

## EFFECTIVE COMMUNICATION ABOUT RISK

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As extension educators, we often are called upon to discuss and explain those risks related to the quality, healthfulness and/or safety of our food and water. In many cases there are no easy answers. Even when we perceive an answer as clear-cut, getting it across to an American public not trained in science and wary of sweeping statements made by scientists or government bureaucrats is no simple matter.

The need to develop effective and meaningful ways of presenting complex technical material clouded by uncertainty and inherently difficult to understand has led to a growing field of study called “risk communication.”

Risk communication has been defined as any public or private communication that informs individuals about the existence, nature, form, severity or acceptability of risks (Plough and Krinsky). It is considered an adjunct to, but by no means replacement of, risk assessment (the characterization of potential adverse health effects of human exposure to hazards) and risk management (the process of evaluating alternative regulatory actions and selecting among them) (Needleman). Risk communication also does not replace risk regulation. All are necessary components in maintaining the healthfulness and quality of any ecosystem.

In its report, *Improving Risk Communication*, the Committee on Risk Perception and Communication of the National Research Council (NRC), stresses the interactive nature of risk communication. The authors distinguish between *risk messages* — one-way written, audio or visual packages developed by experts to present information about risk to nonexperts — and the process of *risk communication* — an interactive exchange of information and opinion among individuals, groups and institutions (National Research Council). They further challenge the view that risk communication is successful only to the extent that recipients accept the views or arguments of the communicators. Rather, they define risk communication as successful when it “raises the level of understanding of relevant issues or actions for those involved and satisfies them that they are adequately informed within the limits of available knowledge (National Research Council, p. 2).

Sandman (1986) refers to the goal of the former as “passive trust” and of the latter as “rational alertness.” He stresses that the ultimate goal of risk communication should be the development of a public that is alert to the issues and rational in their approach to facing those issues.

Successful communication about risks surrounding food and water issues poses challenging problems and opportunities. Covello and co-workers have characterized four types of problems that arise in risk communication:

1. Message problems — e.g., limitations of scientific risk assessments;
2. Source problems — e.g., limitations of risk communicators and risk assessment experts in agreeing about the nature of the risk and how to get that message across to the public;
3. Channel problems — e.g., limitations in the means or media by which scientific information about health or environmental risks is transmitted;
4. Receiver problems — e.g., characteristics of the intended recipients of the communication.

### Defining Risk

Message and source problems are hampered by the fact that the meaning of “risk” is fraught with confusion and controversy. Two definitions of “risk” seen in the literature highlight the chasm that exists between how experts and consumers define risk.

*Risk = Hazard/Safeguards.* Risk is commonly defined by experts as “the probability of loss or injury.” In assessing such risk, hazard is determined by asking: “What could go wrong?” “How likely is it to happen?” and “If it does, what will be the consequences?” Once defined, hazard is then divided by “safeguards” to arrive at risk (Rogers). Safeguards are those practices that help keep a hazard from becoming a reality. For example, if the potential hazard of getting salmonellosis from eating raw chicken is one in three, cooking is a safeguard that reduces the risk to a much lower figure.

*Risk = Hazard + Outrage.* The public, however, sees risk as much more than the probability of a loss. Mortality statistics are one factor, but not the only one, nor in some cases, the most important factor. Peter Sandman (1987) describes these other factors as “outrage.” He defines risk as the sum of hazard and outrage. When the public pays little attention to hazard and the experts ignore outrage, then it should come as no surprise that the two rate risks very differently.

Paul Slovic (1986) has developed the following list of characteristics or outrage factors that figure into consumers’ working definition of risk:

Less Risky	More Risky
Voluntary	Involuntary
Familiar	Unfamiliar
Controllable	Uncontrollable
Controlled by self	Controlled by others
Fair	Unfair
Not memorable	Memorable
Not dread	Dread
Chronic	Acute
Diffuse in time and space	Focused in time and space
Not fatal	Fatal
Immediate	Delayed
Natural	Artificial
Individual mitigation possible	Individual mitigation impossible
Detectable	Undetectable
Old risk	New risk
Known to science	Unknown to science
Easily reduced	Not easily reduced
Individual	Catastrophic
Doesn't affect me	Affects me
Not in my back yard	In my back yard

Using the above lists, one can see why people can become much more concerned about the risks of cancer associated with passive smoking (which are controlled by others) than with the direct risk associated with smoking itself (which is controlled by self). Likewise one can understand why the risk of cancer from natural toxicants such as aflatoxins in peanuts is viewed with far less fear than that from a certain food additive, even though risk of cancer from the latter may be far less. As noted by Sandman (1987), "the risks that kill people often are not the same as the risks that frighten and anger people."

### Communicating with and through the Media

Mass media is a powerful force in our society. It is the channel through which much information about risk is conveyed. Sandman (1986) has identified several factors to consider when communicating with the media about a health risk:

*The reporter's job is news, not education; events, not issues or principles.* The news is the risky thing that has happened, e.g., the discovery that a food additive promotes cancer. It is not the difficult determination of your risk of getting cancer if you consume the additive. If the story is important enough, these technical details may be covered in a sidebar or a follow-up story on the third or fourth day. Few stories, however, merit such attention.

*Politics are more newsworthy than science.* It is important to understand that the politics of risk (e.g., what officials or advocacy groups say about a risk) sells far more newspapers than the hard science surrounding the risk. This doesn't mean scientists should not try to get

reporters to cover abstract concepts such as the uncertainty of risk assessments or the impossibility of zero risk. These need to be woven into our comments. Sandman stresses, however, that reporters and editors may weed out these comments in an effort to simplify the story.

*Reporters cover viewpoints, not “truths.”* Journalism, like science, attempts to be objective, but the two fields define the term very differently. For science, objectivity is tentativeness and adherence to evidence in the search for truth. For journalism, objectivity is “balance.” From the journalistic point of view there is not truth, only conflicting claims, to be covered as fairly as possible, leaving the reader or audience to determine the “truth.”

According to Sandman, on a scale of 0 to 10 representing all possible views on an issue, reporters are wary of 0’s, 1’s, 9’s and 10’s; these views are seen as too extreme to be credible. They are covered as “oddball,” if covered at all. Reporters also pay little attention to 4’s, 5’s, and 6’s. These positions are seen as too wishy-washy to make good copy. What they like to report are 2’s and 3’s in alternating paragraphs or separate stories with 7’s and 8’s. Objectivity to the journalist means giving both sides their chance, and reporting accurately what was said.

If a risk story is developing and you have a perspective you want to be covered, don’t wait to be called. Instead, call the reporter and tell your side. When at all possible, Sandman recommended you try to be a 3 or a 7 — that is, a credible exponent of an identifiable viewpoint. Don’t let yourself be pushed into a position that is not yours, but recognize that journalism doesn’t trust 0’s and 10’s and has little use for 5’s.

*The media see environmental risk as a dichotomy; either the situation is hazardous or it is safe.* Reporters are accustomed to the fact that technical sources invariably hedge, that nothing is ever proven.” They see this as a kind of slipperiness and spend a fair amount of time trying to get 5-ish sources to make clear-cut 3 or 7 statements. You can provide such statements and still avoid dichotomizing the issue as “risky” or “safe” by moving into a discussion of “how risky” the situation is. Remember while you may resent the pressure to simplify, you are far more qualified to do it than the reporter is to do it for you. Decide in advance what your main points are, and stress these consistently and repetitively, even if you have to hook them onto answers to irrelevant questions. Also, stay away from jargon and explain any technical terms you must use.

*Reporters try to personalize risk.* Scientists often are irritated with the media’s tendency to personalize a story by such questions as “Would you drink the water?” or “Would you choose surgery or drugs?” Such questions fly in the face of the scientist’s training to keep oneself out of one’s research and they confuse policy questions with those of personal choice.

Nevertheless, reporters consider those questions that personalize issues as the very best. They bring dead issues to life, make the abstract

concrete, focus on real people facing real decisions, and force technical sources to dichotomize. As was noted in an Environmental Protection Agency (EPA) study on the ethylene dibromide (EDB) controversy, the agency wanted to talk about “macro-risk” (How many deaths will result from EDB contamination?) while reporters kept asking about “micro-risk” (Is it okay to eat the cake mix?). For the individual citizen (faced with a cake mix, not a regulatory proposal), what to do with the cake mix was the issue, not what to do with EDB.

Knowing that reporters will inevitably ask personalizing questions, be prepared with answers. It is often possible to answer both one’s personal views and one’s policy recommendations, and then to explain the difference if there is one.

*Claims of risk usually are more newsworthy than claims of safety.* On our scale of 0 to 10, the 3’s and 7’s share the bulk of the coverage, but not equally. Risk assertions receive considerably more media attention than risk denials. This is not a bias, at least not as journalism understands bias. It is built into the concept of newsworthiness. If there is no allegation of risk, there is no story.

*Reporters do their jobs with limited expertise and time.* Most reporters are generalists with many stories to cover in a limited time. When working with reporters, it’s important to get back to them in a timely fashion with the information needed. Mass media is a powerful tool. It is up to us as scientists and educators to work cooperatively with reporters to get our message across in a clear and meaningful manner.

### Understanding and Communicating with the Public

Covello identifies receivers (individual citizens) as the fourth source of problems in risk communication. Researchers who study risk communication make the following observations regarding factors to consider when communicating with the public on risks to health.

*People’s Perceptions of Risks May Not Agree with Reality.* Slovic and coworkers (1980) noted that people tend to overestimate the level of risk from events that are dramatic and memorable (e.g., botulism, cancer). In contrast, they tend to underestimate risk from undramatic causes, such as salmonellosis or diabetes. People also tend to consider themselves personally immune to many hazards they admit pose a serious threat to others. For example, it has been shown that most people rate themselves as among the most skillful and safe drivers in a population.

*Moral Issues Have More Meaning than Risk Data.* As discussed above, the public views risk as much more than mortality statistics. In many cases morality, not mortality, is seen as the real issue. For example, over the past several decades our society has reached near-consensus that pollution is morally wrong — not just harmful or dangerous, not just worth preventing where practical, but wrong (Sandman, 1986).

As noted by Rayner and Cantor, the critical question facing societal risk managers has become, not “How safe is safe enough?” but, “How fair is safe enough?” Morality issues wreak havoc with cost-benefit analyses. How can one put a cash value on human life? Morality is not an easy issue to deal with, but one that must be considered carefully, both in evaluating and communicating about risks to health.

*Strong Beliefs are Hard to Modify.* It is well known that people tend to hear what they believe, not the other way around. According to Slovic and associates (1980), initial impressions, once formed, tend to structure the way subsequent evidence is interpreted. New evidence appears reliable and informative if it is consistent with one’s initial belief; contrary evidence is dismissed as unreliable, erroneous or unrepresentative.

*Trust and Control Issues Underlie Most Risk Controversies.* Researchers cite trust as a key problem in risk communication. Few people trust government and industry to protect them from environmental risk. While this is true of both passivists and activists, the former are considered more fatalistic and less likely to take things into their own hands (Sandman, 1986).

While trust may be the issue, Sandman does not feel “passive trust” should be the goal. Translating the question of trust into the underlying issue of control, the question becomes “Who decides what is to be done?” Sandman asserts that an environmental risk controversy has two levels: (1) the substantive issue of *what to do*; and (2) the process issue of *who decides*. So long as people feel disempowered on the process issue (who decides), they are understandably unbending on the substantive issue (what to do).

The situation can be viewed as much like that of a child forced to go to bed who protests the injustice of bedtime coercion without considering whether he or she is sleepy. It is hardly coincidental that risks the public tend to overestimate (e.g. pesticides, food additives) generally raise serious issues of trust and control, while most of the widely underestimated risks (smoking, fat in the diet, insufficient exercise, driving without a seatbelt) are individual choices.

Sandman (1986) stresses that the gravest problems of risk communication arise when citizens determine that the issue is important, that the authorities cannot be trusted, and that they themselves are powerless. Then comes the backlash of outrage.

### **Improving Risk Communication**

Are people educable about risks? Most risk communicators suggest they are. In fact, the NRC committee on Risk Perception and Communication contends that, not only can lay citizens understand risk, but they can make important contributions to discussions and perspectives regarding risk-benefit issues. Below are several suggestions made by researchers on how to improve communication about risk.

*Avoid Finger Pointing Comments.* Pam Jones of Jones Communications, an environmental issues/public relations firm, warns against the

use of such messages as "The reason we use chemicals is that the public wants good looking food at cheap costs." No one likes to have the finger pointed at himself as the root of a complex problem, especially when he or she has no say in the decision. Besides, who knows, maybe people would be willing to pay more for increased safety if given the choice.

*Acknowledge Uncertainties and Limits to Expertise; Accept Emotions as Legitimate.* According to Jones, communicators of risk gain support when they acknowledge limitations in knowledge of the effects of x, y and z chemicals, for example, openly discuss trade-offs and alternatives, then explain the reasons for using the chemical and what is being done to protect the consumer. Such an approach admits the uncertain nature of chemical use and forces people to deal with that uncertainty rather than deny it exists. In a similar vein, Sandman (1986) stresses the importance of acknowledging the feelings of people before trying to explain anything substantive about the risk at hand. While this will not eliminate the anger, it will help reduce the outrage and the need to insist on the anger, thereby freeing energy to focus on the issues instead.

*Consider Presentation Format Carefully.* Since the public responds more to outrage than to hazard, Sandman (1987) recommends that risk managers and communicators work to make serious hazards more outrageous. One way is through presentation format. As an example, motorists in one study expressed greater interest in wearing seatbelts when informed that their risk of a disabling injury over a fifty-year lifetime of driving was 1 in 3 than when told that one in every 100,000 person trips resulted in a disabling injury. Another way to increase outrage is to hit hard on the morality of an issue. Recent campaigns against drunk driving and sidestream cigarette smoke provide two models of successful efforts to increase public concern about serious hazards by feeding the outrage.

*Cross-Hazard Comparisons May Be Misleading.* One approach sometimes used to "deepen people's perspective" regarding risk is to present quantified risk estimates for a variety of hazards. We have all seen tables such as those developed by Wilson equating the risk of death from smoking 1.4 cigarettes to eating 100 charcoal broiled steaks to living two months in Denver on vacation from New York (all risks which increase the chance of death in any year by one in a million). As interesting as these comparisons may be, they have a number of inherent limitations. For example, although it may be enlightening to know that a single takeoff or landing in a commercial airliner reduces one's life expectancy by 15 minutes, upon landing one will either die prematurely (almost certainly by more than 15 minutes) or one will not. What are missing in these estimates are the outrage factors . . . the voluntariness, controllability and familiarity of the risk, the immediacy of the consequences, and the degree to which benefits are distributed equitably to those who bear the risk. Because of such omissions, Slovic and coworkers (1980) have characterized arithmetic cross-hazard comparisons as "the kindergarten of risk."

*Risk Decisions Are Better When the Public Shares the Power.* People learn more and assess what they learn more carefully if they exercise some real control over the ultimate decision. While this power-sharing is enormously difficult, it can be well worth the effort.

The goal of power-sharing is to enlist the rationality of the citizenry, so that citizens and experts are working together to figure out how great the risk is and what to do about it. Of course, no responsible agency should go public without any answers. What's important is to propose options x, y and z tentatively, with genuine openness to v and w and to comments that may eliminate z. A list of options and alternatives — and a fair and open procedure for comparing them and adding new ones — is far more conducive to real power-sharing than a "draft" decision.

Public participation on risk decisions is not only the moral right of citizens, but is sound policy. When consumers participate in a risk management decision they are far more likely to accept it, for at least three reasons: (1) They have instituted changes that make it objectively more acceptable; (2) They have gotten past the process issue of control and mastered the technical data on why the experts consider the risk acceptable; and (3) They have been heard and not excluded, and so can appreciate the legitimacy of the decision even if they continue to dislike the decision itself.

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