

# RISK: Health, Safety & Environment (1990-2002)

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Volume 3  
Number 1 *RISK: Issues in Health & Safety*

Article 6

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January 1992

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Frank B. Cross, *The Risk of Reliance on Perceived Risk*, 3 RISK 59 (1992).

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# The Risk of Reliance on Perceived Risk

Frank B. Cross\*

During the 1970's, Chauncey Starr and others alerted society to the inaccurate risk perceptions held by the general public.<sup>1</sup> As documented in a variety of sources, the public's perceived risks from activities such as electric power production corresponded very poorly with "actual" or "objective" risks presented by these activities, as actually measured or estimated from empirical data. The initial commentaries tended to dismiss the perceived risks of the public as uninformed opinions to be ignored or corrected by decision makers.

A response to this position has increasingly arisen to defend reliance on perceived risk as opposed to what is often referred to as objective risk. The critics have observed accurately that the public concept of "risk" is complex and means more than a simple probabilistic estimate of morbidity or mortality. These critics have performed a service by making explicit the relevance of values in the assessment of risk. Some critics have gone even farther, though, to suggest that the public perceptions of risk are in some sense "better" than more scientifically grounded probabilistic estimates and that public perceptions should drive public policy decisions.

In fairness, these critics do not recommend the total exclusion of scientific information from the public policy debate. They may argue, however, that public perception should take some precedence over probabilistic estimates. These authors have made such suggestions as

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<sup>1</sup> See, e.g., Starr, *Introductory Remarks in SOCIETAL RISK ASSESSMENT: HOW SAFE IS SAFE ENOUGH?* 4 (R. Schwing and W. Albers eds. 1980). This work is quoted briefly in Thompson, *infra* note 2, at 3.

that “a reasonable person's concept of risk, vague as it is, is better suited to the regulatory requirements of risk management than are probabilistic concepts [of experts].”<sup>2</sup> Others have gone so far as to suggest that expert “assessments of probabilities and magnitudes of undesired outcomes... are largely irrelevant to societal technology choices.”<sup>3</sup> An increasing number of authors contend that the relative perceived risks of the public should be more important than “actual” risks in societal policy making.<sup>4</sup>

The defenders of reliance on public perceptions of risk generally do not elaborate on precisely what role such perceptions should play in government decision making, as opposed to probabilistic assessments of risk employing the scientific method. Perhaps these authors do not mean to be taken literally when they state that public perception is “best” or “better suited” to regulation, but they leave the distinct impression that popular perceptions should be more important than scientific probabilistic estimates.

The attack on traditional probabilistic risk perspectives and the defense of reliance upon risk perception is probably a natural consequence of post-modernist thought, which questions the very existence of such concepts as truth and objective reality. In this view, reality is no more than perception. This approach found its first prominent outlet in literature, where such leading deconstructionists as Stanley Fish could reportedly proclaim that the theory “relieves me of the obligation to be right... and demands only that I be interesting.”<sup>5</sup> The defenders of public perception share similarities with

<sup>2</sup> Thompson, *Risk Objectivism and Risk Subjectivism: When Are Risks Real?*, 1 RISK 3, 22 (1990).

<sup>3</sup> Rayner & Cantor, *How Fair is Safe Enough? The Cultural Approach to Societal Technology Choice*, 7 RISK ANALYSIS 3, 3 (1987).

<sup>4</sup> See, e.g., Gillette & Krier, *Risk, Courts, and Agencies*, 138 U. PA. L. REV. 1027 (1990) (reviewing the support for this contention). The authors state: “Our objective is not to show that the popular perspective is best, though we happen to think it is.” *Id.* at 1076.

<sup>5</sup> D. LEHMAN, SIGNS OF THE TIMES 75 (1991).

deconstructionist defenders of the preeminence of a text's reader. The post-modern critique soon evolved into the so-called hard sciences, with claims like "the laws of physics are merely social conventions, like traffic laws."<sup>6</sup>

This post-modernist criticism need not be accepted, however. The apparently progressive post-modernists may prove to have inescapable roots in traditionalism, conservatism, and oppression. Before analyzing the implications of risk perception and the post-modernist attack on the search for objective truth, it is important to understand the nature and implications of the disputed dialectic between truth and perception.

In a sense, the dichotomy between perceived and actual risk is a false one. All relevant risk measures employ some human agency, so all are literally perceived risks. There is no realistic means to eliminate human perception and evaluation from the risk assessment process. The dichotomy is still practically meaningful, however, and the key to the debate is the basis for the varying perception. The real question is the value of reliance on risks as perceived by the general public or on risks as perceived by "experts" (who tend to assess risks based on data and results produced by the scientific method). The real dispute is between the relative legitimacy of the bases for the perceptions of the general public and the bases for the scientific method. For simplicity, I will distinguish these as "perceived risk" and "scientific method risk."

The defenders of reliance on perceived risk generally do not contend that publicly perceptions of risk are more accurate (in the sense of being predictive) than is scientific method risk measures. Some of these authors engage merely in a philosophical analysis of what "risk" means. They often stress the irrelevance of "accuracy" and emphasize that risk can be seen as more than a scientific probability assessment and that values properly enter into determinations of risk.<sup>7</sup> These

<sup>6</sup> *Id.* at 26.

<sup>7</sup> See, e.g., Rayner & Cantor, *supra* note 3 (arguing that risk fairness is the key consideration); Gillette & Krier, *supra* note 4, at 1085 (describing risk as containing an "ethical-political question"); Linnerooth, *The Political Processing of Uncertainty*, 56 ACTA PSYCHOLOGICA 219, 228-229 (1984) (arguing against "rationalist" model of

commentaries generally assume without justifying, however, that the values underlying perceived risk are superior or more legitimate than the values underlying scientific method risk measures. I do not intend to enter a metaphysical debate over what risk “is.” Rather, I intend to investigate the sociological implications of the differing constructs of risk.

Reliance on subjective perceived risk, as contrast to scientific method risk, is generally considered progressive and liberal. Advocates of scientific method risk in environmental policy generally appear as defenders of large polluting corporations, while defenders of perceived risk appear as battlers for the “little guy,” who mistrusts the large corporate powers. While the actual progressiveness of the present defenders of publicly perceived environmental risk against large corporations is debatable,<sup>8</sup> it may be assumed for now. Even so, a regime that relies predominantly upon perceived risk would have a natural tendency toward illiberal societal consequences.

Perceived risk centrally differs from scientific method risk in that it may more readily be manipulated. Consider an unusually hazardous pesticide that causes one thousand deaths per year. The producers of the pesticide may hire consultants, contribute to politicians, and take other policy making).

<sup>8</sup> There are several possible reasons why use of perceived risk could defeat societal objectives that are generally considered progressive or liberal. First is the issue of trade-offs. If reliance upon perceived risk causes the overregulation of, say, new sources of air pollution and thereby indirectly causes the underregulation and perpetuation of old sources of air pollution, the use of perceived risk could undermine health protection among those who need it most. Second, overregulation carries costs, which may cause the loss of employment opportunities. If the needy poor lose such opportunities for employment, another liberal goal would be defeated. The reliance on perceived risk may favor the natural environment over poor or disadvantaged individuals, which is dubitably liberal.

Post-modernists reject all such teleological or utilitarian arguments, however. They condemn “performativity,” which is decision making based on the outcome of policies or their pragmatic effect. These individuals reject performativity as placing undue faith in reason, apparently without regard to any empirical test of whether such faith is justified.

measures to obscure the true risk of their product and maintain its production. Ultimately, though, objective truth is on the side of the regulators who can demonstrate the unsafeness of the pesticide. Of course, such scientific truth does not always win out in our present regulatory system, which can be slow and uncertain. The substantial amount of strict environmental regulation that has been adopted does demonstrate that powerful economic interests will often lose in a battle against scientific data. If industry truly dominated regulatory estimates of risk, it seems unlikely that government would have adopted rules compelling tens of billions of dollars in annual compliance costs.<sup>9</sup>

In a regime of perceived risk, however, scientific data is not enough — that data must be presented to the relevant perceivers in a convincing manner. The struggle becomes one over what advocacy group can best affect public perception. Framing the struggle in this way gives an enormous advantage to groups possessing economic and other sources of social power and hurts disenfranchised groups. Powerful economic interests cannot change objective truth, but they can change public perception. Money and media are influential.

Liberal editorial cartoonist Mark Alan Stamaty has lampooned reliance on public perceptions in decision making. His character, a rather dull congressman named Bob Forehead, proclaimed to his constituents:<sup>10</sup>

Recently, there is evidence that lobbying by businessmen and politicians succeeded in overruling a determination by scientists that certain species should be listed as “endangered.” If Lobbying is now superior to science in determining scientific fact, the day can't be far off when public opinion polls will decide what is scientifically true. And economically true as well. And one day in the near future, a majority of Americans polled will agree that our

<sup>9</sup> In 1990, pollution control activities in the U.S. will cost over \$100 billion and represent over 2% of our gross national product. ENVIRONMENTAL PROTECTION AGENCY, ENVIRONMENTAL INVESTMENTS: THE COST OF A CLEAN ENVIRONMENT, at v (Dec. 1990).

<sup>10</sup> Stamaty, *Washington*, Austin American-Statesman, Sept. 14, 1991, at A21.

“deficits” won't exist. And they won't!

Next perhaps the homeless will be “perceived out of existence.” Although Stamaty presented this position as ridiculous, some defenders of perceived risk come close to endorsing the Forehead position.

Reliance on perception is a prescription for entrenching powerful groups and their interests. The powers-that-be have long recognized the benefits of perception for combatting uncomfortable truths. Consider the following historical examples:<sup>11</sup>

For something not to exist, it is sufficient to declare that it does not exist. The Guatemalan dictator Manuel Estrada Cabrera decreed in 1902 that all of the country's volcanos were calm, while an avalanche of lava and mire erupting from the Santa Maria volcano razed more than a hundred villages in the outskirts of Quezaltenango. In 1905, the Colombian Congress approved a law establishing that Indians did not exist in San Andres de Sotavento and other territories where the streams of oil had suddenly sprung up; the Indians who existed were made illegal, and the oil companies were therefore able to kill them with impunity and keep their lands.

Naziism surely thrived on convincing the German people of a scientific lie of Aryan superiority, and Communism has its own history of denying truth through modifying public perceptions.

Lest the above examples seem too extreme and foreign to be threatening in the contemporary U.S., there are clear and present circumstances where perceived risk leads to questionable ethical decisions. For example, numerous successful New Yorkers with children move to the suburbs in the interest of family safety. Yet empirically grounded statistics indicate that among comparable socioeconomic groups, the risk of death to children is much greater in the suburbs than in Manhattan.<sup>12</sup> Perceived risk, though, says move to Westchester County. One suspects that this perception is grounded in

<sup>11</sup> Galeano, *Language, Lies and Latin Democracy*, Harper's, Feb. 1990, at 21.

<sup>12</sup> See Hall, *Parents Weigh Safety of New York vs. Suburbs*, N.Y. Times, Sept. 5, 1991, at B1, B5 (national edition).

fear of the many different ethnic groups found in the city.

In a far more distressing example, there is a widespread public perception that young black males are exceptionally dangerous and violence-prone.<sup>13</sup> Yet statistical data from the Federal Bureau of Investigation and other sources indicates that young black males may be no more violence-prone than other races and that the perception may be due to bias in whom is arrested.<sup>14</sup> To proponents of risk perception, however, this truth is not so important so long as blacks are perceived as more dangerous, the government should deal with them accordingly. Such an outcome is antithetical to liberality and human rights. A very similar tale can be told with regard to the largely erroneous public perception that the mentally ill are particularly dangerous to others.<sup>15</sup>

Another example of the inequity of reliance on perceived risk is provided by this nation's experience with Acquired Immune Deficiency Syndrome (AIDS). Objective science indicates that AIDS is not transmissible through casual contact.<sup>16</sup> For a substantial portion of society, however, there is a significant perceived risk from casual contact with an AIDS sufferer. As a consequence, medical personnel have denied services to AIDS victims, rescue personnel have denied mouth-to-mouth resuscitation or even ambulance transportation, and school authorities have refused education to AIDS-infected children.<sup>17</sup> Because AIDS is especially prevalent in the homosexual community, the fear of AIDS has produced anti-gay discrimination and even

<sup>13</sup> See Stark, *The Myth of Black Violence*, N.Y. Times, July 18, 1990, at A15 (national edition) ("Are blacks, particularly young black men, more prone to violence than whites? The belief that they are is widely accepted by the public, media and government.")

<sup>14</sup> *Id.*

<sup>15</sup> See Shain & Phillips, *The Stigma of Mental Illness: Labeling and Stereotyping in the News*, in RISKY BUSINESS: COMMUNICATING ISSUES OF SCIENCE, RISK, AND PUBLIC POLICY 61 (L. Wilkins & P. Patterson eds. 1991).

<sup>16</sup> See generally U.S. DEPT. HEALTH AND HUMAN SERVICES, SURGEON GENERAL'S REPORT ON ACQUIRED IMMUNE DEFICIENCY SYNDROME (1986).

<sup>17</sup> See *Survey on the Constitutional Right to Privacy in the Context of Homosexual Activity*, 40 U. MIAMI L. REV. 521, 630 (1986).



violence.<sup>18</sup> AIDS provides a clear example of how risk perception is employed to further victimize a community that already suffers discrimination and how that community needs scientific method risk measures to defend itself.

All of these cases illustrate a central value problem with risk perception. Minorities, perceived deviants, and the unknown in general all seem risky. Although the reality of these risks can be disproved through the scientific method, the values of perceived risk nevertheless proclaim the riskiness of blacks, or gays, or whatever minority group seems threatening. Perceived risk is thus a potentially powerful tool of an entrenched and xenophobic status quo against outsiders.

It is ironic that advocates of risk perception typically defend their perspective as a counterweight to empowered elites who supposedly control scientific risk assessment. One author, for example, contends that "the issue is not risk, but power; the power to impose risks on the many for the benefit of the few."<sup>19</sup> This perspective may have some limited truth in some contexts of today's regulatory world, which is predominantly based upon scientific method risk assessment. Yet it is inordinately naive to believe that a shift toward perceived risk would cause the elites to surrender their interests. It seems far more likely that the empowered elites would redeploy their resources in order to manipulate public perceptions of risk more effectively.

The powerful elites are particularly well positioned to manipulate public perceptions. Almost by definition, these elites control or at least influence the media and other tools capable of influencing the public. In a world of objective science, the elites may attempt to deny the existence of Indians in San Andres de Sotavento, but cannot change the fact of their existence. In a world of pure perceptions, though, the elites may attempt to deny the existence of Indians in San Andres de Sotavento

<sup>18</sup> See Note, *Characterization and Disease: Homosexuals and the Threat of AIDS*, 66 N.C. L. REV. 226, 237-238 (1987).

<sup>19</sup> C. PERROW, *NORMAL ACCIDENTS: LIVING WITH HIGH RISK TECHNOLOGIES* 306 (1984).

and, given the right public relations firm, may succeed. The scientific method becomes an essential tool for the disenfranchised to fight abuses of the empowered elites.

If the defenders of reliance on risk perception consider themselves liberal, they should be worrying about the accompaniment of some very strange bedfellows. Their companions include middle class whites who fear minority crime, homophobes, religious fundamentalists, and fascists, at least in foreign nations. While these instances are only examples, they are substantial ones. In addition, the preceding liberal critique of reliance on risk perception finds substantial support in both history and social science.

The anthropologist Mary Douglas has written extensively on the cultural constructs underlying risk perception. She observes a tendency to seek moral, rather than scientific, bases for risk and to equate risk with sin. Her categorization of an "individualist" culture, based on individual risk perceptions (as opposed to those of a scientific hierarchy) involves the inevitable stigmatization of minorities as "dangerous" or sinful.<sup>20</sup> Perceived risk becomes a tool in the suppression of societally marginal minority groups. Charles Rosenberg has observed:<sup>21</sup>

Cultural values and social location have always provided the materials for self-serving constructions of epidemiological risk. The poor, the alien, the sinner have all served as convenient objects for such stigmatizing speculations.

Such marginal groups have little opportunity to alter risk perceptions held by the broad public.<sup>22</sup>

<sup>20</sup> Douglas, *Risk as a Forensic Resource*, *Daedalus*, Fall 1990, at 13-16.

<sup>21</sup> Quoted in *id.* at 15.

<sup>22</sup> It has been suggested that the defense of perceived risk uses the concept as a proxy for the normative issue of consent to risk. Consent, or the voluntary acceptance of risk, is surely a defensible standard, when used on an individual basis. Use of perceived risk in government policy making, though, relies at best upon some sort of majoritarian group consent that offers little protection of minority interests. In addition, in this context, the argument from consent depends on an assumption that the people want government regulation based on their group perceptions rather

Political scientists also have found a liberalizing effect of science and objective truth. Yaron Ezrahi has noted the important political function of science in the modern liberal-democratic state.<sup>23</sup> Science combats the ability of empowered elites to command action based on arbitrary or self-serving motives, by holding the elites accountable to an external truth. The alternative to reliance on science is the dependence “upon traditional, hierarchic, religious, and other nondemocratic authorities.”<sup>24</sup> Professor Ezrahi argues that the “[c]ommon acceptance of formal rules is indeed the only alternative to direction by a single will man has yet discovered.”<sup>25</sup>

History especially confirms the dangers of indeterminism and reliance on popular, rather than scientific truth. The witch trials of the Inquisition and at Salem are but one prominent example. National public acceptance of Nazi science and disastrous Lysenkoism further validate the danger. When “the theatrical is free from constraints imposed in the name of the ‘factual’ and the ‘real,’” the result in this century has been “the antidemocratic politics of totalitarian systems like fascism.”<sup>26</sup>

The dispute between scientific method and public perception traces its roots to the Enlightenment. Although the Enlightenment’s enormous faith in science can be criticized, it nevertheless was “a great liberating movement which in its day eliminated a great deal of cruelty, superstition, injustice and obscurantism.”<sup>27</sup> And it is important to remember that the romantic resistance to the Enlightenment faith in science was led by the proto-fascist Joseph de Maistre and the less-threatening but undeniably conservative Edmund Burke. Isaiah Berlin has written that the historic “abandonment of reason and all sense of reality” in subjectivism has produced “often monstrous moral and than scientific method, an assumption that is not yet proved.

<sup>23</sup> Y. EZRAHI, *THE DESCENT OF ICARUS* (1990).

<sup>24</sup> *Id.* at 195.

<sup>25</sup> *Id.* at 20, quoting Friedrich Hayek.

<sup>26</sup> *Id.* at 282.

<sup>27</sup> I. BERLIN, *THE CROOKED TIMBER OF HUMANITY* 34 (1990).

political consequences” in totalitarian states.<sup>28</sup> Hegel contrasted the “genuine truth” of reason with the artificial truth that is “veiled behind subjective ideas and feelings,” and wrote that “[t]hose who... are assured that the whole truth is directly present in their unschooled opinions, fail to apply themselves to the task of exalting their subjectivity of truth and to knowledge of duty and objective right. The only possible fruits of their attitude are folly, abomination, and the demolition of the whole ethical order....”<sup>29</sup> With respect to the post-modern view that “there is no such thing as truth or objectivity, that there are only points of view,” a critic logically observed that when “there is no difference between right and might, it is just as well to be on the side of might.”<sup>30</sup> History and philosophy teach us the hazards of reliance on general public perceptions of truth as a guide to action.

Perhaps the most persuasive defense of objective reality and the scientific method can be found in the seemingly alien field of literature. Few tales of oppression are more compelling than 1984, and George Orwell’s authoritarian Big Brother recognized the need to destroy the concept that reality is something objective and testable. To dominate and oppress, Big Brother propagated the perception that neither words nor reality had real external meaning, declaiming that “reality exists in the human mind, and nowhere else.”<sup>31</sup> Totalitarians find such minds far more malleable than the authentic scientific method.

The above criticism of reliance on risk perception does not imply that democratic governments should ignore public values and perceptions of risk entirely. Such a contention would be hopelessly naive in a democracy. Unquestioning deference to the conclusions of scientists is also potentially counterproductive. History shows that perceptions or opinions of government scientists, if not science itself, can be controlled or manipulated by authoritarians much like the

<sup>28</sup> *Id.* at 58.

<sup>29</sup> See 46 GREAT BOOKS OF THE WESTERN WORLD 86 (R. Hutchins ed. 1952).

<sup>30</sup> Todorov, *Crimes Against Humanities*, New Republic, July 3, 1989, at 28.

<sup>31</sup> *Id.*

perceptions of the public. Action should not be exclusively driven by government scientists. The dangers of risk perception do caution that the pursuit of truth through the scientific method should be the object of governance. The people need not be foreclosed from risk determination, but reality (as ascertained through the scientific method) must remain as a check on the powers of government to act on public perceptions. Government systems should be constructed so as not to defer automatically or even presumptively to public perceptions of risk, unchecked by scientific data. While the public must remain the ultimate authority in a democracy, capable of dismissing governments, public perceptions need not directly direct all specific policy actions, as if the U.S. were governed as ancient Athens.

Reliance upon the scientific method protects against the illiberalism of perceived risk. As an external value, scientific truth cannot itself be manipulated by oppressors. Kant assured readers that "reason is sufficiently held in check by its own power, the limits imposed on it by its own nature are sufficient."<sup>32</sup> Indeed, the scientific method is a far better check on the manipulations of scientists themselves than is public perception. Lysenkoism might convince the Soviet public of its erroneous precepts but could not withstand the scrutiny of outside scientific investigation. The search for objective truth through the scientific method offers a far sounder value foundation than does government reliance on public perceptions of risk.



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<sup>32</sup> See *supra* note 29, at 221.