Hazard Versus Outrage:
A "Thought Experiment" and a Real Experiment (p. 1)

The Thought Experiment

Imagine a roomful of citizens listening to an expert on pesticide risks, someone like Bruce Ames of the University of California. Ames has done research suggesting that natural carcinogens in food are much riskier than pesticide residues, that broccoli (for example) is more carcinogenic than dioxin. The speaker is trying to convince his audience of this, a tough sell, obviously. But the audience is calm, and the speaker is persuasive. So over the course of an hour or two he succeeds in convincing his audience that broccoli is more carcinogenic than dioxin. They had a hazard misperception and it has been corrected. Now up comes another speaker. "Now that we know that broccoli is more carcinogenic than dioxin," the second speaker inquires, "which one do we want the EPA to regulate?" What would the audience respond? The dioxin.

The Real Experiment

Newspaper articles were written about a hypothetical chemical spill in a residential neighborhood. Three factors were systematically varied: whether the spill was technically serious or technically minor; whether the article contained a lot of technical information or very little; and whether the agency responsible for the cleanup was open and responsive and the neighbors were calm, or the agency was secretive and unresponsive and the neighbors were upset. Some 600 adults read one story each, then answered questions about how serious they considered the spill (for example, whether they would be willing to buy a house in the spill area). The results: The technical detail in the articles had no effect on perceived seriousness. The seriousness of the spill (the spill was 100,000 times as bad in the "high" stories as in the "low" stories) did affect perceived seriousness. But outrage -- the relationship between the agency and the neighborhood -- affected perceived seriousness more than five orders of magnitude of actual seriousness. (Peter M. Sandman, Paul M. Miller, Branden B. Johnson, and Neil D. Weinstein, "Agency Communication, Community Outrage, and Perception of Risk: Three Simulation Experiments," *Risk Analysis*, 13:6, 1993, pp. 585-598. Available online at www.psandman.com/articles/simulate.htm)

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Conclusion

When people are outraged, they tend to think the hazard is serious. Trying to convince them that it's not as serious as they think is unlikely to do much good until steps are taken to reduce the outrage.

For more about my take on this issue, see:

- Testing the Role of Technical Information in Public Risk Perception (Fall 1992) – www.psandman.com/articles/johnson1.htm
- Outrage and Technical Detail: The Impact of Agency Behavior on Community Risk Perception (Nov 1992) – www.psandman.com/articles/outrage.pdf
- Agency Communication, Community Outrage, and Perception of Risk: Three Simulation Experiments (1993) – www.psandman.com/articles/simulate.htm
- Communications to Reduce Risk Underestimation and Overestimation (1998) – www.psandman.com/articles/underest.htm

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