

INTRODUCTION

Risk communication encompasses many types of messages and processes. It is the poster warning food workers to handle food safely to prevent the spread of *Escherichia coli* bacteria. It is the emergency response worker rallying a community to evacuate in the middle of the rising flood. It is the community representatives sitting down with industry to discuss the siting and operation of a hazardous waste incinerator. Risk communication involves people in all walks of life—parents, children, legislative representatives, regulators, scientists, farmers, industrialists, factory workers, and writers. It is part of the science of risk assessment and the process of risk management.

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This book was written for those who communicate health, safety, and environmental risks, primarily the following:

- The communication professionals who prepare the messages, coach the speakers, and facilitate public involvement
- The scientists, engineers, and health care professionals who must communicate the results of risk assessments
- The organization representatives who must present a risk management decision
- Those new to the field of risk communication and anyone being asked to communicate risk for the first time

Because each of these readers may have different needs and questions concerning risk communication, we have divided the book into five parts. Each part or chapter within a part is relatively self-contained; a reader can choose to read some chapters and to skip others of less interest. Part I gives background information necessary to understand the basic theories and practices of risk communication and provides a basis for understanding information in the other parts. Part II tells how to plan a communication effort. Part III gives guidance on using various methods of communicating risk. Part IV discusses how to evaluate risk communication efforts, including how to measure success. Part V offers advice on special cases in risk communication: emergencies, public health campaigns, and international communication. A list of additional resources, a glossary, and an index are also provided. To emphasize key points, each chapter concludes with a summary section. Chapters that discuss how to apply risk communication (as opposed to those that deal with more theoretical aspects like principles and ethics) end with a checklist, which can be used to help plan and develop your risk communication efforts.

Much of our research and theory discussions, case studies, and recommendations draw from U.S. experiences, because that is our area of greatest familiarity. However, many of the risk communication principles we describe also apply to other countries. Readers will also find, sprinkled throughout the book, examples of country-specific risk communication research, successes, and pitfalls. Chapter 23, International Risk Communication, offers considerations for risk communicators outside of the United States and those who must address multi-country risks.

TO BEGIN

Many of the terms used in this book are defined in ways that differ slightly from usage in other branches of science or communication. A glossary is provided, but

as a beginning, we want to explain exactly what we mean by risk communication and how it differs from other forms of technical communication.

Technical communication is the communication of scientific or technical information. Audiences can range from children in a sixth-grade science class, to workers learning a new procedure on a piece of equipment, to scientists reviewing the work of peers. The purpose of technical communication can be to inform, educate, or even occasionally persuade.

Risk communication is a subset of technical communication. As such, it has its own characteristics. At its most basic, it is the communication of some risk. (In this book, it is used to mean the communication of health, safety, or environmental risks.) The audience can be similar to those described for technical communication, but it can also be a wide cross section of the United States and beyond. For example, information to present the risk of not wearing seatbelts could have as an audience anyone who will ever ride in a car.

Sometimes, the risk being communicated is frightening to a particular segment of the audience. Other times, the audience is unaware of or even apathetic to the risk. In still other cases, the organization communicating the risk is not credible to a portion of the audience or the audience finds the way the risk is being managed to be unacceptable. The strong emotions, or the lack thereof, audiences associate with a risk can make it difficult to communicate.

The purpose of risk communication can also differ from that of technical communication. In dangerous situations, such as floods and tornadoes, risk communication may have to motivate its audience to action. In other situations, the purpose is more appropriately to inform or to encourage the building of consensus (more on this in Chapter 5). Another difference between risk communication and technical communication is that risk communication more often involves two-way communication, that is, the organization managing the risk and the audience carry on a dialogue. In technical communication, most efforts are designed to disseminate information, not to receive information back from the audience or to include the audience in the decision-making process. An example of two-way technical communication is scientists reviewing the work of peers.

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Risk communication comes in many forms (see Figure 1.1). In this book, we generally divide risk communication along functional lines, distinguishing between care communication, consensus communication, and crisis communication, which are described in more detail later in this chapter. While these three forms have elements in common with other forms of technical communication, they always have circumstances that require different tactics, or ways of communicating, to effectively deliver their messages to and involve their respective audiences. For example, consensus communication involves much more audience

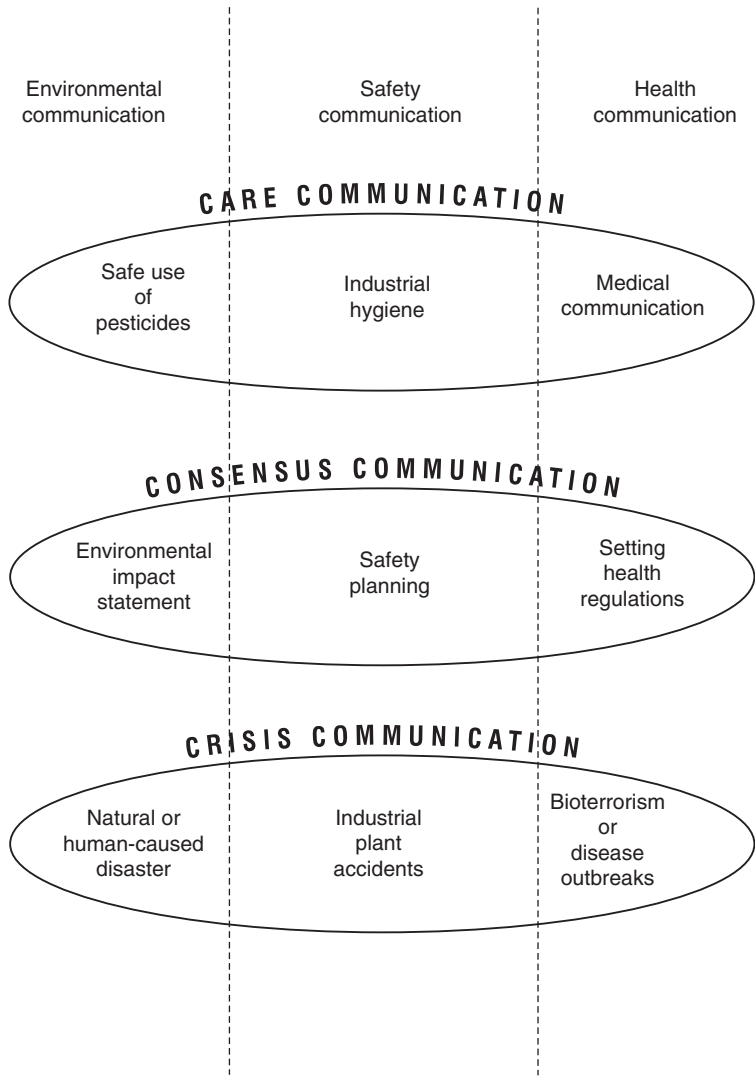


Figure 1.1. Examples of various types of risk communication.

interaction than do care or crisis communication. Risk communication can also be divided topically—for example, into environmental, safety, and health risk communication.

Care communication is communication about risks for which the danger and the way to manage it have already been well determined through scientific

research that is accepted by most of the audience. Another distinguisher is that, generally, those charged with communicating have little return on investment other than the betterment of human lives. Think of the American Heart Association and local public health agencies.

Two subsets of care communication are health care communication (sometimes called health education or health marketing), which seeks to inform and advise the audience about health risks such as smoking or AIDS, and industrial risk communication, which involves informing workers about potential safety and health risks in the workplace. Industrial risk communication can be further divided into ongoing communication about industrial hygiene and individual worker notification, which informs workers of the findings of retrospective mortality studies, in which the mortality rates of a set of workers have been evaluated against standards. Examples of these are the longitudinal studies to determine the effects of beryllium on energy workers (that is, whether they had a higher rate of mortality compared to standards).

Consensus communication is risk communication to inform and encourage groups to work together to reach a decision about how the risk will be managed (prevented or mitigated). An example would be a citizen advisory panel and the owner/operator of the local landfill working together to determine how best to dispose of hazardous chemicals found at the landfill. Consensus communication of risk is also a subset of stakeholder participation, which encourages all those with an interest (stake) in how the risk is managed to be involved in consensus building. Often, the agency or organization with the greatest financial stake funds this process. (Stakeholder participation is also generally called public engagement, public involvement, public participation, stakeholder involvement, public consultation, and audience interaction.) Stakeholder involvement, however, can go far beyond risk communication, into the realms of conflict resolution. These realms encompass entire disciplines in themselves and, hence, are beyond the scope of this book.

Crisis communication is risk communication in the face of extreme, sudden danger—an accident at an industrial plant, the impending break in an earthen dam, or the outbreak of a deadly disease. This type can include communication both during and after the emergency. (Communication during planning on how to deal with potential emergencies would be either care or consensus communication, depending on how much the audience is involved in the planning.)

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Consensus communication is risk communication to inform and encourage groups to work together to reach a decision about how the risk will be managed (prevented or mitigated).

THE RISK COMMUNICATION PROCESS

An overview of the risk communication process will also help explain the concepts presented elsewhere in this book. The process begins with a hazard, a potential or actual danger to the environment or human health or safety. Examples include an oil spill (environment), cigarette smoking (health), and a loose stair tread in an office building (safety). Usually by law but sometimes by commitment, some organization is responsible for managing the risks posed by this hazard, that is, preventing or mitigating any damage (decreasing the probability or lessening the consequences). In the case of a land-based oil spill, the U.S. Environmental Protection Agency, among other organizations, must develop regulations to prevent occurrence and oversee cleanup if preventive measures fail. The American Lung Association has a commitment to eradicate cigarette smoking. The Occupational Safety and Health Administration requires that organizations maintain safe work environments.

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Risk management usually begins with a risk assessment. Just how dangerous is the risk? How much of a hazardous chemical has to spill into a river before the water's natural self-cleansing ability is overwhelmed? Can AIDS be spread by contact with infected health care practitioners? How does the way workers use a forklift affect their risks of being injured or of injuring another? Risk assessment is a scientific process that characterizes risk and assesses the probability of occurrence and outcomes. Based on probabilities, it usually tries to answer questions such as the following:

- Who, or what ecosystems, will be harmed?
- How many of them will be harmed?
- How will they be harmed and by how much?
- How long will the harm continue?

Sometimes the risk assessment has a benefit component attached (risk/benefit analysis). This kind of analysis seeks to determine whether any benefits attached to the risk would balance against the harm caused. For example, does the benefit of the potential advancement of science balance against the potential harm of experimenting with radioactive materials? This kind of analysis may or may not include factors other than the strictly scientific evaluation of the risk and benefit.

Information from the risk assessment is used by risk managers to decide what to do about the risk. Their decisions, and often the process by which they decide, are usually communicated to the people who would be or are affected by the risk

or to those interested in the risk for other reasons (ethical issues, for example). Sometimes the risk managers try to encourage this audience to take action (care or crisis communication), sometimes they need to educate the audience about the risk so that the audience has the information needed to make a decision (care communication), and sometimes they need to discuss the risk with the audience so that a consensus on a course of action can be reached with all parties speaking the same language (consensus communication).

In the case of consensus communication, the decision about how risks are to be managed is made through stakeholder involvement. This type of management requires risk communication that seeks to

- Determine stakeholder perceptions of a variety of factors, including the risk, the organization in charge of managing the risk, and the process being used to reach the decision
- Inform, not persuade (except in the context of an agreed-upon negotiation)
- Balance the needs of competing stakeholders
- Assist in reaching a resolution that all parties can live with.

For example, the process of using an environmental impact statement to evaluate a set of alternative actions often begins with a series of stakeholder meetings to encourage individuals and groups to help define what should be evaluated (this part of the process is called scoping). Care communication and crisis communication also need to identify stakeholder perceptions and concerns; however, in these cases, the information is used to develop messages that will inform the audience and will encourage them to take some course of action. An example of this is the U.S. Environmental Protection Agency's program to communicate the dangers of radon in the home (for example, Weinstein and Sandman 1993).

Where potential personal harm is concerned, the believability of information provided depends greatly on the degree of trust and confidence in the risk communicator. If the communicator is viewed as having a compromised mandate or a lack of competence, credence in information provided tends to be weakened accordingly. Or if the particular risk has been mismanaged or neglected in the past, skepticism and distrust may greet attempts to communicate risks.

—Roger E. Kasperson (1986, p. 277).

At any point during the process, the organization that has been communicating may evaluate its risk communication effort to determine successes and failures. What should be changed next time? What was most effective for this audience, in this situation? Is there anything that can be generalized to apply to other situations and audiences?

AUDIENCES, SITUATIONS, AND PURPOSES

The ideas and techniques given in the rest of the book are tools. They are what we and other risk communicators have found to work for a given audience in a given situation with a given purpose. While a growing body of research lays out guidelines for effective risk communication, the differing dynamics among audiences, situations, and purposes makes finding the one “right solution” impossible, even if there is one right solution to find. Wherever possible, we have cited the work of others as confirmation of our own findings and those of other practitioners in the field. Citations for the research discussed in the text can be found at the end of each chapter.

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Other sources of information for risk communication can be found in the Resources section at the back of the book.

Many of the resources listed discuss such issues as credibility of the organization communicating or managing the risk, fairness of the risk in the audience’s eyes, and trust among parties. These issues will be dealt with only as they relate to specific points in the rest of this book; however, they are important issues that heavily affect the ability to communicate risk effectively. Unfortunately, they are often outside the control of most of us who actually communicate risk. When we step in front of an audience, policies made by those far above us and sometimes years in the past have already either forged a bond of trust with the audience or broken it. Likewise, our credibility as risk communicators will depend on the credibility of other risk communicators who previously faced the same audience.

Although we cannot change the past, we can be aware of past mistakes or successes and make sure that our own efforts are trustworthy, credible, and fair, insofar as we have the authority to make them so. And we must champion the cause of trustworthy, credible, and fair risk management decisions in our own organizations, both because it is ethical and because it is the only way to ensure successful communication.

REFERENCES

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- Weinstein N. D. and P. M. Sandman 1993. “Some Criteria for Evaluating Risk Messages.” *Risk Analysis*, 13 (1): 103–114.