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The Impact of Risk Communication on Consumption and Consumer Well-Being

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The Impact of Risk Communication on Consumption and Consumer Well-Being

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ABSTRACT

In this monograph, we build on the risk communication and the psychology of information processing and decision-making literatures, while extending this work through an explicit discussion of the philosophical foundations of risk communication, regulations, and the implications for communication and policy decisions. In addition, we explore the multidimensional context in which individuals confront risks and make trade-offs with respect to the costs and benefits in specific situations. We discuss various examples of risk-related products and behaviors, which are offered to illustrate the issues that arise when addressing risk in a multidimensional context where scientific information is incomplete and/or ambiguous and there are economic and social costs, as well as benefits, associated with any policy related to communicating and managing risk.

Questions remain about how government and policy can respond to the increasing pace of technology change. The regulatory process is, by definition, slow and has difficulty keeping up with the accelerating dynamics of the...
environment. Are there more responsive market mechanisms that can substitute for government regulation, while still providing protection to individuals? Finally, as society creates “safer” products and processes, there is the potential for triggering more severe risks as a result of the feeling of safety and security.

We invented the concept of risk to help us understand and cope with the dangers and uncertainties in life.

—Chauncey Starr (1969)

Life is filled with risks. People experience accidents, disease, adverse effects, natural disasters, and allergic reactions, even when they take actions to avoid them. Even the simple act of leaving home exposes a person to the possibility of an automobile accident, even as a pedestrian; to the criminal actions of others; to exposure to disease; to falling down stairs; and to a host of other hazards. However, staying home is even riskier, as the majority of injuries occur in the home (Centers for Disease Control and Prevention, 2018). Many of these risks are foreseeable; some are not. Moreover, some of these risks are greater for some people than others because of specific physical or physiological characteristics or differences in behavior and/or lifestyle. Some of these risks are associated with severe outcomes, serious injury, or even death, while others may be associated with more modest or trivial outcomes. The outcomes associated with some risks may be immediate, such as when one touches a hot stove, while the outcomes associated with other risks may take years to become evident, as may be the case for a chronic smoker.

Given the pervasive nature of risk and the many forms it can take, it is remarkable how well the human species has navigated a world filled with hazards. Fortunately, human beings have the capacity to learn and do not need to acquire knowledge of the outcomes associated with risk only through consumption experiences, though this remains a common form of learning. Rather, people learn from the collective experiences
of others, including the studies of scientists, health care professionals, and other experts who bring specialized tools to the study of risk. As a result, more is known now about various types of risks than at any other time in history.

Despite this accumulated knowledge, the multidimensionality of risk and the uncertainties associated with many types of risk make communications about risk a challenge. Providing meaningful and useful information to an individual about risk involves more than applying the labels “risky” and “not risky.” Informed risk-taking is a necessary element of human life, but several questions remain: (1) What information should be provided? (2) How should this information be provided? and (3) To what extent is the risk certain, probabilistic, or unknown? In this monograph, we aim to understand how consumers think about and respond to risk through their consumption behaviors. Risky consumption also poses societal risks, leading to regulatory decisions such as bans on smoking, the use of seatbelts and motorcycle helmets, and so on. In the end, consumer well-being is the goal of risk communication by mitigating the harm of risky consumption.

In this monograph, we bring together literature on risk, risky consumption behaviors, risk communication, and consumer well-being. The monograph builds on prior work on risk communication (Cox et al., 1997; Fischhoff and Downs, 2011; Fischhoff et al., 1998; Kozup et al., 2012; Lepkowska-White and Parsons, 2001; Morris et al., 1980; Wilkie, 1985; Wogalter, 2006a), as well as prior work on the psychology of information processing and decision-making (McGuire, 1976) and extends this prior work through an explicit discussion of the philosophical foundations of risk communication and management and the implications of specific foundations for communication and policy decisions. In addition, the monograph explores the implications of the multidimensional context in which individuals confront risks and make trade-offs with respect to risks and benefits in specific situations.

Throughout the monograph, we discuss various examples of risk-related products and behaviors. These examples are offered to illustrate the issues that arise when addressing risk in a multidimensional context where scientific information is incomplete and/or ambiguous and there are economic and social costs, as well as benefits, associated with any
policy related to communicating and managing risk. These examples are not intended to be exhaustive reviews of the particular example, nor are they intended to suggest specific policy alternatives. Rather, they are intended to provide a context for the complex issues that are the focus of this monograph.

For the purposes of this research, we define “risk communication” as an exchange of information about threats with the goal to enhance knowledge and understanding while building trust and credibility, encouraging discourse, and influencing attitudes and behavioral change (Covello, 2008). Risky consumption behaviors are behaviors that result in harm from both the risk inherent in the product or behavior and the risk inherent in the situation or context within which the behavior takes place (Martin et al., 2013). When referring to consumer well-being, we are focused on consumer experiences related to acquisition, consumption, and ownership that are beneficial to both consumers and society. Thus, risky consumption behaviors when reframed and used in a positive way can result in benefits to consumers rather than harm. For example, texting and driving is a risky consumption behavior that can result in extreme harm, whereas by altering the context within which the behavior occurs, texting can be a beneficial way to enhance consumer well-being. Given the complexity of the risk construct, in the next section we focus on clearly defining risk and its inherent dimensions. Issues surrounding risk that consumers and society face are embedded in how risk is defined.
A foundational issue in risk communication is the very definition of risk. What does it mean when we say that something is (or is not) risky? Defining risk in one way results in a set of solutions or decisions within that definition or context, while defining it another way with other underlying assumptions may result in a different set of solutions or decisions for the same risk. Values are inherent in risk assessment; they are reflected in how risks are characterized, resulting in disagreements between laypeople and experts about the degree of “risk” in a consumption behavior (Fischhoff, 1995). Feelings of dread have been shown to be a strong determinant of risk perception and the individual’s willingness to accept a risk. Research has shown that consumers tend to use heuristics or mental strategies to evaluate the likelihood of harm from potential risk (e.g., Slovic, 1987, 2006). Such heuristics can create a biased assessment not only of what is truly risky and what is less risky but also of what is an acceptable risk (riding a bicycle or paragliding) and what is not (smoking or using cocaine).

Individuals’ assessment of a risk can be overestimated and underestimated, which in turn may influence how they interpret risk information. New evidence for a risk will be evaluated as reliable and

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informative if it is consistent with preexisting beliefs. For example, if you believe that genetically modified foods are potential carcinogens, you are more likely to believe new evidence suggesting a high risk of these foods. When that risk information is contrary to an individual’s held beliefs, however, he or she is likely to discount the reliability and validity of the information. For example, if you engage in vaping and published evidence shows that vaping can lead to the same risks as smoking, you are less likely to believe the evidence. You will find ways to dismiss the evidence as erroneous or unrepresentative. Strongly held beliefs will persevere even after evidence for the belief has been invalidated by new evidence (Shultz et al., 2001). Even in the absence of such biases, individuals differ in the type and degree of risk they are willing to tolerate. Some people engage in inherently risky behavior despite knowing full well the risks involved. For example, people skydive, go rock climbing, use various recreational drugs, and smoke cigarettes, despite their knowledge of the risks. Other individuals have little or no tolerance for risks, while still others are sensitive to only certain types of risk and go to great lengths to avoid them.

It is important to keep in mind that many voluntary hazards are associated with positive affect (e.g., skydiving, smoking, vaping, using recreational drugs). This results in decreasing the level of perceived risk (Keller et al., 2006). Further complicating such differences is the possibility that these same individuals may be risk takers in some circumstances but risk averse in others. In addition, some behaviors pose risks for some people (e.g., peanuts, phenylalanine) but not for others. Establishing management practices and policies regarding risk in the face of such individual differences can be challenging.

1.1 Philosophical Foundation for Policy Development

At the heart of most policy debates regarding risk are four distinctly different philosophical orientations toward risk management and risk communication: (1) “safe minimum standards”; (2) bounded rationality, based on the “rational man” perspective; (3) libertarian paternalism, founded in behavioral economics; and (4) the “precautionary principle,” when considering harm to human health or the environment.
These philosophical foundations are completely consistent with an evidence/science-based approach to analyzing risks (Eddy, 1996). When researchers are able to determine the risk of a behavior/product based on data (e.g., ppm), this is important information. However, even when risk is clearly identifiable, there remain questions about how this information is to be used for purposes of communication, education and policy formulation. Further, there are questions about what information to use or ignore, how to deal with information that is ambiguous, uncertain, and embedded in contexts characterized by numerous potential hazards and benefits that require trade-offs. In addition, the optimality of such trade-offs may be different across people, groups, and usage contexts. Thus, there is a need for a philosophical grounding when using evidence to design communications and establish policy regarding risk and risk management. The four philosophical approaches do not necessarily lead to the same prescriptions.

First, safe minimum standards set the minimum level of safety (acceptable level of harm) that a risk can pose to an individual, to society, or to the environment. If this level is violated, the costs of damage to stakeholders are deemed unacceptable and regulators would step in to protect society and the environment (Crowards, 1997). For example, should regulators allow an activity and impose regulatory restrictions only if there is scientific consensus that the activity is harmful?

Second, the bounded rationality perspective holds that individuals who are appropriately informed can make their own trade-offs regarding risks and manage the risks they encounter from their own respective preferences. Inherent in this approach is the assumption that individuals are “well-informed” and have the cognitive capacity to process scientific information to manage the risks in their lives (Simon, 1955, 1972). In addition, the degree of how “well-informed” is bounded or constrained by incomplete information on alternatives as well as the individual’s ability to make choices among those competing alternatives. Finally, individuals will choose to satisfice when they reach the limit of their cognitive effort to search out and evaluate alternatives. For example, information on the risks of cancer from smoking is provided to society through mandated warnings, educational interventions, and other means;
However, some questions still remain as to whether smoking is “certain” to cause cancer. Thus, an individual may choose to search out and evaluate more information, but at some point, he or she may choose to satisfice—deciding whether or not to smoke from partial information. This leaves the final decision on whether to accept the risks of engaging in a risky consumption behavior to the individual rather than regulators.

Third, the Libertarian Paternalism perspective is based on the concepts of both bounded rationality and bounded self-control. It aims to influence risky consumption behavior while also respecting the freedom of individual choice (Sunstein and Thaler, 2003). When faced with making a choice as to a risky behavior, consumers are often not presented with well-defined information, and thus they can be influenced by the framing of a choice, the starting point of a decision, or the default rules that define that decision. The goal of this perspective is to provide information to influence choices in a way to encourage welfare-promoting behaviors without eliminating the ability to make a choice. Thus, an individual could select a less risky choice or could decide that the benefits from undertaking the risky behavior outweigh the costs of that risk. For example, employers can present the choice of whether to set aside a certain amount of your monthly salary in a 401(k) as an opt-out or opt-in choice. The difference between this default rule of opt-out versus opt-in can influence the likelihood of whether you will decide to save now for retirement or not. It is possible that you may not want to enroll in a 401(k) at this time but your preference changes knowing that your employer has made enrollment automatic. You have the freedom to opt-out if you so choose.

Fourth, the precautionary principle approach is a strategy to cope with possible risks that have the potential to cause morally unacceptable harm that is plausible but lacks the scientific understanding of the likelihood and extent of the harm (e.g., nanotechnology, climate change, systemic insecticides). This principle has been applied to numerous international climate change treaties, including the Montreal Protocol (1987), the Rio Declaration (1992), Stockholm convention (2001), and later treaties. The goal is to prevent threats to health and/or the environment when there is a “need to act to reduce potential hazards before there is strong proof of harm, considering the benefits and
costs of action and inaction” (“better safe than sorry”) (European Environmental Agency, 2001). For example, in the 1930s before polychlorinated biphenyl (PCB) drew concerns about its potential risk of poisoning people, industry was keeping that information within their respective companies, and it was not circulated among policy makers and other stakeholders. In retrospect, some critics have argued that had the precautionary principle been applied at that time, it may have been able to avoid the toxic legacy of extreme harm to humans and animals (Koppe and Keys, 2001). The critical question is, should the activity (e.g., PCBs, GMOs, climate change) be restricted until scientific consensus surfaces that the activity is harmful or not harmful? Similarly, to what degree must it be harmful or not harmful?

1.2 Cost–Benefit Analysis and Different Philosophical Perspectives

These four philosophical approaches use cost–benefit analysis to determine the acceptable level of risk for all stakeholders. First, the importance of a cost–benefit analysis is implicit in all four perspectives. Second, its goal is to determine whether the benefits outweigh the costs of a particular decision or regulatory action. Under safe minimum standards, regulatory action is justified when analysis of the risks (and ensuing harms) shows that the benefits of regulation exceed the costs of regulation by a “sufficient” margin. This sufficient margin can be the result of some objective decision rule or can be based on the “subjective” opinions of a panel of experts. The bounded rationality approach suggests that the trade-offs regarding risks should be left to the individual. While such a view is consistent with personal freedom to choose, it does not take into consideration the negative externalities that the risky consumption behavior could impose on society and the environment.

Cost–benefit analysis in the libertarian paternalism perspective is considered from the individual not the societal level and is a way to shine light on important social and economic facts that would not otherwise be found either in private or at the societal level. Then, cost–benefit analysis becomes a way to ensure “better priority-setting and of overcoming predictable obstacles to desirable regulation, whatever
How Do We Define Risk?

may be our criteria for deciding the hardest questions about that topic” (Sunstein, 2000, p. 1060). The goal is to measure the full ramifications of the design selected to nudge individuals toward a certain choice. The process is based on a subjective evaluation of the welfare consequences without eliminating freedom of choice; then, the benefits “outweigh” the costs. Under the automatic enrollment in 401(k) plan, some employees may be better off if, under an opt-in framing, they would not have acted, while others could be worse off if they do not have the income to save at this point in their lives and choose not to opt-out (inertia). In a cost–benefit analysis, there should be an evaluation of these gains and losses. Under what conditions should the “nudger” be able to decide or override the preferences of the “nudgee” in terms of conceptions of well-being? Libertarian paternalism is based on the underlying assumption that individuals make poor decisions because they do not have complete information, lack the motivation to pay attention, or lack self-control (Sudgen, 2009).

The precautionary principle approach requires that policy makers determine the level of risk “for which there is no definitive proof that the damage will materialize” (de Sadeleer, 2012, pp. 3–4. The foundation of this approach shifts the burden of proof from demonstration of potential harm to demonstration that a behavior or product is “safe.” The approach to cost–benefit analysis would also include assessment of what is acceptable according to public input, ethical considerations, and other qualitative approaches. Debate is ongoing over how to most effectively integrate benefits and costs that are difficult to quantify, whether they relate to qualitative values, or whether they are too uncertain to estimate with reasonable confidence (Brill, 2016).
References


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