Theorizing Crisis Communication provides a comprehensive and state-of-the-art review of both current and emerging theoretical frameworks designed to explain the development, management, and consequences of natural and human-caused crises. A critique of the many theoretical approaches of crisis communication, this volume provides readers with an in-depth understanding of the management, response, resolution, and significance of failures in corporate responsibility, as well as destructive global events such as pandemics, earthquakes, hurricanes, tsunamis, chemical spills, and terrorist attacks.

This second edition contains new theories from related subfields and updated examples, references, and case examples. New chapters discuss metatheoretical considerations and theoretical advancements in the study of social media. Throughout the text, the authors highlight similarities, patterns, and relationships across different crisis types and offer insight into the application of theory in the real world. Integrating work from organizational studies, social sciences, public relations, and public health, this book:

- Covers a broad range of crisis communication theories, including those relevant to emergency response, risk management, ethics, resilience and crisis warning, development, and outcomes
- Presents theoretical frameworks based on research disciplines including sociology, psychology, applied anthropology, and criminal justice
- Provides clear and compelling examples of application of theory in contexts such as rhetoric, mass communication, social media, and warning systems
- Offers a systematic and accessible presentation of topics by explaining each theory, describing its applications, and discussing its advantages and drawbacks

Theorizing Crisis Communication, Second Edition, is the perfect textbook for advanced undergraduate and graduate students of crisis and risk communication, and an importance reference for scholars, researchers, and practitioners in fields including crisis communication, emergency management, disaster studies, sociology, psychology, and anthropology.

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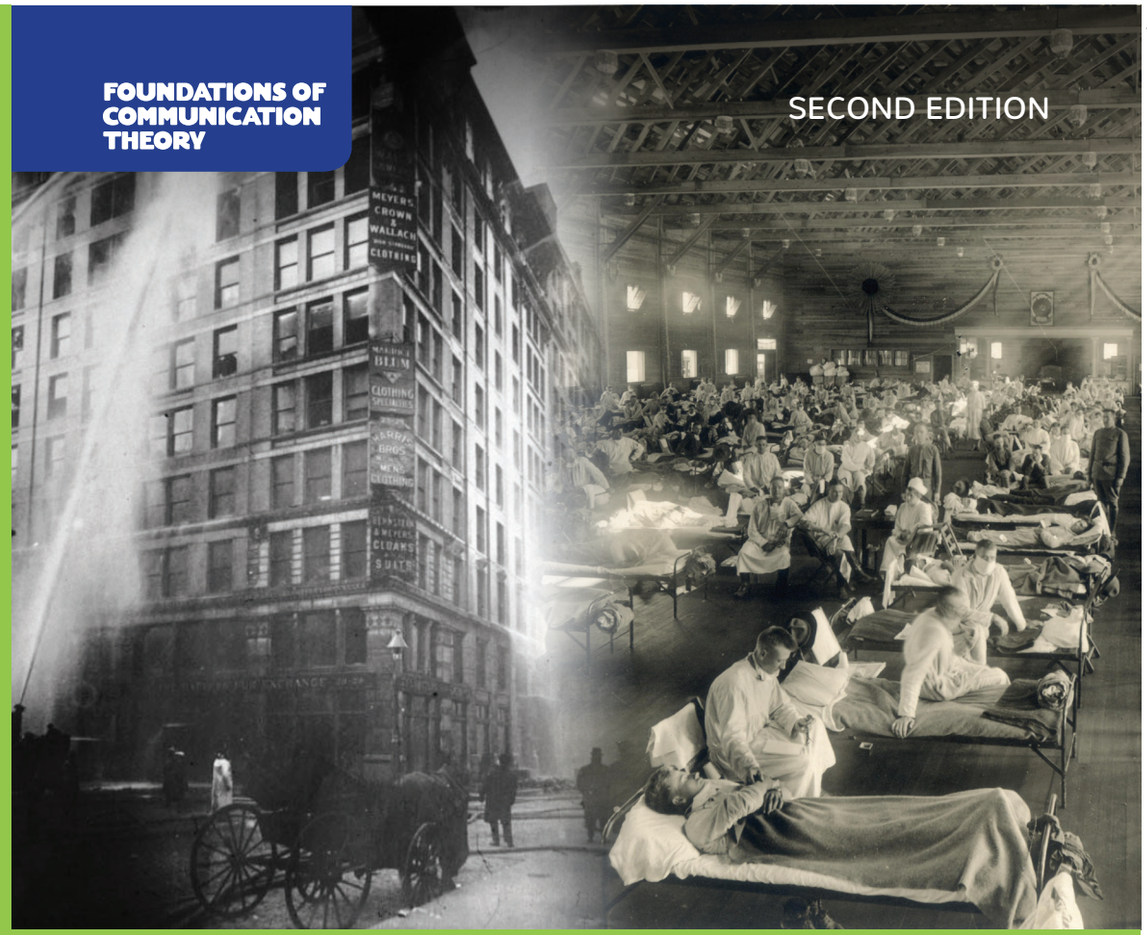

THEORIZING CRISIS COMMUNICATION

TIMOTHY L. SELLNOW AND MATTHEW W. SEEGER

WILEY Blackwell

Theorizing Crisis Communication

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Theorizing Crisis Communication

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Acknowledgments

Crisis, disaster, and risk have emerged as critical areas of multidisciplinary inquiry. These events continue to manifest as deeply disruptive occurrences and as significant forces of social change. Despite their power, crises and disasters are underexamined phenomena. Effective understanding, management, and response requires attention from the research community. This attention also necessitates the development and application of a diverse and multidisciplinary body of theory.

Puzzles and questions are the stuff of theory creation. Crises and disasters, by definition, are high uncertainty events that defy our sense of normal and our established processes and frameworks for making sense. Crises make the full realization of what is happening, why, and with what near and long-term outcomes difficult. Theory, and especially the predictive and explanatory functions of theory, help us explain these confusing and uncertain events.

We were gratified and somewhat surprised at the success of the first edition of *Theorizing Crisis Communication*. Although we believed a summary of crisis theory was important, we also assumed that crisis communication remained a relatively specialized area of communication research. The success of the first edition demonstrated that crisis communication is recognized as a critical area of practice for individuals, organizations, communities, and society at large and is becoming increasingly mainstream.

The second edition of *Theorizing Crisis Communication* reviews a larger body of theory reflective of the continuous growth in crisis communication scholarship. In addition to the discussion of more theories in all chapters, this edition includes new chapters on theory formation, social media, and applications of theory, as well as expanded treatment of technology, resilience, and risk, among others.

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Special thanks to M. Scott Poole for his support and encouragement and to the editorial staff at Wiley for making a second edition possible. We also wish to thank the anonymous reviewers who provided feedback on the first edition.

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Revising this work, amid a global pandemic of historic proportions as well as widespread protests regarding social justice, created unique challenges. While endeavoring to represent the moment, we also worked to ensure that we addressed both those risks that are understood and those that are emerging. Emerging infectious diseases, technological failures, hurricanes, fires, and chemical and biological contaminations are sadly common. The disruption and harm caused by factors such as climate change are new, especially given the scale. In fact, we are seeing more events that we would characterize as mega-crises, based on the scope, scale, and duration of the harm. Both familiar and new risks are likely to be increasingly important influences on our lives, and we hope this book aids and encourages those who seek to understand and manage crisis events.

We dedicate this work to our newest grandchildren Greer Johanna Swift and Emmett Adam Sellnow-Richmond.

Foreword

Dr.Brooke Fisher Liu

University of Maryland

Crises present opportunities and threats. Communication helps us understand and make meaning of these opportunities and threats. With a sound understanding of crisis communication theory, leaders are better equipped to navigate troubled waters and steer their organizations and communities towards a stronger tomorrow. Understanding crisis communication theory also empowers community members on a path towards resilience in collaboration with or independent from organizations. At the individual level, crisis communication theory and the related research can help individuals better prepare themselves and their families for hazardous weather, terrorist attacks, active shooter events, and many other crises. With the knowledge presented in this book, readers can become more critical consumers of social media, traditional media, and political discourse surrounding crises. This book also positions readers to ground their research in the rich theoretical tapestry of the crisis communication field.

When this book was published in 2013, it was the first undertaking to synthesize decades of research from a variety of disciplines into a single resource. The book provides an accessible entrée for students, researchers, and professionals into the power of theory. As social psychologist Kurt Lewin famously wrote, "There is nothing so practical as a good theory" (Lewin, 1951, p. 169). In the second edition of this book, Sellnow and Seeger capitalize on the success of their first edition, while keeping up with recent crisis communication theorizing.

Friends, colleagues, and students often ask why I study the potentially depressing topic of crises, especially since I generally am a positive person. You may also have been asked why you are studying crises and, thus, reading this book. While perhaps not obvious, the answer should be simple: Through communication, leaders, and community members

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make sense of crises, collectively overcome obstacles, and – if done well – improve the wellbeing of society. When done poorly, ineffective crisis communication contributes to more widespread damage including loss of life and property, environmental harm, and financial ruin.

As you can see, crisis communication is the perfect area of study for eternal optimists who see the positive possibilities of crisis management and the land mines to avoid. As Sellnow and Seeger note in Chapter 1 of this book, "While avoiding all crises and disasters such as earthquakes and tsunamis is impossible, some can be avoided and most can be more effectively managed" (p. 2). To understand the power of crisis communication we have to simply look at the world around us. As this book goes to press, we are experiencing a global pandemic on a scale that has not been experienced since the 1918 Spanish Flu Pandemic. As we witness history in the making, we are also experiencing the powers of effective crisis communication and the pitfalls of ineffective crisis communication. The COVID-19 pandemic has sharpened our attention on the role of media in crises (see Chapters 7 and 8), including the World Health Organization declaring COVID-19 an infodemic and a pandemic (WHO, 2020). The COVID-19 pandemic also has crystalized the importance of conveying messages that motivate people to take appropriate protective actions (see Chapter 9) and the central role of ethics in crisis communication (see Chapter 11).

The ongoing COVID-19 pandemic will no doubt inspire a new generation of crisis communication theorists and professionals. We welcome you into the vibrant and growing area of crisis communication scholarship and practice. Crisis communication is an applied area of scholarship grounded in a solid theoretical foundation. Applied communication research seeks "to make a difference in the world through examining some feature of human communication" (Cissna, 2000). British Prime Minister Winston Churchill is credited with saying, "Never let a good crisis go to waste" during the Second World War (Mutter, 2016, para. 1). We have already seen special calls for research on COVID-19, first from the *Journal of International Crisis Communication Research* and then from *Health Communication* among other journals.

The proliferation of scholarship on the COVID-19 pandemic comes on the heels of a steady increase in crisis communication research. Indeed, some researchers have joked that we should rename divisions within our professional associations because of the dominance of crisis communication scholarship in these divisions. Mega crises have long captured the imagination of researchers, including myself. Indeed, the 9/11 terrorist attacks and the 2005 Hurricane Katrina solidified my dedication

to crisis communication scholarship while I was in graduate school. Likewise, the 2009 H1N1 pandemic launched my focus on social media and crisis communication, including the social-mediated crisis communication model that my colleagues and I have developed over the past decade (see Chapter 8 for a discussion of social media and crisis communication theories). More recently, the tragic tornadoes that have devastated portions of the Southeastern United States have motivated my team's collaboration with the National Weather Service to improve tornado risk and crisis communication, including theories about warning communication (see Chapter 3 for a review of these theories).

As we think about the crises to come, this book provides the necessary framework for developing robust research grounded in theory that can inform practice (see Chapter 12). The many functions of crisis communication theory include organizing and describing observations, explaining relationships among constructs, predicting what will happen next, controlling outcomes when feasible, informing practice, facilitating critique, and promoting inquiry, as further discussed in Chapter 2 of this book. This book also showcases the wide variety of contexts to which we apply crisis communication theory including crisis development (Chapter 4), crisis outcomes (Chapter 5), emergency responses (Chapter 6).

While reading this book, I encourage you to consider how theory can guide crisis communication practice – including areas for which we have limited knowledge. As a scholarly community, we create the most impact when we develop and test theories through active engagement with communities of practice. As Sellnow and Seeger discuss in Chapter 1 of this book, crisis communication is a relatively young field of study. In the decades to come, the field will continue to grow and mature. My recommendation is that as you read this book, consider how you can contribute to our knowledge base whether through research, theory development, and/or your future careers.

References

Cissna, K. M. (2000). Applied communication research in the 21st century. *Journal of Applied Communication Research*, *28*, 169–173. https://doi-org.proxy-um.researchport.umd.edu/10.1080/00909880009365563

Lewin, K. (1951). Problems of research in social psychology. In D. Cartwright (Ed.), *Field theory in social science: Selected theoretical papers* (pp. 155–169). Harper & Row.

Mutter, J. (2016, April). Opportunity from crisis: Who really benefits from post-disaster rebuilding efforts. *Foreign Affairs*. www.foreignaffairs.com/articles/2016-04-18/opportunity-crisis

WHO. (2020, February). WHO director-general's opening remarks at the media briefing of Ebola and COVID-19 outbreaks. www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-ebola-and-covid-19-outbreaks

1

Introduction to Crisis Communication

Crises are increasingly important social, political, economic, and environmental forces and arguably create more change, more quickly than any other single phenomenon. Crises have the potential to do great harm, creating widespread and systematic disruption, but they may also be forces for constructive change, growth, resilience, and renewal. They can quickly reshape institutions, create shifts in demographics and populations, alter ecosystems, undermine economic stability, and rapidly alter widely held beliefs. Understanding these events, therefore, is critical. A significant component of that understanding involves clarifying the role of communication processes in the onset, management, resolution, and meaning of crises.

Recent examples, including the COVID-19 pandemic, the 2018 Camp Fire in Northern California, 9/11 terrorist attacks, Hurricane Maria in Puerto Rico, Hurricane Katrina in New Orleans, and the 2004 Indian Ocean tsunami illustrate the rapid change that happens following a crisis. The events of 9/11 precipitated not only a fundamental rethinking

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of federal policy but also created the most comprehensive reorganization of the U.S. federal government to occur in decades. Hurricane Maria devastated the island of Puerto Rico, claimed 3,000 lives, and prompted a massive migration of residents from the island to the U.S. mainland. Hurricane Katrina also created a major demographic shift in New Orleans and prompted new understandings of risk and the role of governments in response to disasters. The 2004 tsunami claimed as many as 230,000 lives in 14 countries, wiped away entire communities, and created widespread economic and environmental damage. It also called attention to the risks associated with tsunamis and development in coastal areas. The 2018 Camp Fire was the worst wildfire in California in more than 100 years, claiming 85 lives and costing over $1.5 billion. The COVID-19 pandemic was the most devastating infectious disease outbreak since the 1918 influenza pandemic. Public health professionals and disaster researchers had been warning about the risks of a global pandemic for decades.

Historically, the worst crises have been earthquakes and infectious disease pandemics. The 1918–1919 influenza, or Spanish flu, pandemic, is estimated to have infected 500 million people worldwide and may have resulted in more than 20 million deaths. The worst earthquake of the twentieth century occurred in Tangshan in China in 1976. Official death tolls indicate that about 255,000 people lost their lives and another 150,000 were injured. Crises, big and small, natural and human caused, are inevitable. In fact, many scholars suggest they are occurring with more frequency and causing more harm than they have in the past (Perrow, 1984; Seeger et al., 2003).

While avoiding all crises and disasters such as earthquakes and tsunamis is impossible, some can be avoided and most can be more effectively managed. Crisis management is a well-established practice drawing on a variety of fields including medicine, sociology, psychology, engineering, logistics, political science, criminal justice, as well as communication. In fact, it simply would not be possible to conduct strategic crisis management without a comprehensive communication plan, and, in many cases, "communication is the essence of crisis management" (Coombs, 2010, p. 25). Agencies, both public and private, such as the Federal Emergency Management Administration (FEMA) and the American Red Cross, have a critical role in creating crisis response capacities. Internationally, the World Health Organization (WHO) and the International Committee of the Red Cross and Red Crescent have taken on more of a crisis management mission. Crises are, by definition, interdisciplinary events and often reach across regional, cultural,

economic, and political boundaries. Some researchers have pointed out that this interdisciplinary aspect has made integration of both research and practice more challenging (Pearson & Clair, 1998). Along with communication, integration, coordination, and cooperation are critical to negotiating these boundaries and to effective crisis management and response.

Crisis communication theories problematize the messages and meaning construction process in all the forms of human interaction and coordination that surround these threatening and high uncertainty events. Owing to the unpredictable nature of crises, theorizing about them creates many challenges. In some ways, every crisis may be seen as an entirely anomalous and unique event that, by definition, defies any systematic explanation. It is common to see a crisis as just an accident, an unusual combination of events that could not happen again. Conversely, the fact that crises occur at an increasing and alarming frequency allows scholars to observe similarities, patterns, and relationships across numerous occurrences. Many theoretical crisis frameworks described throughout this book were developed for specific types of events, including warning theories and evacuation models for hurricanes and recall models for contaminated food (Chapter 3). In many cases, scholars have also found these approaches have utility for understanding other kinds of crises. Increasingly, efforts are directed toward developing broader, more encompassing theories, using what is sometimes called an all-hazards approach. These approaches begin by understanding that all events described as crises will have some common elements – such as threat, uncertainty, and the need for an immediate response – and that common response contingencies will be required.

Crisis research and theory have historically been driven largely by the need to improve crisis management practice. Initially, practitioners sought to develop frameworks and models to promote understanding and improve their practice. After analyses and critiques of their responses, managers often developed after action reports, which were then used in subsequent training and planning for future events. These efforts began to reveal patterns and relationships that eventually led to more general theoretical frameworks and systematic research. Experience-based approaches eventually evolved into formal case studies, which remain a dominant methodology used for studying crises. For the emergency manager, the primary communication issues relate to coordination of efforts and logistics and public warnings and notification. Communication technologies – such as 800 MHz radios, web-based systems of targeted text alerts, warning systems such as sirens, and

mass media alerts such as the emergency broadcasting system – were the primary focus for improving communication. More recently, social media such as Twitter, Facebook, and Instagram have become important tools for crisis communication.

Case studies have been enriched as researchers combined them with survey questionnaires and ethnographic techniques. Survey data has contributed significantly to understanding audience needs and interests. Ethnographies have helped capture the complex and often devastating experiences of people living through crises. In addition to case studies, laboratory-based research including simulations and experiments has been used to test specific hypotheses, thereby contributing to the development and refinement of crisis communication theory. These include investigations of attribution of crisis cause, examinations of how audiences perceive and respond to crises, and tests of the effectiveness of various message forms. Critical methodologies, including descriptive and rhetorical approaches, have been employed to develop more general frameworks of crisis communication that address issues such as ethics and social justice.

In this chapter we provide an overview of crisis and communication concepts. Crisis communication theorizing and the development of a wide range of theoretical frameworks is necessary to explain, understand, and predict crises as well as inform crisis communication practice. Crisis theory also draws on both field research and research in controlled experimental settings as well as qualitative and critical approaches. Theory drives research by suggesting relationships and questions and by calling attention to gaps in our understanding and deficiencies in practice.

We begin this chapter by discussing definitions of crisis, communication, and crisis communication. Definitions are essential elements of any theorizing process, which provide the basic conceptual component necessary to build a theory.

Defining Crisis

As with many fields of study, scholars have debated the merits of various definitions of crises. In addition, different fields of study favor different terms. Sociology generally uses the term disaster while organizational studies and communication researchers prefer the term crisis. Regardless of the terminology, these debates about definitions are important in establishing the parameters of a field and indicating the

principal components of the phenomenon. Definitions are also important components of any theory. For example, within the area of crisis studies some debate exists about the level of harm necessary for an event to qualify as a crisis. A bad snowstorm may be disruptive to a community, but the storm may only be characterized as a crisis when it threatens public safety and property. High winds may be disruptive but only constitute a crisis when they create significant property damage. To construct a theory of crisis, it is first necessary to ensure the event under examination actually meets the definition of a crisis.

The FEMA uses several criteria to determine when a situation qualifies as a disaster. A disaster declaration is required for federal aid to be available to communities (see Table 1.1).

These criteria allow FEMA to assess the relative magnitude of disruption and harm an event has created and determine the amount and form of assistance a community may need. A federal disaster declaration is necessary under the provisions of the Disaster Relief Act of 1974 and the Stafford Act of 1988 for federal assistance and aid to be distributed. The WHO identifies elements required for an infectious disease outbreak to be declared a pandemic. An epidemic involves the emergence of a new disease or reemergence of a disease, with sustained human transmission, occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people (Kelly, 2011).

Some crises are distinct in terms of their scope and the level of harm created. These so-called mega-crises "defy boundaries, limits, neat demarcations, patterned connections and linear consequences"

Table 1.1 FEMA Disaster Declaration Criteria.

- Amount and type of damage (number of homes destroyed or with major damage);
- Impact on the infrastructure of affected areas or critical facilities;
- Imminent threats to public health and safety;
- Impacts to essential government services and functions;
- Unique capability of federal government;
- Dispersion or concentration of damage;
- Level of insurance coverage in place for homeowners and public facilities;
- Assistance available from other sources (federal, state, local, voluntary organizations);
- State and local resource commitments from previous, undeclared events; and
- Frequency of disaster events over recent time period (FEMA, 2011).

Source: FEMA (2011), Declaration Process Fact Sheet.

(Helsloot et al., 2012, p. 5). Mega-crises create especially significant threats, overwhelm capacity to respond, and have both short- and long-term consequences. These events are often inconsistent with the "traditional dichotomy between natural and man-made disasters" by creating complex interactions between human-caused and natural phenomena (Helsloot et al., 2012, p. 5). Mega-crises may profoundly and permanently undermine the viability of communities, institutions, and regions and require a fundamental rethinking of preparation, response, management. Most importantly, mega-crises require consideration of causes and consequences. Climate change, for example, involves the complex and nonlinear interaction of human and natural phenomena. As climate patterns that have been relatively stable for thousands of years shift, the consequences for local weather patterns, sea level rises, agricultural practices, and human migration will be profound. Management of this mega-crisis will require sustained, cooperative, multinational efforts and social and political change on a scale not seen before. Managing the consequences of climate change will become an imperative for communities, organizations, industries, and countries. Mega-crises such as climate change have prompted an emphasis on building and improving resilience as an important strategy of response.

From other perspectives, the question of the magnitude of a crisis is best understood as a matter of personal, community, and even cultural perception. Not surprisingly, people are more likely to understand an event as a crisis when it affects them. Coombs (2010) describes a crisis as a function of perceptions based on a violation of some strongly held expectation. Food, for example, should be safe to eat and free of harmful E. coli contamination. Tap water should be safe to drink. It is generally expected that rivers will remain within defined areas and not spread to inundate residential or downtown areas. Seasonal influenza should be a relatively minor disorder and should not create widespread illness, death, and social disruptions. The violation of these expectations and some level of community and social consensus about the relative level of risk and threat create the *perception* of a crisis. A crisis condition is in contrast to what would be considered a normal condition. When people believe there is a crisis, they are likely to behave differently than they would in so-called normal times.

Similar debates about definitions have also focused on the notion of the intentional creation of harm. For example, some scholars have argued that international conflicts between countries represent crises, while others have suggested that war itself should not be classified as a crisis,

although the consequences, such as the dislocation of populations, disruption of food supplies, or disease outbreaks, do represent crises. War usually but not always is the outcome of some extended conflict and as such is not surprising in the same way as most crises. Terrorism attacks are intentional, unanticipated, and surprising and are generally classified as crisis events.

These various crises all generally evoke the notion of some dramatic, unanticipated threat with widespread and wholly negative impact. Events such as the Japanese tsunami and Fukushima nuclear accident, the Challenger Shuttle disaster, the British Petroleum (BP) Gulf oil spill, and the anthrax letter contamination episode represent crises. These events share three general attributes: they are largely unanticipated or violate expectations; they threaten high-priority goals, and they require relatively rapid response to contain or mitigate the harm (Hermann, 1963; Seeger et al., 2003). Crises are almost always unanticipated by key stakeholders, although there are usually warning signs and cues. Most often, they involve a radical departure from the status quo and a violation of general assumptions and expectations, disrupting "normal" and limiting the ability to anticipate and predict. The severe violation of

Table 1.2 Typologies of Crisis.

Crisis Types:		
Lerbinger (1997)	Seeger et al. (2003)	Coombs (2010)
Natural disaster	Public perception	Natural disasters
Technological crises	Natural disasters	Malevolence
Confrontation	Product or service crisis	Technical breakdowns
Malevolence	Terrorist attack	Human breakdowns
Organizational misdeeds	Economic crisis	Challenges
Workplace violence	Human resource crisis	Mega-damage
Rumors	Industrial crisis	Organizational misdeeds
Terrorist attacks/ man-made disasters	Spills (oil, chemical)	Workplace violence
Crises from environmental factors	Transportation disasters	Rumor

expectations is usually a source of uncertainty, psychological discomfort, and stress. Sometimes, the occurrences are so confusing people simply do not know what to do and experience extreme psychological dislocation. Weick has described this response as a cosmological episode: "When people suddenly and deeply feel that the universe is no longer a rational, orderly system. What makes an episode so shattering is that both the sense of what is occurring and the means to rebuild that sense collapse together" (Weick, 1993, p. 633).

Significant threats to such high-priority goals as life, property, security, health, and psychological stability are often associated with crises. These threats also create severe anxiety and stress and the need to do something, that is, to take some action in response to the threat. This reaction is sometimes described as the fight or flight response, a natural neurological response first described by psychologist Walter Cannon in the 1920s. The primary mammalian stress hormone, adrenaline, is activated when a threatening situation is faced. This hormone produces several neurological responses, including increased heart rate, constricted blood vessels, and dilated air passages. In general, these responses enhance an organism's physical capacity to respond to a threatening situation. Gray (1988) updated the fight or flight framework into a more comprehensive four-stage process of "freeze, flight, fight, and fright." Initially, an organism may exhibit a freeze response, exhibiting hypervigilance or awareness to the threat. The second response, according to Gray, is to flee, and if this is not an option or if fleeing is exhausted as a strategy, a fight response is activated. Finally, a strategy of fright, freezing, or immobility may occur as the organism "plays dead" in a final effort to avoid the threat.

A third defining condition of crisis is that the event usually requires some immediate action or response by agencies and groups to limit and contain the harm. Actions such as shelter-in-place or evacuation are common for some kinds of events. During the 2009 H1N1 influenza pandemic, the Centers for Disease Control and Prevention (CDC) recommended members of the public get vaccinations, wash their hands frequently, cover their cough, and stay home when sick. These actions are mitigation strategies designed to limit the spread of the disease. In cases of contaminated products, avoiding the product is necessary to reduce harm. Power outages, heavy rains, or floods often contaminate municipal water supplies. In these cases, water must be disinfected through actions such as boiling to avoid waterborne diseases. These actions usually require some communication of expert or situational advice. The need for a rapid response implies that crises emerge quickly

and are of relatively short duration. This is not always the case. The consequences of a crisis can emerge slowly over time and last for very long durations. Environmental crises, for example, may be years, even decades in the making and the consequences may only become clear slowly over time. Chemical contamination is an especially challenging source of slow-moving crises. With over 50,000 known landfill sites with toxic chemicals, these legacy "time bombs" have the potential to slowly yet significantly impact human health for years and even decades (Worthley & Torkelson, 1981).

We have suggested elsewhere that a crisis may be defined as a specific, unexpected, non-routine event or series of events that creates high levels of uncertainty and a significant or perceived threat to high-priority goals (Seeger et al., 2003). This definition captures the three primary conditions of crisis and suggests a crisis may be a contained, single event such as the 27 April 2011, Tuscaloosa, Alabama, tornado in which 52 people died, or it may be a series of interacting and cascading events, such as the Fukushima earthquake, tsunami, and nuclear disaster. This definition also includes the idea that a crisis should be contained or specific in its parameters. Larger issues, such as the ongoing healthcare crisis or the energy crisis, would not meet this definition.

Others have offered more straightforward crisis definitions. Heath (1995), for example, suggests that a crisis is a risk manifest. From this perspective, a risk occurs before a crisis and is the consequence of a risk continuing to develop without appropriate efforts to manage it. This notion of a risk incubating, developing unchecked, and perhaps interacting with other factors is one of the most common views of a crisis "cause." Therefore, crisis is also closely related to the concept of risk. Risk communication generally concerns "risk estimates, whether they are appropriate, tolerable, and risk consequences" (Heath, 1995, p. 257). Birkland (1968) described crises as focusing events, bringing attention to issues and setting the larger public policy agenda. Thus, a crisis can be a significant force in political and social change and may determine what actions government might take.

Crisis comes from the Greek *krisis* and *krinein*. *Krisis* was a medical term used by the Greek writer and physician Hippocrates to describe the turning point in a disease. *Krinein* means to judge, separate, or decide. Crisis in its eastern etymology refers to a decision point requiring a decision of judgment. The Chinese symbol for crisis, *wēijī*, sheds light on the way the term is understood in some eastern cultures. Composed of two symbols, *wei* roughly translates to "danger, dangerous, endanger, jeopardize, perilous, precipitous, precarious, high, fear, afraid." While

there is some debate about *jī*, it may sometimes mean "opportunity" and may also mean "a crucial point" (Mair, 2010). According to this translation, *wēijī* may refer to a dangerous situation and a crucial point.

Other fields have their own debates around definitions and terminology. Sociology, which probably has the longest tradition of research in this field, uses the term disaster to represent events that can be designated in time and space that have impacts on social units. These social units, in turn, enact responses and changes to manage the impacts (Fritz, 1961). Although many definitions have been proposed, most investigations of disaster refer to the physical impacts or problems unplanned or socially disruptive events cause for human communities (Kreps, 1984). Disasters create considerable harm to people and the physical infrastructure. They generally occur suddenly and prompt actions that can be taken to mitigate the harm. Quaretelli (2005) argued further that the term disaster is rooted in two fundamental ideas. First, disasters are social phenomena as opposed to simply natural forces. Natural forces, storm surges, earthquakes, or infectious diseases are sources of damage, while the disaster is the impact on social systems and processes. Second, a disaster involves the established social structure and associated changes, such as disruptions, to that structure. Although the term disaster is preferred by sociologists, it is conceptually very similar to the term crisis used in fields such as communication.

Closely associated with efforts to define crisis is the question: what causes a crisis? A number of perspectives have been offered to explain the cause of crisis (see Seeger et al., 2003, pp. 12–15). These include faulty decision making, oversights, accidents, natural changes, and unanticipated events. These may be summarized in three views: (1) normal failure and interactive complexity; (2) failures in warnings, faulty risk perception, and foresight, and (3) breakdowns in vigilance (Seeger et al., 2003, p. 12).

Normal accident theory (NAT) describes the ways in which normal, routine failures may lead to catastrophic crises. Developed by the sociologist Charles Perrow (1984), NAT emphasizes the interactive complexity that develops around larger scale socio-technical systems. Large systems, particularly those built on industrial or even societal scales, typically are technologically intense and create very high levels of complexity. The east coast electrical blackout of 2003 involved the interaction of environmental conditions (a very hot day and peak demand), inadequate maintenance in the form of tree trimming, a software bug, operator error, and an electrical grid that was highly integrated. The result was a loss of power to 55 million people in eight U.S. states and in

Ontario, Canada. Perrow (1984) notes that failures such as these are characterized by interactivity and tight coupling. Interactivity simply means that one system, or subsystem, impacts another. In the case of the blackout, peak demand and hot weather caused transmission lines to expand and come into contact with trees that had not been trimmed. When systems become overly complex, managers cannot anticipate these interactions. Most so-called natural disasters (floods, hurricanes, tornadoes) involve the interaction of natural phenomena with human systems (dams, levees, building codes and housing developments). Tight coupling occurs when there is "no slack or buffer between two items" (Perrow, 1984, p. 90). Managers thus have little time or ability to correct failures. Quite literally, there is no room for error. Perrow's work has been highly influential to the development of crisis theory. Among other things, his work predicts that as society becomes more complex, more crises will occur. Thus, accidents are becoming increasingly normal. FEMA reports that federal disaster declarations have been steadily increasing since 1953. In 1953, there were only 13 such declarations, yet 2011 saw 99 declarations, the highest ever recorded (FEMA, 2013).

A second but related view of crises posits that they are caused by failures in warnings, faulty risk perception, and inadequate foresight. This view follows the logic that when a risk or threat can be anticipated, it can be avoided. Turner (1976), for example, suggested a crisis is an "intelligence failure" or a "failure in foresight" (p. 381). Risks are often poorly understood or poorly communicated. Sometimes the signals of an impending crisis are not accurately interpreted or not assembled in ways that allow managers to connect the dots. Many crises, such as the Bhopal, Indiana/Union Carbide disaster, the New Orleans/Hurricane Katrina crisis, the Exxon Valdez oil spill, and the Flint water crisis can all be understood as failures to perceive, understand, or appropriately communicate risks.

A third view of crisis cause suggests these events occur when vigilance breaks down. This view of cause was initially popularized by the concept of groupthink developed by Janis (1972). According to this theory, decision systems, such as small groups, sometimes develop pressures to conform and reach consensus and a sense of invulnerability that reduces their ability to critically evaluate information and assess risk. Faulty decision making characterizes many crises, including the collapse of Enron and the 1986 Challenger Shuttle disaster. These faculty decisions systems and breakdowns in vigilance are often reflected in what Clarke (1999) described as fantasy planning. Disaster plans are often based on wildly optimistic assumptions and have little hope of actually working.

Clarke characterizes such plans as rhetorical documents designed primarily to convince publics that technologies are safe and that appropriate precautions have been taken.

Although there is general consensus about what constitutes a crisis, there is almost always debate about what and who caused a crisis. Issues of causality are related to responsibility, accountability, and often liability. Therefore, as discussed in Chapter 10, strategic portrayals of blame, cause, and responsibility tend to dominate the discourse following a crisis. It is also important to recognize that the term carries considerable semantic weight and thus is used strategically to call attention to issues. Defining an issue as a crisis means that action must be taken in response and resources should be made available. Sometimes there is public disagreement regarding whether a situation constitutes a crisis, with advocates hoping to make the issue part of the public agenda precisely because it is a crisis.

Defining Communication

As with the definition of crisis, scholars have also wrestled with definitions of communication and have offered a variety of competing and complementary views. Traditional notions of communication have tended to be more static and emphasize the role of the sender in a process of distributing messages to receivers. Receivers were largely seen as passive participants who were assumed to simply accept and act upon the message. The best-known formulation of this approach is Berlo's (1960) sender-message-channel-receiver model. This model created a straightforward linear view of communication, a perspective that dominated many early emergency communication conceptualizations and tended to frame crisis communication as a unidirectional process of issuing warnings or alerts through systems such as the emergency broadcast system or community-based weather sirens.

More contemporary notions of communication draw on a much broader set of concepts and describe a much more dynamic and transactive process. Participants are described simultaneously as senders and receivers, transacting and co-creating meaning through the ongoing and simultaneous exchange of a variety of messages using multiple channels. One of the best examples of this approach is Barnlund's (1970) transactional model, initially developed as a theory of interpersonal communication. This approach emphasized the view that communication is a complex process that is dynamic, continuous, circular, and

unrepeatable. Communication involves encoding and decoding systems, ongoing feedback loops, and the ongoing, co-creation of meaning.

Other views of communication emphasize different aspects of the process and many of these conceptualizations have direct application to communication in crisis contexts. Dance (1967), for example, argued that communication is both dynamic and cumulative in that it is heavily influenced by past experiences. Thus, previous experiences with a crisis influence the interpretations and communicative choices one makes. During the response to Hurricane Katrina, for example, the agencies responsible for crisis management made mistakes that damaged their reputations. This undermined their credibility, making subsequent efforts more difficult. Cushman and Whiting (2006) developed a framework that suggested much of the meaning derived through communication is created through the rules governing the communication process. During a crisis, some of these rules may no longer function and involve new actors in new contexts; thus, communication may become more complex and less effective. In other cases, new rules may surface or be imposed, influencing how meaning is created. Many theorists emphasize the symbolic nature of the process. Communication relies on symbols or an arbitrary but agreed-upon system of labels and representations that carry or encode the message and connect the message to larger systems of meaning. During crises, symbols, such as warning signs and sirens, can play an important role. In fact, many crises, like 9/11, become their own meaning systems, conveying values, ideologies, and specific views of power.

Ultimately, communication is about the construction of meaning, sharing some interpretation or consensual understanding between senders/receivers, audiences, publics, stakeholders, or communities. Scholars differ on the locus of that meaning. The mass communication theorist McLuhan (1964) offered the view that the medium is the message, suggesting that any technology (medium) used to distribute meaning directly affects the meaning that arises. Thus, the warning siren becomes the message.

Contrasting this view are the general semanticists who argue that meaning is in people's interpretation of symbols and thus exist in the communicators' cognitive processes. People who have experienced the pain and trauma of a disaster, for example, carry an interpretive system of meaning associated with disasters that is not available to others. Communication can also be understood to occur within a larger ecology (Foth & Hearn, 2007). This may include the media used, relationships, networks, history, and the larger social, political, cultural, and economic

context. Communication both influences and is influenced by the context and ecology. A crisis, for example, creates a specific context, which influences communication activities, and the communication activities also influence the context. Digital communication technology, including social media and handheld devices, has significantly altered the ecology of crisis communication. Some researchers argue that these technologies have repositioned those who are at the center of the crisis as active sources and senders of information rather than as passive receivers (Pechta et al., 2010).

An additional view of communication important in consideration of crises is the communicative constitution of organizations (CCO) perspective. This view, developed initially by McPhee and Zaug (2000) and expanded by others, suggests that organizations are constituted in and through human communication. Communication is the fundamental process whereby organizations are created by individual actors and actions. Organizations are "ongoing and precarious accomplishments realized, experienced, and identified primarily – if not exclusively – *in* communication processes" (Cooren et al., 2011, p. 1151). The CCO perspective unifies a number of views from systems theory, narrative theory, social constructivism, and critical theory, among others (Putnam et al., 2009). CCO also foregrounds a number of competing views regarding what constitutes an organization. Some perspectives, for example, emphasize the material and substantive nature of an organization, while others emphasize organizing as an ongoing process. Still others suggest that an organization is simply the coordinated behaviors of individuals. Communicative processes and outcomes may play roles in each of these views of organizations.

One of the widely used approaches to CCO is the concept of the four flows of communication introduced by McPhee and colleagues. The four flows include organizational self-structuring, membership negotiation, activity coordination, and institutional positioning. These are described as "flows" because they are interactive yet enduring, take many forms, and occur in many contexts by many participants (McPhee, 2015). Organizational self-structuring is a deliberative, reflexive process whereby the structuring processes, such as norms, rules, and hierarchies, are created and communicated. Membership negotiation concerns the ways in which individuals are recruited to become part of the organization, establish and maintain relationships, and are socialized into the organizational culture. Activity coordination involves the collective coordination of member activity. The activities of individuals in organizations are interdependent and must be coordinated and

assembled in a unified way. The final flow concerns the macro-level positioning of the organization in relation to the larger environment. This form of communication is necessary for organizations to have an independent and recognizable identity (see McPhee & Zaug, 2008; McPhee et al., 2014).

The CCO perspective may be especially relevant to crisis contexts because crises often disrupt these flows and the resulting organizational processes. Crises can change identity, disrupt patterns of coordination; shift roles, hierarchies, and responsibilities, and change membership patterns. In addition, crises often give rise to emergent organizations that respond to the crisis, such as volunteer and support groups and search and rescue groups. Crises are important forces in shaping and creating organizations and CCO can help explain these developments.

Finally, communication scholars have also described the functions of communication. These approaches, such as functional decision theory (Gouran, 1982) and media uses and gratifications theory (McQuail, 1983), emphasize the instrumental nature of communication; that is, communication allows for the intentional creation of certain outcomes. Functional approaches focus on the results or outcomes of communication behaviors and processes. This perspective sees communication as a tool senders and receivers use to accomplish goals, solve problems, make decisions, influence others, and coordinate actions. Communication may be more or less effective in accomplishing these outcomes depending on its structure, how it is used, what audiences it targets, and what channels are employed, among many other factors. Managing a crisis often requires the cooperation of various agencies, groups, and community members. In many cases, this cooperation requires communication; thus, communication is an instrument of cooperation.

Dance and Larson (1976) described three broad functions of communication: (1) regulating the behavior of self and others; (2) linking individuals with others and their environment; (3) developing higher mental processes and capacity. Regulating behavior primarily through persuasive processes is a fundamental communication function and represents an important tradition in communication inquiry extending back to the Greek rhetoricians. In fact, some views suggest that all communication is persuasive. Linking functions include both information exchange and linking to one's environment but also the development of relationships. Information about the environment is necessary to make choices about how to behave. Finally, Dance and Larson suggest that communication processes are closely associated with cognitive processes and capacity. In other words, communication is an epistemology, a way of knowing

and thinking. We have suggested that this functional approach may be particularly useful in understanding the communication activities associated with crisis management. These are outlined in Table 1.3.

These functions, critical to effective response, suggest that communication is associated with a wide range of instrumental outcomes during a crisis. For example, communication is necessary to persuade people to prepare a personal crisis plan. In fact, the website Ready.gov promotes preparedness through a public communication campaign. A successful communication of evacuation notice is necessary to manage the harm of floods, hurricanes, and some forms of toxic spills. Public health officials sometimes describe communication as a form of "social Tamiflu," referring to the antiviral medication used to treat influenza.

Table 1.3 Functions of Crisis Communication.

Scanning and Spanning	(Monitoring and maintaining external relationships: collecting information, building relationships with external stakeholders) Sensemaking of information Issue management Spanning agency, organization, and community boundaries Risk communication
Crisis Response	(Planning for and managing crises) Uncertainty reduction, providing information and interpretations, warnings, evacuations notices, product recalls Coordination with key stakeholder and response agencies Information dissemination Promoting strategic ambiguity
Crisis Resolution	(Restructuring, repairing, and maintaining relationships after a crisis) Defensive messages Explanatory messages Image restoration Renewal Grieving and memorializing
Organizational Learning	(Emerging from a crisis with enhanced knowledge, relationships, and capacity) Dialogue Networks and relationships Understanding and norms

Communication is the primary way public health officials can influence the behavior of publics in ways that can limit the spread of this infectious disease.

Given this range of definitions, concepts, and complexity of communication, is it possible to fully define crisis communication? Crisis communication could simply be understood as the ongoing process of creating shared meaning among and between groups, communities, individuals, and agencies within the ecological context of a crisis for the purpose of preparing for and reducing, limiting, and responding to threats and harm. This definition points to the diversity of communicators – both senders and receivers – involved and the instrumental and functional elements of communication during a crisis. Beyond this definition, however, is the fact that communication processes are sensemaking methodologies allowing individuals, groups, communities, and agencies to co-create frameworks for understanding and action even within the highly uncertain, demanding, and threatening context of a crisis. These events shatter the fundamental sense of normalcy, stability, and predictability we all count on in living our daily lives. They are disruptive, confusing, shocking, and intense events and making sense of them and reestablishing some new normal requires communication. Crisis communication processes are also made significantly more complex by the diversity of audiences, cultures, backgrounds, experiences, new technologies, and forms of crises. In addition, effective communication in these cases can literally be a life and death matter. Understanding the role of communication in these events, therefore, is critical.

The effort to do so has been driven by dramatic crisis events and has involved several research traditions. In its earliest iteration, crisis communication practice was a subfield of public relations and was directed toward identifying strategies to protect organizations facing accusations of wrongdoing. One of the first professional practitioners of public relations, Ivy Lee, helped manage press coverage of the 1906 Pennsylvania Railroad disaster involving a passenger train derailing on a bridge in Atlantic City. The disaster caused more than 50 deaths (Hallahan, 2002; Heibert, 1966). The principles of crisis communication were drawn largely from anecdotal insights, "war stories," and later more formalized case studies (Coombs, 2010, p. 23). Although these early principles of crisis communication were anecdotal and did not draw on any established theory, they laid the groundwork for subsequent investigations, which began to develop in the 1980s. More systematic case studies and the application of rhetorical theory added to the earlier principles of practice and a coherent field of crisis communication began to emerge

(Lachlan et al., in press). Erikson's (1976) examination of the Buffalo Creek disaster, Fink's (1986) analysis of the Three Mile Island Disaster, Seeger's (1986) analysis of the Challenger Disaster, and Snyder's (1983) and Benson's (1988) investigation of the Tylenol poisoning and subsequent responses helped developed the case study approach to crisis. Much of the work was still descriptive and critical and depended largely on descriptive and rhetorical methods (Benoit, 1995).

As the field developed coherence, investigators began employing empirical methods to study crisis communication. This included both field studies of crises and disasters using survey questionnaires and laboratory investigations. Investigations of Hurricane Katrina (Spence et al., 2007), the terrorist attacks of 9/11 (Lachlan et al., 2009) as well as investigations of organizational responses to crisis (Coombs & Holliday, 2010) were often grounded in more formal theories, utilizing approaches that could be replicated to confirm results.

Other fields, including management, sociology, political science, anthropology, and public health also explored questions of crisis and communication. Of these, the work of Quarantelli (1988), Mileti and O'Brien (1992), and Wenger (1985) was especially relevant, focusing on questions of communication, coordination, warning messages, and media coverage. Disaster sociology in particular has developed a comprehensive body of work in communication. Investigators in management and organizational behavior approached crisis as an issue of strategic management responses. This included Shirvastava's (1984) case study of the Bhopal Union Carbide Disaster, Perrow's (1984) analysis of Three Mile Island, and Weick's (1993) examination of the Mann Gulch disaster. Finally, the field of political science has explored government response to crisis. This includes Birkland's (1997) work on disasters and the subsequent development of public policy agendas and Comfort's (1994) examination of the Northridge earthquake resilience and coordination. Other fields, such as anthropology, public health, nursing, chemistry, tourism, agriculture, geology, and engineering have their own niche interests in crisis communication.

Today, crisis communication is a robust, interdisciplinary field with important areas for the application of research and theory. Crisis managers make use of the result of research and use theory to inform their decisions. Response agencies commission studies to answer specific questions. Researchers employ a wide range of methods and approaches to explore the preparation and planning, risk recognition, response, and recovery. An important part of this process has been the development of theories of crisis communication. Theory helps researchers organize

and make sense of observations and provides focus to investigations. Theory can help expand our understanding and conceptualization of crisis communication. Practitioners can use theory to help predict and control what is often a very uncertain crisis condition. Finally, theories can challenge assumptions about crisis and the role communication plays.

Plan for This Book

The following chapters present, describe, and critique a wide range of theories that have utility in explaining how communication functions before, during, and after a crisis. We include explanations of various communication channels, audience behavior and responses, agency coordination, image and reputational repair, and crisis management. This body of theory is highly diverse and interdisciplinary, taking many forms and coming from many disciplinary perspectives. Some are grounded in more general qualitative and social constructivist assumptions, while others are more specific and related to logical positivist epistemologies. This effort to represent a broad sampling of theory allows for a much more comprehensive understanding of the role of communication in crisis and also provides the researcher and the practitioner a broader array of tools. In addition, these theories comment on one another, providing and demonstrating how theory has developed within one particular area of focus. We have grouped these theories into nine chapters. Each chapter represents a family of theory in terms of similar focus or structure.

The chapters are presented roughly in a developmental system. We begin with Chapter 2, a discussion of theory. Chapter 3 presents theories of communication and warning as primary processes occurring when a crisis first emerges. Warnings, including evacuations, are central tools in limiting harm with many types of events. Theories of communication and crisis development are presented in Chapter 4. Failures of communication are closely associated with the onset of crisis, and specific communication processes are associated with each stage of crisis development. Theories of communication and crisis outcomes (Chapter 5) and theories of communication and emergency response (Chapter 6) examine efforts to explain, model, and respond to the post-crisis conditions. Communication is generally recognized as an essential tool for agencies and communities seeking to mount an effective response. Theories of communication and crisis (Chapter 7) describe efforts to characterize and explain the role of

legacy media. Chapter 8 focuses specifically on theories dedicated to explaining the role of social media in crisis communication. Chapter 9 explores theories of influence, including persuasion and rhetorical approaches to crisis communication. Theories of communication and risk management, covered in Chapter 10, draw on the very well-developed body of scholarship in risk communication. Theories of communication and ethics (Chapter 11) reflect our belief that crisis always involves questions of good and bad, right and wrong, and desirable and undesirable. Finally, in Chapter 12, we explore the ways in which crisis communication theory can be applied and expanded.

Conclusion

Crises are powerful forces of individual, organizational, community, and social disruption and change and communication plays an essential role in the ways in which crises emerge, are managed, resolved, and understood. Theory is an important tool for both investigators and practitioners. These events create high levels of uncertainty, confusion, chaos, and harm that theory and research can help explain, predict, and control. Communication is constitutive of the organizations responding to crisis and the organizations emerging from crisis. Moreover, communication is the way we come to understand and make sense of crises. As crises become more frequent and the impacts touch more people, the theories of crisis communication can help in avoiding crisis, mitigating harm, and recovering more quickly and completely.

2

Theorizing about Crisis and Crisis Communication

In this chapter, we discuss definitions of theory, theory's role and function, and the various forms theory takes. We also explore the traditional theory-practice divide and the movement to develop practical theories to bridge the divide. A framework for a meta-theory of crisis communication is presented. Our view is that theory is a necessary component to any effort to create systematic understanding. Theory plays an especially important role when there is confusion and uncertainty about what is happening, why, and what the consequences might be, such as during a crisis. We also believe that theory is critical to practice, or as noted social scientist Kurt Lewin observed, "There is nothing so practical as a good theory" (1951, p. 169).

Arguably, theory is the most important tool researchers have for building broader understanding of any phenomena. Theory is also a widely misunderstood concept often denoting an esoteric and generalized abstraction bearing no relationship to reality or practice. This is reflected in the common statement: "Well, that's all well and good in theory, but it doesn't work in reality." Theory by definition must be

Theorizing Crisis Communication, Second Edition. Timothy L. Sellnow and Matthew W. Seeger.

related to the reality it seeks to explain; in its most basic form, a theory is simply an explanation created for something that needs further understanding. Theory is an abstraction of reality, a way of framing, modeling, and understanding what is observed to be happening. By explaining the reality of what is observed, theory can be used to inform practice. On one hand, formal theory can be quite rigid in its efforts to describe a formal system or proposition framed in a way that allows for developing specific predictions, testing, and validation. On the other hand, a theory can be as simple as an individual's expectation based on observations and experiences. These lay theories are formulated by all of us and help us explain, organize, and make sense of the world we experience. Theories, formal or informal, are simply sensemaking devices, sets of concepts, definitions, or ideas that allow individuals to organize observations in ways that account for the observations they make about the world.

One of the traditional conceptualizations of theory and research makes a distinction between basic research, which is associated with theory development, and applied research, which is associated with practice (Stokes, 1997). Basic research does not consider the practical ends of the work and seeks to identify fundamental theoretical concepts and principles (Reagan, 1967). Traditionally, basic research was valued over other forms in part because it was not influenced by practical issues and problems. Applied research is more likely to be influenced by practical or even political concerns. Theory and principles of application are both improved, however, when they are developed and refined in relation to one another.

The relationship between theory and practice is complex and dynamic, governed by disciplinary norms and conventions, and influenced by changing political and economic forces (Hutchings & Jarvis, 2012). Some disciplines rely heavily on theory while others are more application and practically oriented. In many cases, practice comes first and leads to the development of theory. The relevance of fields of study changes as social conditions change. Issues or problems emerge, giving rise to investigations and the development of theory. The 9/11 terrorist attacks, for example, promoted a surge of government-funded research seeking to solve a range of practical problems, including interoperability of first responder communication systems, effectiveness of warning and risk recognition systems, the factors associated with resilience, and the conditions that might give rise to terrorism. The emergence of new infectious diseases, such as the Zika outbreak and COVID-19, spur programs of research, which in turn give rise to theories. Crises often point out

unforeseen issues, problems, and areas of vulnerability that then require systemic programs of research. In many cases, researchers must move very quickly to help address practical issues associated with emerging risks. During the early stages of the COVID-19 disasters, a group of microbiologists, material scientists, engineers, and clinicians from around the country came together to investigate protocols for decontaminating the N95 masks used to protect medical and frontline workers. These protocols were needed to address a severe and immediate shortage of personal protective equipment created by COVID-19.

While the conceptual distinction between theory and practice has been part of an ongoing discussion in research communities, communication scholars have begun to question this distinction (see Barge & Craig, 2009; Eadie, 1990; Petronio, 1999). Several emerging communication traditions – including applied communication, engaged scholarship, action research, translational research, and value-based scholarship, among others – seek to both understand and apply communication inquiry to solve problems, engage issues, and address social inequities (Seeger, 2009). This movement has been driven by the ongoing recognition that communication processes are necessary to address a variety of social problems and issues. This includes the management of risks and crisis events. The group of researchers developing N95 decontamination protocols described earlier turned to communication researchers to develop methods for effectively disseminating their protocols. The development of practical theories of communication has been "explicitly designed to address practical problems and generate new possibilities for action" (Barge & Craig, 2009, p. 95). As such, they hold a specific relevance to crisis communication.

One example of a practical theory that emerged from observations during crises is the Waffle House Index. This index was derived from observations by employees of the Federal Emergency Management Agency (FEMA) regarding the severity of a crisis and the ability of local Waffle House restaurants to stay open. This restaurant chain has an established record of good emergency preparedness and is generally able to continue operations except during the most extreme weather events. Thus, a full menu, a limited menu, or restaurant closure is a general indication of the severity of a crisis (McKnight & Linnenluecke, 2016). The Waffle House Index can be described as a theory of crisis severity and has practical utility as a means to assess the severity of a crisis and what resources a community might need for recovery.

Barge (2001) and Barge & Craig (2009) suggest three broad approaches to the development of practical theories of communication: mapping,

engaged reflection, and transformative practice. Mapping takes many forms and is a process necessary to almost all theorizing. It involves creating some form of representation of the reality being examined. Although all theory should bear a direct correspondence to reality, practical theory is perhaps more attuned to the dynamics of the context than other forms. The idea of mapping is that by creating a symbolic abstraction of a system, process, structure, or phenomena allows for understanding of the relationship between the various sub-components. Reflexivity concerns the dialogue that occurs between theory and practice when theory is deployed as a tool for addressing problems and issues. Practical theory is refined, tested, and critiqued based on its utility. Barge & Craig (2009) argue that practical "theory emerges from a systematic reflection on communicative practice in terms of the kinds of problems, dilemmas, and sites that people engage in the conduct of their lives and how they manage them" (p. 59). Finally, transformative practice means using theory to "make sense of situations and take action that is intended to improve those situations." Theory may be transformative in its ability to fundamentally reframe practice in intentional and strategic ways to achieve desired outcomes. The movement to develop a body of practical theory helps bridge the traditional divide between theory and practice by developing fuller understandings of how the two domains can be productively related. It also downplays the tendency to view theorizing as a more important and valued process than practice. Practical theory may be especially useful as a tool for making strategic decisions under conditions of high uncertainty, such as crises.

Theoretical approaches take a variety of forms. Some of these approaches provide broad conceptual grounding for the object of study. Some are based on observations that become formalized. These approaches can provide unifying orientations and clarify underlying philosophies for a domain of theorizing. They clarify values, the overall purpose of theorizing, and the way scholars think about their work, often described as meta-theories.

Meta-theory represents the underlying philosophy behind a body of theory or the fundamental set of ideas about how a phenomenon of interest in a particular field should be thought about and studied (Wagner & Berger, 1985). Meta-theoretical perspectives are the fundamental assumptions regarding and domain of study that guide theorizing. It describes what researchers will focus on, how, with what goals, and with what outcomes. A meta-theoretical perspective identifies the problem(s) to be addressed by theory (see McPhee, 2000). A meta-theoretical perspective of a phenomenon can be described using four broad concepts: ontology,

axiology, epistemology, and methodology. Ontology concerns the nature of the reality being examined. Epistemology concerns the character of knowledge about a particular domain of inquiry and asks questions such as how do we know what we know, what can we know, and what counts as legitimate knowledge. Value questions, including aesthetic, ethical, and broader utility, are addressed by axiology. Domains of inquiry may have intrinsic value and may be seen as worthwhile based on the outcomes they achieve. Finally, methodology concerns the accepted epistemologies of the field and the established ways of conducting inquiry. A meta-theoretical approach to crisis communication addressed these four elements (see Table 2.1).

We discuss the traditions of crisis communication inquiry throughout this book. The dominant method of crisis communication research is the case study, largely because of the challenges of collecting data around disasters. Case studies employing thick description, rhetorical analysis, content analysis, interviews, formal reports, and media accounts are useful in capturing the dynamics of a crisis. Other approaches, especially survey research and laboratory investigations, have also become increasingly important methods for crisis communication investigations. The epistemology of crisis communication is grounded in a view that theory should be contextually relevant. That is to say, any theory of crisis communication should account for the essential elements of the crisis context, including uncertainty, immediacy, and harm. Diverse kinds of knowledge can provide insight into the conditions of a crisis. This includes experiences and personal accounts, empirical and qualitative data, and critical analyses. Much of crisis communication theory is particularly attuned to those individuals, groups, organizations, and communities suffering harm. Some theories privilege organizational harm while others privilege the harm to individuals. Several theories described in the following chapters can be critiqued on the grounds that they have a managerial bias because of the tendency to privilege organizations. The axiology of crisis communication has been driven largely by questions of ethics especially as they relate to rights of individuals to have access to information and the duty to help and care for those who face harm. The concepts of significant choice and autonomy concern the rights of individuals to have access to information about matters that might impact them (Ulmer & Sellnow, 1997). Beneficence and the ethic of care concern the obligation to care for those harmed in ways that are beneficial to their needs (Egilman, 2006). Finally, the ontology of crisis communication focuses on the reality of crisis, especially as experienced by those most directly impacted. As we

Table 2.1 Meta-Theoretical Elements of Crisis Communication.

Ontology:
High uncertainty
Immediacy
Threat
Disruption and chaos
Emotional Responses: fear, dread, anxiety
Axiology:
Ethics of significant choice and right to know
Ethic of care
Autonomy
Beneficence
Epistemology:
Diverse kinds of knowledge
Experiences
Empirical
Critical
Qualitative
Methodology:
Case Studies: thick description, rhetorical analysis, survey, content analysis, interviews, formal reports, and media accounts
Experiments

have noted in Chapter 1, a crisis creates high uncertainty, a threat, and the need for an immediate response. A crisis often engenders intense feelings of fear, dread, anxiety, and uncertainty. The reality of crisis often involves confusion, chaos, disruption, and the lack of normalcy.

While meta-theoretical underpinnings (Table 2.1) of a domain of study help clarify the goals, the function, structure, form, and nature of what constitutes a theory are also important to examine. There are many formal definitions of theory, such as those presented in Table 2.2. At some level, however, the very straightforward "If A then B" proposition underlies most formal theories. For example, a basic crisis theory might propose, "If a condition is perceived to be a crisis (A), then people will experience high levels of uncertainty (B)." This theory does not necessarily propose that all people will feel uncertainty or that all crises will produce high levels of uncertainty. A theory is never "proven" as a universal law covering all cases, particularly when considering human behaviors where so many factors may interact. This proposition does

Table 2.2 Definitions of Theory.

"A theory is a description of concepts and specification of the relationship between or among those concepts" (Baldwin et al., 2004).
"A theory is a set of interrelated constructs (concepts), definitions, and propositions that present a systematic view of phenomena by specifying relations among the variables, with the purpose of explaining and (or) predicting the phenomena" (Kerlinger, 1986).
"Theory is a tentative explanation invented to assist in understanding some small or large part of the 'reality' around us. Ideally, theoretical concepts are measurable and propositions testable and therefore subject to refutation" (Donohew & Palmgreen, 2003).
Theory can be seen, "in its broadest sense as any conceptual representation or explanation of phenomena" (Littlejohn, 1999).
"Theory is a generalization separated from the particulars, an abstraction separated from a concrete case" (Alexander, 1987).

suggest, though, is that as a general principle, crises are characterized by uncertainty. It is then possible to follow the initial proposition with a second, "If people experiencing a crisis feel high levels of uncertainty (A), then they will seek out information (B)." This is an example of how theories can be systems of propositions.

This example of theories as systems of propositions illustrates some of the functions of theory (Table 2.3). The first is to organize a set of observations. One of the most striking behaviors people exhibit upon experiencing or learning about a crisis is their attempt to find a television or radio for a news report or a website for more information. These observations about crisis behaviors can be organized in an "If A then B" proposition that allows for a second function: to explain some phenomenon or something that needs explanation. It may not be immediately clear why people experiencing a crisis are talking on their cell phones, texting friends, meeting in small groups, or spending time on the web. These propositions provide an explanation for that behavior. A third function of theory is to predict what will happen in a particular situation. If we know that A is followed by B, then it is possible to predict when B will occur. Crisis managers, for example, know that in a crisis the public will have an intense need for information and will seek it out from any available source, usually an immediate source such as radio, television, or the web. Crisis managers also understand that if they do not provide

Table 2.3 Functions of Theory.

Organize observations of a phenomenon or sets of related phenomena
Describe what is observed
Explain the relationships between constructs
Predict what will happen in a particular circumstance
Control the outcome when it is possible to predict
Inform practice by helping people understand what is happening
Facilitate critique by promoting understanding of what can happen
Promote inquiry and research by helping investigators form questions
Promote other theory building by proving related insights

the information and meet the informational needs of the public, other often less credible sources will fill the informational void. The fourth function of a theory is to help exert some control over behavior by informing practice. By providing immediate, credible, and easily accessible sources of information to people who are experiencing a crisis, managers can reduce uncertainty and anxiety and influence what messages the public receives. Creating some sense of control and, thus, order is critical during the uncertainty and chaos of a crisis. Finally, a theory can help guide research by creating questions that can be tested and by generating new theories. Theory guides research by pointing to the questions that need to be answered and by putting them in a form that can be answered. Once research is completed, the results can be placed in the theoretical framework to refine the propositions further or, in some cases, demonstrate that the theory is incorrect. In this case, an entirely new set of propositions is needed. Thus, theory is tested through research. A theory cannot be proven to be entirely accurate or correct, however, because there are always new cases. It is more accurate, therefore, to say a theory has received support than to claim it is true or proven.

Within the structure of the "If A then B" proposition is the explicit expectation that A is related to B is some way. The connection between A and B may take many forms and sometimes the form is not clear or self-evident. The most obvious form is that A causes B, but causality is very difficult to establish, particularly in the social sciences, where individuals make choices about their behavior. Cause implies a direct almost law-like relationship between variables that is rare in cases of human

behavior, although it is still the goal of some theoretical perspectives. In other theories, the expected relationship may be simply temporal, that A precedes B in some logical way. Many developmental theories are grounded in this form of relationship, assuming that A must occur before B can occur and that completing A makes room for B. It may also be that A is correlated with B in the sense that the two are connected in either a positive or negative way. A positive relationship means a change in A results in a change in B in the same direction, where a negative correlation indicated that changes in one direction in A results in a change in the opposite direction in B. Some theories specify multi-directional relationships where A influences B and B also influences A. A structural relationship between A and B may occur when they are both part of a larger system, such as a cultural system, creating a relationship where one is related to the other.

This "If A then B" structure underlies most theories, as theories do take many other forms. One form is the taxonomy, which might be framed as "A is not B, is not C, is not D." A taxonomy is a system of classification whereby some groups of phenomena are sorted according to their types. Table 1.2 presented three common crisis taxonomies. The value of a taxonomy is that it specifies similarities and differences. As with definitions, taxonomies help clarify the range of concepts under investigation. A second form of theory is the model; in fact, all theories can be described as models in the sense that they are representations or abstractions of the real world. The theory "If a condition is perceived to be a crisis, then people will experience high levels of uncertainty" is a verbal model. The description is a verbal representation or model. There are also pictorial models, such as the food recall model presented in Chapter 4, or models of hurricane tracks and land falls. Mathematical models, system models, scale models, and hybrid models are also used in research. Each seeks to represent reality and describe the relationship between elements. Models are particularly helpful in demonstrating relationships such as time, sequence, or proximity. They can help clarify and visualize the relationships between elements of the theory, especially when those relationships are complex.

Another distinction sometimes made between theories is logical positivist versus social constructivist approaches. These approaches represent two philosophical orientations and tend to be associated with different methodological stances. Logical positivism is a rational approach to human behavior that follows empirical assumptions. According to this approach, the truth or accuracy of a statement lies in its ability to be empirically verified. Logical positivists believe in a

material reality that can be measured and verified through empirical observation. They seek more law-like relationships in their efforts to understand behavior. In contrast, constructivists or social constructivist approaches typically favor more qualitative approaches and argue that much of meaning is socially constructed through perception, interaction, and language. For the students of theory, it is important to understand that these philosophical stances underlie various propositions and influence how the propositions are formulated. Both approaches are represented in theories of crisis communication.

Theories may also be described as specialized, narrow, or grand. A specialized theory is a narrow proposition designed for a very limited application or circumstance. Most crisis theories are relatively specialized formulations developed to explain specific phenomena. A grand theory is a formulation that seeks to describe and explain a much broader range of phenomena. These theories are appealing in that they have the potential to unify many more limited theories and create an overall picture of the phenomenon under investigation. Chaos theory, with very wide-ranging application as described in Chapter 6, is one such theory. While chaos theory explains a great deal, it falls short of being a grand theory in that it does not create a complete understanding of any one phenomenon. When a set of propositions becomes general and abstract, it is called a paradigm. "A paradigm can be viewed as a set of basic beliefs (or metaphysics) that deals with ultimates or first principles" (Guba & Lincoln, 1994, p. 107). It is a mental window or worldview that specifies elements, relationships, and assumptions. According to Kuhn (1962), a paradigm can also be described as a "coherent set of concepts, principles, assumptions, and basic axioms that have come to be accepted by a sufficiently significant number of researchers or practitioners in the field" (cited in Dills & Romiszowski, 1997, p. xi). Probably the most popular paradigm in communication research is systems theory, which outlines the general dynamic homeostasis that characterizes the relationship between supra systems, systems, and subsystems (Bertalanffy, 1950). According to systems theory, various forms of feedback maintain stability by regulating the operation of systems. As a paradigm, systems theory is too general to generate specific testable hypotheses. Nonetheless, it has been widely influential in the formulation of other theories.

Theories are also sometimes described as emergent when they are in the early stages of development. As propositions are offered, tested, refined, and critiqued, more scholars may find they have utility. When this happens, theories typically reach some level of development where

they are no longer emergent but represent mainstream sets of ideas that have been agreed upon and accepted as useful. Grounded theory is a qualitative approach designed to lead to the emergence of new theories. Rather than following the traditional approach of beginning with a theory and testing its propositions through the collection of data or observations, this approach begins with data and allows the propositions to emerge (Glaser & Strauss, 1967). Observations are coded, concepts are developed, observations are categorized, and theoretical propositions are then generated.

Finally, theories themselves may be loosely grouped or categorized by similar characteristics in form, function, or area of explanation. These families of theories, such as developmental theories, mass communication theories, or theories of warning, typically focus on similar issues or phenomena. In doing so, they comment on one another and create a richer, more complete understanding of the area being examined. Often within a family of theory there are conflicting and competing formulations and research is required to sort out which is the most useful explanation. Image repair theories of crisis are a family of related theories that, taken together, provide a rich perspective to explain how organizations respond to crises. Various theories of warning address the challenges of disseminating messages about impending risks under conditions of uncertainty that will motivate people to take appropriate action.

Critiquing Theory

As we noted earlier, theory can be understood broadly as a set of tools, but all tools are not equally effective. Some tools are better matched to some applications. It is common for theories to be applied in contexts for which they were not initially designed. In other cases, the theory is not well matched to the phenomenon it is designed to explain. Sometimes a theory fails to account for new developments, such as changes in technology or in social structures, and is no longer useful.

Some theories, for example, are complex and thus cannot be easily understood or applied. The common criticism that theory does not work in the real world is usually due to overly complex sets of propositions, perhaps characterized by jargon and too many exceptions and caveats. Simplicity is one characteristic of a good theory. Simple theories are easier to understand and apply. Related to simplicity is the idea that a theory should be parsimonious, efficient in explaining as much as

possible with few propositions and with wide application. Some highly parsimonious theories, such as chaos theory described earlier, have explanatory utility in both the physical and the social sciences. The most parsimonious of theories is the grand theory, which for most fields remains an elusive goal. Because theory is essentially a tool, it should also be useful, not only in generating and informing research but in guiding practice. This is another reason for constructing simple and straightforward theory. Theories should be dynamic in a way that allows them to develop, expand, and grow to accommodate new understandings and insights. In this way, a theory has much greater longevity.

Heurism is the ability of a theory to generate new ways of thinking, understanding, and, ultimately, generating research. Sometimes, theories capture the imagination of researchers and entirely new bodies of knowledge are created. They are often replaced by new frameworks that go beyond the initial formulation and are seen as having more explanatory potential. Finally, theory should be structured in such a way that it can be tested. We noted earlier that a theory can never be proven true or accurate. It is possible, however, to prove a theory false. This characteristic of falsifiable is a critical component of any theory that has as a goal generating research.

Conclusion

Theory and theory building are expressions of our natural inquisitiveness and creativity. Humans have an instinctive drive to explain and understand; in this sense we are all theory builders and users. People who have experienced a crisis often feel an intense need to ensure that such an event never happens again. Explanation and understanding are part of that process. Interestingly, communication of the experience or sharing the story of the crisis is often part of the process. These stories help others learn and make sense of the event. Crises, however, are anomalous events and generate high levels of uncertainty about what is happening, why, and what should be done. Theory is particularly appropriate in these contexts for informing decisions and actions. Beyond this, however, theory helps build a more comprehensive understanding of crises: how they develop, what role they play, and how they can be managed.

3

Theories of Communication and Warning

Both scholars and practitioners have sought to understand the process whereby crisis managers and the public receive information about an immediate and impending threat, how that threat is interpreted and understood, and how it may impact individual decisions and actions. One result is a set of relatively specialized theories and models that address crisis detection, issues of evacuations, efforts to create shelter-in-place responses, and recalls of potentially dangerous products, such as contaminated food. While related to more general theories of risk perception and communication as presented later in Chapter 8, these approaches are distinct in dealing with the specific problem of how to inform the public about an imminent threat and provide motivation to take self-protective action. Warnings are important because they are the principal way, along with promoting preparedness, for reducing harm.

In this chapter we describe the general process of issuing warning messages as well as the contexts of such warnings. Some of the fundamental tensions of warning systems, including the duty to warn, are described, along with variables such as channels, audience characteristics, contextual

Theorizing Crisis Communication, Second Edition. Timothy L. Sellnow and Matthew W. Seeger.

variables, and timing. Warnings vary widely in terms of channel (e.g., sirens, text alerts), specificity (e.g., a Department of Homeland Security [DHS] color-coded alert of "elevated risk," a hurricane evacuation order, a Centers for Disease Control and Prevention message about social distancing), and the source of the message (e.g., neighbors, media, government agency). A significant body of literature has sought to describe these variables in warnings.

We review several functional theories of communication and crisis warning, including Mileti and Sorensen's Hear-Confirm-Understand-Decide-Respond model, Lindell and Perry's protective action decision model (PADM) response framework, and the integrated food recall model. We describe several warning systems, including the Emergency Broadcasting System, the DHS alert system, and the National Hurricane Center's cone of uncertainty. The development of mobile alert systems such as the Wireless Emergency Alert (WEA) are also described.

Detection of Risks

The detection or identification of risk is a communication process that may be understood as signal detection or, as described in Chapter 4, a trigger event. A trigger event signals a significant discrepancy between the current and desired state. Organizations and institutions survey their internal and external environment through an ongoing process of scanning to assess risks and threats. New risks are constantly presenting themselves and old threats reemerge. Signals about impending risk can manifest from news reports, warnings from scientists, automated warning systems, engagement of activists, government regulatory bodies, or through interpersonal sources, among others (Kasperson et al., 1988). To issue a warning, the threat must be recognized and agreed upon by decision makers. The development of a crisis usually involves a failure to recognize, receive, interpret, or attend to a threat signal. Mileti and Sorensen (1990) suggest that "[t]he ability to recognize the presence of an impending event is determined by the degree to which an indicator of the potential threat can be detected and the conclusion reached that a threat exists" (p. 4). Missed warnings, ineffective communication about a perceived threat, failed interpretations, and/or failure to act upon warnings, then, are typically associated with the development of a crisis (Seeger et al., 2003).

COVID-19, for example, emerged in Wuhan, China, with the first signals emerging December 30, 2019. Dr. Li Wenliang, an ophthalmologist at Wuhan Central Hospital, warned his colleagues of a new respiratory

illness. Reports soon emerged in social media. The World Health Organization issued its first warnings in early January 2020. The Chinese government was slow to react and even tried to silence Dr. Wenliang, who later died of the illness. Most other governments were also slow to react, discounted the threat, and generally failed to take decisive action. In some cases, existing pandemic preparedness plans were not activated.

Turner (1976) included a discussion of these forms of failures in his larger failures of foresight model. As Turner (1976) noted, the failure to perceive a risk may involve a variety of signal features as well as general problems in reception, detection, and interpretation (Table 3.1). Seeger et al. (2003) claimed that signals and messages associated with threats are often faint, subtle, or not easily detected, and, in addition, are often incorrectly interpreted. They typically involve novel, non-routine information that does not have well-defined audiences, channels, interpretive schemes, or clear routine responses. The strength, frequency, and urgency of the message and the credibility of the source are important determinants of a response, including the chances of issuing a larger, more general warning message.

Weick's theory of sensemaking (described in Chapter 7) outlines the ways information is collectively interpreted and the ways this process may collapse, mislead, or fail to recognize a risk (1988, 1993). Sensemaking is a collective process for creating plausible meanings and involves the "bracketing of cues from the environment, and the interpretation of those cues based on salient frames. Sensemaking is thus about connecting cues and frames to create an account of what is going on" (Maitlis & Sonenshein, 2010, p. 552). Three factors are identified that may influence

Table 3.1 Limiting Factor on Threat Recognition.

1. Weak or subtle crisis signal.
2. Presence of strangers as distractors.
3. Source of crisis signal not viewed as credible; that is, from an outside source or from a whistleblower.
4. Inadequate channels for communicating risk or threat.
5. Signal of threat embedded in other routine messages.
6. Risk/threat messages systematically distorted.
7. Organizational or professional norms against communicating risks and warnings.
8. Risk/threat messages discounted because of inconsistency with dominant beliefs.
9. Signals do not coalesce, are not compiled, or do not reach appropriate receivers.

Source: Adapted from Turner (1976).

enactment, precipitate failed interpretations, and lead to crises. These are commitment, capacity, and expectations. Commitment is associated with public statements reifying a specific interpretation. A strong public commitment from leaders to a particular interpretation may limit the ability of other interpretations to emerge. Capacity concerns sufficient volume and diversity of sensemaking resources. If managers are distracted by other issues and demands, they may not have the capacity to receive and interpret cues about impending risks. Finally, collective expectations may create blind spots leading to missed cues. Many crises may be attributed in part to failures in enactment, including the Challenger Shuttle Disaster (Gouran et al., 1986), the Flint Water crisis (Nowling & Seeger, 2020, and the Bhopal Union Carbide Disaster (Shrivastava, 1992). The failure to take decisive and rapid action in response to the initial warnings of COVID-19 can be explained in part by ongoing efforts by elected officials to downplay the risk and distractions from other issues and conflicts.

Warnings

A warning, then, is a functional message or system of messages informing an audience, most often a large public audience, of some likely threat or danger (Vihalemm et al., 2012). "Warnings" are conceptually distinct from "alerts." An alert is issued when there is an issue of general concern or when something has happened, or may happen, that could jeopardize public security, health, and well-being. A warning typically follows an alert when the threat has been confirmed, includes more specific information about the nature of the threats, and may include advice about how to respond (NRC, 2011). Warnings that contain five dimensions are generally more effective. These include the nature of the hazard, the location, specific guidance, timing, and the source of the warning (Bean et al., 2015). Warning messages also seek to convey to an audience an understanding of specific threats and the level of the threat, including the severity of the potential harm and the probability of its occurring.

Warnings often extend to offering recommendations from subject matter experts or emergency managers about actions that can be taken or avoided to reduce or mitigate the threats. This second dimension of warning is essentially persuasive, seeking to induce some action such as evacuation or shelter in place. Warnings also have an instructional dimension, indicating what people should do in response (Sellnow et al.,

2017a). Lindell and Perry (2004) describe the various warning activities, questions, and outcomes associated with the stages of a crisis, presented in Table 3.1. Thus, warnings have both informative and persuasive dimensions, and principles of effectiveness in both forms of communication are important. Warnings are a form of specialized risk communication, as discussed in Chapter 8, designed to help receivers limit or mitigate harm.

Warnings are high-consequence messages with the potential to save lives and reduce harm (Seeger & Sellnow, 2016). If incorrect, late, or communicated ineffectively, however, warnings can cause needless disruption to communities and businesses as well as reduce effectiveness of later warnings. Warnings that recommend evacuations, for example, are some of the most challenging decisions made during disasters (Fairchild et al., 2006). Mandating populations to relocate creates the risk of additional harm, including traffic accidents and adverse health events. Conversely, evacuations can reduce death tolls, especially where there is sufficient lead time and when a specific area is affected, such as with hurricanes. Public warning systems have been an essential part of risk management from the middle ages when warning bells were used to signal threats. Warning signals such as fog horns and lighthouses for shipping, bells, whistles, and flashing lights for train crossings, and sirens for fires were used widely by the early 1900s. Federal legislation, as well as emerging tort law and rising public expectations, provided incentives for more effective warning systems (Egilman, 2006).

The decision to issue a warning often involves a variety of experts and officials, including emergency management professionals, subject matter experts, political actors, and elected officials (Sorensen, 2000). Subject matter experts, such as medical professionals, epidemiologists, engineers, meteorologists, and seismologists, provide technical information. Elected and appointed government and emergency management officials typically have final authority in issuing public warnings. In making decisions about issuing warnings, emergency managers and public officials appraise the threat based on available information, assess the consequences of issuing a warning versus not, and ask, which outcome will produce the least harm (Mileti & Sorenson, 1990)? The likelihood of harm, the scope of harm, the consequences of an inaccurate warning, as well as the consequences of failure to warn are all important considerations in the decision to warn. Assessment of impending risks almost always involves uncertainty, requiring an evaluation of the credibility of different sources of information about risks. Balancing risks and benefits also requires weighing competing values and assessing the context of the

risk. "Obviously, public death and injury can result if withheld warnings are followed by disaster" (Mileti & Sorensen, 1990, pp. 2–9). In some cases, delaying the decision to issue a warning allows more information to be collected and evaluated and others consulted. Decisions may also be delegated to others. Delaying in the case of a time-sensitive risk can reduce the effectiveness of the warning. In some cases, standard decisional guides are used to issue warnings. The National Hurricane Center, for example, has a set of criteria for issuing tropical storm warning and watches, and hurricane warnings and watches are based largely on wind speed. In most cases, the decision to issue a warning is a judgment made in a high-risk situation with imperfect knowledge.

Although warnings are essential to limiting harm in many disaster contexts, they also cause social and economic disruption, public concern, and physical and psychological harm. Warnings that prove incorrect can reduce credibility, limit the effectiveness of subsequent warnings, and cause embarrassment (Mileti & Sorensen, 1990). This may discourage officials from issuing warnings. In addition, some officials may be reluctant to issue warnings because they believe the public will panic. The public panic disaster myth is well documented and is sometimes used to justify withholding warnings. Warnings rarely, if ever, cause panic, and, in fact, the more significant challenge is simply getting the public's attention about an emerging risk. In addition, officials may feel that offering too much information is itself risky or that the public simply ignores warnings (Sorensen, 2000).

An additional consideration concerns the ethics of warning and involves questions of autonomy and beneficence (Egilman, 2006). Autonomy is part of a larger set of principles about the right of individuals to have access to information about issues that may affect them. Autonomy is closely associated with the communication ethic of significant choice and the principle of right to know. Withholding information reduces a person's autonomy and their ability to make choices for themselves about the level of risk they accept. The right of access to information about risks is well established as both an ethical and legal obligation (Ulmer & Sellnow, 1997). Withholding such information may have legal implications in the event harm does occur. A second ethical principle, beneficence, is the ethical obligation to show charity, mercy, and kindness toward others by taking actions that benefit others. Beneficence is a "moral obligation to act for the others' benefit, helping them to further their important and legitimate interests, often by preventing or removing possible harms" (Beauchamp, 2018). This imperative exists for all those in professional

roles but may be especially significant in cases of emergencies where people face harm.

A final set of considerations for emergency managers are the legal consequences of failure to issue a warning when there is sufficient information to do so. In cases where harm does occur, individuals responsible for issuing warnings may face legal consequences. In the case of the 2014 Flint Water crisis, for example, officials chose not to issue warnings about an outbreak of Legionnaires' disease, even though they had sufficient information to do so. The outbreak resulted in several deaths. As a consequence, managers, including top public health officials, have faced a series of legal charges up to and including manslaughter (Gable & Buehler, 2017). In a similar case, officials downplayed the risk of the 2009 earthquake in L'Aquila, Italy. Earthquakes are very difficult to predict and officials elected not to issue a warning in response to several minor seismic events. The subsequent earthquake killed more than 300 people and the officials were charged with manslaughter. While a post-crisis environment is often litigious, cases of criminal liability for emergency managers are quite rare.

Decisions about warnings occur within a complex, high-risk context where information is inadequate and different values, needs, and perspectives must be considered. Sorensen (2000) points out that "warning systems are complex, because they link many specialties and organizations – science (government and private), engineering, technology, government, news media, and the public" (p. 119). Decisions to warn require information from these various experts be reconciled and some level of consensus reached. Sometimes these decisions are wrong. The public may be warned of a crisis that never manifests or the public may not be warned and, subsequently, a crisis occurs, harming both people and property.

Effective warning systems, as we have noted, are critical to protecting the health and well-being of the public, and diverse systems have been developed for a wide range of public threats. Sirens have been used primarily for weather, industrial, and transportation risks and flash floods where an immediate audience must be notified of a risk. The Emergency Broadcasting System (and the subsequent Emergency Alert System) was developed in 1963 as a television- and radio-based system. The system was established to provide the president of the United States with "an expeditious method of communicating with the American public in the event of war, threat of war, or grave national crisis" (EBS, 1978). These systems notwithstanding, the media have generally been assumed to play a central role in disseminating warnings. Local weather

reporters, for example, are credible sources for warning about impending weather risks.

Because risks and threats are usually based on probabilities, warnings always include some level of uncertainty. Uncertainty, in fact, is generally recognized as "the central variable" in all efforts to communicate risk (Palenchar & Heath, 2002, p. 131). One of the primary tensions in any warning system involves balancing the level of uncertainty and the need to induce some action. Thus, many warning systems are graded to communicate greater or smaller probability estimates of the likelihood of harm occurring as well as estimates of the severity of the potential harm: "This is a very big and dangerous storm that threatens life and property and there is a strong probability it will impact this area," for instance.

One example of a gradated system was the color-coded DHS Advisory System (see Figure 3.1). The system ranged in terms of risk uncertainty across severe, high, elevated, guarded, and low. The system was implemented in March 2002, designed to provide the public with information about the level of national threats. Color-coding was selected as a way to provide a quick visual reference. Color-coding is commonly used in a number of systems as a shorthand reference for levels of risk (e.g., "code red" or a "red alert"). The DHS system was widely criticized, however, for providing little guidance to the public on what actions to take and for failing to provide any meaningful distinctions between the various levels of risk. The system was replaced in 2011 by the National Terrorism Advisory System (NTAS), targeted to specific audiences with a two-tier warning system. The two alerts are:

1. Imminent Threat Alert, which warns of a credible, specific, and impending terrorist threat against the United States;
2. Elevated Threat Alert, which warns of a credible terrorist threat against the United States.

The new NTAS also includes a "Sunset Provision": The "threat alert is issued for a specific time period and then automatically expires" (US Department of Homeland Security, 2011). Specific alerts may be extended if there is additional information or if the circumstances of the threat change.

The new NTAS seeks to address the fundamental problem of uncertainty inherent to any warning system. By simplifying the system to two levels, the question of what level of certainty signals what level of alert becomes less significant. More gradated decisions about certainty and risk are simply not made. In addition, the new NTAS also provides specific information with each alert, including the geographic region,