

Dealing with Risk: Why the Public and the Experts Disagree on Environmental Issues.

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The dilemmas of risk management decisions have been the focus of scholarly research across a variety of disciplines including cognitive psychology, anthropology, philosophy, and law. The responses of a culture to technological risks inevitably raise issues about the limits and forms of rationality, trust in institutions, elite versus participatory decision making, and the factors that determine human concern or neglect.

Howard Margolis, a professor of public policy at the University of Chicago, who has written some notable books about patterns of thought and rationality, offers an important new theoretical perspective to account for why the public and experts disagree about environmental risks. Margolis disputes the conventional wisdom, much of it derived from risk perception data, that expert-lay disagreements are best explained through concepts of power, trust, autonomy, rationality, or ideology. Nor can these disagreements be accounted for by mere lack of information, an idea that has spawned a new field called risk communication. Margolis writes, "What we are seeing is the unconscious using of habits of mind that the very person involved would be likely to deem inappropriate if aware of what is governing intuition."

Margolis begins his inquiry by persuading us, through the use of a clever puzzle involving colored poker chips, that our intuitions about probability, however strong, are not always reliable. Even well-informed students of probability theory can be fooled. Using the poker chips to illustrate how habits of mind distort rationality, Margolis skillfully constructs his explanation for faulty intuition of environmental risk based on three concepts: frames, fairness, and fungibility.

The concept of frame, a variant of the elusive Kuhnian paradigm or the heuristic of cognitive psychology, represents the deeply embedded factors -- social and cultural -- that wed us to an intuition. Evidence is often inconsequential against the incorrigible frame. The term "fairness" signifies the influence that a sense of injustice has on the perception of risk. As Margolis writes, "Once a situation is perceived as unjust, it is difficult ... to subject it to cold calculations of costs against benefits or of comparative risk." Children dying from air bags is just such a case where the sense of injustice overrides any cost-benefit calculation. The last of Margolis's three concepts, fungibility, offers the most explanatory power in his framework. By "fungibility," he means one's willingness

to consider the full panoply of trade-offs when facing a risk decision. Fungibility means one considers the benefits of taking a risk (as in using artificial sweeteners), the drawbacks of taking a risk (as in not removing asbestos from a ceiling), the drawbacks (and costs) of not taking a risk (as in eating only pesticide-free food that has harmful fungi), and the benefits of not taking a risk (as in lowering the risk of cancer by substituting bottled water for tap water).

It is the failure of individuals to embrace the "habit of fungibility" -- moving back and forth through the risk-benefit-cost domain -- that offers a parsimonious explanation, according to Margolis, of the growing list of factors that help account for the differences between lay and expert risk decisions and between subjective and objective risk estimates.

This book contributes a new important theoretical dimension to the field of risk studies and should be read along with Douglas and Wildavsky's *Risk and Culture* and Kasperson's theory of social amplification of risk. The book is not without its fault lines. Margolis fails to take his own concepts far enough. Too much of the book's emphasis is on getting laypeople to see risks like experts. Experts, too, need fungibility. They must understand that technical rationality and cultural rationality may not coincide and that gaps between public intuitions and expert constructions of risk may be reduced in two ways: by more public knowledge, especially knowledge of the scientific uncertainty that underlies risk estimates, and by authentic democracy, since social empowerment encourages fungibility.