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ON MARKETS FOR RISK

MARK SAGOFF*

What are we afraid of? If you ride a bus in Washington, D.C., you might find out. Huge red letters scream to you:

STAND BACK OF WHITE LINE
DO NOT TALK TO DRIVER WHILE BUS IS IN
MOTION
EMERGENCY EXIT
KEEP AWAY FROM DOORS

A Martian, were he or she or it to ride a public bus, might guess that we fear traffic accidents more than anything else.

Yet this is plainly false. We may go to great lengths to make buses safe, but when we get into our own cars, we do not even bother with the seat belts. We do very little about drunk driving although, according to government estimates, alcohol is a factor in at least one-half of the 50,000 traffic deaths that occur in the United States each year.¹ While virtually ignoring this major source of death and injury, we willingly spend about \$5 million per life saved in protecting ourselves from the hazards of radiation.²

The anomalies that arise in public policy toward risk are repeated over and over again in private decisions. People who engage in dan-

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1. INFORMATION PLEASE ALMANAC 827 (1980). For a table of fatality estimates from various accidental and environmental causes, see Slovic, Fischhoff, & Lichtenstein, *Rating the Risks*, ENV'T, Apr. 1979, at 14, 19. For an expanded study of actual vs. perceived risk, see Fischhoff, *How Safe is Safe Enough? A Psychometric Study of Attitudes Towards Technological Risks and Benefits*, 9 POL'Y SCI. 127 (1978).

2. The valuation of life in the context of nuclear reactor safety is a concern of the *Bulletin of Atomic Scientists*. See, e.g., Holdren, *The Nuclear Controversy and the Limitations of Decisionmaking by Experts*, 32 BULL. ATOM. SCIENTISTS 20 (Mar. 1976); Primack, *Nuclear Reactor Safety: An Introduction to the Issues*, 31 BULL. ATOM. SCIENTISTS 15 (Sept. 1975); see also C. Sinclair, P. Marstrand, & P. Newick, *Innovation and Human Risk* (Center for the Study of Indus. Innovation, London, 1972).

gerous sports — parachuting and mountain climbing are examples — may refuse to touch coffee for fear it contains a carcinogen. Likewise, a friend of mine who chain smokes makes sure there are no “chemicals” in her food. I suppose this attitude is reflected in public policy, for, while the law permits cigarettes to be advertised in newspapers and magazines, it prohibits any additive in food that can be linked with cancer.³

The greatest anomaly in our attitude toward risk may be historical. People are exposed to far fewer hazards today than they were fifty or a hundred years ago. Yet we seem to worry about the dangers in our environment now more than ever. Diseases that were scourges at the turn of the century — pneumonia, influenza, tuberculosis — are comparatively innocuous today. I need not mention what food and medicine were like before the regulation of food, drugs, and cosmetics early this century.⁴ Yet we have become more, not less, suspicious. As one observer says:

One day we hear about the danger of mercury, and run to throw out cans of tuna fish from our shelves; the next day the food to shun may be butter, which our grandparents considered the acme of wholesomeness; then we have to scrub the lead paint off our walls. Today, the danger lurks in the phosphates in our favorite detergent; tomorrow the finger points to insecticides, which were hailed a few years ago as saviors of millions from hunger and disease. The threats of death, insanity, and — somehow even more fearsome — cancer lurk in all we eat or touch.⁵

I imagine that more of us are in a “doomsday” mood, expecting, as it were, the end of the world or something like it, now than a century ago, when millennial movements were strong.⁶ “How extraordinary,” Aaron Wildavsky, the economist, writes. “The richest, longest-lived, best-protected, most resourceful civilization, with the highest degree of insight into its own technology, is on its way to becoming the most frightened.”⁷

3. The Delaney Clause of the Food Additives Amendment Act, 21 U.S.C. § 348(c)(3)(A) (1976) requires that “no [food] additive shall be deemed to be safe if it is found . . . after tests . . . to induce cancer in man or animal.” This principle has been extended to animal feeds, 21 U.S.C. § 348(c)(3)(A) (1976), and food coloring, 21 U.S.C. § 376(b)(5)(B) (1976).

4. Federal Food, Drug, and Cosmetic Act, Pub. L. No. 717, 52 Stat. 1040 (1938) (codified at 21 U.S.C. §§ 301–392 (1976)).

5. Rabinowitch, *Living Dangerously in the Age of Science*, 31 BULL. ATOM. SCIENTISTS 5 (Jan. 1972).

6. See J. MADDOX, *THE DOOMSDAY SYNDROME* (1972).

7. Wildavsky, *No Risk is the Highest Risk of All*, 67 AM. SCIENTIST 32 (Jan./Feb. 1979).

I

These anomalies in the way we deal with risk are a function, perhaps, of our tendency to accept — even seek — all kinds of risks we would never dream of imposing on anyone else. We would fight, perhaps, before we would allow anyone to impose such risks on us. It is one thing to jump voluntarily; it is another to be pushed even if the risks and rewards are the same. Californians who are finicky about what Nestles has put in their eggnog build their patios on the San Andreas fault. They want the eggnog, like the earthquake, to be “natural.” I am not sure what this means, but it is not a new sentiment (taboos about pollution are as old as history) and it is important.

The risks we are willing to take as members of the public seem to belong to a different order than the risks we voluntarily accept as private individuals. We insist on stringent fire protection in hotels and hospitals while we do little about protecting our own homes. We require airplanes to be completely safe while we risk our lives constantly by failing to maintain our automobiles. We smoke but we are upset to discover minute traces of some possible carcinogen in our drinking water. Many factors enter in. Chauncy Starr, a dozen years ago, identified what is probably the most important one. The public, he wrote, is willing to accept “voluntary” risks that are a thousand times greater than “involuntary” ones.⁸

Is the public, then, irrational? The following argument suggests that we are.

1. Assume we want to achieve the most safety at the least cost.
2. The efficient way to achieve our goal is to minimize the marginal cost of each unit of added safety. (In other words: spend money in ways that will produce the most overall safety.)
3. Assume that people are irrational if they reject an efficient means to reach their goal and prefer a much less efficient or even totally ineffective one instead.
4. Consider two risks, one “voluntary” and the other “involuntary.” Suppose that they pose the same danger, e.g., one is benzene at home while the other is benzene in the workplace. Suppose, moreover, that it is a thousand times more expensive to lower exposure to benzene in the workplace (where the chemical is a necessary element in industrial processes) than in the home (where substitutes can easily be found).

From premises 2 and 4, we may conclude:

8. Starr, *Social Benefit versus Technological Rule*, 165 *Sci.* 1232, 1237 (1969).

5. It is very much more efficient (by a ratio of 1,000 to 1) to lessen the risk at home than to lessen the risk in the workplace.

"The indications are that the public is willing to accept 'voluntary' risks roughly 1,000 times greater than 'involuntary' risks."⁹ The public, then, would permit the "voluntary" risk at home while preventing the "involuntary" risk in the workplace. From steps 3 and 5, we then conclude:

6. The public is irrational.

If we assume we want to achieve the most safety at a certain cost, then we do seem to be irrational — for we swallow many a camel of risk (as in smoking) while straining at gnats (radioactive medical wastes). This irrationality, moreover, if that is what it is, may be found in our legislation. If the Toxic Substances Control Act,¹⁰ the Clean Air Act,¹¹ and the Clean Water Act of 1977¹² were intended principally to achieve safety within the bounds of efficiency — to ensure the public health to the extent that the "benefits" outweigh the "costs" — then, indeed, much that is in these laws appears to make no sense.¹³

If overall efficiency is our goal, economists may know better than politicians how to achieve it. We might better be governed, then, by the Council of Economic Advisors than by elected representatives. Some experts have reached this conclusion. These analysts propose, therefore, that they should formulate public policy on the basis of the best available scientific studies and the finest techniques of risk-benefit analysis.¹⁴ Experts in the field of policy analysis talk in terms of

9. *Id.*

10. 15 U.S.C. §§ 2601-2629 (1976).

11. Clean Air Act Amendments of 1970, Pub. L. No. 91-604, 84 Stat. 1676 (1970) (codified at 42 U.S.C. §§ 7401-7642 (Supp. III 1979)).

12. Clean Water Act of 1977, Pub. L. No. 95-217, 91 Stat. 1566 (1977) (codified at 33 U.S.C. §§ 1251-1376 (1976 & Supp. III 1979)).

13. For example, §§ 160-169 of the Clean Air Act as Amended, 42 U.S.C. §§ 7470-7479 (1977), classifies large areas of the West as Class I areas in which "significant deterioration" of air quality is not permitted. This effectively forecloses the development of important energy resources without regard to the benefits or costs. Likewise, much of our environmental legislation is *technology based* — requiring the use of the "best reasonably available control technology" rather than the technology that will be cost-effective or cost-beneficial. See, e.g., the Federal Water Pollution Control Act, 33 U.S.C. § 1311 (1976), which requires the discharge of effluents to be reduced over several years and thus forces technological development to accomplish that goal. By 1977 all industries had to install the "best practicable control technology currently available," *id.* § 1311(b)(1)(A), and by 1983 they must use the "best available technology economically achievable," *id.* § 1311(b)(2)(A). The Court of Appeals of the District of Columbia praised this "technology-forcing" strategy as evidence of EPA's "commitment to the development of sound guidelines." *Natural Resources Defense Council v. Train*, 510 F.2d 692, 712 n.105 (D.C. Cir. 1974).

14. For discussion of the relevance of risk-benefit analysis to public policy concerning environmental and workplace hazards, see W. LOWRANCE, *OF ACCEPTABLE RISK* 94-101

“tradeoffs.”¹⁵ How much is a life worth — or how much are we willing to pay to reduce risk by a certain amount?¹⁶ How much GNP, consumer “satisfaction,” or “welfare” are we willing to forego for how much safety? — These are the kinds of questions policy analysts ask.¹⁷

To answer these questions, economists study our behavior under risk to determine how much we are willing to pay for safety, e.g., in equipping our cars with seat belts or our homes with smoke detectors.¹⁸ (They find that we spend a lot to avoid some risks while we blithely ignore others — which makes us “irrational” or at least uninformed or mistaken if, indeed, overall safety is our principal concern.)¹⁹ Economists use this information to justify estimates of how much safety is worth to us, that is, in dollar terms, how safe is safe enough. They recommend, then, that public policy be made *efficient* in the sense that it provide safety only up to that dollar limit. They would make our public attitude toward safety reflect the private attitudes we reveal or would reveal in markets. Since markets often do not exist to price environmental hazards, public policy may make up that lack. Law would be justified as a substitute for — or as a prophylactic upon — the functioning of consumer markets.²⁰

Once we assume, as many economists do, that markets, real or hypothetical, provide the appropriate framework for the social evaluation of risk, it becomes plausible to suppose that we should always buy the

(1976); Leape, *Quantitative Risk Assessment in Regulation of Environmental Carcinogens*, 4 HARV. ENVTL. L. REV. 86 (1980); Lovins, *Cost-Risk-Benefit Assessments in Energy Policy*, 45 GEO. WASH. L. REV. 911 (1977); Ricci & Molton, *Risk and Benefit in Environmental Law*, 214 SCI. 1096 (1981); Rowe, *Government Regulation of Societal Risks*, 45 GEO. WASH. L. REV. 944 (1977).

15. See, e.g., Schwing, *Trade-offs*, in SOCIETAL RISK ASSESSMENT: HOW SAFE IS SAFE ENOUGH? 129 (R. Schwing & W. Albers, Jr. eds. 1980) [hereinafter cited as SOCIETAL RISK ASSESSMENT].

16. The classic paper is Schelling, *The Life You Save May Be Your Own*, in PROBLEMS IN PUBLIC EXPENDITURE ANALYSIS 127 (S. Chase ed. 1968); see also, Zeckhauser, *Procedures for Valuing Lives*, PUB. POL'Y, Fall 1975, at 442. For comment, see Hapgood, *Risk-Benefit Analysis: Putting a Price on Life*, 243 ATL. 33 (Jan. 1979).

17. See, e.g., Thaler & Rosen, *The Value of Saving a Life: Evidence from the Labor Market*, in HOUSEHOLD PRODUCTION AND CONSUMPTION (N. Terleckyj ed. 1976); Linnerooth, *Methods for Evaluating Mortality Risk*, 8 FUTURES 293 (1976).

18. See, e.g., Conley, *The Value of Human Life in the Demand for Safety*, 66 AM. ECON. REV. 45 (1976).

19. See Slovic, Fischhoff, & Lichtenstein, *Facts and Fears: Understanding Perceived Risk*, in SOCIETAL RISK ASSESSMENT, *supra* note 15, at 181 and authorities cited therein.

20. Frank Michelman has written: “In the economic vision, it is only the prospect of overcoming the market’s failure to capture gains from trade that can justify, from the individual’s standpoint, the risks of exploitation inherent in majoritarian political institutions.” Michelman, *Politics and Economics or What’s Really Wrong with Rationality Review?*, 13 CREIGHTON L. REV. 487, 498 (1979).

most safety we can at the least cost — up to the point at which we are no longer willing to pay to increase safety. Instead of making airlines *very* safe, for example, we might use some of that money on anti-smoking campaigns or on driver education. We might make risk management, then, *cost-effective*.²¹ We would seek “to equate the marginal costs of saving lives across programs for a certain number of lives saved.”²²

Industries, in this spirit, have petitioned the courts to overturn “irrational” regulations on cost-benefit grounds.²³ (Litigation over the OSHA benzene²⁴ and cotton dust²⁵ standards are excellent examples.) President Reagan, by Executive order, has instructed all departments and agencies that “[r]egulatory action shall not be undertaken unless the potential benefits to society outweigh . . . the costs to society.”²⁶ Some of the President’s advisors have suggested that the courts should invalidate all laws that are not cost-beneficial, i.e., that are inconsistent with overall economic efficiency.²⁷ There are as many ways to force people to be “rational” as there are ways to force them to be “free.”

I shall argue here, however, that efficiency is not the principal goal we pursue either as individuals or as a society in managing hazards and

21. Michael S. Baram writes: “*Cost-benefit analysis* . . . is used by the decisionmaker to establish societal goals as well as the means for achieving these goals, whereas *cost-effectiveness analysis* only compares alternative means for achieving ‘given’ goals.” Baram, *Cost-Benefit Analysis: An Inadequate Basis for Health, Safety, and Environmental Regulatory Decisionmaking*, 8 *ECOLOGY L.Q.* 473, 478 (1980) (footnote omitted). Baram comments that to the extent economic factors are permissible considerations under enabling statutes, agencies should engage in cost-effectiveness analysis, which aids in determining the least costly means to achieve designated goals, rather than cost-benefit analysis, which improperly determines regulatory ends as well as means. *Id.* at 474.

22. SOCIETAL RISK ASSESSMENT, *supra* note 15, at 144–45 (quoting A. Kneese, staff economist, Resources for the Future).

23. Major cases in which industry requested relief from regulation on cost-benefit grounds include: *American Iron & Steel Inst. v. OSHA*, 577 F.2d 825 (3d Cir. 1978); *Aqua Slide 'N Dive v. Consumer Prod. Safety Comm.*, 569 F.2d 831 (5th Cir. 1978); *Certified Color Mfr's. Ass'n v. Matthews*, 543 F.2d 284 (D.C. Cir. 1976); *Industrial Union Dep't, AFL-CIO v. Hodgson*, 499 F.2d 467 (D.C. Cir. 1974).

24. *Industrial Union Dep't, AFL-CIO v. American Petroleum Inst.*, 448 U.S. 607 (1980).

25. *American Textile Mfrs. Inst. v. Donovan*, 101 S. Ct. 2478 (1981).

26. Exec. Order No. 12,291, 46 Fed. Reg. 13, 193 (1981). The order specifies that the cost-benefit requirement shall apply “to the extent permitted by law.”

27. Members of President Reagan’s task force on regulation have taken this position. “On regulatory reform, Mr. Weidenbaum of Washington University, chairman of that task force, said he favored an executive order requiring agencies to conduct cost-benefit analyses before adopting regulations. . . . James Miller of the American Enterprise Institute, another task force member, said he thought all agencies should be required to prove that the benefits of a proposed regulation exceed its cost, and that it has chosen that [sic] least costly alternative. He also said that regulatory analyses . . . should be mandatory and subject to judicial review.” *Nat'l L.J.*, Nov. 17, 1980, at 9.

risks. Once we see that we have something beside efficiency in mind — once we see that our goal is not even *safety* — I believe that most of our private behavior and public law concerning risk can be appreciated and understood for what it is. The principal value informing public law for the workplace and the environment — as well as private behavior — may be *autonomy*, not *efficiency*.²⁸ Public policy, then, may not represent an attempt to increase welfare, utility, or “satisfaction.” It may represent our attempt, rather, to control the conditions under which we pursue happiness — the conditions under which we lead our lives.

II

A distinction between *freedom* and *autonomy* will help me make this point. You are *free*, according to a traditional conception of freedom, insofar as you can do or get what you want. This popular, if rough or crude, conception of freedom needs qualification,²⁹ of course, but it will do for our purposes. You may see a connection between social efficiency and this conception of freedom. An efficient society — a society that maximizes the satisfaction of preferences — helps individuals to get what they want. An efficient society need not be a happy one; no one has shown that the satisfaction of wants leads to happiness more than to disappointment.³⁰ Yet efficiency may be said to increase a kind of freedom. This is not the political freedom we have to make

28. I omit the possibility that economists might survey individuals to find out how much they are willing to pay for autonomy and thus assign this commodity a price in a cost-benefit analysis. Burton Weisbrod has suggested a model by which considerations of justice or equity might be brought into efficiency estimates or what he calls “grand-efficiency.” Weisbrod, *Income Redistribution Effects and Benefit-Cost Analysis*, in PROBLEMS IN PUBLIC EXPENDITURE ANALYSIS 177 (1968).

29. I agree with Gary Watson, who writes:

According to one familiar conception of freedom, a person is free to the extent that he is able to do or get what he wants. To circumscribe a person's freedom is to contract the range of things he is able to do. I think that, suitably qualified, this account is correct

Watson, *Free Agency*, 72 J. PHIL. 205, 205 (Apr. 24, 1975). Watson qualifies his account by arguing that a person is free only to the extent that he acts upon motives that are also values or express his valuational system. Watson characterizes a person's valuational system as “that set of considerations which, when combined with . . . factual beliefs . . . yields judgments of the form: the thing for me to do, in these circumstances, is *a*.” *Id.* at 215. Watson's thesis is entirely consistent with the view argued by Charles Taylor that responsibility for oneself requires one to be a critic and evaluator of one's own motives. Taylor, *Responsibility for Self*, in THE IDENTITIES OF PERSONS 281 (A. Rorty ed. 1976).

30. For a superb study of consumer disappointment and its connection with political action, see A.O. HIRSCHMAN, SHIFTING INVOLVEMENTS: PRIVATE INTEREST AND PUBLIC ACTION (1982). For an excellent argument that markets do not satisfy our wants but rather make us dissatisfied with them, see Lane, *Markets and the Satisfaction of Human Wants*, 12 J. ECON. ISSUES 799 (1978).

laws for ourselves — laws that may express our public values as distinct from our private interests.³¹ It is a freedom markets provide — “freedom in the traffic”³² — a freedom to satisfy wants.

An efficient society promotes the ability of the individuals in it to satisfy their wants and desires; it promotes freedom in the sense that refers to an individual's welfare. This sense of freedom — “negative” freedom or freedom from interference in one's pursuit of happiness³³ — has no necessary connection with autonomy. Freedom, in this sense, has to do with getting what you want or doing as you like; autonomy, on the other hand, consists in your ability to get or to do these things on your own, without being beholden to any other person, without accepting favors, and without having the important background decisions made by somebody else.

If you have to depend for your welfare on the wisdom, expertise, or goodwill of others, if they determine what you want or how you are to get it, then you lack autonomy, even if your benefactors are wiser than you and cut you the best deal they can. If you rely instead upon your own actions and decisions, then you may have autonomy even if you fail to achieve your ends. Duncan Kennedy puts the idea this way. He writes that a person is free to the extent that he satisfies his preferences. Freedom in that sense is coincident with welfare. “Autonomy, by contrast, does *not* refer to the degree of satisfaction, but to the *character of the circumstances on which satisfaction is dependent*.”³⁴

Statements concerning an “environmental ethic,” properly understood, may have more to do with the autonomy of individuals than with the efficiency of society. “A thing is right,” Aldo Leopold wrote, “when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.”³⁵ The appeal of this statement, I believe, depends on the belief that we all compete as equals under rules that nature sets: gravity and the carbon dioxide cycle apply to everyone equally; therefore, these violate no one's autonomy. An artificial environment introduces human control, and with it

31. For a presentation of this distinction in the context of cost-benefit analysis, see Maass, *Benefit-Cost Analysis: Its Relevance to Public Investment Decisions*, 80 Q.J. ECON. 208, 213-19 (1966). For a more general discussion, see B. BARRY, *POLITICAL ARGUMENT* 71-72, 81-83, 94-95, 132-35, 295-98 (1965). For a discussion of the relevance of this distinction to environmental regulation, see Sagoff, *At the Shrine of Our Lady of Fatima or Why Political Questions Are Not All Economic*, 23 ARIZ. L. REV. 1283 (1981).

32. S. Holmes, *Transformations of Legitimacy* 71 (May 1976) (Yale Univ. Doctoral Thesis).

33. I. BERLIN, *Two Concepts of Liberty*, in *FOUR ESSAYS ON LIBERTY* (1969).

34. Kennedy, *Legal Formality*, 2 J. LEGAL STUD. 351, 371 (1973) (emphasis in original).

35. A. LEOPOLD, *A SAND COUNTY ALMANAC AND SKETCHES HERE AND THERE* 224-25 (1975).

the distinction between those who manipulate and those who are manipulated. We may have more welfare in a more artificial or more controlled environment than in a natural environment, but we are not likely to have more autonomy. The conditions of our well-being, even if they are enhanced in a highly technological rather than in a "simpler" society, tend to be less in our own hands.

E.F. Schumacher, in his book *Small Is Beautiful*,³⁶ hit upon a formula which appeals to a vast constituency. We need not argue whether small is efficient, whether, for example, solar and wind power may generate more electricity more safely and cheaply than nuclear reactors. That question, I believe, is somewhat beside the point. Small is not beautiful because it is efficient; it is beautiful because it encourages autonomy. It gives people control of the means by which they satisfy their desires and this, I believe, may be more important to them than whether the desires are satisfied. (Does this thought lie behind the Marxist idea of giving workers control of the means of production — which could include worker control of nuclear power plants?) The nicest thing about solar panels and windmills, from the environmentalist perspective, is that you or I can decide whether to install them. The bad thing about nuclear power is that the decision is somehow up to "them."³⁷

Economists who believe that much of our behavior under risk is irrational might take another view of it were they to consider that it may be motivated, not by fear, but by resentment.³⁸ The problem, then, would be to explain, not why we fear some dangers more than others, but why we resent some dangers more than others. One answer is plain. We resent risks imposed upon us, as members of the public, by those who seek, in doing so, to achieve economic ends. We resent these risks because those who subject us to them treat us not as ends in ourselves but as means to the production of some economic goal such as efficiency or wealth. This is not a value system to which many of us would subscribe, for society or for ourselves; yet it seems to be imposed upon us by those who take an economic view of regulatory policy. Accordingly, people who resent being subjected to technological risks, e.g., dangers associated with nuclear technology, become even more

36. E. SCHUMACHER, *SMALL IS BEAUTIFUL: ECONOMICS AS IF PEOPLE MATTERED* (1973).

37. For an expanded argument on this theme, see Sagoff, *supra* note 31, at 1296–98.

38. For discussion of the concept of resentment and its connection with freedom, desert, and valuation generally, see P. STRAWSON, *Freedom and Resentment*, in *FREEDOM AND RESENTMENT AND OTHER ESSAYS* 1 (1974); see also Wolf, *The Importance of Free Will*, 90 *MIND* 386 (1981).

angry when they are told that the risks to the public are small in relation to the benefits. They resent these risks even though they acknowledge that they face greater dangers quite casually, for example, when they drive their cars.

I want to suggest that people in the environmental, anti-nuclear, and consumer movements are less concerned about freedom than about autonomy. If environmental legislation is seen as an attempt to preserve individual autonomy, public policy toward risk is not irrational. The decision to enforce limits on benzene exposure in the workplace, but not the home, for example, is simply a decision to protect people from risks imposed by others while leaving them free to accept or reject the risks they personally can control.

Cost-benefit analysis, then, cannot be justified as a means of achieving the public's primary goal, for that goal may not be efficiency; it may be autonomy. People want to determine the background level of risk; they do not want the working conditions of their lives to be determined by others. It does not matter how cost-beneficial risks are; it is a question, rather, of who controls them. To environmentalists of this persuasion there is only one sort of acceptable risk. It is not necessarily a risk the benefits of which exceed the costs. It is a risk that people understand and to which they or their political representatives do, in fact, consent.

III

Economists suggest that they, like environmentalists, are concerned with consent. A market approach, they argue, identifies the risks to which people would consent if, as a practical matter, they could reveal or act upon their individual preferences.³⁹ They say that markets, if free and fair, are unanimous consent arrangements.⁴⁰ This is a tautology, indeed, if any transaction that affects individuals who do not consent to it is counted as a market failure. They also say that any transaction to which two rational self-interested parties consent benefits both.⁴¹ This too, is tautological, given plausible assumptions about the nature of "rational self-interest." I do not want to quarrel here with

39. Richard Posner argues that "consent is the operational basis of the concept of Pareto superiority We are then led . . . to an ethical defense of market transactions that is unrelated to their effect in promoting efficiency" Posner, *The Ethical and Political Basis of the Efficiency Norm in Common Law Adjudication*, 8 HOFSTRA L. REV. 487, 490 (1980).

40. "In the first place, relationships in the market are a form of unanimous-consent arrangement." C. SCHULTZE, *THE PUBLIC USE OF PRIVATE INTEREST* 16 (1977).

41. "A most important point that I wish to make about the phenomenon of exchange is that not just one but both parties to an exchange are better off after the exchange is executed

these two propositions. I only want to point out that they are different. One justifies markets in terms of consent; the other, in terms of aggregate efficiency or satisfied consumer demand.

Together, they give us an important principle — that unanimous consent arrangements, which characterize free and fair markets, lead to efficient or optimal outcomes. This is the conceptual basis of arguments Milton Friedman and others have offered in favor of capitalism.⁴² Because these arguments rest, as I have suggested, on a system of tautological definitions, I cannot fault their logical consistency, although I question whether they apply or ever could apply to anything that exists or is likely to exist in America or elsewhere. The problem that concerns me, however, is how to make centralized or public decisions — e.g., decisions about the distribution of risk associated with energy development and waste disposal — that people do not consent to through market transactions. What then is the role of market or cost-benefit analysis? When markets fail or when relevant markets exist only in the imaginations, surveys, and writings of economists, what is the relationship between efficiency and consent?

I want to suggest that there is none. Economists argue, as I have said, that consent leads to efficiency. On the basis of this argument economists unfortunately tend to assume the converse, namely, that efficiency can stand as a suitable substitute for consent.⁴³ Where markets do not exist, or where market failure is endemic, economists tend to assume that what a “perfect” market *would* do is what people *would* consent to. But this assumes what may be false — that a market should exist in the problematic area and that people would consent to making transactions within such a market.

Consider the way many economists establish a “value” for life. In a typical research experiment, an economist offers subjects a hypothetical choice, say, one million dollars, in exchange for running a million-to-one risk of instant death. Almost everyone accepts that hypothetical bargain. The odds of death may then be increased, the payment de-

than they were before.” W. BAXTER, *PEOPLE OR PENGUINS: THE CASE FOR OPTIMAL POLLUTION* 19 (1974).

42. M. FRIEDMAN, *CAPITALISM AND FREEDOM* ch. 1 (1962).

43. As long as “redistributive considerations are not salient,” Richard Posner writes, “consent to efficient solutions can be presumed; . . . politically influential groups can do no better, in general, than to support efficient policies.” Posner, *supra* note 39, at 488.

For a presentation of the assumptions behind this move from what efficient markets would do to what governments ought to enforce, see Kneese, *Environmental Policy*, in *THE UNITED STATES IN THE 1980's* 253 (P. Duignan & A. Bavushka eds. 1980). For a typical discussion of the way Pareto notions of improvement or efficiency connect consent with the outcome of cost-benefit analysis, see E. GRAMLICH, *BENEFIT-COST ANALYSIS OF GOVERNMENT PROGRAMS* ch. 4 (1981).

creased, or both, until some indifference point is reached. Economists frequently advocate the use of this "switch" point in establishing safety standards for nuclear reactors and for other dangerous technologies.⁴⁴

The problem with this approach may become apparent if we change the offer to involve a risk, not of death, but of being tortured, sodomized, having one's hand cut off, becoming a slave, or undergoing a needless lobotomy. Here the economist may ask, for example, if you would accept \$50,000 in exchange for a 1/1000 probability you will be enslaved the rest of your life. Suppose you take the hypothetical bargain. Suppose, moreover, a trade-off point is established at which people generally would accept a cash payment in exchange for a small risk of being made prostitutes or slaves. What have we learned about regulatory policy? How can this information possibly tell us anything we could use or want to know?

That experiments of this kind are perverse becomes obvious when we reflect that we would outlaw all such bargains were they to be made, not hypothetically, but in fact. If you accept a 1,000-to-1 gamble on being killed for a sum of money and then have bad luck (e.g., because the wheel stops at your number), whoever made the offer, nevertheless, would be arrested were he to kill you. It is still murder even if it is efficient. One simply cannot legally set up a market of this kind. Likewise, you cannot raffle yourself into slavery. Again, outside of the "dunking" booths at fund-raisers, where you buy "shots" at soaking your boss, our society does not allow markets in torture. If actual markets are forbidden in death, slavery, torture, etc., what could we possibly learn from hypothetical markets? Why would we want to determine when death, torture, slavery, or what-have-you is efficient? Why should a civilized society wish to know that?⁴⁵

IV

An answer might be that we need to know how much to spend "at

44. See, e.g., Mishan, *Evaluation of Life and Limb: A Theoretical Approach*, 79 J. POL. ECON. 687 (1971); Zeckhauser, *Procedures for Valuing Lives*, 23 PUB. POL'Y 419 (1975).

45. Graham Greene's DOCTOR FISCHER OF GENEVA OR THE BOMB PARTY (1980) tells of a party in which guests are invited to pull open Christmas crackers which either contain a sizable check or a lethal bomb. The party is not the idea of an economist but rather of a misanthropist. He gives it so that his guests, driven by greed, will humiliate themselves and thus reinforce and vindicate his contempt for the human race. For a discussion of degrading or perverse preferences (though not one that concerns economic approaches to risk), see Barry, *Lady Chatterley's Lover and Dr. Fischer's Bomb Party: Liberalism, Pareto Optimality and the Problem of Objectionable Preferences*, in FOUNDATIONS OF SOCIAL CHOICE THEORY (J. Elster ed.) (forthcoming); see also Goodin, *Laundering Preferences*, in FOUNDATIONS OF SOCIAL CHOICE THEORY (J. Elster ed.) (forthcoming).

the margin" for lifesaving equipment and for safety in the environment and in the workplace. Let us suppose this is so. Why would individual willingness to pay in hypothetical risk markets give us a basis on which to determine this amount? Three reasons come to mind. First, individual willingness-to-pay, one may argue, indicates an efficient trade-off point between safety and cost.⁴⁶ Second, it may be said that people, on the average, would consent to the trade-off. Third, one may argue that the number we get (say, somewhere about \$300,000 per life saved)⁴⁷ seems like a good one and there is no better way to derive it. All of these reasons, however, are plainly inadequate.

As for the first, we must ask why *efficiency* should determine the level of risk to be imposed upon the public. Surely we do not torture criminals for confessions when it is efficient to do so. (We do not experiment with surrogate markets to determine what chance of torture people would accept for money; nor would we use such a figure to justify torture.) Likewise, we do not shanghai luckless citizens as slaves on the grounds that the social savings is more than people would pay to avoid such a risk. We do not say that the luckless citizen consents to being enslaved even if some slavery is efficient, i.e., even if overall benefits exceed costs. If efficiency should not be a criterion for the distribution of torture or slavery, why, then, should it be a criterion for the distribution of death? I simply see no answer to that question.

The second reason is no better. The fact that some people give a hypothetical answer to a hypothetical question is not a ground to believe that other people — or even these people themselves — consent, therefore, to an actual risk imposed upon them. Real consent is given in real markets; and people must consent to the market as well as to the trades they make in it. As far as I know, no one at Three Mile Island or at Love Canal or anywhere outside of economics departments has consented to the idea or to the ideology of a market approach to public safety and health.

Let us suppose, finally, that we need a "trade-off" number, al-

46. "Consistency with the criterion of potential Pareto improvement and, therefore, consistency with the principle of evaluation in cost-benefit analyses, would require that the loss of a person's life be valued by reference to . . . the minimum sum he is prepared to accept in exchange for its surrender." E. MISHAN, *COST-BENEFIT ANALYSIS* 305 (1976). This statement occurs in a discussion of ways to assess willingness to pay as a criterion for establishing a social valuation of risk for loss of life and limb.

47. M. Bailey, in *REDUCING RISKS TO LIFE: MEASUREMENT OF THE BENEFITS* 52-66 (1980), surveys various benefit-cost assessments to arrive at a plausible low bound between \$170,000 and \$300,000 and a plausible high bound between \$584,000 and \$715,000. A \$287,175 figure is discussed by Hapgood, *supra* note 16, at 36.

though this is itself a questionable assumption.⁴⁸ Is individual willingness to pay — individual self-interest — the best or indeed the only way to establish it? Plainly, not. The use of the surrogate market approach has the merit of setting up juries of citizens but the question it asks them is the wrong one. They should be asked, not to report their self-interest, but after weighing arguments and listening to reasons, to state their view of the public interest. That information might be useful to the policymaker. How much does the individual think the community should be willing to pay for ambulances? How much for anti-smoking programs? What do we think the responsibility of industry should be with respect to the safe disposal of its chemical wastes? How much should the corporations be willing to invest of their profits for reducing airborne hazards? Or keeping groundwater uncontaminated? The amount individuals and corporations *are* willing to pay to reduce risks is one thing; the amount they *should* be willing to pay is another. The former “interest” may reflect whatever has been accepted in the past. The latter determination, however, must be made politically through informed normative discussion and debate.

V

The familiar verse:

Oh mother did you bring me silver,
Mother did you bring me gold,
Or did you come to see your son hanging
Hanging from the gallows pole?

reminds us of the time when sentencing was handled on the basis of individual willingness to pay. We have not progressed very far, it seems, if we rely on that standard in protecting public safety and health. To ask how much people are willing to pay or to take for avoiding or accepting a risk is to change their status from that of members of the public, concerned with the nature of the society they live in, to that of parties in a private contract, concerned only with how a transaction affects them. Individuals may resent the a priori switch of their values and decisions from the public to the private realm; they may not consent to the market in which they are compelled to make decisions

48. See *supra* note 15 and accompanying text. Regulations that are technology-based or which otherwise set a standard “as safe as feasible” do not depend upon a determination of “the value of life.” Such a determination is not a *condition* of the policy but is a *consequence* insofar as a dollar figure may be inferred from the cost of the technology.

that, as they think, ought to be left to the political process.⁴⁹

To force people to think about public policy in market terms or in risk-benefit terms is to compel them to accept a particular conception of choice, indeed, a particular conception of consent. This conception of consent may be popular among economists — at least those that are wedded to the market paradigm. It is a conception, however, that may be inappropriate to decisions made *in foro publico*; it may be inimical to our political freedom and to the institutions of collective as opposed to individual choice.

When juries of citizens make decisions in civil and criminal cases, they act not on their rational self-interest, but on reasons of another sort — the law, the evidence, and a conception of right and wrong. Public officials should be guided by similar considerations. Their job is not to maximize wealth but to respond to many values, one of which may be efficiency, in making and applying public law. Political institutions, in principle, give us freedom to choose not so much what to buy as individuals, but what to be as a society — a freedom to associate for common purposes and to decide the nature, market or nonmarket, of our relationships with one another.

I have argued, in effect, that a vast difference exists between choice based in self-interest and choice based in a conception of the common interest. The relation between the two is not that of the part and the whole; one is not a function of the other. They represent, rather, two logically distinct strategies of choice.⁵⁰ The individual who chooses on the basis of self-interest need be given information only about the way a particular policy affects him; he need have no concern about how others are affected or about the nature of the policy itself. The individual who chooses on the basis of a conception of the common interest, on the contrary, is concerned about the total meaning and effect of a policy for the society as a whole. A market approach to public policy, as one commentator has noted, “is so set up that ‘one’s own share’ becomes the be-all and end-all.”⁵¹ But the second approach, in which the individual is asked to debate and then to vote for a conception of the common will, “becomes a vote not just on *shares* but on *policies*, and not just on a distribution as such, but on the principles involved.”⁵²

49. For discussion of this point, see Sagoff, *We Have Met the Enemy and He Is Us or Conflict and Contradiction in Environmental Law*, 12 ENVTL. LAW 283 (1982).

50. For further argument, see Sagoff, *Economic Theory and Environmental Law*, 79 MICH. L. REV. 1393 (1981).

51. Rescher, *Economics vs. Moral Philosophy*, 10 THEORY & DECISION 169, 171 (1979).

52. *Id.*

VI

The major statutes enabling administrative agencies to regulate environmental and workplace hazards do not in general require a cost-benefit or market approach to the management of risk.⁵³ The Clean Air Act,⁵⁴ the Clean Water Act,⁵⁵ and the Noise Control Act⁵⁶ create public entitlements to reasonably clean, safe, and quiet surroundings. Likewise, the Occupational Safety and Health Act entitles workers to a workplace in which they are treated as persons and not merely as factors in the production of wealth.⁵⁷ This is what we approve as a society and this is as it should be on moral grounds. It is more important that we respect each other's safety, privacy, and dignity as persons than that we maximize utility.

I am aware that the legislation we have is sometimes vague. The requirement that the workplace be free of risk insofar as is "feasible" is a celebrated example of this vagueness.⁵⁸ A cost-benefit approach to risk, however, is no more definite than an approach that considers public values: the concept of what is efficient is itself vague. For example, economists easily can prepare cost-benefit analyses that support opposing sides in a policy dispute.⁵⁹ Furthermore, any legislation that does not itself set the standards for hazards or pollutants must stipulate the goals to be achieved in qualitative terms. The agencies then must interpret these goals quantitatively.⁶⁰ The statute, no matter how well writ-

53. For discussion, see generally Baram, *supra* note 21.

54. 42 U.S.C. §§ 7401-7642 (Supp. III 1979).

55. 33 U.S.C. §§ 1251-1376 (1976 & Supp. III 1979).

56. 42 U.S.C. §§ 4901-4918 (1976 & Supp. III 1979).

57. The Occupational Safety and Health Act of 1970 defines an "occupational safety and health standard" as a standard that is "reasonably necessary and appropriate to provide safe and healthful employment." 29 U.S.C. § 652(8) (1976). If toxic materials or chemicals are involved, the Secretary of Labor is required to "set the standard which most adequately assures, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity." *Id.* § 655(b)(5).

58. *Id.* For another example of vagueness, consider the Federal Environmental Pesticide Control Act, 7 U.S.C. §§ 136-136y (1976) which requires the EPA Administrator to ban any pesticide which presents "any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits." *Id.* § 136 (bb), 136d(b).

59. An excellent case study of this problem may be found in B. ACKERMAN, S. ROSE-ACKERMAN, J. SAWYER, JR., & D. HENDERSON, *THE UNCERTAIN SEARCH FOR ENVIRONMENTAL QUALITY* (1974).

60. The fact that qualitative goals have to be implemented quantitatively raises the problem of overdelegation of legislative power to the agencies. Justice Rehnquist, reading the Occupational Safety and Health Act, found the relevant portion of § 6(b)(5) "completely precatory, admonishing the Secretary to adopt the most protective standard if he can, but excusing him from that duty if he can't. In the case of a hazardous substance for which a 'safe' level is either unknown or impractical, the language of § 6 (b)(5) gives the Secretary

ten, is unlikely to rule out every standard but one. Thus political and economic factors are bound to operate at the agency level. The point, then, is to make the process at that level as open, fair, and intelligent as possible.⁶¹ This is the antithesis of an administrative process that relies on a cost-benefit analysis reviewed, behind closed doors, at the Office of Management and Budget.⁶²

Finally, the legislation we have, taken as a whole, is less vague than it might seem to one who looks at the statutes individually. The law as a whole clearly expresses a national policy toward environmental and workplace nuisances and hazards — to protect people from hazards imposed on them without their consent. This legislation does not establish an absolute right to protection — it does not mandate safety at any cost; instead, it demands that economic and other considerations be taken into account. This does not suggest, however, that efficiency is or ought to be the goal of public policy or that all other public goals or values count only as “externalities” deserving at most a “shadow” or surrogate market price.⁶³

Since our goal in regulating hazards may be to promote not just efficiency but also autonomy, the statutes we have are hardly irrational, but properly require us to go the extra economic mile to protect the environment and the workplace. I am aware no one knows exactly how long the extra mile should be; the law is unavoidably vague on this point. We may judge the distance better, however, if we keep the following thought in mind. Let us not be overly concerned with welfare, that is, with the question whether the self-interested consumer is satis-

absolutely no indication where on the continuum of relative safety to draw his line.” *Industrial Union Dep’t v. American Petroleum Inst.*, 448 U.S. 607, 675 (1980) (Rehnquist, J., concurring). However, Justice Marshall, joined by three other Justices, found Congress to have been sufficiently definite. “The word ‘feasible’ has a reasonably plain meaning, and its interpretation can be informed by other contexts in which Congress has used it.” *Id.* at 717 n. 30 (Marshall, J., dissenting.)

A statutory standard so vague as to permit basic policy decisions to be made at the agency level might be considered an unconstitutional delegation of legislative authority; Justice Rehnquist, then, might have invalidated a great deal of legislation on the rule he applied in *Industrial Union*. Yet the courts, following Justice Marshall, stop short of this. See *A.L.A. Schechter Poultry Corp. v. United States*, 295 U.S. 495, 529–42 (1935) (invalidating President Roosevelt’s authority under the National Industrial Recovery Act to approve codes of “fair competition”). But see *United States v. Rock Royal Coop. Inc.*, 307 U.S. 533, 577–78 (1939) (upholding delegation of power to the Secretary of Agriculture to set “reasonable” milk prices).

61. For explanation, see generally K. DAVIS, *DISCRETIONARY JUSTICE: A PRELIMINARY INQUIRY* (1969). But see Jaffe, *The Illusion of the Ideal Administration*, 86 HARV. L. REV. 1183 (1973).

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

63. See Kennedy, *Cost-Benefit Analysis of Entitlement Problems: A Critique*, 33 STAN. L. REV. 387, 398–400 (1981).

fied. Let us be concerned as well with autonomy, that is, with the question whether people have some authority or say over the circumstances in which they form their preferences and the conditions under which they compete to satisfy them. The extra mile, then, would be longer not necessarily where more lives can be saved but where the individual is more imposed upon — where the risks he takes are less in his own hands.

This nation first regulated conditions in the workplace primarily as a response to the horrors that existed a century ago in sweat shops, mines, and company towns.⁶⁴ I have no idea whether these horrors were efficient, that is, whether they emerged as a result of free, uncoerced, and voluntary market transactions. Perhaps they did. I have no idea whether the benefits of a fifteen-hour workday to society were “worth” the costs. I have no idea whether child labor maximized overall societal wealth. I do know, however, that it does not matter. We simply are not going to return to a fifteen-hour workday, to child labor, or to an egregiously unsafe workplace whether to do so is efficient or not. Why then call for risk-benefit analysis? Why suppose that the problem with child labor is that the benefits do not equal the costs?

Laws that regulate the workplace and the environment — laws ranging from the Fair Labor Standards Act⁶⁵ to the Clean Air Act⁶⁶ — set forth an ideology concerning the standards a civilized society ought to set for itself and respect. Laws of this kind do not correct, but replace, market mechanisms for collective choice. They assure some autonomy for the ordinary citizen, by which I mean some success not in satisfying the preferences he or she happens to have, but in determining the background conditions under which he or she forms and pursues those preferences. Through these laws we get a normative purchase upon — we control — the moral character of our relations with one another.

VII

What are we afraid of? Do we fear that our health and safety are severely threatened by the risks associated, for example, with nuclear installations and industrial wastes? Perhaps. I have argued, however, that we may have more reason to resent than to fear these and other hazards. What we should fear, I believe, is that entitlements created by

64. For a summary, see J. FOLLMANN, JR., *THE ECONOMICS OF INDUSTRIAL HEALTH* 5-27 (1978).

65. 29 U.S.C. §§ 201-217 (Supp. III 1979).

66. 42 U.S.C. §§ 7401-7642 (Supp. III 1979).

public law and supported by the most rudimentary conceptions of morality will be treated as "benefits" for which individuals should be "willing to pay." The demand for risk-benefit analysis, as a Congressional staff scientist has said, "is the invention of those who do not wish to regulate, or to be regulated Its primary use in government decision-making is to avoid taking action which is necessary or desirable in order truly to protect the health of the public or the integrity of the environment."⁶⁷

There is a distinction between what we are willing to pay for as individual consumers of goods and services and what we determine as citizens we owe to each other and to our surroundings. There is a difference, in other words, between what we would do as individuals competing in a market and what we would do as members of the public building a conception of ourselves as a community. The great threat hazardous wastes and workplace pollution pose is not, perhaps, to our health and safety but to our sense of being a community capable of acting in association, not in competition, with each other. Economic approaches to pollution, more than anything, make us fear for that conception of ourselves.

67. Zimmerman, *Risk-Benefit Analysis: The Cop-Out of Government Regulation*, TRIAL, Feb. 1978, at 43, 44. Zimmerman was then staff scientist for the House Subcommittee on Health and the Environment.