
society’s basic structure is Rawls’ game, and the game is limited to con-
sideration of a few of the primary institutions and practices that define
society. He repeatedly warns against applying principles that look like
the two principles of the special conception, but are not, because they
try to answer questions that are too particularized.

It is a mistake to focus attention on the varying relative posi-
tions of individuals and to require that every change, consid-
ered as a single transaction viewed in isolation, be in itself just.

... If it is asked in the abstract whether one distribution
of a given stock of things to definite individuals with known
desires and preferences is better than another, then there is
simply no answer to this question.189

This warning applies to the question of risks. Specific rules governing
exposure to risk are not part of the basic structure because they do not
constitute parts of society’s core regulative institutions that determine
life prospects in ways that are roughly correlated to social stations. Pre-
cisely because large amounts of risk exposure are random with respect
to social status, it could not be part of the concern of major social insti-
tutions that distribute fundamental rights and duties and determine the
division of advantages of social cooperation, also to distribute such
risks.

In sum, Rawls is studying a very important, but also a very general
question about social organization. The overall position of the least-
advantaged class member, not any ingredient in isolation, must be

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judged. The system of social and economic assets provides focus just as the system of liberties did under the liberty principle. That is why Rawls' theory can generate a claim to a certain level of income, but not claims to specific levels of particular goods and services. Such specific questions of entitlements cannot be answered by Rawls' general theory. They must await resolution until actual societies have been built up through the constitutional and legislative stages. The government, in eventually answering those questions of specific entitlements, will then have to face and resolve the question of indexing, a question that entails attending to adverse as well as beneficial consequences.

By assuming that the indexing problem can be solved, one can see the general shape of a Rawlsian society's response to a demand for greater risk reduction. It might well conclude that some Package One of primary goods, containing some risk and some wealth was superior to Package Two with less risk and lower wealth. If Package One actually makes the least-advantaged class better off than Package Two, the difference principle would seem to permit it. However, this simply means that additional risk is required so long as compensation is paid, that is, so long as those exposed to more risk actually receive more wealth. This structure of analysis is not very different from its major competitor, cost-benefit analysis. Now a Rawlsian would insist that this interpretation of the difference principle does not reduce to utilitarianism, asserting that the primary good index should be articulated through some representational process rather than through markets or evaluations of pleasure and pain. At the very least, however, he would have to concede that the "correct" level of risk is going to depend upon some balancing assessment of risk compared to other primary goods potentially substitutable for risk. In cases where risk creation generates gain, redistributions of those gains via compensation to the risk-taking class are theoretically permissible. It may well be that for all its intricacies, the Rawlsian structure supplies no more than a prescription that risks whose benefits exceed the damage they will cause should be allowed, provided only that compensation is in fact paid.

190. Professor Michelman has applied A Theory of Justice to the issue of constitutional welfare rights. Michelman, supra note 89. After assuming that the least-advantaged class' prospects can be defined only in terms of income and wealth, id. at 976-77, Michelman asks whether the two principles could ground "insurance rights," or claims running in favor of the least-advantaged class for social provision of particular elements of basic services and goods—housing, education, health services, and the like. He concludes that, "under the difference principle . . . there can be no implicit insurance-rights package because there is no concern for what the bottom spends (or is able to spend) its income on. Income is income—a primary, an elemental, social good, of which the bottom simply wants and is entitled to as much as it can get." Id. at 981. The point can be generalized to the entire primary goods package—there is no concern for any specific element, and hence no "right" describable exclusively in terms of one of them.
2. Dworkin. — Like A Theory of Justice, Ronald Dworkin's treatment of moral and social obligations places questions of justice prior to questions of social welfare. His theory is "anti-utilitarian" in the sense that rights can outweigh opposing arguments founded on social policy goals, such as maximum social welfare. It is from Dworkin's writing that the catchphrase "rights as trumps" is taken.

Dworkin's conception of rights is not vulnerable to the charge that rights theories sometimes treat arguments against utilitarianism as though they were arguments against all forms of consequentialism. While some Dworkinian rights may be absolute, "[r]ights may also be less than absolute; one principle might have to yield to another, or even to an urgent policy with which it competes on particular facts. We may define the weight of a right, assuming it is not absolute, as its power to withstand such competition." In particular, while abstract rights can be expressed in absolute terms (such as the right to political speech), such expression has not taken account of competing arguments. "[C]oncrete rights, on the other hand, reflect the impact of such competition." The right to bodily integrity must qualify as an abstract right. It ignores the competitive concerns individuals have to be able to perform other actions than those motivated by an obsessive concern with life preservation, including actions that actually threaten lives by putting them at risk. Before one can determine the status of any specific right against risk under Dworkin's conception, one needs to determine its "weight," by appraising it in light of the competition.

All this may sound anomalous coming from a theory that coined the expression of rights as "trumps." Dworkin merely contends that rights must trump at least some social goals, or else the very category of rights would lose its separate force, and one would speak most concisely solely in terms of social welfare. This does not mean, however, that all abstract rights must be protected absolutely; some abstract rights will clash with the abstract claims of others. It can even be appropriate to speak of such clashes "in the language of economics . . . [and] to define the proper balance by comparing the sum of the utilities of two parties [with competing abstract rights] under different conditions." Not only can individual rights compete, therefore, but at least on some occasions that competition can be resolved by reference to information about consequent states of affairs identical to the information necessary to perform utilitarian calculations. What prevents an

191. In this section I owe much to the work of H.L.A. Hart. See Hart, supra note 58.
192. R. Dworkin, supra note 64, at xi.
193. Id.
194. See supra notes 77–79 and accompanying text.
195. R. Dworkin, supra note 64, at 92.
196. Id. at 98.
197. Id. at 92.
198. Id. at 98–99.
analysis of competing abstract rights from collapsing into universalistic utilitarianism is that methods "of compromising competing rights . . . consider only the welfare of those whose abstract rights are at stake. They do not provide room for costs or benefits to the community at large, except as these are reflected in the welfare of those whose rights are in question." 199

Whatever one may make of this structure, it does not provide an analysis of specific rights against risk. Such rights paradigmatically concern cases where individual interests are sharply opposed, pitting the claims of individuals concerned with avoiding risks against individuals concerned with avoiding the adverse effects associated with bearing the often considerable costs of reducing those risks. The tools necessary to resolve the conflict among these competing claims include more precise information as to the rights people can legitimately raise in such circumstances and what weights those rights have. The answers depend on the precise political theory one has, since it is only within the framework of a comprehensive political theory that any such questions can be resolved. 200 As presented so far, Dworkin's theory constitutes a framework for a political theory, but it is not yet a substantive theory itself. Furthermore, the framework provides absolutely no a priori reason to believe that rights against risk as eventually revealed shall possess characteristics of absoluteness or uniformity, for those questions depend on the manner in which the framework is filled.

In one critical respect, Dworkin does more than articulate a framework for a theory. He advances one substantive reference point for what a satisfactory substantive theory might contain. His central substantive idea is that each individual is entitled to equal dignity and respect from others and from the government. 201 Dworkin proposes to derive from this principle whatever rights to specific liberties individuals have. 202 Whatever liberty from risk exposure individuals may have under Dworkin's theory must be found by examining his idea of equal dignity and respect.

In examining liberties, Dworkin's theory becomes anti-utilitarian in yet another sense. He views utilitarianism's undeniable historical appeal as due solely to that aspect of it that comports with his equal treatment principle, namely its injunction that "each man is to count for one." 203 Laudable though this aspect of utilitarianism may be, it is corruptible as a decision mechanism for right conduct, and it threatens to reduce the idea of equal treatment to an illusion. That danger exists,

199. Id. at 99.
200. See id. at 90–93.
201. See id. at xii, xv, 272–78.
202. Id. at 273–74. Dworkin proposes that "individual rights to distinct liberties must be recognized only when the fundamental right to treatment as an equal can be shown to require these rights." Id.
203. See id. at 275.
says Dworkin, whenever a utilitarian calculation accords weight to an individual's "external" as well as his "personal" preferences. Counting external preferences violates equal treatment because it results in undercounting the personal preferences of any individual against whom someone else possesses an external preference. Any utilitarian calculation (or any majority voting system, which Dworkin believes to be the political counting mechanism most like utilitarianism) that permitted counting such external preferences would fail to be faithful to the overarching right to equal dignity and respect.

Dworkin's system of rights blocks the use of utilitarian calculations where those calculations are likely to be mistaken because external preferences influence the outcome. The uses of utilitarian calculation are made to conform to equal treatment by prohibiting it from making decisions in which external preferences are "antecedently likely" to play a material role. "Hence the preferred liberties are those such as freedom of speech or sexual relations, which are to rank as rights when we know 'from our general knowledge of society' that they are in danger of being overridden by the corrupting element" of counting external preference in utilitarian arguments or majority vote decision procedures.

Dworkin's argument about the defect of utilitarianism has been roundly criticized, but that debate can be sidestepped here. Even assuming the argument to be persuasive, it totally fails to support any "anti-utilitarian" right against risk, for much the same reason raised in the discussion of Fried's theory and its use of a counter-factual test to distinguish intended consequences from unintended consequences and their side effects. The conflict of interests in technological risk cases does not appear to turn on or materially involve appeal to external preferences. Both risk creator and risk bearer are interested in the allocation of goods and social advantages to their respective selves. Indeed, the risk creator would most happily accept a situation in which no one was exposed to risk, for it would save her the potential costs of defending claims against her and protecting her good reputation from

204. The distinction essentially consists in the difference between preferences we have for allocations of goods and social advantage for ourselves and preferences we have for how such goods and advantages are assigned to someone else. See id. at 234-38, 275-78.
205. The argument in the text is stated in terms of a negative external preference, a prejudice. Altruistic impulses would result in overcounting, and would also be impermissible. See id. at 235; but see Hart, supra note 58, at 841-43.
206. This includes decisionmaking through representative democracy, which Dworkin believes is the political form that best conforms with utilitarian policies. R. Dworkin, supra note 64, at 276.
207. Id. at 277.
208. Hart, supra note 58, at 838 (footnote omitted) (quoting R. Dworkin, supra note 64, at 277).
209. See id.; infra note 211 (citing commentators).
210. See supra notes 120-26 and accompanying text.
moralistic barbs by others in her community. In truth, so far as external preferences bear on such cases, they would seem to weigh against the interests of the risk creator, since many people apparently are willing to brush risky operations with a condemning tar that expresses our external preference that the risk creators come to as much grief as possible. 211 The external/personal preferences distinction argues for rights to create risks.

If the case of toxics risk produces no antecedent likelihood that external preferences will weigh in, and hence no reason to recognize anti-utilitarian claims in this situation, that case is to be remitted to a utilitarian or majority vote decision mechanism. 212 Under such procedures, legislation protecting individuals can be legitimated, but not on the basis that individuals rightly claim some pre-legislative entitlement to such protection. It would be legitimate simply because risk bearers outnumber risk creators in the electorate. Risk bearers come to each such decision point counting as one, but own no particular purchase on the outcome as a result of anything other than their personal preferences not to be exposed to risks. The multitude of laws enacted in the last decade attests to the strength of those numbers, but not, under Dworkin's analysis, to the existence of any antecedent claim to governmental intervention based on rights those numbers have, other than the primitive one of treatment as an equal, which both majority vote and utilitarian counting respect.

IV. Giving Good Weight 213

This study of the structure of risk regulation, undertaken largely from within the rights tradition, has proceeded from two initial premises: (1) many environmentalists and many citizens claim some protection from technological risks regardless of adverse consequences; and (2) the anti-utilitarian, absolutist rhetoric of numerous contemporary theories of rights seems to lend support to those claims. Examination of general arguments and four different modern rights theories shows that the second premise is erroneous.

211. The interests of workers or others who gain from the continued operation of a commercial risk-creating facility might motivate them to prefer or vote for the risk creator. These preferences, however, would count as personal, not external, because these workers treat others instrumentally, as a means to their own personal ends, rather than as separate objects of concern. Similarly, a white man's preference that blacks be excluded from professional schools because such exclusion improves his chance of getting in would count as personal. See R. Dworkin, supra note 64, at 234–35.


212. R. Dworkin, supra note 64, at 276–78.

Despite his emphasis on categorical norms, Fried expressly endorses taking consequences into account. Dworkin's methodology consigns the question to the legislature where a utilitarian calculation may well determine the matter. Rawls' attempt to reduce social decision-making to the self-interested choices of rational individuals under idealized constraints leaves the matter indeterminate. The legislators in his ideal society operate on information and assumptions too limited to resolve the matter, but the structure of his argument requires consideration of adverse consequences. Epstein's strict liability theory fails to provide any solution to the problem of risk prevention, except perhaps to suggest that we may prevent any risk for which the creator would be unwilling or unable to provide compensation. In applying that criterion before the fact, one must assess the competing consequences to risk creator and risk bearer.

Thus, the central enterprise of rights theories—reinvigorating respect for the individual as an autonomous moral agent—seems to entail a structure of risk regulation that must count adverse consequences as relevant. Because the morally relevant attributes of the individual extend beyond an interest in self-preservation, conflicts arise among valid human interests whenever risk regulation necessitates curtailing opportunities to achieve, vindicate, or promote those other human attributes. One strategy addressing those conflicts that still responds to the urge for consequences-invariant risk protection resolves the conflicts a priori by developing rules, or orderings of values, that apply to all risks without regard to adverse consequences.\footnote{214} The adverse consequences of risk regulation appear too varied and, at least in some cases, too substantial for this strategy to succeed. Finally, while one can undoubtedly defend some prophylactic rules that apply without regard for consequences, these rules must be regularly reevaluated, and can be modified legitimately or even abandoned as information about consequences, among other things, changes.

A blunt lesson emerges from this analysis: certain risks can be imposed justifiably on others. Arguments against risk imposition must argue on the basis of all consequences, not without regard for consequences. If it is fair to translate the Kantian injunction into the idea that all rational persons have a right not to be used without their consent, then one must conclude that preventing risk imposition can impossibly "use" risk creators and their beneficiaries as surely as risk imposition can use risk bearers. It depends on the adverse consequences and the risks.

Some may be moved by these remarks and yet still resist them on the ground it is callous\footnote{215} or offensive\footnote{216} to announce a principle that

\begin{footnotes}
\footnotetext[214]{John Rawls' theory of justice is the most influential example of such a strategy regarding justice generally, though it fails to generate rules for risk. See supra notes 141–90 and accompanying text.}
\footnotetext[215]{See, e.g., Schwartz, 1981 Sup. Ct. Rev. 291, 294 ("Both the [federal health
authorizes risks to human life and, inevitably, the death of some of those exposed. Alternatively, some may concede that risky actions are permissible, yet deny that this conclusion should be publicly announced. As suggested earlier, acknowledging the legitimacy of placing lives at risk may be costly to society's collective sense of self. These objections represent further sorts of consequences that may flow from risk regulation decisions, this time from decisions not to regulate or not to claim to regulate risk imposition absolutely.

But why is such a confession callous or immoral, if it comes as the result of thoughtful and sensitive reflection upon the clash of legitimate values? Implicit in the suggestion that it is may be a mistaken opinion about the necessary structure of moral judgments, namely that the "bottom line" conclusion of any moral claim says all that is morally relevant about the situation. That idea may itself be part of the legacy of utilitarianism, which does exhibit this structure. Under utilitarianism, the sum of utility is the only feature of the world which is of moral significance. Actions can only be judged right or wrong on the basis of their total consequences. Any assessment of an action on the basis of a partial consideration of consequences would simply be an error, and the significance of any constituent part of the sum is entirely merged into the significance of the total. This general structure may be shared by other theories, but they should take no credit from this. Such theo-

216. For example, the National Highway Transportation Safety Agency has condemned the efforts of cost-benefit analysts to evaluate safety regulations through procedures that place a dollar value on human life. The National Highway Transportation Safety Agency, Regulatory Impact Analysis on Recession of Automatic Occupant Protection Requirements A-1 to A-2 (1981).


218. See supra note 68 and accompanying text.

219. Despite condemning the structure of cost-benefit analysis as permitting competing values to be traded off against the sanctity of human life, the most careful environmentalists do not assert that the do-no-harm principle is an absolute. See, e.g., Kelman, Cost Benefit Analysis: An Ethical Critique, Regulation, Jan.–Feb. 1981, at 33, 36. The literature is deficient, however, in describing how competing values are to be accommodated, except to suggest occasionally that this be done by the vote, rather than by the market. See, e.g., Sagoff, supra note 173, at 1292. A purely procedural suggestion like this seems vulnerable, however, to the critique of majoritarian procedures generally: there must be some substantive checks on how severely the majority can damage the interests of the minority. See supra note 173.

Maintaining the claim that some values are absolute might be part of a program to employ "illusion" to defuse dissension concerning tragic choices. G. Calabresi & P. Bobbitt, supra note 68, at 59; R. Goodin, supra note 217, at 120–21. It becomes impossible to sustain such illusions, however, in the face of persistent demands for articulated justifications of significant governmental programs.
ries ignore the role that moral concepts such as regret over decisions play in ethical systems:

[Under such theories, a] structure appropriate to conflicts of belief is projected on to the moral case; one by which the conflict is basically adventitious, and a resolution of it disembarasses one of a mistaken view which for a while confused the situation. Such an approach must be inherent in purely cognitive accounts of the matter; since it is just a question of which of two conflicting ought statements is true, and they cannot both be true, to decide correctly for one of them must be to be rid of error with respect to the other—an occasion, if for any feelings, then for such feelings as relief (at escaping a mistake), self-congratulation (for having got the right answer), or possibly self-criticism (for having so nearly been misled).220

One can speak of valid moral claims or points of view that, all things considered, have not been found to be sufficiently persuasive to dictate choice, and yet continue to revere such values and both express and experience regret over the necessity that they cannot be totally vindicated because of a conflict with other valid interests and claims.221 This structure supplies the appropriate way to conceive of the issues that risk regulation raises.

Within this structure, the ambition to achieve a world in which no physical harm is caused to others, or at least one in which one strives constantly to reduce such harm, need not be sacrificed to a conclusion that some risk must currently be tolerated and accepted. To the contrary, the recognition that a tragic choice has been forced on us by the interaction of our conflicting values and the empirical contingencies of the world222 ought strongly to motivate us to alter those contingencies insofar as we can. Although these attempts have been halting and ineffective, much environmental legislation has attempted to force the development of new, less risk-imposing technologies through various regulatory strategies. The structure of moral judgment just presented explains one motivation for such efforts.

In this way, "do no harm" is an appropriate goal for a system of justice but not an appropriate standard to judge specific behavior. Might it be, however, that both the goal and the lesser standard cannot be simultaneously maintained? A standard of justice, like legal decisions generally, ordinarily operates both to evaluate behavior and to


221. The complicated structure of moral judgments, including the element of regret, is brought out in two articles by Bernard Williams. See B. Williams, Consistency and Realism, in id. at 187; B. Williams, supra note 220; see also Foot, Moral Realism and Moral Dilemma, 80 J. Phil. 379 (1983) (agreeing with Williams that many moral conflicts are not resolvable "without remainder").

222. Thomas Nagel has termed this the "disparity between the fragmentation of value and the singleness of decision." T. Nagel, Mortal Questions 128 (1979).
influence behavior. By indicating how prior or present risky behavior is evaluated, society at the same time serves notice as to how future behavior shall be evaluated, and thereby may encourage individuals to conform their behavior to the standard enunciated. In articulating a level of acceptable risk, will we be ensuring that the do no harm goal is nullified as an earnest goal, because we will be informing risk creators that some line short of that unreachable goal is acceptable? 223

Recently, Professor Dan-Cohen has argued there are some circumstances when the law as the public reads it (conduct rules) might justifiably be different from the law that an official judging private conduct ultimately applies (decision rules). 224 When a decision rule conveys a normative message that opposes or detracts from the power of a conduct rule, we might want to separate the rules. 225 In cases of duress or necessity, for example, we may want the defendant to act as if the obligation to obey the law were absolute, whereas in judging that behavior we may excuse law-breaking conduct because the pressures on the individual were too high to be resisted. If the individual knew of the decision rules' leniency when he was deliberating over his conduct, however, he might lower his resolve to obey the law, and more law breaking would result. 226

Much environmental legislation is absolutist in language, but more lenient in administration. 227 Such legislation seems to present conduct rules approximating "do no harm," yet hiding within the complexities and uncertainties of the administrative process are considerably more lenient decision rules that better accommodate the realities of the unfortunate trade-off between risk and freedom of action. Following the argument for separating conduct from decision rules, one might think this structure is necessary to maintain the vitality of "do no harm" as a goal while (grudgingly) recognizing the necessity of some risky behavior.

There are at least four reasons why this argument fails. First, the criminal law context and the regulation of technological risk context differ in a crucial respect. Criminal law rules address activity that is in the first instance largely self-regulated. The individual must evaluate his behavior and conform it to the criminal law. This creates the possibility of a disjunction between rules operative at the moment of individual decision and rules operative at the moment of later public

223. Others involved in regulation might also be adversely affected by elimination of stringent goals. See, e.g., F. Anderson, D. Mandelker & D. Tarlock, Environmental Protection: Law and Policy 343 (1984) ("The major environmentalist argument for non-enforceable goals has been to help hold Congress' and regulators' feet to the fire.").


225. Id. at 632.

226. Id. at 633.

227. See Schroeder, supra note 44.
evaluation. Risky actions, on the other hand, increasingly fall under the ambit of regulatory legislation that requires prior approval of conduct before it is undertaken. Under such circumstances, conduct is not self-regulating, and the decision rule and the conduct rule merge.

Second, even when risk creators do self-regulate, those entities involved with risky technologies are predominantly sophisticated firms, and they will soon comprehend that the “real” law, the law in action as opposed to the law on the books, is the accumulation and extension of actual decisions reached by agencies, rather than the absolutist language of the statutes themselves. The only possible advantage of not informing individuals about the standards their proposals for new powerplants, new industrial facilities, or new products will have to meet is to induce research into safer technologies. However, even this advantage is fleeting, as administrative applicants will quickly gain some rough judgment, on the basis of prior decisions of the agency, that absolute safety is not the norm. Inevitably, the primary conduct, the conduct that will generate risk, will be judged in a context where the decision rule and the conduct rule are ineluctably linked.

Third, there is a cost associated with the strategy of separating decision and conduct rules in the manner suggested: behavior we are prepared to condone under decision rules may be suppressed by the overly stringent conduct rule.\(^{228}\) While we may be prepared to endure the costs of individuals who fail to succumb to the pressures of duress, though we would have excused them had they succumbed,\(^{229}\) the thrust of this Article has been to the contrary regarding risk: we do not want people to cramp their life plans because of an unduly strict impression of what justice requires. Furthermore, the mechanism of prior approval, common to most of our environmental laws, functions to ensure that individuals will not overvalue those benefits and undervalue the costs to others. In the criminal context, such valuations are normally conducted by an individual with a very personal and biased stake in the outcome, and this fact supports one of the central arguments in favor of articulating different decision and conduct rules.\(^{230}\)

Finally, alternative mechanisms exist to effectuate the purposes of the goal and the standard being suggested here. For instance, in appropriate cases we can impose damages liability on risk creators for

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\(^{228}\) Dan-Cohen, supra note 224, at 638 n.29.

\(^{229}\) Id. at 633–34.


>The awful danger [in *Regina v. Dudley and Stephens*] concerned what would follow logically from the principle . . . adopted [if the necessity defense had been accepted.] The only salutary way of framing a suitable exception for necessity in the law of murder will be a ruling in law, or in Lord Coleridge’s term a principle, which necessarily authorizes people whose lives are in pressing danger to judge whether they should kill another innocent victim of the same danger in order . . . to save themselves.
harm caused, even when operating below the level of administratively
determined acceptable risk. The threat of continuing liability produces
a continuous pressure on risk creators to test whether they can diminish
their exposure to such damages through risk-reducing improvements in
their operations. Thus, in the risk context one has available more subtle
or refined enforcement possibilities than in the criminal context.

Accordingly, there are no sufficient reasons against urging that the
next important task of a coherent nonutilitarian approach to risk regu-
lation is to articulate the grounds on which we can distinguish accept-
able from unacceptable risk, keeping in mind that such articulation must
be incorporated in a framework that affirms our efforts to achieve a so-
ciety that imposes progressively less risk upon each of us.

Much work remains to be done on the issues raised by technologi-
cal risks before a full justification of risk regulation, one attempting to
give "good weight" to all the competing considerations, is ripe for de-
bate. For instance, the role of uncertainty costs in influencing risk regu-
lation is not yet well understood, and this Article has abstracted en-
tirely from the empirical questions raised by factual uncertainty it-
self.231 So long as precise information on risks and their effects re-
mains unavailable or available only at substantial expense (in terms of
both cost and regulatory delay), prophylactic rules will continue to be
important regulatory tools, though the appropriate precision and detail
of such rules for risks need further elucidation.232 Considerable debate
continues about the relevance of the number of people exposed to risk
and the number benefited by it,233 yet much depends on the outcome
of that debate, including when nationally uniform as opposed to re-
gionally calibrated risk levels are appropriate. More consideration is
required of whether technologies capable of producing concentrated
catastrophes, such as the nuclear powerplant, should be regulated
more stringently than technologies that disperse risks more broadly,
such as the automobile.234

These and other uncertainties prevent me from pushing the argu-

231. See supra note 32 and accompanying text.
232. See generally Diver, The Optimal Precision of Administrative Rules, 93 Yale
L.J. 65 (1983) (analyzing the criteria for deciding among rules ranging from the precise
to the general).
233. Compare, e.g., Taurek, Should the Numbers Count?, 6 Phil. & Pub. Aff. 293
(1977) (arguing number of lives involved should not affect decision), with Parfit, In-
numerate Ethics, 7 Phil. & Pub. Aff. 285 (1978) (arguing against Taurek and proposing
that numbers should affect decision).
234. Some have argued that such additional consideration is appropriate. See, e.g.,
G. Perrow, Normal Accidents (1984); Mishan, Consistency in the Valuation of Life: A
Wild Goose Chase?, 2 Soc. Phil. & Pol. 152, 166 n.19 (1985) (suggesting that as between
(a) the prospect of one in 1000 of death, spread randomly across a population of
100,000,000 and (b) the prospect of a community of 10,000 being destroyed in a coun-
try containing 1000 such communities, most people would consider (b) the more severe
loss).
ments further. By way of setting the stage for subsequent inquiry, I
return in closing to the observation made earlier that the cases for or
against specific regulation of risks depend upon both a normative and
an empirical assessment. I offer the following expansion on that idea.

As to the normative dimension, perhaps the central issue raised
and not fully elucidated by the preceding discussion concerns how one
compares such competing values as freedom of action and bodily inte-
grity. Some perspective on this question comes from appreciating how
justification of risk regulation fits into the larger debate over the justifi-
cation for governmental action that has begun to move beyond the op-
opposition of utilitarianism and the rights tradition.

The rights tradition and utilitarianism, the two grand opponents in
American jurisprudence, clash on many different issues and fronts.235
There are, however, many ways to classify ethical theories, and in one
-crucial respect these two belong together. They seek the same kind of
answer to the question of conflicting values. For its part, utilitarianism
aspires to clear and unique answers for every question of public choice.
If only we can determine the various utility functions of individuals af-
ected by those decisions—a heroic assumption—the absolutely correct
action will be known. Utilitarianism employs a method for producing
that absolute answer that threatens to obliterate the individual, and
hence rights theories reject that method. In affirming the primacy of
the individual, however, those theories do not abandon utilitarianism's
ultimate objective to identify absolutes—clear and definite answers—to
guide social choice or to determine the constraints of justice. In this
respect, such theories still live in utilitarianism's shadow.236

To avoid the vagaries and malleability of balancing competing val-
ues, rights theories have tended to travel a different road to absolute

235. In addition to the differences noted throughout this Article, utilitarian and
rights perspectives on government produce divergent general political theories. Adopt-
ing utilitarianism's view that the maximization of subjective value preferences is the sole
public objective, government's sole legitimate function can be reduced to the mainte-
nance of competitive markets, through which individuals can exchange goods and ser-
ices so that a maximum is achieved. See Michelman, supra note 173, at 148–57. The
influential theory of political pluralism utilizes a related argument in contending that
political competition among numerous interest groups will roughly ensure that none
dominate the rest and thus will achieve a certain stability of government necessary for
prosperity. See R. Dahl, Dilemmas of Pluralist Democracy: Autonomy vs. Control
31–54 (1982). Representative democracy is often defended on utilitarian grounds as a
device through which self-interested individuals pursuing private values can resolve dis-
putes in a way that maximizes welfare. See authorities cited supra note 35.

When preserving the integrity of the individual is taken as the core of political the-
ory, positions emphasizing individual rights and the articulation of public values de-
velop, and stand in opposition to these utilitarian positions. See Michelman, supra note
173, and authorities cited infra note 239.

236. See Hart, supra note 58, at 846. It remains true, nevertheless, that we may
want to judge the superiority of any individual-centered theory in part by its responses
to objections raised by utilitarian critics.
answers: they attempt to identify attributes of the individual that are paramount and never to be overridden by other considerations.\textsuperscript{237} They promise to provide absolutes by identifying fixed boundaries that constitute side-constraints that all appeals to other considerations must respect. This helps explain why the rhetoric of side-constraints, trumps, and barriers is so felicitous for rights theories. Such rhetoric captures the sense of absolute priority that they seek to express and embody.

Thus, we have two approaches to the same end: utilitarianism's reduction of all value to a single metric, and rights theories' placement of some values unqualifiedly above others. If these two seem the only two available theories of justice, that is because one is implicitly assuming that theories of public choice must supply absolute answers.\textsuperscript{238} That assumption, however, threatens to undermine the entire enterprise rights theories seek to advance. In recent years, theories applying the fundamental ideas of the rights tradition to questions of governmental authority, judicial review, and constitutional law have flowered.\textsuperscript{239} The very diversity of these theories seems to refute the assumption that the rights tradition can generate clear, definite, and undeniable answers. If the multiplicity of rights theories, ranging from Nozick to Rawls and from Ackerman to Epstein, supplies reason to despair of any public or objective solution to the problem of conflicting values or interests, utilitarianism may be the only recourse; but that answer steers us directly into the objections encountered previously.\textsuperscript{240}

This impasse comes from a mistaken assumption that absolute answers are attainable. All value cannot be tabulated under a single metric, but neither can multiple values be ranked lexically so that some can be totally ignored while others are fully served. A lesson from the complexity of the clash between freedom of action and bodily integrity and the resilience of our convictions on both values is that a theory of justice cannot uncontroversially resolve the dispute between them.

Both the rights theories and utilitarianism are species of monism,

\textsuperscript{237} See, e.g., J. Fishkin, Beyond Subjective Morality: Ethical Reasoning and Political Philosophy 129–57 (1984); R. Unger, Knowledge and Politics 85–87 (1975); Shiffrin, supra note 62, at 1170–74.

\textsuperscript{238} See Fishkin, Liberal Theory and the Problem of Justification, in Nomos XXVIII: Justification 208 (1986).


\textsuperscript{240} See supra notes 57–61 and accompanying text.
or of the "natural tendency of all but a very few thinkers to believe that all the things they hold good must be intimately connected, or at least compatible, with one another."241 A different view is that "the ends of man are many, and not all of them are in principle compatible with each other . . . ."242 The point is stronger than the self-evident one that human interests conflict. More troubling still, some of these conflicts implicate valid, legitimate ends, so that one competitor cannot simply be ruled out of account ab initio. There exists no meta-rule to resolve apparent conflicts into a single correct choice.243 If this observation is true, both the rights tradition and utilitarian routes to absolutism are wrong because monism is wrong.

In the context of rights against risk, accepting the fragmentation of value244 that comes with rejecting monism means that we must be prepared to ask how much freedom of action we are willing to give up in order to secure improved protection from harm, and to ask the question without the benefit of some purely analytical category that can provide the resolution. In Rawlsian terms, no purely formal statement of these competing interests can produce an answer; we need to understand the value of those interests as well.245 What is more, we must somehow understand these values as having a public component, rather than being purely subjective, in order to avoid reverting to utilitarianism.

Glimmerings of this third way of analyzing risk regulation—that is, our continuing to talk in terms of public values, despite the absence of absolute answers—are beginning to emerge.246 In joining this effort, risk regulation studies must remember that the values of conflicting interests depend partially upon biological, historical, social, and cultural contingencies.247 This can be seen most clearly in the case of the interests in freedom of action. What counts as an ample or even an ade-

242. Id. at 169; cf. Schauer, An Essay on Constitutional Language, 29 UCLA L. Rev. 797, 819 (1982) ("The controversial assumption contained in any particular/general theory of constitutional meaning is that the morally or politically loaded clauses of the Constitution are particulars instead of more general irreducible principles, and also that they are particulars of the same general principle.").
243. See Fishkin, supra note 238.
244. T. Nagel, supra note 222, at 128.
245. See supra notes 158–73 and accompanying text.
246. The persistence of the utilitarianism versus rights opposition may largely be due to the strong grip of another opposition, that between subjective and objective values. The success of any third way may consequently depend upon weaning the debate about public justification and public values away from this latter dichotomy. See, e.g., R. Bernstein, Beyond Objectivism and Relativism: Science, Hermeneutics, and Praxis 223 (1983); J. Fishkin, supra note 257, at 153–57; A. MacIntyre, After Virtue: A Study in Moral Theory 65 (1981); Gordley, Legal Reasoning: An Introduction, 72 Calif. L. Rev. 198, 169 (1984).
quate set of choices within society turns partially on what choices others in the society have. Inability to gain a college level education may count as an appreciable constriction of choice in a society where many career paths require it, whereas in a frontier society in which opportunities abound for the adventurous and daring, the absence of such opportunity may be trivial. Likewise, in a relatively unpopulated society where physical separation of risk creator and risk recipient is feasible, or where opportunities for experimentation and growth do not produce or require widespread technological risk, very low levels of permitted risk creation toward strangers\(^\text{248}\) may not deny significant opportunities. As these characteristics change, two dimensions of value move together. Preventing risk exposure becomes more costly to freedom of action, and risk levels for strangers rise, impinging more substantially on the interest in bodily integrity.

This dynamic does not foreordain that acceptable risk levels rise in technologically advanced societies. A society may become highly risk averse and embrace rules that tightly constrain risk creation. If society becomes risk averse, however, it can only do so on the basis of an analysis that considers the complete range of implicated interests. This requires a commitment to treat both the protection from harm associated with candidate rules and the adverse consequences of those rules as legitimate, valid interests. From that perspective, some nonzero level of risk will almost certainly be taken to be acceptable because of the substantial adverse consequences attendant to any more severe levels of risk prevention.

Thinkers within the rights tradition, emulating Kant, sometimes assert that people's rights are completely separate from and impervious to changes in the understanding of empirical states of affairs.\(^\text{249}\) On the views presented here, this is a serious mistake. Rather than seeking to establish some impoverished minimum of absolute protections, immune from almost any empirical circumstance, we ought to recognize that rights depend on an interaction between human interests and values and the empirical facts about the world. The reference to empiricism does not counsel despair. Rather, it suggests that empirical research and empirical change are the great repositories of hope that individual rights can be enlarged through advances that minimize or reduce the friction between clashing values, and that bring our standards closer to our goals. We can direct our energies, in other words, to activities that promise to enlarge and strengthen human rights, and we ought to welcome the opportunity.

\(^{248}\) Recall that we are concerned here with risk creation among strangers. Different issues concerning free choice, coercion, and assumption of risk arise in other contexts such as the workplace. These, too, would require an analysis that is sensitive to social and cultural contingencies.

\(^{249}\) See Epstein, supra note 107, at 75.