

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

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

Article 3

June 1992

Risk Assessment and Risk Management: Mending the Schism

Richard M. Sedman

Paul W. Hadley,

Follow this and additional works at: <https://scholars.unh.edu/risk>



Part of the [Organizational Behavior and Theory Commons](#)

Repository Citation

Richard M. Sedman, *Risk Assessment and Risk Management: Mending the Schism*, 3 RISK 189 (1992).

This Comment is brought to you for free and open access by the University of New Hampshire – School of Law at University of New Hampshire Scholars' Repository. It has been accepted for inclusion in RISK: Health, Safety & Environment (1990-2002) by an authorized editor of University of New Hampshire Scholars' Repository. For more information, please contact ellen.phillips@law.unh.edu.

Risk Assessment and Risk Management: Mending the Schism

Richard M. Sedman and Paul W. Hadley*

Introduction

In recent decades, risk reduction has become a major mandate at all levels of government. This has manifested itself in a plethora of new laws and regulations aimed at reducing risks associated with hazardous chemicals, motor vehicles, floods, airline travel, nuclear power generation, occupational-related mishaps and law enforcement.

Concurrently, an effort has been made to develop a philosophy/strategy for assessing and managing risks, and a 1983 National Research Council (NRC) report¹ offered important recommendations. Much of that report focused on technical issues of risk assessment, but one recommendation did address risk management. It consecrated the doctrine that risk assessment should be kept separate and independent of risk management.²

Experience shows that difficulties can arise from a blurring of the distinction between the two elements. If risk management considerations (for example, the economic effects of a particular control action for a particular chemical) are seen to affect either the scientific interpretations or the choice of inference options in a risk assessment, the credibility of the assessment inside and outside the agency can be compromised, and the risk management decision

* Dr. Sedman received his Ph.D. (pharmacology/toxicology) from the University of Iowa. He has over ten years of experience cleaning up hazardous waste sites and assessing hazardous waste treatment technology.

Mr. Hadley has degrees in biochemistry and civil engineering from the University of California, Davis. He is also experienced in hazardous waste site evaluation, remediation and risk assessment.

¹ COMMISSION ON LIFE SCIENCES, NATIONAL RESEARCH COUNCIL, RISK ASSESSMENT IN THE FEDERAL GOVERNMENT: MANAGING THE PROCESS (1983).

² *Id.* at 152.

itself may lose legitimacy.

This recommendation has received surprisingly little discussion. A recent paper did analyze several case studies and conclude that risk assessors:³

must be able to step out of their role as the interpreters of scientific data and, together with risk managers, provide a bridge between science and society at the boundaries where the two interact.

Yet, the authors nevertheless endorse “the central role of objective scientific analysis and the distinction between assessment and management activities.”⁴

While there is justification for separating risk assessment and management, we would like to see more attention given to the possible limitations of that approach. A decade of experience has passed since the NRC report was published, and it seems appropriate to reexamine its recommendations, focusing particularly on instances where it may not work.

Experience is the primary justification for sequestering risk assessment from management. It seems to us that there are numerous situations where risk is routinely assessed and important risk management decisions are or have been undertaken without a separation of assessment and management. Here, we explore some of those situations and suggest that they may cast some doubt on the wisdom of the universal separation of risk assessment and risk management activities.

Analogous Experience

Physicians routinely make a diagnosis and then, when appropriate, afford treatment, acting respectively as risk assessors and managers. The knowledge of the patient’s history and knowledge gained in making the diagnosis appear to be essential to a successful outcome. Even when a specialist is brought in or a second opinion is sought, the new

³ Halina S. Brown & Robert Goble, *The Role of Scientists in Risk Assessment*, 1 RISK 283, 307 (1990).

⁴ *Id.*

physician does not rely on the prior diagnosis but reevaluates it prior to treatment. In fact, one complaint we have repeatedly heard about health maintenance organizations is that "factory style" operations interfere with the ability of physicians to know patients sufficiently well to provide good medical care.

Clearly, there are potential disadvantages to the physician as risk assessor and manager. For example, excessive or unnecessary diagnostic procedures may be performed, or expensive treatment may be recommended where a physician could realize a financial gain. In spite of such problems, we doubt that many patients would want to be treated by a physician who did not thoroughly understand their condition.

About twenty years ago, in an attempt to deal with similar potential conflicts of interest, a string of small shops opened to diagnose automobile troubles. The underlying idea was that diagnoses would be "unbiased" by profits that might be realized in rendering subsequent repairs. Notwithstanding considerable appeal of this approach, a review of current yellow pages for the Sacramento area reveals essentially no exclusively diagnostic auto repair businesses. Whatever the theoretical advantages of diagnostic shops, consumers apparently did not support them. Perhaps, failure to link troubleshooting to repair and service led to misdiagnosis and inflated costs. In any case, consumers have spoken and appear to demand that autos be fixed before leaving the shop.

As a third example, consider war. War is risky business. The last two major wars fought by the U.S. had decidedly different outcomes. Perhaps this was influenced by differences in approaches to risk assessment and management.

During the Persian Gulf conflict, ultimate decisions appeared to be made by field commanders who were well acquainted with potential risks. In contrast, during the Vietnam war, such decisions were made by commanders in Washington and Saigon who, by and large, did not directly participate in risk assessments. While field risk assessors repeatedly informed distant managers that the war was not going well, managers chose to use measures such as "body counts" and "territory pacified" to support the proposition that the war was being won.⁵

⁵ NEIL SHEEHAN, A BRIGHT SHINING LIE: JOHN PAUL VANN AND AMERICA IN

Nonmilitary problems had to be addressed during both conflicts. However, the difference in the outcomes may be due in part to the participation of the risk managers in risk assessment during the Persian Gulf war.

Another notable consequence probably attributable to risk management's being separated from assessment was suffered by the space shuttle, Challenger, and its passengers. The potential for failure of seals on a solid rocket booster was well known to certain engineers/risk assessors⁶. However, risk managers, who had to deal with many other issues, elected to launch the shuttle. Perhaps that tragedy could have been avoided if those with the most knowledge of the workings of this complicated technology had been responsible for the launch.

Finally, consider the construction of the Panama Canal. Almost 100 years ago, after expropriating land from Colombia, U.S. attempts to build the canal were in disarray.⁷ As had occurred in an earlier French effort, construction was taking a terrific toll on workers, was over budget and was behind schedule.

Management of the project was given over to a railroad engineer who immediately shut down the project for several years to improve housing, sanitation and disease control. Then, instead of immediately renewing excavation, he constructed a railroad.

All this was accomplished in an atmosphere of extreme controversy stemming from budget overruns, time delays and political pressure. Fortunately, the project manager was involved in the assessment of these problems and was able to undertake the appropriate measures in the face of terrific pressure to get on with the actual excavation of the canal. On the third try, it was built and still works as designed.

VIETNAM (1988); DAVID H. HACKWORTH, *ABOUT FACE, THE ODYSSEY OF AN AMERICAN WARRIOR* (1989).

⁶ *Fixing NASA*, Time, June 9, 1986, at 14. See also, William R. Freudenburg, *Nothing Recedes Like Success? Risk Analysis and the Organizational Amplifications of Risk*, 3 RISK 1, 12-14 (1992).

⁷ DAVID McCULLOUGH, *THE PATH BETWEEN THE SEAS: THE CREATION OF THE PANAMA CANAL* (1977).

Discussion and Conclusions

The doctrine that risk should be managed by a separate group of managers is consistent with broader trends that developed in the 1970's. Schools of management adopted the belief that a good manager, using the proper tools, should be able to manage anything. It is now being generally realized that effective managers must know their product.⁸ There is no reason to believe that this is not as true for managing risk as for managing anything else.

A natural consequence of managers not participating in risk assessment is the emphasis on nonproduct issues. Often risk managers will focus on issues they understand. These include public relations, process, meetings, micromanagement, mission statements, community relations, politics and economics. How can risk be the focus of risk management if the manager isn't knowledgeable about how management activities will influence risk?

Although the examples given earlier may be informative, it would be a vast oversimplification to suggest that their outcomes were solely determined by linking or failing to link risk assessment with risk management. Nevertheless, they tend to suggest that research is warranted before we understand the limits of the NRC recommendation for separating risk management from risk assessment. Under some circumstances, the most effective risk management may require mending the schism between assessment and management.



⁸ See, e.g., DAVID HALBERSTAM, *THE RECKONING* (1986).

CALL FOR PAPERS

RISK: Issues in Health & Safety actively seeks manuscripts

on the following and related topics dealing with risk management

- **Distributional equities**
- **Epistemology of acceptable risk**
 - **Ethics of safety**
 - **Public R&D management**
- **Allocating regulatory responsibilities**
- **Communicating and cooperating across disciplines and jurisdictions**
 - **Determining risk acceptability**
- **Encouraging risk-reducing technologies**
- **Enforcing international treaties**
- **Improving public participation**
 - **Influencing public attitudes**
 - **Right to know**
 - **Informed consent**
- **Alternative dispute resolution**
- **Burdens and levels of proof**
- **Legal responsibility for injuries**
- **Roles of citizen and professional groups**
- **Federalism: Issues in funding and authority**
- **Comparative evaluation of means for implementing domestic policy**

From

professionals interested in such topics, including:

- **Biological Sciences** • **Business** • **Engineering** • **Law**
- **Medicine** • **Operations Research**
- **Social and Behavioral Sciences** • **Philosophy**

Please call, fax or write for authors' guidelines and manuscript submission form.