"Improving" Risk Communication and Risk Management: Legislated Solutions or Legislated Disasters?

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Recently Congress has been moving to enact legislation that enhances the role of risk analysis in policy-making. The various risk-benefit analyses, risk comparisons, and risk characterizations mandated by the bills under consideration may provide valuable data for risk analysts and risk managers.(1) However, we wish to question a central assumption underlying this legislation: that the provision of more information through these procedures will improve risk communication and reduce conflict over risk management.

For example, one editorial suggested that

> To enhance the proper reporting of environmental risks to the public, . . . Congress [should] insist that the degree of scientific uncertainty in risk estimates be reported to the public. . . . (p. 141)(1)

Others assume that explaining uncertainty in health risk assessment will lead to more informed citizens and promote trust in the producers of risk estimates.(2)

However, these assumptions do not appear to be based on empirical evidence. Our recent research(3) suggests that

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discussions of uncertainty in health risk assessment may tend to increase perceived risk. Presentation of information about uncertainty seems to have little effect on trust in the agency providing the risk assessment, except for a minority for whom discussions of uncertainty appear to increase suspicions about the agency's honesty and competence.

In view of these findings and the general dearth of evidence, it is difficult to understand the support on risk communication grounds for such bills as H.R. 2910, the so-called Risk Communication Act of 1993.[4] This bill would require USEPA to characterize the risks of a given activity or substance, and present this information to the public, in great detail. The agency must judge inconsistencies between positive and negative laboratory and epidemiological data, note alternative models, exposure scenarios and assumptions, provide best risk and population estimates (with uncertainty ranges noted), and risk comparisons, among other tasks.

Nowhere in this bill or published reviews of it does there appear to be any discussion (much less evidence) showing that provision of this information will make citizens better informed. It is disturbing to see legislators advance legislation that will have major national impacts without data demonstrating need and efficacy. It is surprising that people who would not dream of proposing a risk management action without evidence showing that it would improve public health and safety would support such a bill without similar evidence to support it.

Legislators and many risk analysts appear to be misdiagnosing

the problem. Seeing great social conflict over environmental issues, they assume that the problem is with the public. They believe the solution is risk communication, defined as conveying technical risk information to citizens in order to lead them to the same risk management conclusions as the experts.

This hypothesis ignores research findings indicating that technical risk information is far less important to social conflict over hazards than other factors, such as trust.[5] Experts who engage in great debates over risk assessment--e.g., over the validity of extrapolating from animal data to humans[6]--seem to forget those arguments when they expect the authority of science to awe laypeople into silence. That authority does not exist for risk assessment, and may not exist for any science today.

Thrusting the details of a limited science like risk assessment into the public arena, as bills like H.R. 2910 propose, appears to us to be a recipe for disaster. Fully airing the complexities of risk analysis and the disagreements among experts is far more likely to arouse public distrust, and demands for risk reduction, than it is to assuage their concerns. It is possible, although unlikely, that provision of the information required by H.R. 2910, S. 110, and other bills would ease conflict within the community of hazard policy-makers. It is a near-certainty that this information will do nothing to still the wider public debate without greater inclusion of citizens in risk management decisions. It may even increase alienation from a policy process that seems to many citizens to ignore their concerns, attend to all interests but that of the public good, and engage in technical language to hide

malfeasance and incompetence.

We agree with our fellow scientists that, all else being equal, more information is better. We would be disturbed if anyone drew from these comments or our research a conclusion that technical information should be withheld from the public. What we object to is the apparent assumption that knowledge about the effectiveness of potential means for conflict resolution is unnecessary for policy.

REFERENCES

1. John D. Graham, "Time for Congress to Embrace Risk Analysis?," Risk Analysis, 14, 139-142 (1994).

2. B.J. Hance, Caron Chess, and Peter Sandman, Improving Dialogue with Communities: A Risk Communication Manual for Government (Trenton: New Jersey Department of Environmental Protection, 1988); F.H. Habicht, Guidance on Risk Characterization for Risk Managers and Risk Assessors (Washington, D.C.: Office of the Administrator, U.S. Environmental Protection Agency, 1992); Carnegie Commission on Science, Technology, and Government, Risk and the Environment (New York, 1993).

3. Branden B. Johnson and Paul Slovic, Explaining Uncertainty in Health Risk Assessment: Effects on Risk Perception and Trust (Phase 1 Final Progress Report, Cooperative Agreement No. CR820522, U.S. Environmental Protection Agency, 1994).

4. H.R. 3910, 103d Congress, 1st Session (August 6, 1993).

5. Branden B. Johnson, Peter M. Sandman, and Paul Miller, "Testing the Role of Technical Information in Public Risk Perception," RISK:

Issues in Health & Safety, 3, 341-364 (1992); Branden B. Johnson, "Advancing Understanding of Knowledge's Role in Lay Risk Perception," RISK: Issues in Health & Safety, 4, 189-212 (1993); Paul Slovic, "Perceived Risk, Trust, and Democracy: A Systems Perspective," Risk Analysis, 13, 675-682 (1993).

6. Nancy Kraus, Torbjorn Malmfors, and Paul Slovic, "Intuitive Toxicology: Expert and Lay Judgments of Chemical Risks," Risk Analysis, 12, 215-232 (1992).