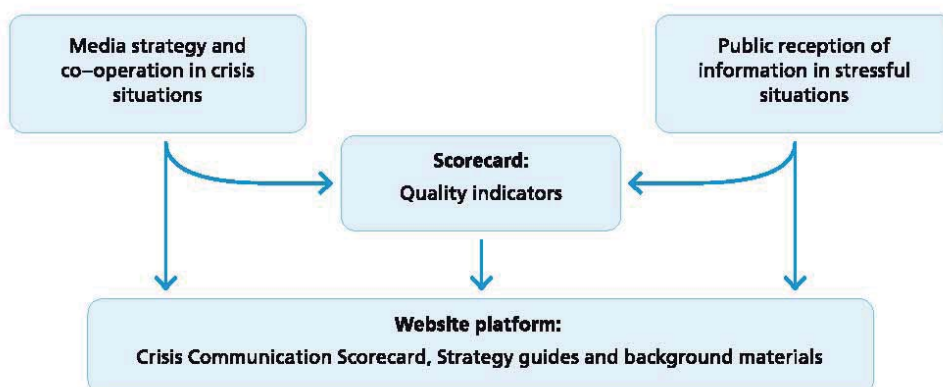Marita Vos, Ragnhild Lund, Zvi Reich and Halliki Harro-Loit (Eds)

Developing a
Crisis Communication Scorecard

JYVÄSKYLÄN YLIOPISTO

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INTRODUCTION

Marita Vos

This book *"Developing a Crisis Communication Scorecard"* presents the results of an international research project under the same name conducted during 2008-2011. The five sections of the book show the theoretical framework, based on a study of the literature, and the empirical findings, culminating in the development of an audit instrument that helps public authorities to be better prepared for communication in crisis situations. The instrument with its user guide and two practical guides are provided in four appendices. A web site www.crisiscommunication.fi gives free access to more materials and software that support the use of the instrument.

Communication in emergencies

Crisis management challenges public authorities. Crises may be the result of acts of nature or acts of man. They may be intended, such as terrorism, or unintended, such as disasters and infrastructure failure. Crisis communication contributes to the crisis management of public authorities. Challenging elements include, among others, the role of the news media in crisis situations as well as processes of sense making and the reception of information in stressful situations by civilians.

This book is about how communication can support public authorities in their efforts at crisis management. It does not address reputation crises in particular but rather emergencies and disasters. It aims at helping public authorities to better fulfil their role in protecting and empowering citizens in the event of a crisis. The authors view crisis communication as a coproduction by relief organisations and citizens. It calls for an active dialogue and awareness of information needs.

Communication can contribute to the empowerment of citizens in crisis situations by supporting preparedness, enhancing societal understanding of risks and increasing cooperation, e.g. in the case of evacuations, or arranging participation in decision making about reconstruction activities..

An international project

This book provides the main outcomes of a collaborative research project, funded by the Seventh Framework Programme of the European Commission (FP7). Other publications by the project teams can also be found via the web site www.crisiscommunication.fi. The project contributes to the area of Security and the following project description: 'Communication strategies of public authorities (including media strategies) before, during and after crises concerning risks, security threats and measures'. The proposed aim of the research team was to develop a crisis communication scorecard in order to bridge theory and practice. The resulting instrument can be used to improve preparedness in all crisis phases. It is not meant to be used during a crisis as a reference, but rather to build better preparation for such situations, by stimulating dialogue on quality criteria for crisis communication and increasing understanding of communication processes in stressful situations. It serves as an audit for the preparedness phase, helps evaluate crisis exercises, and supports learning after a emergency situations.

The following institutes participated in the research project: University of Jyväskylä, Finland (coordinator); Norwegian University of Science and Technology, Norway; Ben Gurion University of the Negev, Israel; University of Tartu, Estonia; and Emergency Services College Finland, Finland.

The research teams in the various countries used various methods. The Norwegian team focused on an extensive literature review on crisis management which served as a basis for the project. The Israeli team investigated best practices and interviewed spokespeople and journalists. The Estonian team investigated response patterns of citizens in stressful situations using focus group interviews. The Finnish university team investigated gaps in crisis communication together with the Norwegian team. The Finnish university team also developed the scorecard with the help of the Finish authority team. All teams cooperated with each other in the process and actively utilized international contacts with scholars and practitioners.

In conducting literature search, the teams primarily used English and native language sources, which could be considered a research limitation. Also, the instrument developed is offered in the English language, although local organisations are invited to customize the instrument to fit their needs. The outcomes do not provide a recipe for crisis communication but deliver insights to consider when seeking to improve the quality of crisis communication. Many aspects of quality may be important in any case, although their relative weight will differ depending on the cultural context. The researchers propose comparative research to further clarify such matters in the future.

A multidimensional perspective

The book adopts a multidimensional perspective, drawing on insights from the communication sciences as well as from experts in crisis management, and

grounded in the social sciences and humanities. Specifically, premises on which this scientific study on crisis communication are grounded are the following.

- There is a strong connection between crisis communication and crisis management;
- Communication in the different phases of a crisis is viewed as a process;
- By adopting a stakeholder approach to crisis communication the diversity of public groups is respected;
- Communication in the network of response activities is taken into account.

First, we firmly connect communication to crisis management, seeking to increase the added value of communication for response activities. In order to be effective, crisis management in the event of an emergency requires communication to strengthen cooperation, explain rescue activities, and instruct and involve public groups.

Second, we adopt the process approach of the 'Crisis and Emergency Risk Communication Model' (CERC) that proposes communication activities be developed according to the various phases of a crisis, from the preparation phase to the crisis and post-crisis phases.

Third, we support a strong orientation towards the various stakeholders groups and emphasize the importance of paying attention to public perceptions. The stakeholder approach in crisis communication is a human-centred approach that is based on what people want and need to know. In order to support people in crisis situations it is crucial to understand the diversity of public groups in how they use media as well as what they want and need to know.

Fourth, we take the network of response organisations into account. Instead of focussing only on separate actors we acknowledge that in complex crises response activities are initiated by various organisations. Cooperation and coherence is not only needed in crisis management but also in the communication with the public groups.

The structure of the book

The five sections of the book present the scientific research leading to the practice-oriented outcomes of the project: the crisis communication scorecard with its user guide and two practical guides in the appendices. Depending on the reader's needs, he or she can either start with the theoretical sections or the practice-oriented appendices. Each section ends with an executive summary.

The first section of the book is "*The crisis communication scorecard: supporting emergency management by authorities*". This section explains how the instrument was developed.

The second section of the book is titled "*Disasters, crises and communication: A literature review*". It is a comprehensive literature review that helps communication professionals and researchers to better understand developments in the field of crisis management. This is important because crisis communication should be an integral part of crisis management.

The third section focuses on best practices under the title "*Best practices in crisis communication: theory and praxis*". An extensive overview of best practices is provided. The section provides a scientific basis, while the conclusions are clearly laid out in the practical guide in the appendix.

In the fourth section "*Exploring media relations during crises*" attention is paid to the news media. Public organizations also use direct channels to communicate with citizens, but the news media are nevertheless very important in crisis situations.

The fifth section in the book is "*Information channels and response patterns in a situation of risk*". In this section.crisis communication is seen from the perspective of citizens and the view advanced that it needs a differentiated approach in which a variety of channels are used to communicate with different public groups. People have different previous experiences of crises, and receive and search for information in different ways.

Appendix 1, "*The Crisis Communication Scorecard: A tool for crisis communication preparedness and evaluation*", shows the crisis communication scorecard with all of its various indicators. The list of indicators is long, but normally one group only of the indicators will be utilized and shown in the online programmed version of the scorecard. The first group of the indicators forms an audit for the preparation phase, while in the later phases a different group of indicators can be used to evaluate a crisis communication exercise.

Appendix 2, "*User guide for the crisis communication scorecard*", explains how to work with the scorecard. Free support materials and software are provided on the project website www.crisiscommunication.fi.

Appendix 3, "*Crisis communication guide for public organisations*", takes the reader step by step through the phases of a crisis. The references to the literature are given separately as notes since the main purpose of this guide is practical advice.

Appendix 4 "*Defining target groups and message strategies during crises; some guidelines based on empirical research*", is an additional guide. It is shorter and focuses in depth on a single topic, summarizing the empirical research results to help users in practice make decisions about target group segmentation, channels and message strategies.

Acknowledgments

SECTION I

THE CRISIS COMMUNICATION SCORECARD: SUPPORTING EMERGENCY MANAGEMENT BY AUTHORITIES

Pauliina Palttala and Marita Vos

CONTENTS

1 INTRODUCTION

This section of the book presents a research-based measurement instrument [1]for public authorities. Modified from the existing balanced scorecards developed for emergency management and corporate communication, this tool aims to help authorities in communication planning and to increase their communication preparedness through continuous evaluation of performance.. As its foundation, the instrument cherishes the stakeholder approach that stresses the expectations and information needs of various public groups as a core for crisis communication management..It also shows the importance of a functional relationship with the news media and fluent cooperation with the response organisation network..

The indicators of the scorecard employ the best practises of crisis communication that have been documented over the past years by number of scholars and practitioners. This work endeavours to offer a strategic approach for authorities to cope with the communication challenges phased in current complex crisis. The measurement instrument can be used to audit preparedness of public authorities to communicate in an emergency. It also contributes to an emergency exercise, in which it can be used to evaluation. The book section introduces the elements that construct the instrument and points out criteria for the indicators through which quality of the communication functions can be evaluated.

2 CURRENT CHALLENGES OF CRISIS COMMUNICATION

Emergencies excite high expectations for communication and authorities are challenged to manage them efficiently. Complex crisis situations occupy the attention of several agents and require fluent information exchange not only among the authorities responsible for crisis management but also citizens directly or indirectly with the citizens affected. Likewise, crises draw a lot of media attention and news, owing to the latest developments in mass communications, is disseminated more rapidly than ever before. Thus, there is obvious pressure to communicate efficiently in crisis situations.

Communication in crises such as large-scale accidents, natural disasters and crime (e.g. a school shooting, terrorist attack) requires special care. In particular, the large number of agents involved impedes coordination. Securing cooperation between actors in the response network is a challenge. Lack of a common understanding of communication goals, clear division of responsibilities and the means of communication to be used often causes constraints in fulfilling the requirements of effective communication, both internally and externally, as an earlier report published as part of this project showed (Boano & Lund, 2009). So far, crisis communication with publics has often followed a dissemination model; yet, it is suggested that public perception and information needs are crucial. Moreover, the relevant authorities have in some cases failed to respond to the rapid information demands set by the media, and hence have lost their position as a first source.

Because of constraints in the past, crisis communication has become more target-oriented and strategic. Yet crisis communication by public authorities lacks a structured instrument for evaluation. This section reports on the development of such an instrument, based on the methodology of measuring performance indicators, as introduced by Kaplan and Norton (2001). This extends beyond the approach of best practices, and prioritizes quality criteria for crisis communication.

3 TOWARDS A RECEIVER-CENTRED PROCESS MODEL OF CRISIS COMMUNICATION

Crises are highly visible, require immediate attention, have a need for action, and are outside the organisation's complete control (Stephens, Malone & Bailey, 2005). In the terminology of rescue and relief practice the term *emergency* often replaces crisis, disaster or catastrophe. In the literature, however, the concept of crisis is broadly used to describe various kinds of incidents which threaten people or the environment, or as events that reflect badly on the reputation of a company. Crises can be divided into intentional (terrorism, sabotage, workplace violence, poor employee relationships, poor risk management, hostile takeovers, unethical leadership) and unintentional (natural disaster, disease outbreaks, unforeseeable technical interaction, product failure, economic down-turn) events (Ulmer, Sellnow & Seeger, 2007). As a crisis we define situations which require an emergency response from public organisations. These could be major accidents, natural disasters or criminal activity (i.e. a school shooting or act of terrorism), and thus both intentional and unintentional crises are included.

Nowadays crisis communication is understood to cover everything from pre-crisis prevention and preparation strategies to post-crisis containment and evaluation strategies (Fearn-Banks, 2004 in Dardis & Haigh, 2009). In different phases of the crisis, the goal of communication is to reduce uncertainty about response, resolution, negative consequences, public perception, and blame of the situation (Stephens, Malone & Bailey, 2005). Low familiarity, doubt and confusion are likely to increase perceived threat by the public (Sandman, 2002).Traditionally, in public relations research the concept of crisis communication referred to spokespersons' attempts to answer the wide public and media interest and criticism shown towards an organisation and reduce negative impacts on business. In the emergency field, crisis communication refers to information about the danger in question, and how people can help themselves, e.g. by securing their lives, health and property. Hence, *crisis communication*, as we understand it, can be defined as sending and receiving messages which explain the specific event, identify its probable consequences and outcomes as well as provide specific harm-reducing information to affected communities in an honest, candid, prompt, accurate and complete manner (Reynolds & Seeger, 2005; Coombs, 2007).

In the health communication domain, professionals often frame their messages in respect of the public harm caused by the possible event as *risk communication* (Reynolds & Seeger 2005). There has been debate in the literature on what constitute the main differences between risk and crisis communication, and how these concepts are related. The term risk alludes to a factor which is a probable cause of injury or harm. It is the uncertainty of an event occurring that could have an impact on the achievement of objectives. Risk is measured in terms of consequences and likelihood. Risk communication can be understood as an iterative exchange of information among individuals, groups, and institutions related to the assessment, characterization, and management of risk" (McComas, 2006).

Currently it is understood that risk and crisis communication form a solid continuum, and that the two overlap in real time (Reynolds & Seeger, 2005). Communication is needed before, during and after a crisis, while during crisis situations themselves risks are constantly being re-evaluated and communicated.

The body of knowledge on communication in organisational crisis is relatively rich. The majority of the research on crisis communication is based on real life examples, often case studies, in which the communication by an organisation is examined. Communication strategies have attracted interest in both practice and research, with the focus mainly on the post-crisis phase where strategic decision-making has been seen as crucial and negative publicity threatening the image or reputation of an organisation is likely (Dardis & Haigh, 2009). Currently, a shift seems to be taking place from mere image restoration to fulfilling the expectations of media, citizens and miscellaneous groups. This means that communication is carefully planned to match stakeholder expectations, taking crisis-specific characteristics and the phase of the event into account.

4 THE BALANCED SCORECARD AS A MEASUREMENT INSTRUMENT

In this chapter the balanced scorecard is proposed as a tool for the management of organizations, and its applications for communication purposes are discussed. In chapter 4, on the basis of what has been said in the previous chapters, we outline the content of the crisis communication scorecard model, and in chapter 5 we present our conclusions on the structure and elements of this model. In the appendix to this book the model in its entirety will be described and explained.

4.1 The concept of the balanced scorecard

The Balanced Scorecard of Kaplan and Norton is a measurement and improvement system designed to translate strategies into concrete actions (Buytendijk & Brinkhuis-Slaghuis, 2000). The balanced scorecard is a strategy tool. Unlike many measurements in business, it proactively assesses an organisation's performance in line with its overall strategy and vision for the future..It allows concentration on key success factors, identifies their interrelatedness, and hence minimizes information load caused by various fragmented measurement systems. It shows bottlenecks in performance and prioritises the allocation of resources (Vos & Schoemaker, 2004).

The approach of a scorecard is integrative as it connects the different subgoals of departments into the organisation's strategy and facilitates communication by creating dialogue between units (Ritter, 2003). Scorecards not only can but should be adapted to an organisation- or unit-specific measurement and improvement tool, tailored to the strategy of the organisation (Kaplan & Norton, 2001 and 2004)..

The original model of a balanced scorecard by Kaplan and Norton (1996) comprises four perspectives (financial, customer, internal processes, and learning and growth), which are evaluated and reflected throughout an organisation and its processes at different levels from individual to division and the whole organisation. Quality control has become a management perspective in which quality is defined for all organisational policy areas (Boomsma & Van Borrendam, 1990). The concept of the balanced scorecard is used for management purposes on the level of the organisation as a whole, but also for separate business units. Kaplan and Norton (2006) stress the importance of aligning the various scorecards within an organisation to create synergy.

Furthermore, balanced scorecards have been developed for various areas of expertise, e.g. human resource development (e.g. Becker, 2001), marketing (e.g. Peelen et al., 2000) and IT (e.g. Keynes, 2005). Scorecards have also been developed for smaller specialist areas such as city management (Weig, 2004) and disaster management (Moe, Gehbauer, Senitz & Mueller, 2007). The latter scorecard is referred to when discussing the structure of our crisis communication model in a later chapter. In this chapter the idea of a general balanced sco-

recard for use in management has been explained; we now turn to how this concept of a scorecard can be used in the area of communication.

4.2 Communication scorecards

Fleisher and Burton (1995) formulated a number of criteria for measuring performance in the communication area and stated that measuring performance should be part of normal business operations. The indicators that assess performance must aim at core processes and critical variables so that opportunities for improvement can be identified (Fleischer & Mahaffy, 1997). Later, Hering, Schuppener and Sommerhalder (2004) and Rolke and Koss (2005) discussed the use of a customised quality assessment based on a balanced scorecard for the communication area in more detail. The interest in the topic is increasing, although it does not seem easy to find the right indicators and measures for communication.

A scorecard is an overview of performance indicators. Usually these are measured by the available facts and figures but for communication few facts and figures so far exist. Some authors suggest using indicators that are wider than communication itself. Zerfass (2008) gives a framework for a corporate communication scorecard, mentioning elements such as increasing stocks, and Ritter (2003) suggests the number of invoices sent out. An earlier Swedish study summarised a performance measurement for companies which is based on e.g. market share, share price, ranking and awareness among stakeholder groups (Sveriges Informationsförening, 1996). Market share and share price are influenced by many other factors than communication, however. When performance measurement should also show the added value of communication (Hering,.Schuppener & Sommerhalder, 2004) it is important to use indicators that focus on its own merits and then see how these contribute to wider goals.

Weig (2004) states that many factors in the management of organisational processes are in fact difficult to quantify and argues that the facts and figures used should be valid, reliable and significant for the topic, as the chosen facts and figures may otherwise create 'Scheingenauigkeit', a false sense of preciseness. Therefore, next to the facts and figures available, Weig (2004) also uses the results of Internet surveys where these better match the criteria of validity, reliability and significance.

When the facts and figures available match the communication activities well, this has preference (e.g. results of a regular reputation measurement). In other cases Vos and Schoemaker (2004) suggest using an auditor assessment, as is done in another method of quality control developed by the European Foundation of Quality Management, EFQM (Ahaus & Diepman, 2002). In this method, which is widely used, especially in governmental organisations, auditors give an assessment of quality indicators on scales. The full method would not suit the communication area that well, as it is time consuming and requires a detailed description of routine procedures, and these are not common in the dynamic practice of communication (Vos & Schoemaker, 2004). Both methods can complement each other such that the principle of a scorecard is used to

provide an overview of quality performance indicators in a way that stimulates learning and improvement, while at the same time, when facts and figures are not available or suitable, assessment scales can be used to measure the quality of the work done in the organization.

Traditionally, the balanced scorecard has been a management tool for business; however, it also has much to offer to public organisations. Vos and Schoemaker (2004) proposed a model for a communication scorecard with fields for concern(or corporate) communication, internal communication, and marketing communication, that include indicators for measuring how these support the input, throughput and output processes of an organisation. In the adjusted version for government organisations, customization of communication functions is needed.

In the public sector, instead of marketing communication, more emphasis is laid on policy communication, the role of the media and transparency because in a democracy authorities need to be even more transparent than private organisations (Vos, 2003). Moreover, public organisations are said to function in a more complicated, unstable environment, they are regulated by additional legal and formal constraints, they operate with more rigid procedures and they have more diverse products and objectives than private sector organisations. In policymaking, public organisations need to communicate about unfinished matters that are still under discussion (Gelders, Bouckaert & Van Ruler, 2007). These conditions set by a complex environment are a challenge for communication management.

Balanced scorecards are used for an organisation as a whole, but also function for business units. Performance indicators can also be developed for specific areas. Moe, Gehbauer, Senitz, and Mueller (2007) developed a scorecard for disaster management that shows this is possible. Within this framework a scorecard for crisis communication can be developed. The scorecard should fit the bigger picture required for crisis management, as an integral approach is needed to increase the added value of communication for crisis management. The content of the performance indicators relies on earlier work in crisis communication by various scientists and current empirical research.

The aim of the crisis scorecard to be developed is to improve crisis preparedness. It should enhance organisational learning, measure whether the chosen communication strategies work out as planned for the communication goals set, and point out matters that need to be improved. The value of a crisis communication scorecard is that it provides a wide overview of the most important quality criteria for crisis communication.

5   THE FRAMEWORK OF THE CRISIS COMMUNICATION SCORECARD

Crisis communication research, as described in the previous chapters, showed the importance of taking the different phases of a crisis into account, as set different tasks for communication. Also, knowledge of the various stakeholders and their needs should be taken into account in decision making about communication strategies. This will be further clarified below, as these elements are crucial and should be reflected in the structure of the scorecard.

5.1   The crisis phases defines the communication tasks

The first element of the crisis communication scorecard consists of the phases of the crisis. Almost all crises follow similar phases (Pearson & Mitroff, 1993; Stephens, Malone & Bailey, 2005). In disaster management these are called prediction, warning, emergency relief, rehabilitation (short-term), and reconstruction (long term), and the activities undertaken in these phases are mitigation, preparedness, response and recovery (Moe & Pathranarakul, 2006).

As research suggests, crisis communication should be an ongoing process which continues throughout the pre-crisis phase, the crisis situation itself, and its aftermath (e.g. Ulmer, Sellnow & Seeger, 2007; Coombs, 2007). Specific kinds of communication activities are required in each phase of a crisis. In the model of integrated emergency risk and crisis communication (Reynolds & Seeger, 2005) it is assumed that crises develop in a predictable and systematic way from risk, to eruption, to clean-up and recovery on into evaluation. Below, the communication tasks are presented in brief (Reynolds & Seeger, 2005).

   1) Pre-crisis: risk messages, warnings and preparations in order to monitor and identify risks, gain understanding, prepare for an event, affect behaviour to reduce harm, cooperate with response organisations, and develop recommendations.
   2) Initial event: uncertainty reduction, self-efficacy and reassurance in order to ease emotional turmoil, have a well-functioning communication structure with designated spokespersons, add understanding of the situational factors and circumstances, understand and endorse the personal response activities (how and where to get more information).
   3) Maintenance: ongoing uncertainty reduction, self-efficacy and reassurance in order to gain more accurate public understanding of ongoing risks as well as background factors and issues; facilitate cooperation with response efforts; collect feedback; correct rumours; continue to support self-efficacy and personal response; enable informed decision making by the public based on understanding of risks.
   4) Resolution: updates regarding resolution; discussions about cause and new risks in order to keep publics informed about ongoing clean-up, remediation, recovery and rebuilding efforts; facilitate broad-based, hon-

est and open discussion regarding cause, blame, responsibility, and adequacy of response; improve public understanding of new risks; affect behaviour related to new risks to reduce harm; reinforce positive identity and image of an organisation.

5) Evaluation: discussions of adequacy of response, lessons learned and new understandings of risks in order to be able to evaluate and assess responses, including communication effectiveness; document and share lessons learned; determine specific actions to improve crisis communication and response capability; create linkages to pre-crisis activities.

In the crisis communication scorecard, an integrated approach is chosen to link communication activities to the disaster management phases. Therefore, a categorization of disaster management phases and activities is presented in table 1 and connected to the communication tasks. In reality the shifts are not necessarily linear (Chess, 2001), and because the way crises evolve is unforeseen, flexibility in decision-making is crucial (Seeger, 2002)..In addition, the presence of multiple stakeholders poses a challenge for communication management. In multi-organisation situations (where many response organisations cooperate), organisations may enter the scene in different phases; for those who have been involved from the beginning, the situation looks different than for those who were called in to help later on.

In sum, for an organisation a crisis is regarded as a natural stage in an ongoing evolutionary and learning process (Sellnow, 1993; Weick, 2001; Kersten, 2005). In other words, this view emphasises that crises can be seen as a never-ending developmental process in organisations rather than as an aberration.

5.2 Stakeholders specify the communication strategy

From the perspective of a public organisation, the second element in the scorecard consists of the stakeholders. In large-scale emergencies, such as natural disasters and major accidents, many different stakeholder groups are affected. The definition of stakeholder groups and their multiple expectations towards communication is a major challenge for a public organisation.

Therefore, criteria to indicate the agents and define their roles are needed. Generally, a stakeholder can be "any group or individual who can affect or is affected by the achievement of the organisation's objectives" (Freeman, 1984). The stakeholder theory is interested in the consequences of the interaction between an organisation and its social environment and how these relationships could be better managed (Frooman, 1999). The role of stakeholders in organisational crisis communication can be highlighted as follows. First, according to the resource dependence theory, stakeholders are seen as guardians of resources (Pfeffer & Salancink, 1978). Second, a crisis can violate an organisation's reputation (Coombs, 2006, 2007). It follows from these premises that the mission of communication is to uphold relationships which strengthen resources and maintain a positive image. For authorities, the goals of crisis communication are to help restore order and minimize damage to people and property, prevent

panic by providing information related to the crisis event, facilitate informed decisionmaking and strengthen the self-efficacy of citizens.

Strong stakeholder relationships are the bottom line of effective crisis communication because they may prevent breakdowns in established organisational structures (Ulmer, Sellnow & Seeger, 2007). In a crisis, both the organisation and its publics experience high levels of uncertainty which in turn impair belief and sense-making structures (Weick, 1993). People's understanding of the world can change when an 'unbelievable' and shocking event takes place. A crisis is a surprise and shock to the organisation too, and decisions are often made under stress and without a complete picture of the situation. Since normal structures in crises are likely to fail (e.g. power supply), replacements are needed to back up efficient decision-making. The organisation needs information to identify the severity of the problem, manage the emergency and prevent further damage. The stakeholders need knowledge to be able to make informed decisions about the crisis from the standpoint of their individual interests.

On the one hand, consistency is evidently important if organisations want to been seen as legitimate (Stephens, Malone & Bailey, 2005). On the other hand, different stakeholders also need to be addressed by different message strategies (Stephens, Malone & Bailey, 2005) since expectations, needs and media use vary between public groups. A major challenge is to keep track of stakeholder perceptions. In complex situations shifting stakeholder relationships create problems for organisations because the criteria and expectations may be incompatible or competing (Stephens, Malone & Bailey, 2005). The latter may be more of a problem in the case of reputation crises than emergencies like flooding or earth quakes. As the scorecard is developed to support authorities in preventing and managing emergencies, more attention is paid to saving lives and preventing health problems than addressing reputation damage, a topic that dominates much of the crisis communication literature.

For the communication scorecard stakeholders are categorized into *directly and indirectly affected citizens and communities (abbreviated as citizens), news media* and *response organisation and network*. In the planning of crisis communication, each of these has to be dealt with separately.

Citizens
The first group of stakeholders consists of the directly and indirectly affected individuals and communities. Efficient communication is not only about a fluent flow of information between the response organisations, it is also how response organisations are able to serve the public groups: to meet the communication expectations of people and provide consistent information about the problem in hand. Huang and Su (2009) state that information provided timely can help to minimize the negative impact to both an organisation and its stakeholders. Uniform and harmonized messages increase legitimacy, because the line of the story is strong and leaves less space for sidelines and confusing interpretations. Completely and objectively presented information is more likely to be perceived as ethically sound. Finally, an active response means taking initiative to show that the organisation is aware of the crisis and is dealing with it.

Crisis communication emphasizes a human-centred perspective, i.e. communication planning is based on analyses of what people want and need to

know. Understanding and building trust aims at partnership-like relations with the public, which is considered to be one of the best practices in crisis communication (Seeger, 2006). Crisis communication needs a dialogue, as it is coproduced by various organisations and the public groups themselves. Response organisations enhance the empowerment of public groups and depend on public cooperation, for instance in the case of an evacuation. Jones (2002) states: "The point here is that if the organisation is to be successful in establishing a dialogue with the public, then the style of communication and the issues that should be discussed must be determined by the public's dominant discourses. Thus, whilst two publics may have the same stance on an issue, they may have two distinct ways of communicating about it."

When communicating with citizens, the authorities usually try to avoid the element of panic. Unfortunately they often attempt to do so by keeping silent. However, the availability of information gives the public the chance to evaluate the risk and make informed choices on actions (Reynolds & Seeger, 2005). Open risk sharing enhances a common understanding and dialogue between an organisation and its environment. Honesty, candour and openness form the golden line of crisis communication. Accurate, extensive and timely information is expected to reduce anxiety, and to activate people in self-efficacy and protective measures. For response organisations it is a challenge to conduct communication that is timely, accurate and consistent. In crisis situations, people want explanations of what happened as well as answers to what is being done to minimize similar risks in the future.

News media
The second group of stakeholder in crisis communication scorecard is the media. In crisis communication responders pay attention to how the media portray the crisis as there is an assumption that publics perceive a crisis as the media frame it in news stories (Choi & Lin, 2009). In the era of online media, especially Internet websites, blogs and discussion forums have gained importance as compared to the traditional print and broadcast media (Cloudman & Hallahan, 2006). The breaking of a crisis provokes a sense of urgency and immediacy, and new communication technologies can make any crisis happening anywhere a nationwide or international news story and cause discussions on the Internet (Coombs, 2007).

Crisis communication relies much on the mass media as a channel of public information, but journalists are also seen as counterparts in crisis situations. When there is a severe emergency, journalists are willing to drop their critical role and cooperate with response organisations to protect the public (Allan & Zelizer, 2004). At a later phase of the crisis the attitude may be more critical again.

Overwhelming media attention is an encumbrance, especially in the beginning phase of the crisis when there is not yet much information to be given. In some cases it can also be a challenge to draw and maintain media attention. This is especially the case in risk communication. In its gatekeeper role the media decide what is published as news. For the communication scorecard it is crucial to indicate how media relations can be improved in order to communicate more effectively in crisis situations.

Response organisation and network

The third category of response organisation and network includes the agents involved in crisis management. Although the focus in the crisis communication scorecard is on public authorities, non-governmental organisations are also considered, as their role in emergency management nowadays is acknowledged to be bigger. Stakeholders in this category include first respondents (fire department, police, and hospitals), regional and national authorities and government officials, NGOs and other relevant private organisations (i.e. airline companies, power plants) which together form the network of response organisations.

As past crises have revealed, networking and cooperation among the range of actors is relevant (Palm & Ramsell, 2007). Networks enable organisations from different fields of authority to unite their expertise and hence manage the crisis in a more effective manner. Relationships within the network are seen as channels where resources such as information, knowledge and trust are exchanged (Kenis & Schneider, 1991 in Palm & Ramsell, 2007). It is expected that during a crisis leaders will take charge and give a clear direction to its management. However, crisis operations are multi-organisational, transjurisdictional, polycentric response networks which demand lateral control (Boin, 't Hart, Stern & Sundelius, 2005).

National emergency management systems have been developed to improve crisis preparedness. The purpose of these structures is to ensure that each agent within the network functions according to the same protocols. In national plans, the importance of communication is also recognized. For example, one of the 14 features listed in the Incident Command System of the US is integrated communication (FEMA, 2005).

The coordination among organisations is also a constraint, because crises are compound and occupy several actors in the crisis response. Every organisation works in its own way and therefore a more uniform approach to decision-making, coordination and control is needed. The importance of communication should be universally recognized. Inadequate knowledge of roles, tasks and working methods of other actors hinders cooperation. Standard operating procedures, lessons learned and training add to crisis preparedness. This is crucial when messages are sent by local, regional and national sources from different public organisations.

A special edition of the Journal of Contingencies and Crisis Management also makes the point that defining coordination is problematic (Helsloot, 2008). In practice command and control is still very much the backbone of emergency management. However, instead of one all-knowing leader efficient management is based on good coordination between various actors in the response network. That means a less centralized management model. The following coordination problems are often experienced: a lack of consensus about what coordination is, the coordination is strained between organisations working on common but new disaster related tasks, and there are difficulties in achieving overall coordination in any disaster despite of the magnitude (Quarantelli, 1988).

6 THE PROPOSED STRUCTURE OF THE CRISIS COMMUNICATION SCORECARD

In this chapter it is explained how the crisis communication scorecard model is constructed and what form the main elements in its design. Various scorecards are referred to as a basis for this model, although adaptations have been made to bring the model better into alignment with the area of crisis communication. The use of the scorecard will now be further described.

6.1 Construction

Moe et al. (2007) developed a scorecard for natural disaster management projects in which they list BSC measures per disaster management phase. This is done similarly in the outline for the communication scorecard proposed in this chapter. The phases form the horizontal sections of the table. However, Moe et al. also adapted the regular fields of the balanced scorecard of Kaplan and Norton (2001). The regular four fields: financial, customer and internal business perspective, next to learning and growth does not seem suitable in the present case where a special crisis communication scorecard for public organisations is in question.

On the one hand, Moe et al. (2007) transformed the financial perspective into a donor perspective, which may be useful for international disaster management involving NGOs with donors, but it is not very helpful for government organisations. On the other hand, they did not adapt the other perspectives, which could be customised better. The customer perspective is here specified as two stakeholder groups of citizens and the media. Also, the internal business perspective is specified by the internal communication processes within a response organisation and in the network of response organisations. In this way cooperation receives attention. The perspective of learning and growth is here integrated in the phase of preparation as well as evaluation. The columns in the table represent the three stakeholder perspectives mentioned in the previous chapter: citizens, news media, and response organisation and network.

The financial perspective in the business scorecards could refer to how communication contributes to the financial success of organisations, whereas in public sector organisations it could refer to how costs are kept low and the legitimacy of the tax-payer is maintained (Kaplan & Norton, 2001). However, crisis communication is expected foremost to strengthen the response activities themselves, and in this way it is already also reducing costs, e.g. by creating awareness for future prevention and increasing the empowerment of citizens by helping them to help themselves and each other. It is for this reason that here the financial perspective is not addressed separately in the scorecard.

Learning and growth are, of course, very important in crisis communication, as the literature shows that it is not self-evident that organisations learn from previous crises and adapt their procedures (Boano & Lund, 2009). This issue will be addressed in the first and last phase of the scorecard model, in-

cluding the fact that the scorecard itself needs to be adjusted in the light of new experiences.

Table 1 shows the main elements that form the structure of the crisis scorecard model. As noted above, communication strategies should be developed according to the characteristics and the phases of the crisis, and according to stakeholder expectations and needs. The column that presents the time line is important in the scorecard because, in the next column, in connection with the crisis phases, the communication activities are specified, i.e. risk communication campaigns can be used as a tool to educate and affect people's behaviour in a desired direction. An example could be that people are given advice on how to act in the case of a flood. The stakeholder columns cluster the main stakeholder groups and guide organisations to generate their internal and inter-organisational communication systems and identify more precisely the stakeholders involved and their particular communication needs in order to develop communication strategies according the requirements of the current situation.

The scorecard stimulates crisis communication planning and the preparedness of response organisations, and reveals the overall picture of how crisis communication is conducted. The value of the method is that it shows all the different communication functions in relation to one another. So, if communication problems between response organisations exist, they will most likely affect communication with citizens and the media in a negative way.

6.2 Performance indicators

The scorecard framework presented in figure 1 is 'loaded' with content gathered from earlier literature and additional current empirical research. The scientific basis of the scorecard's indicators is further explained in Appendix A to this section of the book. In this way the quality of the communication functions can be evaluated according to established quality indicators. These are measurable statements through which the quality of the communication performance can be rated. The scorecard should also define how and when performance should be measured. Actions, such as established relations, coordination and cooperation, should be evaluated often..

Next to the overview of the scorecard elements, a detailed list of performance indicators will also be made. Ritter (2003) presents a list of indicators for corporate communication with columns for measurement standards, measurement methods, and updating frequency. The specification given in the text of the columns, however, is not always consistent with the heading and the content does not always refer to communication (e.g. the number of orders and invoices). Here, it is proposed to specify the performance indicators, then clarify the main quality criteria for these, and mention how this is measured, including the frequency of measurement.

TABLE 1   Overview of elements of the Crisis Communication Scorecard.

Time	The phases of a crisis and emer-gency man-agement activities	Communication tasks (to be further specified per task by listing performance indicators)	Stakeholder groups		
			Citi-zens	News media	Response organi-sation/ network
Before	[1] Prepara-tion: (prediction, prepared-ness and mitiga-tion)	1.1 Knowing the public groups and their media use	x		
		1.2 Monitoring of risk perception and general public understanding of risks	x		
		1.3 Contribution to the general public preparedness	x		
		1.4 Establishing cooperation with news media and journalists for crisis situa-tions		x	
		1.5 Improving preparedness in the or-ganisation and in the network of re-sponse organisations			x
		1.6 Improving network facilities and availability of manpower			x
		1.7 Improving information exchange and training of crisis communication activities in the organisation and within the response network			x
During	[2] Warning	2.1 Targeting and distribution of warn-ing messages	x		
		2.2 Issuing instructions to public groups and monitoring reactions	x		
		2.3 Informing the news media		x	
		2.4.Information exchange and coordina-tion in the organisation and within the response network			x

	[3] Crisis response: (emergency)	3.1 Instructions on how to prevent further damage	x		
		3.2 Clarifying the situation to help public groups to cope with the situation	x		
		3.3 Continuous monitoring of needs and perceptions of public groups	x		
		3.4 Direct means of communication	x		
		3.5 Designated crisis agency spokespeople and services for journalists		x	
		3.6 Assist cooperation in the organisation and within the response network			x
After	[4] Reconstruction: (recovery)	4.1 Instructions for recovery efforts	x		
		4.2 Stimulating a more accurate public understandings of the recovery and ongoing risks	x		
		4.3 Ongoing monitoring of needs and perceptions of public groups	x		
		4.4 Ongoing media relations		x	
		4.5 Stimulating cooperation and coordination in the organisation and within the response network			x
	[5] Evaluation	5.1 Supporting reflection	x		
		5.2 Evaluation and conclusions for the future via media and public debate		x	
		5.3 Supporting evaluation and learning about communication in the organisation and within the response network			x

As argued before, for this purpose not many facts and figures on communication are yet available (Vos & Schoemaker, 2004). Hence in this scorecard model an assessment based on scale questions phrased as measurable statements about communication, is proposed where each indicator can be backed up with facts and figures, or even replaced by these when appropriate facts and figures become available.

The list of indicators of our scorecard is more specified and longer than suggested by e.g. Moe et al. (2007) and Ritter (2003). Weig (2003) also just lists 5 indicators for each of the 4 customary fields for management..Where a scorecard consists of just a few indicators, the results will not be very helpful to arrange improvements and will need further investigation. This explains why we specified the indicators to create rich data and related them to communication. In this way the diagnosis takes less time and it is easier to link the results to plans for improvement of the communication.

In this way, we do more than merely compile a short list of existing, and often not very suitable, facts and figures: instead we seek to ensure that the crisis communication scorecard is a learning tool in itself and that it indicates success factors that are based on research and can truly improve the current quality of crisis communication. Moe et al. (2007) suggest adding a colour code to the results of the indicators: green to indicate that the performance agrees with the plans and stakeholder expectations, red for serious deficiencies, and yellow to indicate an in-between situation, e.g. when corrective action is already being undertaken. Ritter (2003) compares the overview of outcomes to a dashboard which could show figures in red or in black. Vos and Schoemaker (2004) use a scale measurement to present the results in snake diagrams and cobweb figures. Here, it is proposed to combine the use of clear colour codes with graphics based on scale measurement.

The indicators in the crisis communication scorecard reflect success factors found in empirical research. These are often also referred to as best practices. However, it is not the intention to provide best practices in a narrow sense but rather in a broader sense, by showing what these are based on, to provide insights that might be applicable in the current situation. Given the rapid changes in contemporary society, in particular those in the field of communication, and.also the dynamic nature of crisis situations, it is not strict rules that are needed but rather indications of what directions it would be best to take and what specific matters should be taken into account. For instance, it has been considered a best practice to try to organise press conferences when a crisis has occurred in the afternoon, just before the evening news. Nowadays one can not wait for this, as news reaches the Internet fast, e.g. by SMS and phone messages from people at the crisis location. Thus the best practice should not be one that refers to a specific moment in time when information should be put out, but rather point out the urgency in giving information to journalists, including directly on the Internet. In the given example, the scorecard not only shows the importance of fast notification but also the shift in thinking away from stressing traditional media relations alone towards also devoting manpower to the Internet.

The crisis communication scorecard is meant to be a tool for public organisation to help them in communication planning and to increase their communi-

cation preparedness. By clustering and analyzing the indicators, umbrella quality criteria for communication can be made visible. The quality criteria refer to critical aspects found in various forms in many of the indicators. These can further help the analysis of measurement results, as patterns may be revealed in which certain phases, stakeholder groups or quality criteria bring either high or low results. This diagnosis may lead to a better understanding of the strong and weak points in the development of crisis communication, which would then help in prioritising improvement plans. A preliminary list of quality criteria is given below.

NETWORK QUALITY: coordination and joint communication strategies.
Multi-authority situations call for coordination in the network, integrated communication strategies and adequate resources to plan and conduct communication activities.

-       Planning for joint preparedness: discussing objectives and strategies for crisis communication (e.g. for various scenarios); procedures for pooling expertise for round-the-clock service and up-scaling (for communication up-scaling may be needed more often and earlier than for rescue activities); as well as arranging communication platforms and channels (e.g. alarm system, crisis info website and call centre).
-       Network exchange and training: (continuous) exchange of information, to know the responsibilities of the organisation and its partners in the response network and keep track of current actions; joint exercises and training to ensure enough expert manpower in communication.

MONITORING QUALITY: knowledge of citizens' needs and perceptions ('listening')
Communication has to be geared towards citizens' needs and perceptions; this is based on continuous monitoring of these, and the discourse on the Internet and in the media.

-       Knowledge of stakeholder segments and communication climate: media use, information seeking and processing; what are considered reliable sources and intermediaries?
-       Monitoring of citizens' needs and perceptions: what information needs do people have in coping with the current crisis and what do they perceive as challenging? What risks are felt to exist and what is the publics' understanding of these risks?
-       Following the discourse in the media and on the Internet (e.g. by content analyses)..

COMMUNICATION STRATEGY QUALITY:.strategies for stressful situations.
Various quality criteria have been established for *how* to communicate with citizen groups and the news media.

For communication with all of these, citizens and the news media:

-              Correct, credible and trustworthy information

- Accessibility of information and facilities (e.g. well known websites and call centres)
- Up to date, timely/fast: updated web info and round-the-clock media service, by an adequate supply of trained manpower;

Additional for communication with citizens:

- Empower citizens to act: balance of information and instructions vs. sense making of the situation and empathy for citizens involved;
- Well-targeted at public groups and with well chosen media and intermediaries.

Additional for communication with the news media:

- Promoting a public service orientation in cooperation with the authorities.

For each of the various communication tasks in the crisis phases indicators can be developed and connected to broader quality criteria or principles.

6.3   The scorecard in practice

Since crises are always a challenge to existing organisational structures, it depends on the preparedness of an organisation how well it settles to the demands, unfamiliar roles and ambiguity that crises bring with them. Therefore, organisations need to also practise and get accustomed to an exceptional division of labour and to their changing roles and responsibilities.

The scorecard has been developed for both crisis communication planning and training purposes and it is based on the assumption that the higher management must be involved in the process..The instrument is divided in three parts following a continuum of before, during and after crisis. The parts are called *Preparation, Warning and crisis response*, and *Reconstruction and Evaluation* and in each of them relevant indicators are set to evaluate performance.

Firstly, the scorecard works as an audit of crisis communication preparedness, with the aim of improving planning. An audit assesses the capacity and skill of the organisation to communicate before a crisis manifests itself..The first part of the instrument consists of indicators that deal with, for instance, identification of mapping stakeholders and their expectations, systems of monitoring risks, and ways of ensuring operational capacities in the response organisation and network. The audit can be done in guided group discussions and include an evaluation of the communication plan of the organisation.

Secondly, the scorecard can be used as a measurement instrument during a complex emergency exercise to assess communication performance in various crisis scenarios. The main purpose of training is to show organisations to what extent they actually are able to communicate in a crisis situation. The change from 'old' to 'modern' type of crisis has pointed out that new strategies of anticipation (preparatory effort) have joined the traditional strategies of.resilience

and that crisis training should involve the top level managers as well (Boin and Lagadec 2000). Even though it is still crucial that crisis teams operate seamlessly the need for rapid and flexible decision-making required from crisis managers is gaining importance.

When the scorecard is used to evaluate an exercise the focus is on the later parts. The object of an exercise is to learn how to deal with a changing crisis situation while real-time input is given to add pressure and create a realistic scenario. The scorecard is planned to fit both table-top and simulation exercises. According to Freimuth et al. (2008) a simulation can provide the most value in an emergency exercise. Compared to much used table-top exercises in the emergency communication field, simulations offer a more realistic setting for exercise because they emphasize action over action intensions. Simulations especially develop individual and organisational capacity to manage crisis as they provide the participants the opportunity to observe their experience, assess its impact and make changes (Freimuth, Hilyard, Barge and Sokler 2008, 36S).

Thirdly, the scorecard may also serve as a basis for a continuous intermediate evaluation throughout the course of a developing real crisis, or subsequently, it can be use to analyse such based on throughout documentation. The scorecard needs to provide enough information for learning, but its results should also be easy to overview and interpret. In all these three ways the instrument will help public organizations to further improve the quality of crisis communication.

The scorecard is meant for different kinds of public authorities throughout the European countries. Its content is based on crisis management and communication literature on emergencies in the western societies as well as disasters in e.g. Asia. However, it aims to provide a more adjustable list of best practices practises, which are usually criticised as being too local and context-bound. The scorecard is tested in practice. For future research, it would be interesting to compare the measurement results in different situational and cultural settings to find out if different organisational needs or cultural emphases occur.

Executive summary – section I
The crisis communication scorecard endeavours to offer authorities a strategic approach for coping with the communication challenges in the various phases of complex crises. In this section the structure and content of the developed scorecard were justified. The elements that construct the instrument were introduced and the criteria for the indicators through which quality of the communication functions can be evaluated were pointed out.

This section refers to Kaplan and Norton, the initiators of the balanced scorecard, whose work inspired the authors to develop a scorecard for crisis communication. Scorecards were originally developed for business organisations, but in this case the principle was applied to communication supporting crisis management by public organisations. The authors explain the choices made in the process. In the structure of the scorecard the various phases of crisis management were followed. The case for a strong stakeholder orientation was made and communication tasks were identified accordingly. The next step was to phrase the performance indicators as statements for assessment by scale measurement.

The indicators of the scorecard employ the best practices of crisis communication as these have been documented over the past few years by scholars and practitioners. (A number of these scholars are mentioned in Appendix A to this section, and the following book sections also refer to important background literature.).In addition the scorecard draws on the results of the empirical research reported in this book. The measurement instrument can be used to audit the preparedness of public authorities to communicate in an emergency. It also contributes to the thorough evaluation of a rehearsal of a crisis scenario. The Crisis Communication Scorecard itself is presented in Appendix 1 to this book and a User guide is provided in Appendix 2.

References

Ahaus, C. & Diepman, F. (eds.) (2002), Balanced scorecard & Model Nederlandse kwaliteit, Kluwer, Deventer.

Allan, S. & Zelizer, B. (2004), Rules of engagement: journalism and war. In Allan, S. & Zelizer, B. (eds) Reporting war: Journalism in wartime. Routledge, New York.

Becker, B., M. Huselid & D. Ulrich (2001), The HR-scorecard; linking people, strategy and performance. Harvard Business School Press, Boston..

Boano, C. & Lund, R. (2009), Disasters, crisis and communication; a literature review. CrisComScore Studies, no. 1.1.

Boin, A., 't Hart P., Stern, E. & Sundelius B. (2005), The politics of crisis management. Public Leadership under Pressure. Cambridge University Press, Cambridge.

Boin, A. and Lagadec, P. (2000), Preparing for the Future: Critical Challenges in Crisis Management. Journal of Contingencies and Crisis Management. Vol 8 (4) pp. 185–191.

Boomsma, S. en A. van Borrendam (1990), Kwaliteit in diensten; een zorg voor managers in de diensten- en industriële sector. Kluwer, Deventer.

Buytendijk, F. and J. Brinkhuis-Slaghuis (2000), Balanced scorecard; van meten naar managen. Samsom, Deventer.

Choi, Y. & Lin, Y-H. (2009), Consumer response to crisis: Exploring the concept of involvement in Mattel product recalls. Public Relations Review, Vol. 35 pp. 18–22

Coombs, W.T. (2006), The proactive powers of crisis response strategies: Managing reputational assets during a crisis. Journal of Promotion Management, Vol. 12 pp. 241–259

Coombs, W.T. (2007), Ongoing crisis communication: Planning, Managing, and Responding. Sage, Thousand Oaks, CA

Chess, C., (2001), Organisational Theory and the Stages of Risk Communication. Risk Analysis, Vol. 21(1) pp. 179–188

Cloudman, R. & Hallahan, K. (2006), Crisis communicators preparedness among U.S. organisations: Activities and assessments by public relations practitioners. Public Relations Review, Vol. 32 pp. 367–376.

Dardis F. & Haigh M. (2009), Prescribing versus describing: testing image restoration strategies in a crisis situation. Corporate Communications: An International Journal, Vol. 4 (1) pp. 101-118

FEMA – Federal Emergency Management Agency (2005), ICS-300: Intermediate ICS for expanding incidents. Student manual, Federal Emergency Agency, Emmitsburg, MA.

Fleisher, C. & Burton, S. (1995). Taking stock of corporate benchmarking practices: panacea or Pandora's box? Public Relations Review, Vol. 21(1) pp. 1–20

Fleisher, C. and D. Mahaffy (1997), A balanced scorecard approach to public relations management assessment. Public Relations Review, Vol. 23 (2) pp. 117-142

Freeman, R. (1984). *Strategic Management: A stakeholder approach. Pitman, Boston.*

Freimuth, V.S., Hilyard, K.M., Barge, J.K. And Sokler, L.A. (2008), Action, Not Talk: A Simulation of Risk Communication During the First Hours of a Pandemic Flu. Health Promotion Practice, Vol. 9, pp. 35S-44S.

Frooman, J. (1999), Stakeholder influence strategies. Academy of management review, Vol. 24 pp. 191–205.

Gelders, D., Bouckaert, G. & van Ruler, B. (2007), Communication in the public sector: Consequences for public communication about policy intensions. Government Information Quarterly, Vol. 24 pp. 326-337.

Hering, R., Schuppener, B. & Sommerhalder, M. (2004), Die Communication Scorecard; eine neue methode des Kommunikationsmanagements, Haupt, Bern.

Helsoot, I. (2008), Coordination is a prerequisite for good collaboration, isn't it? Journal of Contingencies and Crisis Management, Vol. 16 pp.173–176.

Huang, Y-H. & Su, S-H. (2009), Determinants of consistent, timely, and active responses in corporate crises. Public Relations Review, Vol 35 pp. 7-17.

Jones, R. (2002), Challenges to the notion of publics in public relations: implications of the risk society for the discipline. Public Relations Review, Vol. 28 pp. 49-62.

Kaplan, R. & Norton, D. (1996), The balanced scorecard. Translating strategy into action. Harvard Business School Press, Boston, Massachusetts.

Kaplan, R. and D. Norton (2001), The strategy-focused organisation. Harvard Business School Press, Boston.

Kaplan, R. and D. Norton (2004), Measuring the strategic readiness of intangible assets. Harvard Business Review, Vol. 82 (2) pp. 53–63.

Kaplan, R. and D. Norton (2006), Alignment; using the balanced scorecard to create corporate synergies. Harvard Business School Press, Boston.

Kersten, A., (2005), Crisis as usual: Organisational dysfunction and public relations. Public Relations Review, Vol. 31(4), pp. 544–549.

Keyes, J. (2005), Implementing the IT balanced scorecard. Auerbach, Boca Raton.

McComas, K.A. (2006). Defining Moments of Risk Communication Research: 1996–2005. Journal of Health Communication Harvard Business Review, Vol. 11, pp. 75–91.

Moe, T. & Pathranarakul, P. (2006), An integrated approach to natural disaster management. Public project management and its critical success factors. Disaster prevention and management, Vol. 15 (3), pp. 396 – 413.

Moe, T., Gehbauer, F., Senitz, S. & Mueller, M. (2007), Balanced scorecard for natural disaster management projects. Disaster prevention and management, Vol. 16, (5) pp. 785 – 806.

Palm J. & Ramsell E. (2007), Developing local emergency management by co-ordination between municipalities in policy networks: Experiences from Sweden. Journal of Contingencies and Crisis Management, Vol. 15 (4), pp. 173-182.

Pearson, C. & Mitroff, I. (1993), From crisis prone to crisis prepared: a framework for crisis management..Academy of management executive, Vol. 7 (1), pp. 48 – 59.

Peelen, E., P. Waalewijn en S. Wijnia (2000), Marketing balanced scorecard. Samsom,

Deventer.

Pfeffer, J. & Salancik, G. (1978), The external control of organisations: A resource dependence perspective. Harper & Row, New York.

Quarantelli, E.L. (1988), Disaster crisis management: A summary of research findings. Journal of Management Studies, Vol. 25 (4), pp. 373–385.

Reynolds, B. & Seeger, M. (2005), Crisis and emergency risk communication as an integrative model. Journal of health communication, Vol. 10, pp 43–55.

Ritter, M. (2003), The use of a balanced scorecard in the strategic management of corporate communications. Corporate communications, Vol. 8 (1), pp. 44–59.

Rolke, L. & Koss, F. (2005), Value Corporate Communications; wie sich Unternehmenskommunikation wertorientierd managen lässt, BoD, Norderstedt.

Rosenthal, U. & A. Kouzmin (1997), Crises and crisis management; toward comprehensive government decision making. Journal of Public Administration Research and Theory, Vol. 2, pp. 277–304.

Sandman, P.M. (2002), Smallpox vaccination: Some risk communication linchpins. Retrieved March 30, 2009 from
http://www.psandman.com/col/SARS-1.htm

Seeger, M.W. (2002), Chaos and crisis: Propositions for a general theory of crisis communication. Public Relations Review, Vol. 28, pp. 329–337.

Seeger, M. (2006), Best practices in crisis communication: An expert panel process. Journal of Applied Communication Research, Vol. 34 (3), pp. 232–244.

Sellnow, T. L. (1993), Scientific argument in organisational crisis communication: The case of Exxon. Argumentation and Advocacy, Vol. 30, pp. 28–42.

Sverges Informations förening (1996), Return on Communications. The Swedish Public Relations Association, Stockholm.

Stephens, K. K., Malone, P. C. & Bailey, C.M. (2005), Communicating with stakeholders during crisis. Journal of Business Communication, Vol. 42, pp. 390–419.

Ulmer, R., Sellnow, T. & Seeger, M. (2007), Effective crisis communication. Moving from crisis to opportunity. Sage Publications, Thousand Oaks.

UN/ISDR (2002), Living with risk: a global review of disaster vulnerability. A preliminary version. April 10, 2009, retrieved from http://www.adrc.asia/publications/LWR/LWR_pdf/index.pdf

Vos, M. (2003), Communicatie-kwaliteitsmeter gemeenten: Cahier 28. Faculteit Communicatie en Journalistiek HU, Utrecht.

Vos, M. & Schoemaker, H. (2004), Accountability of communication management: A balanced scorecard for communication quality. Boom Onderwijs/ Lemma, Amsterdam.

Weick, K.E. (1993), The collapse of sensemaking in organisations: The Mann Gulch disaster. Administrative Science Quarterly, Vol. 38, pp. 628-652.

Weick, K. (2001), Making sense of the organisation. Blackwell, Oxford.

Weig, F. (2003), Balanced Scorecard für Strategisches Management von Städten; ein Ansatz unter Einsatz von internetumfragen. VS Verlag für Socialwissenschaften, Wiesbaden.

Zerfass, A. (2008), The corporate communication scorecard; a framework for managing and evaluating communication strategies. In Zerfass, A. Van Ruler, B. and Sriramesh, K., Public Relations research; European and international perspectives and innovations, VS Verlag fur Sozialwissenschaften, Wiesbaden.

Appendix A: Scientific background

This appendix explains the reasoning behind the scorecard indicators. It follows the crisis phases that form the main element of the structure of the scorecard. The full text of the scorecard's indicators is provided in the appendix 1 of this book.

PHASE 1. REPARATION (PREDICTION, PREPAREDNESS AND MITIGATION)

Communication tasks	Background
CITIZENS: 1.1 Knowing the public groups and their media use 1.2 Monitoring of risk perception and general public understanding of risks 1.3 Contribution to the general public preparedness	When a situation turns into a crisis, public authorities, in the role of emergency managers, are surrounded by uncertainty and only a very limited time can be used for thorough stakeholder analysis. Therefore, preparatory action needs to take place. In order to deliver and receive messages effectively at the height of a crisis, the basics must be clear - .what kind of public groups the affected citizens form, what their concerns are and through what channels they seek information - as the patterns differ (Harro-Loit and Vihalemm, 2011; Hirschman, 1970). People with special needs, e.g. people with disabilities, immigrants, foreign language speakers, socioeconomically vulnerable groups, the sick or medicated, require special attention as they might need specially tailored ways of delivering messages (Perry et al., 1982). It should not be forgotten that in crisis situations media consumption habits and the functioning of certain media channels undergo substantial change. In addition to the purposeful selection of channels and message format, publics also have a generalized right to receive information about hazards and risks, "things, forces, or circumstances that pose danger to people or to what they value" (Stern and Fineberg, 1996, p. 215). This allows them to make informed choices regarding a threat; this, in turn, allows participation in decision making and risk sharing (Reynolds and Seeger, 2005) in the nearby neighbourhood and society in general. People also perceive risks differently from experts of public authorities, as experts focus on scientific probabilities while people tend to rely on common sense, experience and emotion (Slovic et al., 2004; Brehmer, 1987; Kletz, 1996). The perception of risk affects how messages are interpreted. To plan their messages, authorities must monitor people's perceptions regularly to understand the way of thinking of different groups (Vos and Schoemaker, 2006).Pre-crisis messages are often persuasive in nature and aimed at preventing harm, educating people about safety precautions and changing peoples' behaviour.
NEWS MEDIA: 1.4 Establishing cooperation with news media and journalists for crisis situations	The media include both press and broadcast, and both local and (inter)national. Television and radio become the most widely used information sources during emergencies (Hindman and Coyle, 1999). Mass media channels make it possible to communicate with large groups of citizens, allowing journalists to ask questions, and helping the public analyze the situation to make informed decisions (Lowrey, 2004)..The media should be encour-

	aged to provide information about risks and how to prepare for them, and the coverage needs to be analysed. A long-term working relationship and mutual trust is needed, while it is essential that journalists receive a proper service and advice on how they can help in delivering messages in a crisis situation. Crisis communicators need to be trained to deal with large numbers of media representatives during crises and spokespersons need training as part of pre-crisis planning prior to the onset of a crisis situation (Seeger, 2006)..
RESPONSE ORGANISATION AND NETWORK: 1.5 Improving preparedness in the organisation and in the network of response organisations 1.6 Improving facilities and the availability of manpower 1.7 Improving information exchange and training of crisis communication activities in the organisation and within the response network	In complex crisis situations the attendance of multiple actors is needed, as no single authority has sufficient competence to overcome the problem (Burkle and Hayden, 2001). Efficient cooperation, however, is dependent on several things. It requires a common language in order to make sense of the technical jargon often used as well as a shared working culture, as not all potential participants, for example, are used to fast decision-making. It also requires clear structures and protocols to define responsibilities and tasks, and facilitate the coordination of communication activities. Training and simulations prepare organisations for the exceptional division of labour and changing roles and responsibilities that characterize highly uncertain situations (Ulmer, Sellnow & Seeger, 2007). Also, communication strategies need to be integrated into the decision making processes of crisis management (Seeger, 2006), and policies for various crisis scenarios need to be developed within individual organisations as well as within the network. It must be clear which of the levels, operational or strategic, predominates in decision-making. In other words it must be planned how communication 'upscaling' from the local to the regional and national level is to be done (Palttala et al., 2011).

PHASE 2. WARNING

Communication tasks	Background
CITIZENS: 2.1 Targeting and distribution of warning messages 2.2 Issuing instructions to public groups and monitoring reactions	An effective warning requires that a broad number of the stakeholders are recognized as the public is in fact constructed of many different publics (Stephens et al., 2005; Heath and Abel, 1996) whose interests (Luoma-aho and Vos, 2010) and media consumption habits differ..Studis on the impact of the media channel on the reception of warning messages (i.e. Trumbo and McComas, 2008; Lachlan et al., 2007; Aldoory and Van Dyke, 2006) recommend using different message appeals for passive and active information seekers (Choi and Lin, 2007). Active information seekers search e.g. the Internet, whereas passive information seekers rely on information delivered by the mass media, or, in some cases, neighbours and friends (social network) (Harro-Loit and Vihalemm, 2010). Hence, it is important to send warnings via multiple channels and to monitor their effects.
NEWS MEDIA: 2.3 Informing the news media	When crises break, the news media.are usually the first source to give information about the alert (official crisis notification). From the outset spokespeople need to be available and prepared for journalists' questions and demands..Particularly in the warning phase, the public and media expect to be given news about the impending crisis, and verification that such information is precise is important. Explaining what is currently known, what is required and what is yet missing, and telling when the next update is expected helps the news media to report the situation (Reich et al., 2011).
RESPONSE ORGANISATION AND NETWORK: 2.4 Information exchange and coordination in the organisation and within the response network	In the warning phase, the first thing to do is activate the crisis management plan within the home organisation and response network. This however may take hours, and communication about the first signals and initial decisions made – before a preparedness plan is activated – are fundamental for efficiency and success in the later response (Hensgen, Desouza and Durland, 2006).The signals about a threatening crisis may come from many sources: an employee, the surveillance system, another organisation in the response network or an external stakeholder. Warnings must be delivered at real-time speed in the organisation and within the network, so that management starts effectively and everybody knows what everybody else is doing. The coordination of crisis communication needs to start as soon as possible, including informing others about important messages sent out to the relevant publics.

PHASE 3. CRISIS RESPONSE (EMERGENCY)

Communication task	Background
CITIZENS: 3.1 Instructions on how to prevent further damage 3.2 Clarifying the situation to help public groups to cope with the situation 3.3 Continuous monitoring of needs and perceptions of public groups 3.4 Direct means of communication	In the outbreak of a crisis communication seeks to respond to immediate public needs for information in a spontaneous, less controlled manner than in the preparedness phase before a crisis (Reynolds and Seeger, 2005). Response messages should include self-efficacy action that can be taken to reduce harm (Egbert and Parrott, 2001). Instructions must be in given in a clear and concrete form and instructions need to be repeated. Informative messages concern basic needs and crisis logistics – how, where and when it is possible to obtain medical treatment, water, food, shelter, beds, medicine, cash and means of communication (Reich et al, 2011). The aim of the strategic planning of communication is to create messages which better match audience needs, values, background, culture, and experience (Murray-Johnson et al., 2001), e.g. foreign language speakers and other groups with special needs have to be addressed separately. Information is given on the media consumption habits of the affected publics and the new media are especially utilized for that. Crisis messages should also provide affective information to help in the accompanying psychological turmoil (Reynolds and Seeger, 2005). Actions and information needs are monitored.
NEWS MEDIA: 3.5 Designated crisis agency spokespeople and services for journalists	The news media should not been seen as an adversary but rather a counterpart or partner. This means that communicators of response organisations can call on the media as a strategic resource in managing the crisis. When defining message content, uncertainty is normal in crisis situations and should be accepted. Overly reassuring messages do not erase inconsistency, and communication about rescue activities and future prospects should be open and candid (Seeger, 2006.)
RESPONSE ORGANISA-TION AND NETWORK: 3.6 Assist cooperation in the organisation and within the response network	Gaps in the information flow and lack of standard operating procedures (SOPs) defining crisis communication on the network level during a crisis are common, and as a consequence decision-making and cooperation can be hindered (Palttala et al., 2011). It is a challenge for the actors to form and maintain an up-to-date, accurate and complete picture of the crisis situation. Keeping up with the course of events requires efficient coordination systems as well as versatile and case-specific technical communication capabilities. Knowledge about differences in organisational cultures and openness about the goals and motives for action is also needed to maintain trustworthy relationships within the network. Breakdowns and contradictions between authorities not only complicate cooperation but also cause confusion and create additional uncertainty, thereby compounding harm to affected publics (Seeger, 2006).

PHASE 4. RECONSTRUCTION (RECOVERY)

Communication tasks	Background
CITIZENS: 4.1 Instructions for recovery efforts 4.2 Stimulating a more accurate public understanding of the recovery and ongoing risks 4.3 Ongoing monitoring of needs and perceptions of public groups	Reconstruction phase communication consists of decisions and actions taken after a crisis aimed at restoring or improving pre-disaster living conditions, while encouraging and facilitating necessary adjustments to reduce risk and achieve long-term sustainability (Moe et al. 2007). In this phase, the response authorities must inform and persuade about ongoing clean-up, remediation, recovery, and rebuilding efforts (Reynolds and Seeger, 2005). It is important to further explain the cause and consequences of the crisis, tell people how they can contribute to the recovery effort, and show empathy for their loss, while continuing to engage the affected publics in dialogue and hear their concerns.
NEWS MEDIA: 4.4 Ongoing media relations	In the post-crisis phase the media become more critical regarding the cause of the crisis, the appropriateness of the response activities and who should take the blame and responsibility for it (Reynolds and Seeger, 2005). On the one hand, individual response organisations must be prepared for media pressure in the blame game and openly explain what is and will be done in order to restore the status quo, while cognizance must also be taken of the communication of other response organisations. On the other hand, the recovery activities could lose news value, and consequently the media must be stimulated to continue reporting on the recovery effort to engage and maintain.people's interest in it over the longer term (Boano and Lund, 2010). Reflective dialogue with the relevant journalists, emphasizing how collaboration can further both public and journalistic interests is valuable (Reich et al, 2011).
RESPONSE ORGANISATION AND NETWORK 4.5 Stimulating cooperation and coordination in the organisation and within the response network	Recovery after crises is about stabilizing the situation and restoring normal routines. A response organisation might, however, be unable to carry out its formal and organisational work roles (Quarantelli, 2005). On the other hand, as soon as the event is over, actors tend to return to the prior business-as-usual mode of operation, forgetting that the crisis recovery work must be carried out for a long period of time. Response organisations may ease their efforts and disperse at the first favourable signs, with the result that the fundamental questions that generated the crisis and that were generated by it are poorly dealt with (Boin and Lagadec, 2000).

PHASE 5. EVALUATION

Communication task	Background
CITIZENS: 5.1 Supporting reflection	The evaluation phase allows for initiatives targeted at improving the public's resilience and future readiness. In order to succeed, both the failures and successes of the organisation's crisis communication must be analysed and positive action by publics reinforced (Reynolds, 2002)..Public knowledge about what happened is thereby increased, enabling public groups to better cope with similar situations in the future. Although affected public groups may be eager to forget their recent difficulties, it is nevertheless important from a future perspective to look back on what happened. Perceptions of public groups might differ from those of the authorities. Matters should be discussed and experience used to improve preparedness and modify communication plans (Reich et al, 2011).
NEWS MEDIA: 5.2 Evaluation and conclusions for the future via media and public debate	Post-crisis evaluation on relations with the media will reveal whether the public authorities have been able to provide information to the different news media channels. Assessment of media coverage displays interpretations in the news reports that might be of a positive, negative or neutral nature. Crisis messages, both press releases and direct communication, should contain instructive information and express empathy in a fine balance (Freimuth et al., 2008). Furthermore, society needs to cope with similar situations and therefore public debate helps in developing preparedness for future crises. Such debate may concern preventive measures or steps to reduce the likelihood of similar risks in the future.

| RESPONSE ORGANISA-TION AND NETWORK:

5.3 Supporting evaluation and learning about communication in the organisation and within the response network | Response organisations should honestly and effectively evaluate what happened and make the necessary changes to increase the level of resilience for future events. However, there are challenges for post-crisis evaluation and learning: for example, response organisations may define the closure of an incident differently; it is not customary for experiences to be shared within the network after a crisis; the level of experience among the actors is likely to vary; and the documentation and dissemination of lessons learned is often insufficient (Palttala et al., 2011). For subsequent decision making, the organisation's activities should be carefully documented. Effective learning processes require accessible information regarding decision-making procedures, protocols, incident logs, records of messages that have been distributed and published, calls received at the information centre, and any other information worth analyzing for the purposes of learning lessons (Reich et al, 2011). Experiences and lessons learned should not be internally restricted but shared with the whole response network (Boin and Lagadec, 2000). It is only in this way that the cooperation of actors and preparedness of the network can be improved. |

References to the appendix

Aldoory, L., and Van Dyke, M. (2006), 'The roles of perceived "shared" involvement and, information overload in understanding how audiences make meaning of news about bioterrorism', Journalism and Mass Communication Quarterly, Volume 83, Number 2, pp. 346–361.

Boano, C. and Lund, R. (2010), Disasters, crisis and communication; a literature review. In Vos, M., Lund, R., Harro-Loit, H. and Reich Z., Developing a crisis communication scorecard, Jyväskylä Studies in Humanities, University of Jyväskylä.

Boin, A., and Lagadec, P. (2000). Preparing for the future: Critical challenges in crisis management. Journal of Contingencies and Crisis management, Volume 8, Number 4, pp. 185–191.

Brehmer, B. (1987), 'The psychology of risk', in Singleton, W. T. and Hovden, J. (Eds), Risk and decisions, Wiley, New York, pp. 25–39.

Burkle, F.M. and Hayden, R. (2001). The concept of assisted management of large-scale disasters by horizontal organisations. Prehospital and disaster medicine, Volume 16, Number 3, pp. 87–96.

Choi, Y. and Lin, Y. (2007),.'Communicating Risk: The Effects of Message Appeal and Individual Difference on Risk Message Processing', www.allacademic.com/meta/p171672_index.html, (accessed 27 April 2010).

Egbert, N. & Parrott, R. (2001) Self-efficacy and rural women's performance of breast and cervical cancer detection practices. Journal of Health Communication, 6, 219–233.

Freimuth, V., Hilyard,K., Barge, J. and Sokler, L. (2008) Action, Not Talk: A Simulation of Risk Communication During the First Hours of a Pandemic. Health Promotion Practice, Volume 9, Number 4, pp. 35–44.

Harro-Loit, H. and Vihalemm, T. (2011, forthcoming), 'Response patterns to warning messages among citizens' in Crisis Communication: Information Seeking and Processing Strategies, Journal of Crisis and Contingences Management.

Hensgen, T., Desouza, K.C. and Durland, A. (2006) Initial Crisis Agent-Response Impact Syndrome (ICARIS). Journal of Contingencies and Crisis Management, Volume 14, Number 4, pp. 190–198.

Hindman, D. B., & Coyle, K. (1999) Audience orientations to local radio coverage of a natural disaster: A case study. Journal of Radio Studies, Volume 6, Number 1, pp. 8–26.

Hirschman, A. O. (1970), Exit, Voice, and Loyalty. Responses to Decline in Firms, Organisations, and States, Cambridge, MA.

Kletz, T.A. (1996), 'Risk - Two views: The public's and the experts', Disaster Prevention and Management, Volume 5, pp. 41–46.

Lachlan, K., Sepnce, P., and Burke, J. (2007), 'The Role of Medium Choice in Perceptions of Crisis Message Adequacy and Responses during Hurricane Katrina,
http://www.allacademic.com/meta/p_mla_apa_research_citation/1/8/8/3/3/p188339_index.html (accessed 26 April 2010).

Luoma-aho, V. and Vos, M. (2010) Towards a more dynamic stakeholdermodel: acknowledging multiple issue arenas. Corporate Communication; an international journal, Vol. 15, Number 3, pp 315–331.

Lowrey, W. (2004) Media Dependency During a Large-Scale Social Disruption: . The Case of September 11. Mass Communication & Society, 7(3), 339–357

Moe, T., Gehbauer, F., Senitz, S. & Mueller, M. (2007). Balanced scorecard for natural disaster management projects. Disaster prevention and management, Volume 16, Number 5, pp. 785–806.

Murray-Johnson L, Witte K, Liu W.Y., Hubbell A.P., Sampson J, and

Morrison K. (2001) Addressing cultural orientation in fear appeals: Promoting AIDS-protective behaviors among Hispanic immigrants and African-American adolescents, and American and Taiwanese college students. Journal of Health Communication. Volume, 6 Number 4, pp. 1–23.

Palttala, P., Boano, C., Lund, R. & Vos, M. (2011, forthcoming), Communication gaps in disaster management: Perceptions of experts from governmental and non-governmental organisations, Journal of Crisis and Contingences Management.

Perry, R.W., Lindell, M.K., & Greene, M.R. (1982) Crisis Communications: Ethnic Differentials in Interpreting and Acting on Disaster Warnings. Social Behavior and Personality, 10 (1), 97-104.

Reich, Z., Bentman, M., Jackman, O. (2011) A crisis communication guide for public organisations. In Vos, M., Lund, R., Harro-Loit, H. and Reich Z. Developing a crisis communication scorecard, Jyväskylä Studies in Humanities, University of Jyväskylä.

Reynolds, B. (2002) Crisis and Emergency Risk communication. Center for Disease Control and Prevention.

Reynolds, B. and.Seeger, M. (2005). Crisis and emergency risk communication as an integrative model. Journal of Health Communication, Vol. 10, pp 43–55.

Seeger, M. (2006). Best practices in crisis communication: An expert panel process. Journal of Applied Communication Research Vol. 34 (3) pp. 232–244.

Slovic, P., Finucane, M., Peters, E., Donald G. and MacGregor, D. (2004) Risk as Analysis and Risk as Feelings: Some Thoughts about Affect, Reason, Risk, and Rationality. Risk Analysis, Volume 24, Number 2, pp. 311–322.

Stephens, K. K., Malone, P. C. and Bailey, C.M. (2005), 'Communicating with stakeholders during crisis', Journal of Business Communication, Volume 42, pp. 390–419.

Stern, P. and Fineberg, H. (1996), Understanding Risk: Informing Decisions in a Democratic Society, National Academy Press, Washington, DC.

Trumbo, C. W., McComas, K. A. (2008), 'Institutional trust, information processing and perception of environmental cancer risk',.International Journal of Global Environmental Issues, Volume 8, Number1/2, pp. 61–76.

Ulmer R., Seeger, M. & Sellnow, T. (2007). Effective crisis communication. Moving from crisis to opportunity. Sage Publications, Thousand Oaks.

Vos, M. and Schoemaker, H. (2006), Monitoring Public Perception of Organisations, Boom Onderwijs, Amsterdam.

SECTION II

DISASTERS, CRISIS AND COMMUNICATION: A LITERATURE REVIEW

Camillo Boano and Ragnhild Lund

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CONTENTS

1 INTRODUCTION: AIMS, SCOPE AND STRUCTURE

This section of the book, taking the form of a scoping study, is a desk study of secondary data and a literature review with the aim of gathering evidence, experiences and lessons learned on what should be considered fundamental criteria in crisis management and crisis communication. It constitutes NTNU's background document for the project CrisComScore, of which NTNU's Globalization project is a partner[2].

Without aiming to be comprehensive and definitive, this literature review discusses the multiplicity of contemporary views on disaster and crisis, providing a context for communication research and ground crisis communication in lessons learned in the field of disaster management. Stemming from the authors' backgrounds and academic interests outside the specific communication field the novelty and the challenge of the paper is, drawing from different epistemologies of disasters and crisis management, to analyze the relevance of such discourses for better crisis management and communication. Reviewing discourses around definitions and labels used in disaster studies, the paper argues for the need to re-examine approaches to such studies. In conjunction with increasing understanding of these discourses, a better understanding of the role of local stakeholders and their practices in crisis management and communication emerge as essential to future management practices. Some general principles on how to go about these challenges are presented in the final part of the book section.

The document is structured in various parts:
- Part 2 aims to set the scene of disasters and crises by providing an overview of the magnitude and the scale of the problems and a brief summary of the contemporary challenges and characteristics of such events.
- Part 3 begins by defining crises, disasters and catastrophes according to different perspectives and streams of thoughts aiming to improve our

understanding of these phenomena, before outlining the crisis management literature and specific insights into communication.

- Part 4 explicitly focuses on disasters and crises from a social perspective, charting the evolution of disaster studies from sociology of risks.
- Part 5 discusses recent emphasis on complex theory and dynamic systems studies, and explores disaster and change from this new perspective.
- Part 6 is built on exploration of the emergent concepts of vulnerability, resilience and adaptation, tracing debates and relevant literature, especially in climate change and vulnerability studies.
- Part 7 offers a short introduction on the humanitarian perspective, briefly suggesting trends and debates, and offering a short contribution on the aspect and role of coordination in emergencies.
- Part 8 focuses on crisis management and the different models adopted in its practice. The exploration, though brief and concise, makes reference to the vast literature on the subject, highlighting the trends and gaps.
- Part 9, the final section, attempts to offer a non-expert view on crisis and risk communication.

Methodologically, the paper reviews and systematises works related to disasters and crises, aiming to provide structural arguments and lessons learned to be later applied to research on communication and crisis. In this endeavour the authors brought their own experience of working with post-crisis reconstruction and recovery from Asian countries which had gone through war and natural disaster (Sri Lanka, Indonesia, India, Nicaragua, Venezuela, Ecuador) to the fore. Hence, such contribution is to be considering partial and build on experiences and knowledge on lessons learnt about crisis management and feed them into the communication discourses that would be developed in relation to crisis and disasters.

Although located within the broader discipline of disaster studies and disaster management, this book section also analyses the discourses around the definitions and labels in such contested field, and it is argued that we have to re-examine our approaches to such studies by adopting an holistic vision of disaster rather than a discipline-driven one. In the selection of literature, provided at the end of the section, major emphasis has been given to works which highlight: The complexity of crises, multiple actors and/or stakeholders, multiple perspectives, multiple expectations, phases of both decision making and disaster cycles, relevance of linkages between before, during and after a crisis, relevance of coordination and decision-making mechanisms, problematic aspects and gaps.

2 THE MAGNITUDE OF THE PROBLEM: A CONTEMPORARY VIEW ON A DISASTER-PRONE WORLD

To the casual observer exposed to the plethora of media that currently inform our daily lives, it appears that we live in an increasingly disaster-prone world. This perception has some foundations, at least to the extent that the number of disasters, the economic value of losses and the number of victims have increased in recent decades (Blaikie et al. 1994; Scheuren et al. 2008).

Disaster-prone world

According to the most recent Centre for Research on the Epidemiology of Disasters (CRED) report (Scheuren et al. 2008), in 2007 a total of 414 natural disasters killed 16,847 persons, affected more than 211 million others, and caused more than USD 74.9 billion in terms of economic damage. Even if a greater diffusion of disaster occurrence across countries was noted, the impact on humans remained concentrated across a small number of disasters and countries. Despite no 'mega disaster' being reported, the 10 most important disasters in terms of mortality, victims, and damage accounted for 55.6%, 85.2%, and 66.2% respectively of all of the reported deaths, people affected, and damage caused.

The start of 2008 did not show any signs of there being any improvement. On 12 May 2008 a major earthquake measuring 7.9 on the Richter scale struck Sichuan Province in China, leaving, according to government records, 69,207 dead, 18,222 missing, 374,176 injured, and up to 46.24 million individuals affected. During the summer, a series of hurricanes and tropical storms hit the Caribbean, in particular hurricanes Gustav and Hannah, but also the tropical storms Fay and Josephine. The latter storms severely affected the Bahamas, the Cayman Islands, Cuba, the Dominican Republic, Haiti (most seriously damaged), Jamaica, Puerto Rico, and the United States. Furthermore, the major monsoon floods in September were expected to affect more than 600,000 persons in Bangladesh.

The aforementioned data confirm the global upward trend in the occurrence of natural disasters. This trend is mainly driven by the increase in the number of reported hydro-meteorological disasters, in which floods and storms are the major contributors. In recent years, we have witnessed a strengthening of the upward trend, with an average annual growth rate of 8.4% in the period 2000–2007 (Scheuren et al., 2008: 4).

However, some researchers have suggested that the definition of disasters has become too fluid for statistical time-series purposes (Horlick-Jones et al. 1991; Quarantelli 2001). Notwithstanding statistical uncertainties, there is a body of opinion which has attributed the apparent increase in the human toll of disasters to a combination of population growth, increased urbanization and global economic pressures (Burton et al. 1978; Brammer 1990; Blaikie et al., 1994;

Berke 1998; Donohue 1982; Pelling 2003), resulting in an increase in vulnerabilities.

In observing that our environment appears to have become increasingly '*turbulent and crisis prone*', Richardson (1994) has suggested this might be so not only because we have become a more crowded world, but also because we now have more powerful technology that has the capacity to generate disasters. As the spectre of the Millennium Bug (computer bug) illustrates, for instance, computer failures can bring major computer-driven systems to a standstill instantaneously. The complexity of technology-based systems means that they are more prone to the 'butterfly effect' described by Lorenz (1993) and presented as one of the centrepieces of chaos theory (Gleick 1987).

Small changes or failures in a system can precipitate major displacement through mutually reinforcing positive feedback processes. Mitroff (1988) has alluded to this in his reference to the role of the interaction between information technology and economic systems in creating wild swings in the financial system. Burton et al. (1978: 112) says that '*In a time of extraordinary human effort to control the natural world, the global toll from extreme events of nature is increasing. It may well be that the ways in which mankind deploys its resources and technology in attempts to cope with extreme events of nature are inducing greater rather than less damage and that the process of rapid social change work in their own way to place more people at risk and make them more vulnerable*'.

Whether the incidence of disasters is increasing, or whether it is simply a matter of each disaster having more devastating effects due to increasing vulnerability and insufficiency in preparedness, it is apparent that we live in an increasingly complex world and this has contributed to making us more crisis- and disaster-prone (Richardson 1994).

Contemporary views on disasters and crises

Along with natural disaster events, today's security threats – ranging from mass terrorism to avian influenza, and from climate change to crises that emerge in failed states – pose new and complex challenges for political-administrative elites (OECD 2003; Lomborg 2004; Posner 2004; Boin et al. 2005; Missiroli 2006). The threats originate from many sources, cross political and functional boundaries with ease and have the potential to affect a wide variety of critical infrastructures (LaPorte 2007). Thus, crises are becoming more complex in nature, and they are increasingly transboundary and interconnected; in a way, crises have become endemic features of modern society. This changing nature of crisis appears to be a logical development, given such long-term trends as globalization, increased mass communication '*inter-wiredness*', social fragmentation and the dissipation of state authority (Boin & Lagadec 2000: 185).

Transboundariness: a new trend
The modern nation state faces an array of threats in the form of terrorist attacks, water shortages, critical infrastructure failures, unexpected flows of illegal immigrants, progressive climate change, and new pandemics (Rosenthal & Kouz-

min 1993; Rochlin 1999; OECD 2003; Posner 2004; Egan 2007). When a threat becomes acutely manifest, a crisis emerges (Rosenthal et al. 1989; 2001). The manifestation of a crisis poses intricate challenges for political leaders and policy-making. These challenges are compounded by the changing nature of the contemporary crisis. Recently, Boin and Reinard (2008) suggested that the complexity of these threats is compounded by their transboundary nature.

According to Boin and Reinard (2008, 4), '*a transboundary threat is characterized by the potential to cross geographic and functional boundaries, jumping from one system to another*'. The ice storms in Canada in 1998 and the electricity blackout in Buenos Aires in 2001–2002 are examples of trans-functional crises: a classic threat agent penetrated and paralysed a wide variety of critical services). The rolling blackouts in the north-eastern United States and Canada in the summer of 2003 and on the European continent during November 2006 are examples of trans-geographical crises with functional repercussions (Boin & Reinard 2008: 5).

Moreover, transboundary threats can impose themselves from 'the outside', thus affecting many systems at once. Good examples include hurricanes, tsunamis and earthquakes. Hurricane Katrina in 2005 provides the most recent example of an exogenous threat that crippled a wide variety of critical systems in Louisiana and rapidly affected systems across the United States (for example, gas availability and prices in the north-east) and worldwide, for example, by sending shocks through financial markets (Boin & Reinard 2008: 4).

Boin and Reinard (2008:4), in acknowledging that countries have become tightly linked economically, politically and socially (Castells 1996) and that people, goods and services now cross borders with relative ease (Friedman 2005), suggest that three widely recognized developments in particular enhance the catastrophic potential of future crises. First, the rapid speed with which new technologies emerge and co-evolve with other technologies makes it virtually impossible to assess the unintended consequences of such technologies and their applications (Egan 2007). While new technologies hold immense promises for our well-being, they are certain to '*bite back*', either through unforeseen glitches or unforeseen uses (Baer et al. 2005). Second, new forms of terrorism, most notably the indiscriminate use of suicide agents, have emerged (Laqueur 2003; Sageman 2004). While the threat of terrorism should not be overstated, most observers agree that the potential for resulting devastation is growing. Third, climate change is likely to create new and unforeseen threats (Stern 2006; IPCC 2007b).

Nation states thus have become susceptible to what were once considered 'foreign' or 'local' problems in distant places (Sundelius 2005; Missiroli 2006). A crisis in one corner of Europe can now turn into a crisis for the entire continent. The Chernobyl explosion, the outbreak of mad cow disease (bovine spongiform encephalopathy (BSE)), conflict in former Yugoslavia, or in Georgia or Sri Lanka, illegal immigration in Southern Europe, an energy crisis in the Ukraine, terror attacks in Madrid and London, and attacks planned in the UK and Germany, all exemplify how '*local*' crises transcend geographical and functional boundaries (Boin & Reinard 2008: 5).

The multifaceted nature of the transboundary crisis demands an '*interdisciplinary*' response – a coordinated response among many actors who operate in different systems and increasingly in different countries. Such a critical element

in the humanitarian literature is termed '*shrinking of humanitarian spaces*' (Hilrost & Fernando 2006), and has called for many attempts at appropriate, coordinated and effective changes in institutional design in order to build transboundary response systems.

Complexities and interconnectedness

The complexity and coupling of ever larger, complex systems continue to increase, and small disruptions can lead to rapid escalation (Perrow 1999). The 1997 economic crisis in Asia exemplifies the speed by which seemingly minor events cascade into developments on a worldwide scale (Bisignano et al. 2000). The global IT infrastructure has been shown to be vulnerable to 'glitches' and viruses, with small interruptions causing tremendous damages (Rochlin 2001). According to Boin and Lagadec (2000: 186) the original '*fault model*' – based on the assumption that a crisis is an isolated event, with a limited duration, perceived as manageable (technically, economically, socially), in which costs are relatively easy to estimate, and recoverable within a planned timeline, possibly managed by codified intervention procedures (specialized and well-organized roles, responsibilities and hierarchies, known by the services in charge) – has to be considered inappropriate for the complexities of the present global scenario which requires collective capabilities beyond the technical realm (Rosenthal 1998).

The modern crisis is the result of many converging factors: specific risks that are increasingly difficult to evaluate, large systems consisting of entangled networks of a hitherto unknown complexity, the immediate 'mediatization' of incidents, abrupt changes in collective perceptions and sudden social demands (Boin & Lagadec 2000: 186). According to Boin and Lagadec (2000) the elements which add new parameters to current crises are:

- Large impacts, large populations affected
- Very high economic costs, surpassing classical insurance capabilities
- Unprecedented, generic and combined problems, affecting vital resources
- Snowball dynamics due to a multitude of resonance phenomena
- Emergency systems reacting on the wrong foot: obsolete, non-applicable and even counterproductive procedures
- Extreme uncertainty that will not vanish within the emergency period
- Long duration, with threats transforming over time
- Convergence, i.e. large numbers of actors and organisations quickly arriving on the scene
- Critical communication problems: within the responsible organisations, with the public, the media, and the victims (even populations which are very distant in space or time).

The amnesia syndrome

It may sound rather naïve in the content of this document to reiterate the necessity and the fundamental relevance of disaster lessons learned. The vast amount of lessons-learned literature, academic interests, organisational and inter-organisational evaluations and learning discussions, as well as the 'manualistic' emphasis that has emerged recently, at least in the humanitarian field, all confirm what Boin and Lagadec (2000: 188) call the '*amnesia syndrome*' in which recurring problems of disasters and crisis seem to be vaporized in practice: '*As soon as the event is over, forgetting and returning to the prior situation are in order. The units ease their efforts and disperse at the first favourable signs. The fundamental questions that generated the crisis - and that were generated by it – are not dealt with. In the absence of any analysis of the collective handling of the crisis, wrong lessons will be "retained" – creating traps for the future*'. Thus, the idea of learning is completely out of phase with the wish to forget as soon as possible.

Concluding remarks

This part has provided an updated view of the magnitude of our contemporary disaster-prone world. Key issues addressed are transboundariness, complexities and interconnectedness and why there is a fundamental lack of 'lessons learnt' in practise, and in spite of a vast amount of documentation of the need to better address the amnesia syndrome. Against this background the next part addresses what constitutes a disaster or crisis and how it is understood in different crisis-related discourses. Various, and often contingent, debates around definitions and labels exist. Still gaps and problems of using the various labels occur.

3   DEBATES AROUND DEFINITIONS AND LABELS

In thinking about disasters, clearly one of the most central issues is the attempt to define the term 'disaster'. Cutter (1994) and Quarantelli (1998) found that there is little consensus among researchers on what the central concept in the area is, rendering it complex and meaningless what to include and exclude in statistics, how to label specific events and subsequent practice, and how to draw up specific policy and thus elaborate narratives. This part of the document aims to collect the different definitions, showing gaps and recurring problems underlining different lines of thought that have led to the common usage of terms which are often employed interchangeably.

Disasters

There have been a number of attempts at reformulating the term 'disaster', some more successful than others. Quarantelli and Dynes (1977: 24), in a macro-level analysis, noted at least four major references for the term: the physical agent, the physical consequences of the agent, the way in which the impact of the physical agent is evaluated, and the social disruption and social changes brought about by the physical agent and its impact (Dynes 1974).

Quarantelli (2001: 332) defines disasters as '*those crisis occasions generated by the threat of the actual impact of relatively sudden natural and technological disasters that have significant negative social consequences*'. This definition was at the centre of the milestone publication which some years previously had highlighted disasters as instabilities arising at the interface between society and the environment (Lomnitz 1998; Quarantelli 2001).

For Lomnitz (1998) the interface referred to is technology '*used in its wider sense, which includes social technologies (politics, warfare) as well as technologies relating to housing, transportation and so on. In either case technology is a social product: high-rise buildings in Mexico City or cave dwellings in central China, towns located in the path of volcanic mudflows or avalanches, and so on. The essentially social nature of disasters makes it important for geoscientists to become aware of social studies on the nature of disasters*' (Castaños & Lomnitz 1995).

Almost all recent definitions use some version of this last conception, following the first socially oriented definition innovatively advanced by Fritz (1961) and also the one by Quarantelli (1994; 1998). In this respect, definitions of a social nature have clearly and fortunately replaced the very early referents that were made in almost entirely physical terms. Nevertheless, even the newer conceptions tend to assume concentrated space-time events, leaving unclear the categorical status of very diffuse events such as famines and epidemics that would otherwise be classified as disasters (Quarantelli & Dynes 1977: 24).

Some writers have stated that the emphasis on a specific event as an identifying feature is a pro-Western, pro-technology, pro-capitalism bias, unsuitable for distinguishing disasters in underdeveloped societies (Westgate & O'Keefe 1976). Other critics have argued that disasters are inherently political phenom-

ena and should be conceptualized in this way (Brown & Goldin 1973); the implication of this for research, if it is a valid position, has so far been unrecognized. The most extreme critical attack is that the word 'disaster' is an outmoded concept, a residue from the sweep of history that captures relatively insignificant phenomena instead of the newer terrors that have emerged in the modern world (Barkun 1977). A few writers have tended to use the term 'natural hazard' in place of disaster, but this seems to be a regression to earlier physical rather than social referents and totally ignores catastrophes generated by technological rather than natural agents (Quarantelli & Dynes 1977: 25).

Carr (1932: 211) argued that a disaster is '*defined by human beings and not by nature*'. He noted, '*not every windstorm, earth-tremor, or rush of water is a catastrophe. If there are no serious injuries or deaths and other serious losses there is no disaster*'. Carr's association of disaster with an event associated with the destruction of human lives and economic loss is very much shaped by the modernist imagination of his time. Such early concepts have undergone continuous changes. Throughout history, explanations of what causes a disaster, what its likely impact would be and what meaning should be attached to it have gone through important modifications.

Historically, ideas about disasters have gone through three important phases. Traditionally, catastrophes were attributed to the supernatural. They were characterized as acts of God, '*with the implication that nothing could be done about their occurrence*' (Quarantelli 2001: 3). The rise of Enlightenment secularism led to an important shift in the way society conceptualized disasters, and the development of science as the new source of knowledge altered people's perception of disasters. However, in more recent times, this 'Acts of Nature' understanding has been gradually displaced in societal and organisational perspectives by the notion that disasters result from the '*Acts of Men and Women*' (Quarantelli 2001, 4).

Earlier disaster researchers such as Quarantelli were criticized for defining a disaster too emphatically from a sociological perspective and for depicting it as a '*social crisis occasion*' (Furedi 2007). Such criticism and further research have contributed to promoting a shift from a sociological perspective to an ecological perspective on disasters encompassing a wider vision on the coupled human and ecological system, promoting alternative concepts of vulnerability, risk, resilience, and, more recently, adaptation.

Dynes and Drabek (1994) have constructed a useful '*traditional*' and '*universal*' definition of disaster, which they use as a straw man: '*[The] baseline conceptualization: Disasters were events, which had social consequences but were generally outside human control. When such events occurred in communities, they created great fear and personal trauma. This created social chaos, making local communities incapable of effective action. Outside authorities, especially the military, were needed to re-establish command and control. Outside agencies were needed to aid these helpless people. Disaster planning was to enhance the national government's ability to re-establish social order and to facilitate recovery. Since some national governments were inept and weak, it was the responsibility of donor governments to provide assistance*'.

The new perspective based on environmental and risk consciousness preferred to see disaster in terms of '*extreme environment*' (Furedi 2007: 284) and claimed that the '*idea of extreme suggests the absence of a meaningful way of compre-

hending an event or circumstance that produces the (possibly) negative effect of render-ing a situation incoherent' (Kroll-Smith et al. 1997: 3–6).

Central to the argument promoted by the new vulnerability paradigm of disaster research and its present evolution (Birkmann 2006) is the contention that in contemporary times communities are far more affected by a technologi-cal disaster than a natural one. Supporters of the claim that technological disas-ters have a peculiarly powerful impact on people argue that this response is related to the 'ambiguity of harm'. The possibility of indeterminate casualties over a long period of time breeds apprehension. Its destructive consequences are unknowable and therefore people continue to live in a state of anxiety well past the eruption of the disaster (Furedi 2007).

Following the thesis developed by Erikson (1994), it is suggested that toxic disasters, for example, are invisible and never have a clear end. They are un-bounded and become a permanent source of anxiety. Some researchers insist that rather than leading to the emergence of solidarity, technological disasters help to create a 'corrosive community' (Erikson 1994; Freudenberg 1997; Kroll-Smith et al. 1997).

Another approach to defining disasters is provided by Keller and Al-Madhari (1996: 20), who applied arbitrary statistical benchmarks. Accordingly, disasters were defined in terms of a threshold number of fatalities (10), damage costs (USD 1 million) and number of people evacuated (50). On the basis of this definition the authors claim there have been 6000 disasters since 1970, with 4 million deaths and widespread economic costs. This approach has the appeal of providing a solid, unambiguous foundation for defining disasters, and it is ap-propriate in the context of studies concerning statistical issues, such as the probabilistic prediction of frequency and magnitude of disasters. However, it loses sight of the qualitative factors which are present in disaster situations, ir-respective of whether or not the fatality, damage cost and evacuation thresholds are reached (Faulkner 2001: 138).

Disaster classifications

Along with the problem of defining the term, the classification of disasters seems to be another important element in the debate. Since there is wide vari-ability in the description of disaster events and their impacts, it is not unusual to have different initial classifications for disasters. Some experts believe that there are two major types of disasters: natural disasters and man-made disas-ters. A natural disaster is the consequence or effect of a hazardous event, occur-ring when human activities and natural phenomena (i.e. a physical event, such as a volcanic eruption, earthquake or landslide, which does not affect human beings) become enmeshed (Leon Abbott 2005).

In areas where there are no human interests, natural phenomena do not constitute hazards, nor do they result in natural disasters. This understanding is crystallized in the formulation: '*disasters occur when hazards meet vulnerability*' (Blaikie et al. 1994). Vulnerability is influenced by factors such as location, state of housing, level of preparedness, and ability to evacuate and carry out emer-gency operations. Different populations have different levels of vulnerability, which is one reason why hazards of a similar type and intensity can have quite varied effects on different populations.

Man-made disasters are disasters having an element of human intent, negligence or error, or involving a failure of a system. Thunderstorms, tornados or earthquakes may cause man-made disasters such as power or telecommunication outages, and although the root cause is a natural phenomenon they are still considered to be man-made disasters.

The Canadian Disaster Database[3] (CDD) categorizes disasters into five different types:

- Biological, such as epidemics
- Geological, such as earthquakes
- Meteorological and hydrological, such as drought
- Human conflict, such as terrorism
- Technological hazardous, such as chemicals materials.

The Disaster Database Project[4] (DDP) conducted by the University of Richmond (Virginia, USA), categorizes disasters into three major classes:
- Conflict-based disaster, such as bombing and massacres
- Human systems failure, such as dam collapse and mining accidents
- Natural disaster, such as earthquakes.

The United Nations (2006) classifies natural disasters as follows:
- Hydro-meteorological disasters, including floods and wave surges, storms, and droughts, and also related disasters, such as extreme temperatures and forest and/or scrub fires
- Geophysical disasters, including earthquakes, tsunamis, and volcanic eruptions
- Biological disasters, covering epidemics and insect infestations
- Technological disasters, consisting of industrial accidents, transport accidents, and miscellaneous accidents.

The Center for Research on the Epidemiology of Disasters (CRED) at the Department of Public Health, Université Catholique de Louvain, which maintains EM-DAT, a worldwide database on disasters, defines disaster as '*a situation or event which overwhelms local capacity, necessitating a request to a national or international level for external assistance; an unforeseen and often sudden event that causes great damage, destruction and human suffering*' (Scheuren et al. 2008: 2). The database is based on such a definition and on the following criteria: '*for a disaster to be entered into the database, at least one of the following criteria must be fulfilled: 10 or more people reported killed; 100 or more people reported affected; declaration of a state of emergency; call for international assistance.*'

CRED and Mu nichRe (the world's largest reinsurance company) have recently led a collaborative initiative on 'Disaster Category Classification for Operational Databases' (Scheuren et al. 2008: 4). This classification is a first step in the development of a standardized international classification of disasters. EM-DAT distinguishes two generic categories (for) (of) disasters: natural and

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3   *http://www.publicsafety.gc.ca/res/em/cdd/index-en.asp*
4   http://www.learning.richmond.edu/disaster/.

technological. The natural disaster category is further divided into 6 sub-groups, which in turn cover 12 disaster types and more then 32 sub-types, as depicted in Figure 1.

Crises

Much early management theory assumed relative stability in both the internal and external environments of organisations and therefore did not provide a firm foundation for coping with change and crises (Booth 1993). If the implications of change were considered at all, they were viewed in terms of the challenges of coping with gradual (relatively predictable) change, rather than sudden changes which might test an organisation's ability to cope. From an organisational perspective, such situations may be described as crises or disasters.
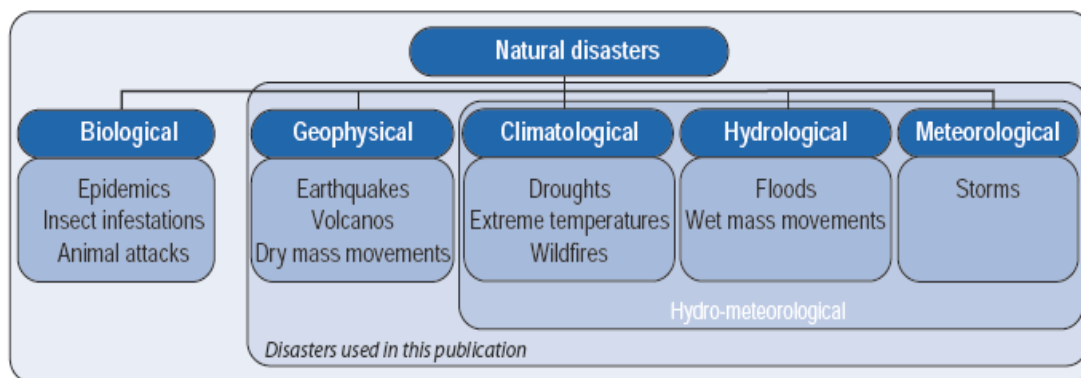
FIGURE 1 Natural Disaster Categories (Scheuren et al. 2008: 4).

One perspective on the nature of crises is provided by Selbst (1978), who refers to a crisis as '*Any action or failure to act that interferes with an (organisation's) ongoing functions, the acceptable attainment of its objectives, its viability or survival, or that has a detrimental personal effect as perceived by the majority of its employees, clients or constituents*'. In this definition two dimensions of the crisis situation are emphasized, which shed light on the distinction between crises and disasters, and the ramifications of these two situations with regard to the responses of organisations and communities (Faulkner 2001: 136). Firstly, by referring to '*any action or failure to act*', Selbst implies that the event in question is in some way attributable to the organisation itself. Secondly, it is implied that the event must have detrimental or negative effects on the organisation as a whole, or on individuals within it (Faulkner 2001: 136).

Selbst's definition of crises seems to exclude situations where the survival of an organisation or community is placed in jeopardy because those involved have little or no control over the events involved. For example, tornadoes, floods and earthquakes can hardly be regarded as self-induced, although communities in vulnerable areas can take steps to minimize the impacts of such events (Faulkner 2001: 136).

In the same line of thought, Selbst suggests two different definitions of disaster and crisis: disaster refers to '*situations where an enterprise is confronted with sudden unpredictable catastrophic changes over which it has little control*' and crisis is '*a situation where the root cause of an event is, to some extent, self-inflicted through such problems as inept management structures and practices or a failure to adapt to change*' (Faulkner 2001: 136).

The University of Delaware's Disaster Research Center[5] differentiates between disasters, emergencies and catastrophes as follows:

(1) Emergency: an event that may be managed locally without the need of added response measures or changes to procedure.
(2) Disaster: an event that:
  - Involves more groups who normally do not need to interact in order to manage emergencies
  - Requires involved parties to relinquish their usual autonomy and freedom in favour of. special response measures and organisations
  - Changes the usual performance measures
  - Requires closer operations between public and private organisations.
(3) Catastrophe: an event that:
  - Destroys most of a community
  - Prevents local officials from performing their duties
  - Causes most community functions to cease
  - Prevents adjacent communities from providing aid.

In another line of thought, to complement the debate on definitions, the Chinese character for crisis means both danger and opportunity, and this inherent duality has influenced attempts to define crises and management, preparation and/or responses. Fink (1986: 14) borrowed Webster's dictionary definition to conceptualize a crisis as '*a turning point for better or worse*', and '*a decisive or crucial time, stage, or event*'. He argued that a crisis starts from any prodromal (precursory) situation, heats up, draws attention to the organisation, causes disruption to daily business, and threatens organisational reputation and financial viability (Fink 1986: 14).

Thus, crises and disasters have transformational connotations, with each such event having potential positive (e.g. stimulus to innovation, recognition of new markets) and negative outcomes (Faulkner 2001: 138). This is illustrated by seasonal floods in riverside areas of Peninsula Malaysia, which are seen as both hazards and resources (Chan 1995). The floods bring disruption to communities within the area, but at the same time they replenish the productive capacity of riverside alluvial soils upon which the region's agricultural industry is dependent (Faulkner 2001: 138).

Numerous other definitions of crises and disasters have been advanced, with most focusing on three core concepts: disruption (Pauchant & Mitroff

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[5]   http://www.udel.edu/DRC/

1992), threat (Ulmer 2001), and negative potential consequences for an organisation (Guth 1995).

Although crises can occur in a seemingly endless multitude of sizes and shapes, they can be organized in terms of four general types: (1) accidents: unintentional and internal; (2) transgressions: intentional and internal; (3) faux pas: unintentional and external; and (4) terrorism: intentional and external (Coombs & Holladay 1995).

Birkland (1997; 2007: 27), in his study of the dynamics of policy change after a sudden event, adopts the definition of disaster as a '*focusing event*' which is '*an event that is sudden, relatively rare and can reasonably be defined as harmful or revealing the possibility of potential future harms, inflicts harm or suggests potential harms that are or could be concentred on a definable geographical or community of interest, and thus known to policymakers and the public virtually simultaneously*'.

In the debate on definitions and categorization using Faulkner's (2001: 136) model, Birkland (2007) envisage a spectrum of events such as that depicted in Fig. 2, with crises, disasters and catastrophe positioned on a scale of magnitude. However, it is not always clear where to locate specific events along this continuum because even in the case of natural disasters the damage experienced is often partially attributable to human action, or in Birkland (2007: 3) words, '*in each case the problem was induced by the action or inaction of an organisation*'.

		Crises	Disasters	Catastrophes
SCALE OR MAGNITUDE OF THE EVENT	⇑	Chernobyl	9/11 attacks	Hurricane Katrina
		Exxon Valdez	Kobe earthquake	South Asia Tsunami
		Tylenol poisoning	Pan Am 103	
		Swiss Canyon Incident	Katherine Flood (Australia)	

FIGURE 2   Crises, Disasters and Catastrophes (adapted by Faulkner 2001, in.Birkland 2007).

Frequently, the recognition of a critical problem that might eventually precipitate a crisis becomes a matter of 'too little too late' largely because, as Booth (1993: 106) observes, '*standard procedures tend to block out or try to redefine the abnormal as normal*'. This problem is probably more relevant to the genesis of crises, where organisations fail to adapt to gradual change, but it might also? apply to disaster situations to the extent that the tendency to ignore warnings of an impending disaster often leaves communities unprepared when it actually happens (Faulkner 2001: 137).

From the mid-1990s onward, the term crisis has increasingly become an integral part of everyday vocabulary in Western societies. One might think that this has been caused by an increasing occurrence of crises as well as the growing severity of the threats involved. However, another explanation concentrates

on the general mood in Western society that has made it more receptive if not vulnerable to disturbances of the normal functioning of businesses and government (Rosenthal 2003: 132).

A crisis is no longer seen as an event that can be easily demarcated. In traditional crisis research, the focus was on the sheer surprise of a threatening event and the mechanisms by which the authorities took control of the situation, bringing the crisis to a distinct end. Today, crisis analysts define crisis as process, and want to grasp the full context of the conditions, characteristics and consequences of that process (Quarantelli 1998). Self-evidently, this makes it increasingly difficult to give a proper label to a particular crisis. It may be the case that the identity of a crisis changes over time. For instance, an aeroplane that crashes into an apartment building in a densely populated part of a big city may be seen at the moment of direct impact as a downright disaster, and nearly 10 years later, at its provisional end, as a high-politics crisis (Rosenthal et al 2001).

The period following the hectic moments of short-term crisis decision-making is often called the aftermath of the crisis, but it may actually be more crisis-prone than the first hours or days after the direct impact. Models of crisis management in which immediate crisis response is followed by crisis recovery and rehabilitation may serve well as prescriptive arrangements but do not always reflect the reality of crisis as process (Rosenthal 2003: 132).

Lalonde (2004: 78) provides a summary of diverse definitions appropriate for the scope of this. document, as shown in Table 1.

Carter (1991: xxiii) defines a disaster as '*an event, natural or man-made, sudden or progressive, which impacts with such severity that the affected community has to respond by taking exceptional measures*'. Booth (1993), in his definition of crises, places a similar emphasis on the necessity of '*exceptional measures*' in the community's response by referring to the necessity of non-routine responses, but he adds that stress is created by the suddenness of the change and the pressure it places on adaptive capabilities. Thus, a crisis is described '*as a situation faced by an individual, group or organisation which they are unable to cope with by the use of normal routine procedures and in which stress is created by sudden change*' (Booth 1993: 86).

In yet another perspective, as described by Gleick (1987), Peat (1991), Prigogine and Stengers (1985), crises and disasters epitomize chaos phenomena. In terms of *Chaos Theory*, even apparently stable systems are frequently '*at the edge of chaos*', whereby a seemingly insignificant event may be enough to precipitate instability and change on such a scale that the integrity and coherence of the system appears to be threatened. Fink emphasizes the ubiquity of the 'edge of chaos' condition in business when he suggested that businesses generally are a crisis waiting to happen, i.e. '*any time you're (i.e. managers) are not in crisis, you are instead in a pre-crisis, or prodromal mode*' (Fink, 1986: 7). In his view, the essence of crisis management thus becomes '*the art of removing much of the risk and uncertainty to allow you to achieve more control over your destiny*' (Fink 1986: 15).

Once a system is pushed beyond a certain point of criticality by a crisis or disaster, it may well be destroyed as an entity, it might be restored to a configuration resembling its pre-crisis or pre-disaster state, or a totally new and more

effective configuration might emerge (Faulkner 2001: 136).

Such a dynamic process has been the central element of recognition of some vulnerability analyses proposed by a specific set of literature (Birkman 2006), that will be explored later in this document.

TABLE 1   Crisis Definitions (adapted from Lalonde 2004).

Crisis	Negative Aspects −	Positive Aspects +
Of the overall organisation plan	Perturbation, disorder (Stallings, 1973; Morin, 1976; Denis, 1993; Lagadec, 1996)	Balanced research opportunities, Restoration of social fabric (Meyer, Brooks and Goes, 1990)
Of the action plan	Inertia, paralysis, source of confusion (Denis, 1993; Pauchant and Midriff, 1995; Lagadec, 1996)	Research to adapt new, more efficient actions (Milburn *and al.*, 1983; Denis, 1993)
Of the plan regarding the relational system between players	Conflict, competition (Denis, 1993; Quarantelli and Dynes, 1976; Dynes, 1970a, 1978; Stallings, 1973; Rosenthal, Charles and Hart, 1989)	Co-operation, alliances, coalition (Quarantelli and Dynes, 1976; Stallings, 1973; Rosenthal, Charles and Hart, 1989)
Of the behavioural plan of behaviours provoked by stress	Excess tension leading to a series of hasty gestures (Hermann, 1963; Dynes, 1970a, 1970b; Hass and Drabek, 1970; Warheit, 1986; Lagadec, 1996; Dynes, 1970a; Quarantelli and Dynes, 1977)	Stress creator, research of clearer solutions (Milburn *and al.*, 1983; Quarantelli and Dynes, 1977)
Of the value plan	Banality, routine (Toft and Reynolds, 1994; Gephart, 1984; Pauchant and Mitroff, 1995; Perrow, 1984; Wenger, 1978)	Prevention, solidarity called into question (Fritz, 1961; Dynes, 1970a; Barton, 1962, 1963; Form and Nosow, 1958; Kaniasty and Norris, 1995)
Of the learning plan	Rapid approach of the norm (Cyert and March, 1963; Hedberg, 1981; Petak, 1985; Rosenthal, Charles and Hart, 1989; March, 1996; Lagadec, 1996)	Experimentation (Hedberg, 1981; Meyer, 1982; Meyer, Brooks and Goes, 1990; Lant and Montgomery, 1987)

Catastrophes

The concept of a catastrophe has generally been approached from four main angles, according to (1) the origin (natural occurrence or man-made technology), (2) the consequences (extent of losses and damage, intensity and length), (3) the underlying course (interventions of various agents, capacities of responses, organisations, and communities), and (4) according to the level of risk involved (Drabek & Hoetmer 1991; Lagadec 1996; Rosenthal et al. 1989; Rosenthal & Kouzmin 1993; Shrivastava 1993; Perrow 1994; Turner 1994).

Generally, the concept of a catastrophe is associated with a relatively well-defined event and its most noticeable manifestations (Barton 1962; Cisin & Clark 1962; Guetzkow 1962; Dynes 1970; Drabek & Hoetmer 1991; Denis 1997; Rosenthal & Kouzmin 1993).

The definition given by Denis (1993) is the one that best characterizes a catastrophe, namely that of a '*sudden occurrence, with a low probability which, if it arises, has important consequences in terms of losses (human, material financial, etc.) for a given collective, and provokes tensions in the social fabric of that collective*'.

The concept of a crisis takes on a more generic and less specific meaning, when one considers that while the literature on catastrophes led to the elaboration of relatively broad typological motifs, there is nothing similar in the crisis literature that attempts to move in several directions at once. While it is a more complex and rich concept, the extensive use of 'crisis' as a concept in a number of disciplines tends to generate confusion about its real meaning (Lalonde 2004).

In line with the debate on such definitions, in which the differences that appear in crisis and disasters can be especially seen at the organisational, community and societal levels, Quarantelli (2005: 2) argues that '*in a catastrophic event, most or all of the community built structure is heavily impacted, as in the case of Hurricane Hugo which destroyed or heavily damaged more than 90% of all homes in St. Croix in the U.S. Virgin Islands*'. Also, in both Aceh Province (Indonesia) and Sri Lanka in the recent tsunami of 2004 (TEC 2006; Boano 2007; Hyndman 2007; Telford & Cosgrave 2007) such an event made it impossible for displaced victims to seek shelter with nearby relatives and friends, as they typically do in disaster situations. In contrast, there are situations in which only parts of a community are typically impacted, even in major disasters. For instance, in the Mexico City earthquake of 1985, at worst less than 2% of the residential housing stock was lost, and only 4.9% of the population experienced great damage to the building in which they lived. This example also implies that it is not total loss but loss relative to the total base that is crucial. A sudden loss of 50 homes in a metropolitan area may not even be a disaster, but would be catastrophic in nature for a small village (Quarantelli 2005: 2).

In addition, in catastrophes the facilities and operational bases of most emergency organisations are also usually directly hit. After Hurricane Andrew in southern Florida, many structures that housed police, fire, welfare, and local medical centres were seriously damaged or destroyed, making work operations in them all but impossible. While in a major disaster some such facilities may be directly impacted, the great majority typically survive with little or no physical damage (Quarantelli 2005: 2).

Moreover, at institutional and organisational levels catastrophes often paralyse routine activities. Local officials are unable to undertake their usual work roles, and this often extends into the recovery period. Related to the aforementioned observations, is the fact that in catastrophic situations local personnel are often unable for some time, both immediately after impact and into the recovery period, to carry out their formal and organisational work roles (Quarantelli 2005: 2). This is because some local workers may be dead or injured, and unable to communicate with or be contacted by their usual clients or customers, and/or unable to provide whatever information, knowledge and skills are required, as in the case of Hurricane Andrew and in Aceh. Whether or not the general inability to provide usual services happens, it is usually only on a very small scale in major disasters, and if it does occur then it lasts only for a relatively short period of time.

Finally, help from nearby communities often cannot be provided. In many catastrophes, not only are all or most of the residents in a community directly affected, but also often those in nearby localities will be similarly stricken, as can often be seen in the typhoons that hit south-west Asia, such as in the Philippines, Aceh and Myanmar, and in areas surrounding Chernobyl after the ac-

cident at the nuclear plant in 1986. In short, catastrophes tend to affect multiple communities, and often have a regional character. This, for instance, can and does affect the massive convergence that typically descends upon any stricken community after a disaster. In a disaster there is usually only one target for the convergence, whereas in a catastrophe not only may nearby communities be unable to contribute to the inflow, but they themselves often become competing sources for an eventual unequal inflow of goods, personnel, supplies, and communication (Quarantelli 2005: 2). Hurricane Mitch in Central America is a good example of a catastrophe that actually engulfed several different countries, as (is the recent tsunami of December 2004 in South East Asia.

Concluding remarks

As this brief review of the literature on definitions shows, there is no precise definition of crises and disasters in a form which would enable us to empirically identify when such situations occur. In this respect, it is important that we be reminded that from an organisational point of view crises and disasters are essentially very similar and the main distinction commonly made between them is a root cause of the problem (Faulkner 2001: 136). The former represent situations where the causes of the problem are associated with ongoing change and the failure of organisations to adapt to the change, while the latter are triggered by sudden events over which the organisation has relatively little control. Notwithstanding this distinction, most of the features attributed to disasters are equally applicable to crises (Faulkner 2001: 136; Quarantelli, 2005: 2; Birkland 2007).

What this literature review also makes evident is that several authors have attempted to distil the essential characteristics of disaster or crisis situations (Fink 1986: 20; Keown-McMullan 1997: 9; Weiner & Kahn 1972: 21). For the purpose of the present document, in order to bring out the interlinkages and multidimensionality of disasters, a synthesis of the contributions suggested by Faulkner (2001: 137) produces the following key elements:

- A triggering event, which is so significant that it challenges the existing structure, routine operations, or survival of an organisation
- High threat, short decision time and an element of surprise and urgency
- Perception of an inability to cope held by those directly affected
- A turning point, when decisive change – which may have both positive and negative connotations – is imminent. As Keown-McMullan (1997: 9) emphasizes, '*even if the crisis is successfully managed, the organisation will have undergone significant change*'
- Characterized by '*fluid, unstable, dynamic*' situations (Fink 1986: 20).

Whether this simplistic characterization of disaster would serve as definition of common denominator in highlighting nuances and attempts to categorise a complex issue, rests to be seen. We have to turn to different epistemological frameworks and disciplinary attempts, which frame disasters and crisis from

different perspectives. In the following part of this book section, a synthetic look to different disaster discourses, which explores the links between disaster and society and the role of risk studies, will be presented.

4 DISASTERS AND SOCIETY: FROM DISASTER SOCIOLOGY TO RISK STUDIES

Disaster studies are, as many other fields of scientific enquiry, (the subject of) (subject to) different perspectives according to the different angles adopted by the various disciplines involved. A physicist may define disaster in relation to the movement of the earth's plates or the occurrence of a high wind or heavy rain, a relief person to relief needs, a political official to political consequences, a manager to organisational perspectives, an economist.to losses to the economy, and a sociologist to severe danger to society, though as the previous part of this document has shown, definitions vary and demonstrate what Britton (1986) argued, namely that '*disasters can be more easily recognized than they can be defined*'.

Disaster discourses

Disaster is a severe, relatively sudden and unexpected disruption of normal structural arrangements within a social system over which the system has no firm control (Barton 1970). A disaster may also be viewed as '*a significant departure from normal experience for a particular time and place*' (Turner 1978). Disaster is also viewed as a mental construct imposed upon experience. This is because to understand disaster, it is not sufficient to know the number of deaths, the value of property destroyed or the decrease in per capita income. The symbolic component requires knowledge of the sense of vulnerability, the adequacy of available explanations, and the affected society's imagery of death and destruction (Barkun 1977).

Alexander (1993) identified the following six schools of thought on natural hazards and disaster studies:

- *The geographical approach* (pioneered by Barrows 1923 and White 1945) deals with human ecological adaptation to the environment with special emphasis on the '*spatio-temporal*' distribution of hazard impacts, vulnerability and people's choice and adjustment to natural hazards. Social science methods are widely used in this approach.
- The *anthropological approach* (Oliver-Smith 1979; 1986; Hansen & Oliver-Smith 1982) emphasizes the role of disasters in guiding the socio-economic evolution of populations. Anthropologists adopting this approach search for reasons why communities in the '*Third World*' fail to provide basic requirements for their people's survival. They also discuss the '*marginalization syndrome*' caused by impoverishment of disadvantaged groups.
- The *sociological approach* (Drabek 1986; Drabek & Boggs 1968; Dynes 1970; Mileti et al. 1975; Quarantelli 1987) discusses vulnerability and the impact of disaster upon patterns of human behaviour and also the effects of disaster upon community functions and organisation. Oliver-Smith (1996) developed three general themes as the major trends in anthropological

research on disaster: the behavioural response approach, the social change approach, and the political economic/environmental approach. Oliver-Smith argues that disaster in the developing world occurs at the interface of society, technology and the environment and is fundamentally the outcome of the interactions of these characteristics. He has also reported that although the occurrence of disaster is frequent, theoretical work in disaster research is limited.

- The *development studies approach* (Davis 1978; Knott 1987) discusses the problems of distributing aid and relief to Third World countries and focuses on refugee management, health care and the avoidance of starvation. This discourse will be outlined in the 'humanitarian scenario' in the following part of the paper, with explicit reference to the large amount of literature and lessons learned.
- The *disaster medicine and epidemiology approach* (Beinin 1985) focuses on the management of mass casualties. It also includes the treatment of severe physical trauma and diseases which may occur after a disaster.
- The technical approach (Bolt et al. 1977; El-Sabh & Murty 1988) focuses on geophysical approaches to disaster such as those studied in seismology, geomorphology and vulcanology, and seeks engineering solutions.

Among these approaches, two disciplines, geography and sociology, have dominated the field of disaster research since the 1950s and have emphasized the environmental and behavioural aspects of disaster. The latter will be the focus in the following discourse.

The disaster sociology and its evolutions

The sociology of disasters, which refers to the study of disasters and its broader societal interferences, has developed in ways that have weakened its ties with mainstream sociology (Tierney 2007). Because disasters bring disruptions to normal social life, create chaos, destroy the social structure, and contribute to replacing social order, disaster research may be viewed as the study of '*social pathology*' (Dynes & Drabek 1994). However, Fritz (1961) provided a sociological definition of disaster along with a rationale for why disaster should not be viewed as social pathology: '*Disasters provide a realistic laboratory for testing the integration, stamina, and recuperative powers of large scale social systems. They provide the social scientists with advantages that cannot be matched in the study of human behaviour in more normal or stable conditions*'.

A recent National Research Council report (2006) describes the disaster research community in sociology and other social sciences as consisting of three groups: core researchers who spend their entire careers within the disasters specialty area; a second group of researchers who make periodic contributions to the field but who generally spend their time working in other areas; and scholars who become involved in the field episodically, typically as a consequence of disasters that affect the geographic areas in which they work.

According to Janis (1951), disaster sociology was initiated during the early days of the Cold War, and was concerned with natural disasters and other extreme events in the United States, focusing on a relatively limited set of questions of concern to government and military leaders, and centering mainly on potential public responses in the event of a nuclear war.

In the subsequent period, research on natural and technological disasters provided useful laboratories for studying social behaviour under conditions of large-scale physical destruction and social disruption (Quarantelli 1987). Thus, sociological research on disasters initially focused on the study of organized behaviour during and immediately following disaster impact. Rapid response studies were undertaken in the late 1940s and early 1950s at the University of Chicago's National Opinion Research Center (NORC) and the National Academy of Sciences (Fritz & Marks 1954). The founding of the Disaster Research Center (DRC) at the Ohio State University in 1963 marked a significant milestone. One DRC founder, E.L. Quarantelli, who had been trained at NORC, was influenced by research traditions in collective behaviour and symbolic interactionism, whereas the other two founders, Russell Dynes and J. Eugene Haas, were organisational researchers. Early publications focused on debunking common-sense assumptions and myths concerning disaster behaviour.

Classic empirical work in the field challenged widely held myths concerning public panic, post-disaster lawlessness, disaster shock, and negative mental health outcomes. In place of these myths, early research stressed positive behaviour and outcomes that characterize disaster settings, such as enhanced community morale, decline in crime and other antisocial behaviour, reduction in status differences, suspension of pre-disaster conflicts in the interests of community safety, the development of therapeutic communities, and organisational adaptation and innovation. Systems theory was the most frequently used perspective in early disaster research. Extreme events were seen as disrupting ongoing societal systems and subsystems, requiring adaptation on the part of affected social units (Tierney 2007).

Classical discourses

The natural hazards perspective, which was originally developed by the geographer G.F. White, also influenced sociological research on disasters. Following the conceptual framework developed earlier by White, research focused on human and societal adjustments to natural hazards, including: avoiding hazards entirely, for example through land-use planning and development restrictions; mitigating the impacts of extreme events through measures such as building codes; spreading risks through the provision of insurance; preparing for extreme events, with a focus on different units of analysis, such as households and entire communities; and responding to and recovering from such events (White 1974; Burton et al. 1978). Research activities thus focused beyond immediate post-disaster responses and spanned the entire hazard cycle.

Quarantelli, Dynes and White established the parameters of mainstream disaster research. Research was guided either implicitly or explicitly by systems concepts. Disasters were seen as consensus crises that enhanced social solidarity and suppressed conflict. Particularly in work guided by White's natural hazards perspective, disasters were seen as having their root causes in societal ac-

tions (or non-actions) that limit options for adjusting to environmental extremes. Reflecting its applied origins, the field focused on describing and categorizing social behaviour and processes that are common to disaster events, and also on identifying best practices for managing hazards and disasters.

Such classic research on extreme events was guided by realist assumptions. On the one hand, it had been long acknowledged that disaster events were not the product of *natural forces* alone. Instead, disasters represent the juxtaposition of physical agents (earthquakes, hurricanes, tornadoes, industrial accidents) with vulnerable places and populations. On the other hand, researchers took for granted that disasters exist as distinct events. Despite extended arguments challenging their validity and usefulness (Quarantelli 1998; Perry & Quarantelli 2005), realist and event-based perspectives continue to dominate the field of study.

As noted by Tierney (2007), such research streams have become increasingly open to social constructionist perspectives. Even though no specific researcher or group of researchers has explicitly concentrated on the social construction of disasters, constructionism has influenced sociological disaster research through a process of gradual assimilation at different levels of analysis at the most basic of which the causes of disasters are socially constructed. There has thus been a shift towards seeing natural disasters as human-induced, and as influenced by politics and institutional practices such as specific '*emergency declarations*' or '*CNN effects*'. In that respect as researched by Miles and Morse (2007) the shift were analysed in constructing public perceptions of risk associated with natural hazards specifically in Hurricanes Katrina and Rita of 2005 provide a useful case study for exploring the social construction of risk that results from media coverage of natural disasters.

More fundamentally, classical disaster research treats disasters as events that originate in earth and atmospheric systems. Physical events then impinge on the built environment and on social systems. Unless those systems are vulnerable, physical events alone do not constitute disasters; an event is not a disaster unless human beings and social systems are affected in negative ways.

While explicitly acknowledging the societal component of disasters and emphasizing that disasters are social rather than physical occurrences, the classical perspective still conveys the notion that disasters are events – events that are recognizable primarily by virtue of their relatively sudden onset and the casualties, damage and disruption they cause.

Disasters are characterized as having a beginning (the period of onset), a middle (the emergency period), and ultimately an end (when social life returns more or less to normal and when recovery takes place). Overlooked in such formulations is the notion that disasters are inherent in the social order itself, or put another way, disasters are episodic, foreseeable manifestations of the broader forces that shape societies.

Alternative views

Formulations such as the aforementioned challenge mainstream research for its failure to consider how such factors as the actions of states, trends in '*development*', and globalization produce disasters (Tierney 2007). Such diversions from the original conceptual path focus on disaster as an inevitable consequence of

what Kousky and Zeckhauser (2005) term '*JARring*' actions, by which they mean actions that they '*jeopardize assets that are remote*'. Such actions include the destruction of coastal wetlands and barrier islands, and other ecosystem services that absorb the impacts of hurricanes and floods, as well as activities that contribute to global warming. A key feature of *JARring* actions is that they create profits for some (industries, development interests) in the short term while externalizing costs and other negative impacts to others when disasters strike.

In this alternative view, far from constituting sudden ruptures in the social order that originate with natural systems and that governments and institutions seek to ameliorate, disasters are part of a set of negative externalities that occur as a consequence of larger political-economic trends and that must be explained by reference to those forces (Tierney 2007).

Thus, such an alternative perspective not only focuses on calamitous events and their effects, but also on the decisions and actions of government, elites and their financial supporters, and global industries and financial institutions that make disasters inevitable. As the title of his book *Disasters by Design* indicates, Mileti (1999) directly addresses some of these issues within the broader context of sustainability, arguing that unsustainable development practices eventually have disastrous consequences. Following White, others have pointed more directly to the role of state action in designing the disasters of the future (for a recent example, see Burby 2006 on Hurricane Katrina or Birkman 2007 for an extensive review of hurricanes and the 9/11 terrorist attacks in the USA).

Pioneering researchers argued for a principle of continuity in the study of disasters, meaning that social behaviour and ongoing patterns of change are not altered significantly by disaster events (Quarantelli & Dynes 1977). The continuity principle implies that groups, organisations and institutions behave in ways that are consistent with pre-disaster patterns or that even if changes do occur new patterns will be short-lived. It also implies continuity between pre- and post-disaster social conditions and trends. Following ethnomethodological reasoning, the structure of the social order should be revealed more clearly during breaching events such as disasters than during times when social arrangements are taken for granted. Studies of major disasters conducted by historians, political scientists, and a growing number of sociologists attest to the fact that social divisions and patterns of unequal treatment persist alongside altruism and heroism when disasters strike and that in some cases disasters have even been accompanied by violent conflict.

In this respect, the Katrina example shows that disasters are occasions that can intensify both social solidarity and social conflict and that the assumption that disasters constitute consensus crises is itself a social construction. After hurricane Katrina, it became clear that even as disasters set in motion large-scale prosocial action on the part of community residents and civil society institutions, they are also accompanied by official efforts to discourage disorderly behaviour on the part of the public and by public and governmental efforts to maintain social distinctions and power inequities.

The political ecology perspective

Disasters generate conflict in part because they open windows of opportunity that competing interests can exploit for their advantage. Although disasters generally do not provide economic benefits to communities or societies over time, they do provide direct benefits to some economic sectors, particularly private interests concerned with response and recovery, such as developers, builders, companies involved in debris clearance, and real estate and banking interests, and recently also military contractors. Referring to the manner in which capitalist systems profit from the creative destruction of disasters, Rozario (2001: 81) observes that '*[o]ne of the primary benefits of a calamity is that it destroys urban environments and thereby liberates and recycles capital that has "ossified" in fixed structures, thus clearing space for new development and opening up new investment opportunities*'.

With respect to state-society relations, Stallings (1988: 569) observed that '*[s]ocial scientists have been creating something of a myth of disasters of their own*', adding that '*[t]his bias continues to foreclose our ability to examine ways in which aspects of social structure and human agency rather than "nature" alone influence the probability, severity and consequences of natural disasters*'. Stallings advanced a conflict theory of disasters that recognizes the interest of the state in ensuring the smooth operation of societal institutions in the face of disruption (Tierney 2007).

According to the aforementioned view, patterns previously seen as indicative of consensus in disasters develop out of a need on the part of those in power to bolster the social order, protect capital, maintain public confidence in existing ruling relations, and contain potential oppositional actions. Even activities associated with immediate disaster responses, such as instituting security measures and sheltering victims, reproduce social inequities while seeking to avoid potential crises of legitimacy (Tierney 2007). Other authors have called attention to the importance of policing practices, in the Foucauldian sense, as a key element in institutional responses to disaster (Horlick-Jones 1995; Hewitt 1983a; 1998).

Gender and disasters

The 1990s and the early 21st century represent the first period in which US sociologists interested specifically in gender became involved in systematic research on disasters. Significant progress has been made in exploring how gender, combined with other dimensions of stratification, such as race and class, shape disaster vulnerability and life experiences both during and following disasters. For example, the different experiences of women and men affected by disaster have been highlighted in the book *Hurricane Andrew: Ethnicity, Gender and the Sociology of Disaster* by Peacock et al. 1997) and others (Enarson & Morrow 1998a; Fothergill 1998; 2003). As these and other studies show, gender is a factor in vulnerability to death and injury, risk perception and risk-reduction behaviour, decision-making authority regarding self-protective measures such as evacuation, the financial and emotional burdens associated with disaster recovery, and ways of coping with those burdens (Bolin et al. 1998; Morrow & Phillips 1999; Enarson & Fordham 2001; Enarson 2005).

At the same time, scholarship has moved beyond essentialist discourses that characterize women as invariably helpless and vulnerable in disasters

(Bolin et al. 1998) by showing how, through their knowledge, organizing skills, social networks, and commitment to family and community, women actively participate in disaster preparedness, response, and recovery efforts (Neal & Phillips 1990; Enarson & Morrow 1998b; Enarson 2000; 2002). However, the field has been very slow to recognize race and class as topics for sociological investigation. This is not to say that race and class have been entirely ignored in mainstream sociological disaster research, but most studies have consistently followed the race-as-a-variable/class-as-a-variable approach (Tierney 2007).

Participatory approaches
Numerous quantitative studies have looked at the influence of such variables as race and class on the capacity to undertake self-protective measures, such as pre-disaster preparedness and emergency evacuation, as well as on disaster impacts, responses, and recovery-related outcomes (for reviews, see Tierney et al. 2001; Tierney 2005; National Research Council 2006). New research is focusing to a greater degree on documenting disaster experiences as seen through the eyes of poor and minority disaster victims and on linking those experiences to broader structural forces.

Studies of disasters approached through the lens of governmental concerns have focused on whether pre-event planning leads to more effective disaster responses on the part of agencies and whether disaster management organisations undergo change as a consequence of disaster experience. In keeping with the field's fundamental focus on disaster-related collective behaviour, researchers have acknowledged the importance of emergent groups in disaster response (Stallings & Quarantelli 1985; Drabek & McEntire 2002) and in socially constructing disaster-related needs (Taylor 1977; Simile 1995).

From disaster sociology to risks studies

According to Tierney (2007), disaster studies in the recent past have developed interchanges with other specialties that explore social phenomena which resemble or overlap with disasters. Chief among these specialties are the study of risk, organisational research on accidents and disasters, and environmental sociology.

The study of risk is itself a multidisciplinary field that focuses on disaster-relevant topics such as risk perception, the social construction and social amplification of risk, risk assessment, and risk management, both in specific societies and in cross-societal and comparative contexts. Substantive findings from these topical areas have already been incorporated into disaster research. General theoretical formulations on risk developed by sociologists such as Luhmann (1993) and Beck (1992; 1995; 1999) concerning risk in contemporary society and the world system has.recently been incorporated in disaster studies.

Although risk has conventionally been approached in the natural sciences as a subject to be technically mastered by mathematical probability, since the early 1980s social scientists have focused on the subjective and social dimensions of risk, basically assuming an evaluative approach to society within the

social sciences (Adam & van Leon 2000; Mythen & Walklate 2006; Taylor-Goodby & Zinn 2006; Mythen 2007).

Prior to the 1980s, risk was relatively marginal in the social sciences,, being considered a technical phenomenon presided over by those working in medicine, engineering and the natural sciences. This relative disinterest in risk can in part be attributed to wider social attitudes. By and large, risk has traditionally been conceived as pertaining to the objective, technical measurement of harm. However, a number of focal incidents in the early 1980s – among them the Chernobyl explosion, the bovine spongiform encephalopathy crisis and growing awareness of climate change – raised questions among the public about how risks were being calibrated and managed (Mythen 2008).

Given that the last two decades have been characterized by flux, uncertainty and rapid social change, it is unsurprising that sociologists have focused on attempts to decipher what all this means for everyday life. Since the publication of Ulrich Beck's *Risk Society* (1992), many academics have become engrossed with the subject of risk. In addition to Beck's landmark text, Mary Douglas and a group of scholars deploying Michel Foucault's work have contributed to our understanding of the construction, assessment and management of risk.

Constructionist approach

Natural sciences have favoured a realist approach to risk, while the social sciences have tended towards a constructionist stance. Realist approaches to risk within the natural sciences have sought to use technical methods to identify risk and probabilistic assessments to calculate the magnitude of harm.

Thus, the key issue at stake has been how to define and measure risk. In contrast, the social sciences, and sociology in particular, have focused more fully on the ways in which risks are socially constructed – that is to say, the part that institutions, practices and processes play in shaping what we know and think about risk. We can see from this division whereby the natural sciences have approached risk as an extant objective entity, whereas the social sciences have been more concerned with the social and subjective sides of risk.

According to Mythen (2008), three main theories of risks have been developed in the constructionist tradition: the risk society thesis fashioned by Beck (1992; 1995; 1999), the governmentality theory rooted in the work of Michel Foucault, and the sociocultural perspective commonly associated with Mary Douglas.

Beck alludes to two forms of danger. First, there are '*natural hazards*', which are defined as unavoidable acts visited on society by nature. Second, there are manufactured risks in the form of the '*side effects*' of capitalist development in the realms of business, science, technology, and medicine. For Beck (1992: 45), the inability of social institutions to manage manufactured risks signals a shift in political and social values. This transformation means that that the principal problems in contemporary risk societies do not stem from a dearth of goods such as income, housing and health care, but are instead borne out of a glut of 'bads', such as environmental pollution, crime, and terrorism (Mythen 2008). Such a sea change in social logic has important ramifications for notions of safety and security. Instead of the sectoral patterns of security common to

industrial society, the threats generated in the risk society are general, with previously protected affluent countries and individuals becoming party to '*boomerang effects*'. For Beck, sociologists need urgently to recognize that using the conceptual tools of industrial society cannot solve the problems and challenges of the risk society. For him, categories such as nation, family and class have become obsolete.

Risk and governance

Although Beck is considered the principal thinker in the risk society tradition, the governmentality perspective germinated in the writing of the French historian and philosopher Michel Foucault (1978; 1980; 1991). Although Foucault did not write explicitly about risk, since his death some theorists inspired by his work have extended his analysis of governmentality to risk. Governmentality essentially refers to the basis of regimes of power that have emerged over time (Mythen 2008).

Governmentality theorists argue that the desire of the state to govern risks to the population through various modes of incitement and provocation is the central element of risk management. Through the circulation of discourses, dominant institutions formulate language and information that generates and fuels prevalent ideas. Foucauldians believe that it is only through the working of discourse that we come to recognize and understand risk.

Both throughout history and in contemporary society medical, scientific and economic discourses orchestrate what can and cannot be said about risk. The discourses that are filtered through dominant institutions govern our everyday practices and make risk '*thinkable*' (Mythen 2008). In this way, power relations are reproduced not by force, but by discourses that facilitate patterns of self-regulation. Expert discourses on risk thus provide the boundaries of (in)appropriate action, surveying and regulating social practices and reproducing 'docile bodies' that uphold the status quo. In effect, citizens respond to such discourses by taking up subject positions that require them to manage their own risks, whether they relate to health, relationships or career (Dean 1999).

Sociocultural views

The third way of seeing risk is by means of the sociocultural approach rooted in the work of the anthropologist Mary Douglas (1985; 1992). According to Douglas (1992: 58), prior to thinking about the materiality of risk, it must first be recognized that individuals encounter threats with a pre-existent package of beliefs and assumptions. There is common ground here with the governmentality school in that risk perceptions are seen to be culturally constructed entities that cannot be properly interpreted outside of frameworks of everyday lived experience (Mythen 2008).

Douglas observes that different cultures uphold boundaries between what is risky and what is safe through rituals, myths and legal sanctions. At the same time, distinctions are drawn between self and other, where otherness is ascribed to individuals and groups that are determined as unusual (Douglas 1992, 8). Indigenous cultures use feared 'others' as repositories for blame for a range of social ills (Douglas 1985, 52). In this way, the appearance of the 'other' serves as

an opportunity for channelling anxieties and as a means of maintaining cohesion for the dominant culture.

Drawing on the classical sociology of Emile Durkheim, Douglas posits that such cultural biases are connected to two sociostructural axes, those of grid and group. Grid pertains to the extent to which a person's choice is determined by their social position. Group relates to the amount of cohesion that exists within a society as a collective body. Thus, cultures with a high group rating have strong internal cohesion and those with low group rating are characterized by greater individuality and looser collective bonds. Douglas proposes that because individuals are situated at different locations along the grid/group axes, different cultural biases evolve.

For Douglas and Wildavsky (1982), there are four ideal types of cultural bias: individualist, egalitarian, hierarchist and fatalist. Individualists have low group and grid, and see risk as a potentially positive force that requires individual rather than institutional management. *Egalitarians* have high grid and low group, meaning that they identify with the collective and tend to attribute blame for risk to outsiders. *Hierarchists* have high grid and high group, and conform to the rules of the collective and trust organisations to manage risk. Finally, fatalists have high group and low grid, making them inclined to feel they have little control over their lives and to passively attribute outcomes to fate rather than human will.

Such approaches, at the theoretical level, have been able to show the importance of the organisational deviance (Tierney 2007) in which organisational environments, organisational characteristics, and cognition and choice, apply just as well to the study of disasters in general as to those stemming from risky technologies. In a society of organisations (Perrow 1991), the study of disasters must include a focus on organisational and institutional structures, cultures and actions – and failures. Models of this type of research include work by Clarke (1989; 1999) and Beamish (2002), who have focused their attentions on the importance of organisational agendas, spheres of responsibility, anarchies, secrecy, and refuse containers in the genesis of disasters.

According to Tierney (2007), disaster researchers must stop organizing their inquiries around problems that are meaningful primarily to the institutions charged with managing disasters and instead concentrate on problems that are meaningful to the discipline. They must integrate the study of disasters with core sociological concerns, such as social inequality, societal diversity, and social change. They must overcome their tendency to build up knowledge one disaster at a time and focus more on what disasters and environmental crises of all types have in common with respect to origins, dynamics and outcomes. Furthermore, they must locate the study of disasters within broader theoretical frameworks, including in particular those concerned with risk, organisations and institutions, and society-environment interactions.

Risk and social vulnerabilities

In the disaster literature, the concept of vulnerability refers to a technical assessment of a population's susceptibility to the harmful consequences of a disaster event (Mitchell, 1989; Deyle et al. 1998; Cutter 2005). Impacts include

damage to private property, infrastructure, economic vitality, habitat, and productive ecosystems, as well as human death and injury.

Traditionally, vulnerability assessments have focused on the physical or structural properties of a hazard, and on features of the natural and built landscape, such as proximity to water bodies, fault lines, floodplains, wind fields, and the resilience of built surfaces and structures to hazard impacts. With regard to flood disasters, hydrologic or physical variables such as the amount of rainfall and flood duration, and built environment characteristics such as the presence of water embankments and the permeability and slope of built surfaces, are standard vulnerability predictors (Zahran et al. 2008).

Many authors have recognized a sort of overemphasis on the physical attributes of vulnerability which stresses that the proximity or exposure to a hazard agent, the nature of the hazard itself, built environment characteristics, and engineering solutions are critically important in assessing and addressing population vulnerabilities to hazard impacts (Zahran et al. 2008)A.

At the end of the 20th century researchers began to question the unequal distribution of disaster effects within a population, with some localities and population subgroups being afflicted disproportionately by disaster outcomes (Bates et al. 1962; Cochrane 1975; Bolin 1976; 1982; 1985; 1986; Bolin & Bolton 1986; Bates & Peacock 1987). These scholars advanced a new dimension of vulnerability that focused on the social and economic forces that shape disaster outcomes, leading to the widespread adoption of the term 'social vulnerability'.

In their classic work *At Risk: Natural Hazards, People's Vulnerability, and Disasters*, Blaikie et al. (1994: 9) define social vulnerability as '*the characteristics of a person or group in terms of their capacity to anticipate, cope with, resist and recover from the impacts of a natural hazard. [Social vulnerability] involves a combination of factors that determine the degree to which someone's life and livelihood are put at risk*'. In other words, social vulnerability is defined by the possession of social attributes that increase susceptibility to disasters. Social vulnerability scholars examine why types of persons choose to locate in hazardous places, live in inadequate homes, and fail to anticipate, resist, and/or recover from the aftermath of a disaster, and they analyse the economic and social forces that mould and determine these dynamics (Zahran et al. 2008).

The research literature on social vulnerability is diverse, addressing a variety of hazards and attributes of the social realm, including race and ethnicity (Bolin 1986; Bolin & Bolton 1986; Perry & Mushkatel 1986; Peacock et al. 1997; Bolin & Stanford 1998; Fothergill et al. 1999; Lindell & Perry 2004), and measures of economic status such as wealth, income and poverty (Dash et al. 1997; Peacock et al. 1997; Fothergill & Peek 2004).

Studies on the physical impacts of a disaster event clearly indicate that socially vulnerable populations suffer disproportionately in terms of property damage, injury and death. On the physical consequences of Hurricane Audrey (June 1957), Bates et al. (1962) discovered significantly higher death rates for the black population (322 deaths per 1,000) compared to white population (38 deaths per 1000). Wright et al. (1979) found that lower income households experience significantly higher rates of injury, particularly relating to floods and earthquake events. Numerous studies indicate that socially vulnerable populations suffer greater property loss in disaster events. Scholars theorize that mi-

nority citizens are affected unevenly by disasters because they are more likely to reside in older, poorer, high-density, segregated, and disaster-prone areas (Cochrane 1975; Foley 1980; Bolin 1986; Bolin & Bolton 1986; Logan & Molotch 1987; Phillips & Ephraim 1992; Massey & Denton 1993; Phillips 1993; Peacock & Girard 1997; Peacock et al. 2006). Fothergill and Peek (2004) note that almost 40% of all tornado fatalities occur in mobile-home parks, which are significantly more likely to house persons with lower income.

Overall, research on the social attributes of disaster vulnerability indicates that disaster events differentially harm minorities and the poor. This does not mean that the black population, Latinos, and the poor are intrinsically vulnerable. The social factors that contribute to observed differences in disaster vulnerability by race/ethnicity and economic class are economic disadvantage, lower human capital, limited access to social and political resources, residential choices, and evacuation dynamics (Zahran et al. 2008). Further discussion on vulnerability, resilience and adaptation is presented in the following part of this document.

Hazards and disaster theories and critiques
Among the classified approaches to disaster already mentioned, including those by Alexander (1991a; 1993), the latter author suggests that '*the social science models offer the greatest accumulation of expertise on the human condition in disaster*' (Alexander 2008)

The dominant body of theory on hazards and disasters had its origins in the 1920s with the work of Harlan H. Barrows in the USA, which paved the way for the emergence of human ecology (or cultural ecology), and also that of Samuel Henry Prince in North America and Pitrim Sorokin in Russia (Sorokin 1942), which led to a sociological approach based on organisational dynamics.

The human ecological model was conceived as a geographical instrument for analysing people's cohabitation with environmental hazards. It emerged slowly from the 1940s to the 1960s under the guiding hand of Gilbert Fowler White, the leading light of the Chicago school of resource geography (Kates & Burton 1986). Subsequently, the approach gathered pace under the impetus of the quantitative and conceptual revolutions that were underway in practically all of the sciences. In essence, the core idea was that people would adapt to hazards that they could not modify in such a way as to reduce their impacts. Adaptation would be based on rational premises, tempered by quirks of perception and preference. This would be expressed both in the pattern of losses and in people's choice of strategy (Alexander 2008).

At the same time, a sociological model of reaction to hazards emerged. Like cultural ecology, it had its origins around 1920 (cf. Prince 1920; Barrows 1923), its early development not long after 1940 (cf. White 1945; Fritz & Williams 1957), and its fastest growth in the 1960s and 1970s (cf. Burton et al. 1968; Barton 1970). According to this model, people would respond to the stress of disasters in rational, socialized ways at the individual, peer group, family, organisational, and societal levels. By focusing strongly on classifying human reactions, the model revealed a web of behaviour patterns that commonly emerge under the duress of disaster.

Over the last 50 years, work in the social sciences has generated a rich variety of observations. Though very widely applied, these have been developed mainly in order to explain adaptation to hazards in the English-speaking countries and in a specific epoch, the 1960s and 1970s, posing different questions on the '*dominant ideologies*'; this effort is due especially to the great amount of literature and experiences generated in the US and US-related cultural environment (Alexander 2008).

Classical versus Modern models

The '*classical*' model of natural hazards, developed from the 1940s to the 1970s by Gilbert White and his students, proposed a linear chain of causality that runs from physical events to human consequences, mediated by humanity's tendency to put itself voluntarily or involuntarily at risk (Burton et al. 1993). Alexander (2008) summarized the model by the following syllogism: '*Extreme geophysical events act upon human vulnerability and risk-taking to produce casualties and damage*'.

White's aim was to shift the field away from excessive reliance on technological mitigation and reintroduce the social aspects connected with non-structural measures, such as land-use control and insurance. However, the linear pattern of causality in this model has tended nonetheless to favour technocentrism, as it is implicitly assumed that abating hazards will reduce vulnerability (Alexander 2008). In the world's poorer countries, technocentrism in development and hazard mitigation have often led to the opposite of what was intended, i.e. the spread of increased vulnerability and the reduction of traditional coping mechanisms.

By the 1980s a '*radical critique*' had emerged to counter what had become the orthodox view of hazards (Hewitt 1983). In this, vulnerability was treated as a more significant cause of disaster than hazards such as earthquakes, floods or chemical explosions (Blaikie et al. 1983a. Alexander (2008) summarized the model by the following syllogism: '*Society's risk-taking and vulnerability interact with extreme geophysical events to produce casualties and damage*'.

While one is justified in assuming that more vulnerable communities suffer greater losses, the problem with this model lies in the high degree of confusion and overlap between the terms 'hazard', 'vulnerability' and 'risk, each of which enjoys a range of subtle interpretations (Alexander 2000: 7–22). The model also tends to reduce hazard mitigation to a mechanistic process of vulnerability reduction. As vulnerability is not a simple function of poverty (Cannon 1994), the model encourages superficiality in the analysis of why communities are vulnerable in the first place, which may have as much to do with culture and the yoke of history as it does with average incomes, gross domestic product or investment ratios.

Alexander (2008) suggests that '*as culture and context offer a route to further insight into hazards, an alternative model is needed based on these concepts. It might be summarized as follows: Extreme geophysical events cumulatively offer a historical and cultural context that helps determine the nature of adaptation to risk and disaster which influences the toll of casualties and damage*'.

In this model, the toll of casualties and damage results from the interaction of three factors: the nature of culture and society, the forces of socio-

economic change, and the impact of extreme geophysical events. Overall, the degree to which knowledge about hazards and disasters acquired over the last half century has been applied varies from one school of thought to another. By and large, lessons in mitigation have been learned in the physical sciences and engineering disciplines – often the hard way, as inefficiencies in design have led directly to avoidable damage and casualties. Many research institutions have developed programmes for the critical analysis of failure, for example, by conducting post-earthquake surveys (Hays 1986).

Furthermore, there is no shortage of expertise on seismic, volcanic, meteorological, and hydrological monitoring practices (e.g. McGuire et al. 1994). Similarly, there have been strenuous efforts in the field of development studies to apply the results of studies and improve the work of safeguarding the world's poorer communities against disaster (Anderson & Woodrow 1989). There have also been widespread improvements in disaster medicine and epidemiology (Manni 1989).

Yet the situation, as further elaborated by Alexander (2008) is not so clear cut with respect to the social sciences. Given that there is no lack of mitigation technology, it is perhaps more important to learn how to apply it more widely and efficiently than it is to invent novel technical solutions. This is true even though the increasing technological complexity of society tends to demand intricate new means of safeguarding it. The social sciences therefore have a pivotal role to play in analysing the conditions needed for the application of useful knowledge, examining why and where it is not being utilized, and helping to create the conditions for better mitigation. They can and should fulfil the role of a critical watchdog on the use of technology in disaster mitigation. They should help determine the most appropriate balance between structural and non-structural measures (Denis 1997).

Concluding remarks

This part has been an attempt to map out, categorise and cluster different discourses on disaster and risk, offering the lineage of its evolution and the central epistemological dimensions. However, it is only recently that complexity has been brought up, both as a common rhetorical instrument to qualify and justify the field of disaster studies as well as serving as an interesting conceptual frameworks from which reading disasters and crisis. The following part will thus address complexity theory, and discourses on stability and change.

5   COMPLEXITY THEORY, STABILITY AND CHANGE

That disaster and crisis are complex events is beyond any doubt. However, it is only recently that a literature on complexity theory and complex systems has emerged out of an effort to understand the dynamic processes of change found in a wide range of physical and biological phenomena, especially in connection with humanitarian and development work (Ramalingam et al. 2008). It is impossible to discuss the enormous body of emerging theory on complexity but we will discuss briefly the ways in which change is considered in different strands of complexity theory, especially those related to disaster and crisis.

Complexity theory

Complexity theory, in general terms, is concerned with stability and change in systems that are complex in the sense that they consist of a great many independent agents that interact with each other in many ways (Waldrop 1992: 11). Originating in mathematics and physics, since the mid-1980s, complexity theory has entered the social sciences, where it has been applied in areas as widely varied as the breakdown of political systems, the working of markets and traffic jams.

Complex systems are formed by a number of simultaneously acting components that each have a certain degree of local information and influence but cannot determine the whole state of the system (Possekel 1999: 13). This makes systems inherently unstable and the ways in which processes of ordering and change occur unpredictable and nonlinear. This is expressed in the concept of self-organisation, which stipulates that, through the interactions within systems and between systems and their environments, systems undergo spontaneous self-organisation (Johnson 2001).

Complexity gives rise to '*emergent*' or critical phenomena that cannot be predicted from the behaviour of a system under '*normal*' or linear conditions. In this sense, society may be conceptualized as a complex nonlinear system and disasters as critical phenomena (Castaños & Lomnitz 1995: 45).

Stacey et al. (2000) distinguish three strands of theory based on chaos, dissipative structures and adaptive systems respectively. In chaos theory, change occurs because of the many ways in which different elements of an open system interact upon each other, resulting in unpredictable patterns of change. Chaos is often exemplified by referring to the effect where a butterfly flapping its wings in Amazonia can cause a storm in Chicago, but at other times will have no effect, depending on its interaction with other conditions.

Although the interactions between components of a system or between sub-systems follow predictable patterns, chaos stems from the unpredictability of the combined interactions where small variations in each of them can accumulate into large consequences. In this stream of thought, unpredictability refers especially to the '*inability of humans to measure with infinite accuracy*' (Stacey

et al. 2000: 89). It is a mathematical approach, where complexity becomes equivalent to the computer time needed to analyse a system (Possekel 1999: 16). The term *dissipating structures* stems from the Nobel laureate Ilya Prigogine, who demonstrated the imbalance of chemical and physical systems by proving how changing conditions (such as the supply of energy) lead to the spontaneous formation of new structures. Self-organisation in this case is a property of systems but is triggered by interaction with external factors.

The third strand of complexity theory identified by Stacey et al. centres around the notion of complex adaptive systems. The difference compared to the other two is that adaptive systems are able to learn by experience, to specifically process information and to adapt. Here, self-organisation means agents interacting locally according to their own principles or intentions in the absence of an overall blueprint of the system (Stacey et al. 2000: 106).

Adaptive systems do not just passively respond to events, they actively try to turn whatever happens to their advantage (Waldrop 1992: 11). This strand leads to a more radical kind of unpredictability than, for instance, the unpredictability of chaos that contains the promise of becoming predictable once mathematics and computers are up to the task. The unpredictability of adaptive systems stems from the creative interaction of sense-making and diverse agents. This way of thinking opens up an avenue for understanding vulnerability and disaster in terms of multiple realities and has many implications, among others for the relation between scientists and lay people.

If complexity is defined as a multitude of systems, agents and interactions, the challenge becomes to devise models to capture and control complexity. Indeed, according to Shackley et al. (1996: 221), much work on complexity (in natural and social sciences) still seems '*largely inspired by the commitment of discovering the principles of predictability (and thus control)*'. On the other hand, some scientists use a different notion of complexity based on sense-making agents. Complexity, in this view, can be defined as a function of the number of ways in which we can interact and the number of separate descriptions required to describe these interactions (Mikulecky 1997: 4, in Possekel 1999: 15).

In this view, complexity becomes the need to select. Complexity requires people and scientists alike to reduce their interactions and interlinkages. Because of the many possible ways this happens, situations of multiple realities emerge. Instead of capturing and controlling complexity, the challenge then becomes to acknowledge multiple realities (shaped by culturally and politically informed selections) and to '*embody the realization of complexities in developing institutional relations, mediations and identities*' (Shackley et al. 1996: 221).

These two views of complexity lead to different kinds of science and policy. Given the dire need to reduce vulnerability to disaster and the history of top-down disaster management styles, it is likely that many disaster students and institutes would be attracted by the prospect of controlling complex systems. The other road to acknowledging multiple realities is more insecure. It is still difficult to imagine disaster policies that are not based on the aim of control and are nonetheless effective, but since they more accurately reflect disaster realities this may be the more fruitful road to take.

Complexity theory has been explicitly applied to vulnerability and disasters in the work by Louise Comfort on self-organisation following disaster (1995)

and in Anja Possekel's study of the volcano eruption in Montserrat (1999). In addition, many of the current developments in disaster theory have an affinity with the premises of complexity. Complexity theory is highly relevant for disaster studies, because it provides an entry point to describe disasters as the interaction between (sub-) systems of nature and society, or hazard and vulnerability. Disasters caused by natural hazards can easily be recognized as instances of complexity (Hilorst 2007). They result from complex interactions of nature and society, different dimensions of space, i.e. where hazards may affect remote places, and different time frames, i.e. the conjunction of different patterns of change: short-term, long-term and cyclical (Holling et al. 2002: 9).

Oliver-Smith (1999) and Comfort et al. (1999) describe such complexities for the Peruvian earthquake and Hurricane Mitch respectively. Floods can originate from the unfortunate coincidence of a number of contingent variations and interactions in social, natural and meteorological elements. Although these variations may each be insignificant and fall within perfectly normal ranges, producing non-floods every day, at particular junctions they result in dramatic flood events (cf. Perrow 1984; Linde 2002). In a review on the emerging concept of vulnerability, Castaños and Lomnitz (1995) explore the complexity of weather in relation to the earthquake in Mexico City.

According to Hilorst (2007), complex system approaches can have a major impact on the study of disasters, specifically those caused by natural hazards, because:

- Disaster could be portrayed as resulting from interactions between several subsystems in the geophysical and climatological environment on the one hand, and subsystems of society, such as science systems and local knowledge systems on the other.
- Secondly, complex system approaches recall the profound impact of disaster risks on society and environmental relations. All too often, disasters are still considered aberrations from the normal situation, or a temporary interruption of development.

A major disaster such as the 2000 floods in Mozambique are invariably followed by statements of politicians and experts outbidding each other on television with estimates on the number of years the country was '*set back*' in development. These comments disregard that disasters may result from, rather than impinge on development. They also fall back on a notion of linear development as the norm of temporal change, disregarding the multi-directional ways in which societies evolve. Hence, complexity can provide an alternative for erroneously putting disasters in a linear time frame of development.

Ramalingam, Jones, Reba and Young (2008: 8) suggest that different complexity science concepts can be directly reflected and.thus have an impact on development and humanitarian work. The authors have grouped such concepts as: *Complexity and systems*, *Complexity and change* and *Complexity and agency*. For the purpose of the present document we will develop the first and the third concept, leaving the *Complexity and change* concept for further reading.

Complexity and systems

Ramalingam et al. suggest that the following need apply for a system to be considered complex:

- Systems characterized by interconnected and interdependent elements and dimensions are a key starting point for understanding complexity science.
- Feedback processes crucially shape how change happens within a complex system.
- Emergence describes how the behaviour of systems emerges often unpredictably from the interaction of the parts, such that the whole is different from the sum of the parts.

From the perspective of a complex system, there are many connections and interactions within the various dimensions of economic and social development, such as between education and the economy, between health and poverty, between poverty and vulnerability to disasters, between growth and the environment, to name a few examples. International aid to address these issues takes place in the context of a dense and globalized web of connections and relationships between individuals, communities, institutions, nations, and groups of nations. Interactions among the various elements of these different systems are themselves complex and multifaceted. Aid relations run alongside many other kinds of international relations: military and security relations, relations of economic cooperation and trade competition. Naturally, these wider relationships have an effect, often a profound one, on the aid-related relationships that exist between countries. If that were not enough, every aid agency operates in a global aid system, which is itself characterized by a huge number of interacting systems, each of which is made up of multiple parts (Martens 2005).

There are numerous different relationships and interactions between bilateral aid agencies and multilateral agencies, between multilaterals and country governments, between aid agencies and communities, among neighbouring communities, between NGOs and governments, and between the aforementioned and non-traditional development actors such as the media, diaspora communities and the military.

Accordingly, Ramalingam et al. (2008: 14) show an explicit awareness of the risk of '*oversimplification*', arguing that research has illustrated that at the heart of many disasters there are seldom single causes but instead many interacting and interdependent dimensions and factors (Buckle 2005). Famine can be caused by drought, a rise in the price of grain, a drop in the price of livestock, inadequate road infrastructure, a lack of food aid, or by all these factors simultaneously (Pirrotte et al. 1999). Despite this level of complexity, a bias towards and reliance on simplistic models pervades the aid system.

In terms of feedback, Ramalingam et al. (2008: 15) suggest that '*there needs to be more attention within development agencies to how strategies for change address broader dynamics of feedback, positive and negative*'. Of particular importance is the fact that feedback processes do not always produce the same effects and are not predictable. In addition, because such complex feedback loops have both posi-

tive and negative effects, different people will look at the same situation and evaluate it differently: where one sees the excitement of economic activity, another sees deforestation; where one sees disease control by draining swamps, another sees loss of wildlife and clean water provided by the filtering effects of wetlands; where one sees more robust housing provision through metal roofing, another sees increased costs and less comfortable houses. An ODI study summarizes these issues succinctly in the context of disaster-affected populations' dependency on humanitarian relief: '*Rather than seeing dependency on relief as necessarily negative, we should be trying to understand the role that relief plays in the complex web of interdependencies that make up livelihoods under stress in crisis. The many interdependencies that comprise a community's social relations and people's livelihoods may have both positive and negative aspects, external aid influences these existing patterns of social relations and, if it continues over a prolonged period, it may become embedded in within tim*e' (Harvey & Lind 2005).

The notion of emergent properties can help to better understand an increasing range of phenomena being faced by international agencies. For example, much is being made of the effects of climate change contributing to the rise in disasters. Much of this thinking suggests that disasters are discrete phenomena that are external to the social or environmental systems upon which they impinge. According to this approach, disasters and society are related to one another in a linear, cause and effect manner. However, in reality, growing populations, the migration of population to coasts and to cities, increased economic and technological interdependence, and increased environmental degradation are just a few of the interacting factors that underlie the increase in disasters (IFRC/RCS 1999; CRED 2001). Emergence suggests that there is a different way to view disasters: not as isolated phenomena, but as emergent properties of interactions within or between complex, dynamic systems.

To explain such concept, reiterated in many parts of this document, '*Consider the following three ingredients: a mega-city in a poor, Pacific rim nation; seasonal monsoon rains; a huge garbage dump. Mix these ingredients in the following way: move impoverished people to the dump, where they build shanty towns and scavenge for a living in the mountain of garbage; saturate the dump with changing monsoon rain patterns; collapse the weakened slopes of garbage and send debris flows to inundate the shanty towns. That particular disaster, which took place outside of Manila in July 2000, and in which over 200 people died starkly illustrates the central point that disasters are characterised and created by context. The disaster was not inherent in any of the three ingredients of that tragedy; it emerged from their interaction*' (Sarewitz & Pielke 2001).

Complexity and agency
Certain kinds of systems are made up of individual adaptive agents acting for their own purposes, and with their own view of the situation. Such agents can be powerful in shaping the system. A special class of complex systems is made up of adaptive agents who react to the system and to each other, and who may make decisions and develop strategies to influence other agents or the overall system. The ways in which these actors interact can give rise to self-organized phenomena. Furthermore, as agents operate in a system, changes in the system

and changes in the other actors can feed back, leading to co-evolution of agents and the system. Thus, critical elements are:

- Adaptive agents react to the system and to each other, leading to a number of phenomena.
- Self-organisation characterizes a particular form of emergent property that can occur in systems of adaptive agents.
- Co-evolution describes how, within a system of adaptive agents, co-evolution occurs, such that the overall system and the agents within it evolve together, or co-evolve, over time.

The concept of adaptive agents in the aid system emphasizes the centrality of human agency in international development and humanitarian work: '*the ways in which the system inhibits or permits adaptation, and the ways in which adaptation at different levels gives rise to systemic phenomena*' (Ramalingam et al. 2008: 46).

This in turn requires a focus on the lives of a wide range of social actors committed to different strategies, interests and political trajectories (Long 2001). Actor-oriented analysis (Eyben 2006) is one way in which this stance has been adopted in the aid world. This focuses on how macro phenomena and pressing human problems result, intentionally and unintentionally, from the complex interplay of '*specific actors strategies, projects, resources, knowledge and meanings*' (Ramalingam et al. 2008: 46).

For example, for many outside the humanitarian sector it comes as a surprise that communities in drought-stricken regions actively seek out and use resources, set up various networks of relationships and interactions, and exhibit a number of coping strategies. This notion of the adaptive capabilities of communities may be particularly relevant for how international aid is designed and implemented: estimates suggest that '*no more then 10% of survival in emergencies can be contributed to external sources of relief aid*' (Hilhorst 2003).

Given the potentially complex nature of the international aid system, it is important to understand the role of clusters of actors, or networks. Network models and webs have been proposed? in the development literature (Levy 1997). Given the web of relations and interactions among various communities, institutions and countries that characterizes the aid world, such approaches have the potential to bring about a shift in perspective to one that emphasizes the importance of understanding relationships and behaviours. Some initial movement towards this attitude can be perceived. For example, it has been suggested that '*development projects should regard relationship management as money management*' (Eyben 2006), rather then seeing aid a catalyst of '*external resources acting on a developing country*'.

The behaviour of adaptive agents is at the heart of a planning, monitoring and evaluation tool called outcome mapping. This methodology, which incorporates an appreciation of complex systems, has as its primary focus the changes in behaviour (defined as actions, attitudes and relationships) of those stakeholders with whom a programme or project interacts directly. These direct stakeholders are referred to as boundary partners in the outcome mapping terminology. The ideal application of the method requires members of an aid programme or project to work with these actors in order collectively to specify

hoped-for changes and to identify specific activities that will help contribute to these changes (Ramalingam et al. 2008: 47).

One of the critiques levelled at complexity science is that there is no real way of dealing with power. However, in the aid context, the concept of adaptive agents enables understanding of how certain agents may act in order to withhold or suppress the adaptive capacities of others – to cite a few: specific groups who are excluded or marginalized in communities, rural producers who are at the mercy of wholesalers, local NGOs who are at the behest of international agencies, and developing country officials who are excluded from trade negotiations. Additional problems arise when different organisations need to work together in a coordinated manner, a specific issue that will be further analysed in the section devoted to the humanitarian scenario.

Concluding remarks

This part has shown that complexity theory with respect to crisis and disaster is a rapidly expanding field. It has evolved from political systems theory to various attempts to acknowledge and study multiple realities of a crisis situation, and has been successfully applied to studies of disaster policies and vulnerabilities and disasters and impacts on development and humanitarian action. However, this part reveals that there is a need to understand various dimensions of vulnerability, resilience and adaptations, which are emerging key concepts in disaster studies.

6 VULNERABILITY, RESILIENCE AND ADAPTATION: EMERGING KEY. CONCEPTS

Concepts of resilience, vulnerability, and adaptation are increasingly important for the study of the disasters and human dimensions of global environmental change. Recent disastrous events such as the Hurricane Katrina, the Southeast Asian tsunami, and the Pakistan earthquake, together with the bird flu and also continuing droughts in Africa, dramatically illustrate the potential vulnerability of human society to disturbances and variability (Janssen & Ostrom 2006: 237). While these concepts are not new and are used in different fields of research and activities, they are becoming more important within the global change research community.

This section of the document aims to highlight major contributions to the literature and the concepts of vulnerability, resilience and adaptation, making clear that local initiatives to enhance livelihoods and hence adaptive capacity may be constrained or even nullified by broader social, economic and political forces that effectively shape local vulnerabilities. This brings the adaptation issue to the question of development and the role of local initiatives relative to '*transformations of geo-political–economic systems*' (Adger 2006).

Ultimately, insights through the newly emerging interdisciplinary understanding of vulnerability and resilience demonstrate the co-evolutionary nature of social and natural systems – resilient ecosystems and resilient societies can better cope with external physical as well as socio-political stresses. Policies and strategies which reduce vulnerability and promote resilience change the status quo for many agencies and institutions and are frequently resisted; thus, knowledge and analysis of vulnerability, resilience and adaptation might provide a robust background for decision-makers (Kasperson et al. 2005).

This part of the document also aims to illustrate and underline '*the human dimensions of global environmental change*' (Janssen & Ostrom 2006: 237) by providing a short review of the diverse and somewhat separate intellectual histories from which such concepts originate, in which understanding the dynamics necessarily involves consideration of both those social and biophysical components and their mutual interactions that have more policy focus emphasis and potential mutual conceptual relations.

Vulnerability

The concept of vulnerability has been used in different research traditions and in the recent past has emerged as a cross-cutting theme in research on the human dimensions of global environmental change (Bohle et al. 1994; Downing et al. 2000; Kasperson & Kasperson 2001; Polsky 2003; O'Brien et al. 2004; Füssel 2007) and disaster studies (Birkmann 2006) despite the fact that there is no or little consensus on its meaning (Gallopin 2006: 295).

Depending on the research area, it has been applied exclusively to the societal, ecological, natural, or biophysical subsystems, or defined as '*a multi-*

layered and multidimensional social space defined by the determinate political, economic and institutional capabilities of people in specific places at specific times' (Bohle et al. 1994: 39).

Adger has examined the evolution of approaches to vulnerability which originated in the social and the natural sciences, arguing that vulnerability emerged as a '*powerful analytical tool for describing states of susceptibility to harm, powerlessness, and marginality of both physical and social systems and for guiding normative analysis of actions to enhance well-being through reduction of risk*' (Adger 2006: 268). Adger suggests that vulnerability to environmental change does not exist in isolation from the wider political economy of resource use but is: '*driven by inadvertent or deliberate human action that reinforces self-interest and the distribution of power in addition to interacting with physical and ecological systems*' (Adger 2006: 270). According to Füssel (2007: 159), the theoretical evolution of hazards research has been characterized by an evolution from pure determinism to an increasingly more complex political economy approach, arguing that '*structure not nature, technology, or agency creates vulnerability*'.

Classical approaches

The risk-hazard approach, the most classical approach to vulnerability (Füssel 2007: 159) is useful for assessing the risks to certain valued elements that arise from their exposure to hazards of a particular type and magnitude (Burton et al. 1978). This approach is most widely applied by engineers and economists in the technical literature on disasters, in which vulnerability by definition refers primarily to the focus of physical systems on the built environment and infrastructures, a focus which leads some authors to treat vulnerability simply as '*exposure to hazards*' (Hewitt 1997: 27) or '*being in the wrong place at the wrong time*' (Liverman 1990).

A key aspect of the risk-hazard approach is the clear distinction between two factors that determine the risk: '*hazard*', which is '*a potentially damaging physical event, phenomenon or human activity [that] is characterized by its location, intensity, frequency and probability*', and.'*vulnerability*' (Füssel 2007: 159), which denotes the '*relationship between the severity of hazard and the degree of damage caused*' (UN DHA 1993).

Out of this classical approach, according to Bohle, Downing and Watts (1994: 39), there are distinctive approaches to vulnerability which, from different vantage points, shed light on the multidimensional space of vulnerability:

- *Human ecology perspective*, which refers to the relations between nature and society conceived as a way of understanding both the risk environment which vulnerable groups confront and the '*quality of their resource endowments*' (Bohle et al. 1994: 39). From this perspective, Cutter (1996) and Cutter et al. (2003) classify research into first, vulnerability as exposure (conditions that make people or places vulnerable to hazard), second, vulnerability as social condition (measure of resilience to hazards), and third, the '*integration of potential exposures and societal resilience with a specific focus on places or regions*' (Cutter et al. 2003: 243), while O'Brien et al. (2004) identify similar trends in '*vulnerability as outcome*' and '*contex-*

tual vulnerability' as two opposing research foci and traditions, relating to debates within the climate change area (Kelly & Adger 2000).
– *Expanded entitlements perspective*, derived mainly from the work of Sen (1981) focuses almost exclusively on the social realm of institutions, well-being, social status, and gender as important variables, while vulnerability research on natural hazards developed an integral knowledge of environmental risks with human response, drawing on geographical and psychological perspectives in addition to social parameters of risk (Adger 2006: 269).
– *Political economy perspective*, in which '*particular resource endowments and patterns of entitlements are always embedded in a macro-structure provided by political economy*' (Bohle et al. 1994: 39). Implicit in this definition of political economy is the notion that specific configurations of class processes confer crisis tendencies which are important in grasping the specific risks and threats experienced by vulnerable groups.

The human ecology approach
The human ecology tradition moves away from the dominant engineering approaches of hazard management, and engages with the political and structural causes of vulnerability within society. Human ecologists attempted to explain why the poor and marginalized have been most at risk from natural hazards (Hewitt 1983b; Watts 1983), moving towards what Hewitt (1997) termed '*the human ecology of endangerment: poorer households tend to live in riskier areas in urban settlements, putting them at risk from flooding, disease and other chronic stresses*'. In this tradition, Cutter (1993) defines vulnerability as '*the likelihood that an individual or group will be exposed to and adversely affected by a hazard. It is the interaction of the hazards of place with the social profile of communities*'.

In the context of food insecurity, the World Food Programme (2004) sees vulnerability as being '*composed of two principal components, namely: risk of exposure to different types of shocks or disaster event and ability of the population to cope with different types of shock or disaster event*'. In contrast, Turner et al. (2003) suggest a place-based conceptualization of vulnerability that comprises exposure, sensitivity and resilience, seeking to analyse the elements of vulnerability (its exposure, sensitivity and resilience) of a bounded system at a particular spatial scale.

The political economy approach
The political economy approach focuses the analysis on people, defining vulnerability as '*the state of individuals, groups or communities in terms of their ability to cope with and adapt to any external stress placed on their livelihoods and well-being. It is determined by the availability of resources and, crucially by the entitlement of individuals and groups to call on these resources*' (Adger & Kelly 1999). This approach prevails in the poverty and development literature. Vulnerability refers exclusively to people, and it is based on an explanatory model of socioeconomic vulnerability to multiple stresses (Füssel 2007: 159).

These two traditions of hazards research have been successfully bridged by Blaikie and colleagues (1994), who propose that physical or biological hazards represent one pressure and characteristic of vulnerability and that a further

pressure comes from the cumulative progression of vulnerability, from root causes through to local geography and social differentiation (Adger 2006: 272). The disaster pressure-and-release model takes its starting point from the risk-hazard framework, determining risk as the product of hazard and vulnerability (Blaikie et al. 1994; Wisner et al. 2004). It then presents an explanatory model of vulnerability that involves global root causes, regional pressures, and local vulnerable conditions (Füssel 2007: 159). Blaikie et al. (1994) also prescribed actions and principles for recovery and mitigation of disasters that focused explicitly on reducing vulnerability.

Sustainable livelihoods approach
Adger (2006: 272) suggest that the sustainable livelihoods and vulnerability to poverty approach might be understood as a successor to vulnerability as entitlement failure. This research tradition, largely within development economics, tends not to consider integrative social-ecological systems but conceptualization and measurement of the links between risk and well-being at the individual level (Alwang et al. 2001; Collinson 2003; Adger & Winkels 2006).

A sustainable livelihood refers to the well-being of a person or household (Ellis 2000) and comprises the capabilities, assets and activities that lead to well-being (Chambers & Conway 1992; Allison & Ellis 2001). Vulnerability in this context refers to the susceptibility to circumstances of not being able to sustain a livelihood: the concepts are most often applied in the context of development assistance and poverty alleviation. While livelihoods are conceptualized as flowing from capital assets that include ecosystem services (natural capital), the physical and ecological dynamics of risk remain largely unaccounted for in this area of research. Indeed, sustaining and strengthening livelihoods has become central to much of the debate about poverty reduction, naturally and helpfully raising issues of vulnerability.

The dominant framework for much of this livelihoods work is the '*sustainable livelihoods approach*' (Farrington et al. 1999), which focuses on people's assets (tangible and intangible), their ability to withstand shocks (the vulnerability context), and policies and institutions that reflect poor people's priorities.

Twigg (2003) believes that paying attention to the extent and nature of poor people's livelihood assets, and their vulnerability to hazards and other external forces should make it possible to identify entry points for protecting those assets that are most at risk, or that could be most valuable in a crisis.

Research on vulnerability applied to the issue of climate change impacts and risks demonstrates the full range of research traditions while contributing in a significant way to the development of the newly emerging systems vulnerability analysis (Carter 1991; UNDP 2001; Mirza 2003). Vulnerability research in climate change has, according to Adger (2006: 274), '*a unique distinction of being a widely accepted and used term and an integral part of its scientific agenda*'.

Climate change research
Climate change represents a multi-scale global change problem characterized by diverse actors, multiple stressors and multiple timescales, and it has been acknowledged that exposure to multiple stressors is a real concern, particularly in developing countries, where food security is influenced by political, eco-

nomic, and social conditions in addition to climatic factors (Leichenko & O'Brien 2002).

The existing evidence suggests that climate change impacts will substantially increase burdens on those populations that are already vulnerable to extreme climate events, and bear the brunt of projected, and increasingly observed, changes that are attributable to global climate change (O'Brien, et al. 2004; Stott et al. 2004; Kovats et al. 2005; O'Brien 2006).

The IPCC defines vulnerability as '*the degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate variation to which a system is exposed, its sensitivity, and its adaptive capacity*' (McCarthy et al. 2001). Vulnerability to climate change in this context is thus defined as a characteristic of a system and as a function of exposure, sensitivity and adaptive capacity (Adger 2006: 273).

The multidimensionality of vulnerability research
All of the aforementioned research traditions, their multidimensionality and the richness of different perspectives, contribute to framing vulnerability to global change, demonstrating that institutions adapt to environmental risk or, as argued by (Adger 2006: 273), '*given resources and favourable circumstances, this adaptation will ultimately reduce the impact of perturbations on marginal sections of society and enhance resilience. Second, it shows that there is a close interdependence between environmental risk, the political economy of development and the resilience of systems*'.

Moreover, as noted by (Füssel 2007), standard applications of disaster risk assessment are '*primarily concerned with short-term (discrete) natural hazards, assuming known hazards and present (fixed) vulnerability*' (Downing et al. 1999), in which the risk to a system is fully described by two risk factors: hazard and vulnerability. In contrast, key characteristics of anthropogenic climate change are that it is long-term and dynamic, it is global but spatially heterogeneous, it involves multiple climatic hazards associated with large uncertainties, and it is attributable to human action requiring a dynamic assessment framework that accounts for changes in all vulnerability factors over time. Hence, any '*conceptualization of vulnerability to climate change needs to consider the adaptive capacity of the vulnerable system, which largely determines how its sensitivity evolves over time*' (Füssel, 2007).

Vulnerability is the flip side of resilience: when a social or ecological system loses resilience it becomes vulnerable to change that previously could be absorbed (Kasperson & Kasperson 2001). In a resilient system, change has the potential to create opportunity for development, novelty and innovation (Folke et al. 2002: 4). Folke, (2006: 262) argues: '*a vulnerable social-ecological system has lost resilience*'.

Resilience

The resilience perspective is increasingly used as an approach for understanding the dynamics of social-ecological systems (Gunderson & Holling 2002;

Lambin 2005; Folke 2006; Smit & Wandel 2006) and describes, in a metaphorical sense, '*the condition of systems that undergo stress and have the ability to recover and return to their original state*' (Sapountzaki 2007).

This perspective emerged from ecology in the 1960s and early 1970s (Holling 1961; Lewontin 1969; Rosenzweig 1971; May 1972)..Holling (1973), in particular, departs from the above views of static equilibrium and introduces a more dynamic option: '*resilience determines the persistence of relationships within a system and is a measure of the ability of these systems to absorb changes of state variables and driving variables and still persist*'.

What gains ground in the various literature is the perception of resilience as the capacity of a system to absorb disturbance and reorganize, while undergoing change, so as to still retain essentially the same functions, structure, identity, and feedbacks (Walker et al. 2004).

According to Resilience Alliance (2007), resilience is '*the ability to absorb disturbances, to be changed and then to re-organise and still have the same identity (retain the same basic structure and ways of functioning). It includes the ability to learn from the disturbance*'. Fundamental to this definition is the shifting attention from purely growth and efficiency to needed recovery and flexibility. Growth and efficiency alone can often lead ecological systems, businesses and societies into fragile rigidities, exposing them to turbulent transformation: '*Learning, recovery and flexibility open eyes to novelty opportunity*' (Resilience Alliance 2007).

Dynamic system approach

The '*dynamic process*' (Folke 2006; Sapountzaki 2007) influenced fields outside ecology and anthropology (Vayda & McCay 1975; Rappaport 1967) such as ecological economics (Perrings et al. 1992), non-linear dynamics (Common & Perrings 1992) and the modelling of complex systems of humans and nature (Costanza et al. 1993), in environmental psychology (Lamson 1986), cultural theory (Thompson et al. 1990), human geography (Zimmerer 1994), the management literature (King 1995), and recently disaster management (UN/ISDR 2002; Davis 2003; Pelling 2003; IFRC/RCS 2005; Davis & Izadkhah 2006), as well other social sciences (Scoones 1999; Abel & Stepp 2003; Davidson-Hunt & Berkes 2003).

Adger (2000) defined social resilience as the ability of human communities to withstand external shocks to their social infrastructure, while Anderies et al. (2004) used the concept 'robustness' to mean the maintenance of some desired system characteristics despite fluctuations in the behaviour of its component parts or its environment. However, resilience is not only about being persistent or robust to disturbance. It is also about the opportunities that disturbance opens up in terms of the recombination of evolved structures and processes, renewal of the system, and emergence of new trajectories. This is why the concept of resilience in relation to social-ecological systems incorporates the idea of adaptation, learning and self-organisation, in addition to the general ability to resist disturbance (Folke 2006: 259).

In this sense, resilience provides an adaptive capacity (Smit & Wandel 2006) that allows for continuous development. In a similar vein, adapting this concept to urban disasters (Davis and Izadkhah 2006: 19), invoking Kendra and Wachtendorf (2002), argue that a resilient system is not possible if '*any of the*

robustness, redundancy, resourcefulness and rapidity is missing from an overall strategy'.

There have been attempts to address social resilience in relation to coastal communities (Adger 2000a), the vulnerability of cities (Pelling 2003) and patterns of migration (Locke et al. 2000), and work has been inspired by the adaptive cycle to understand management institutions and theories of social change (Holling & Sanderson 1996; Westley 2002), famine and assessment of the vulnerability of food systems (Fraser et al. 2005).

Resilience and people-centred development
The UN International Strategy for Disaster Reduction (UN/ISDR) has also adopted the term resilience. With particular reference to natural hazards, it defines the term as: '*the capacity of a system, community or society to resist or to change in order that it may obtain an acceptable level in functioning and structure. This is determined by the degree to which the social system is capable of organizing itself and the ability to increase its capacity for learning and adaptation, including the capacity to recover from a disaster*' (UN/ISDR 2005: 23).

The IFRC/RCS (2004) definition invokes Wildavsky (1991), who addresses resilience as '*the capacity to cope with unanticipated dangers after they have become manifest, learning to bounce back*' and acknowledges resilience at the individual level as, '*a common characteristic of all human beings*', but at the same time, arguing that: '*in the last two decades resilience has become the buzz word to describe the capacity to survive, adapt and bounce back – applied freely to anything from ecosystems to business at any level from households to global communities*' (IFRC/RCS, 2004: 21).

The World Disasters Report (IFRC/RCS 2004) acknowledges the strengths and assets of resilience to risks identified by the sustainability approach, which has become an important organizing framework for the efforts of a wide range of multilateral agencies, NGOs and government bodies (Sapountzaki 2007).

In this perspective, such risks and disasters are part and parcel of a wider developmental(?) context and framework. People'slivelihoods are threatened not only by natural hazards but also by environmental change, social discrimination, unaffordable credit, or misguided government policies. Therefore, attempts to increase community resilience target a complex range of risks (Sapountzaki 2007).

In the face of significant external stress, population displacement is often an indicator of the breakdown of social resilience. In the literature on food security, for example, displacement and coping strategies represent an extreme manifestation of vulnerability (Watts & Bohle 1993).

Coping strategies are actions taken by households when faced with extreme food insecurity which can be caused by diverse factors, from climatic extremes to wars. These are, in effect, short-term adjustments and adaptations to extreme events, are usually involuntary, and almost invariably lead to a different subsequent state of vulnerability to future famine situations (Adger 2000a: 357). Such coping strategies are postulated by Corbett (1988), in the context of African evidence, to be strategies primarily concerned with maintaining the future income generating capacity of the household intact, rather than maintaining current consumption.

Evidence from Rajasthan (India) presented by Jodha (1975) confirms that the objectives of farmers' adjustment mechanisms in the face of food insecurity are to protect their assets and the sources of future income rather than current consumption, thereby providing further evidence of the stages of coping. Interventions in such situations based on increasing consumption may '*prove self defeating and contribute to the process of pauperization initiated and accentuated by recurrent droughts*' (Jodha 1975: 1619).

Despite the vagueness of the term and doubts about how to promote resilience, there seems to be.agreement that local resilience is about a people-centred developmental way of working in relief, recovery and overall disaster risk reduction. Although it is not stated explicitly in the literature, it may be implicitly inferred that resilience has to do with a constant manoeuvring and making of trade-offs between several forms of risk-taking and social development (Sapountzaki 2007).

The concept of resilience thus contributes to shifting policies from those that aspire to '*control change in systems assumed to be stable, to managing the capacity of social-ecological systems to cope with, adapt to, and shape change*'. Thus, managing for resilience enhances the likelihood of sustaining development in changing environments where the future is unpredictable and surprise is likely (Levin et al. 1998; Holling 2001; Folke et al. 2002: 4).

Adaptation

The adaptation of humans to environmental variability has been a focus of anthropology since the early 1990s, when scholars began to use the term adaptation in the context of studying the consequences of human-induced climatic change, without explicitly relating the term back to its conceptual origins in anthropology. The IPCC defines adaptation as '*adjustment in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects or impacts. This term refers to changes in processes, practices, or structures to moderate or offset potential damages or to take advantage of opportunities associated with changes in climate. It involves adjustments to reduce the vulnerability of communities, regions, or activities to climatic change and variability*' (McCarthy et al. 2001: 643).

Smit and Wandel (2006) focus on the concept of adaptation and adaptive capacity in the context of the vulnerability of human systems and climate change. According to them, adaptation usually refers to: '*a process, action or outcome in a system (household, community, group, sector, region, country) in order for the system to better cope with, manage or adjust to some changing condition, stress, hazard, risk or opportunity*' (Smit & Wandel 2006: 282).

Global Change literature
Brooks (2003: 8), describes adaptation as '*adjustments in a system's behavior and characteristics that enhance its ability to cope with external stress*', while Smit et al. (2000: 225), in the climate change context, refer to adaptations as '*adjustments in ecological-socio-economic systems in response to actual or expected climatic stimuli, their effects or impacts*'. Pielke (1998: 159), also in the climate context, defines ad-

aptations as the '*adjustments in individual groups and institutional behaviour in or-der to reduce society's vulnerability to climate*'. Based on their timing, adaptations can be anticipatory or reactive, and depending on their degree of spontaneity they can be autonomous or planned (Fankhauser 1998; Smit et al. 2000).

The term adaptation, as it is presently used in the global change field, has its origins in the natural sciences, particularly evolutionary biology, where it refers to the development of genetic or behavioural characteristics which enable organisms or systems to cope with environmental changes in order to survive and reproduce (Winterhalder 1980; Kitano 2002; Krimbas 2004).

Cultural and ecological views

The application of the term adaptation to human systems has been traced to anthropological and cultural ecology (Butzer 1989; O'Brien & Holland 1992: 37), in which the process of adaptation is seen as '*one by which groups of people add new and* improved *methods of coping with the environment to their cultural reper-toire*'. In this approach, it is recognized that societies adapt to a range of stimuli including, but not limited to, environmental stress. Cultures (or societies), which are able to respond to or cope with change are considered to have high '*adaptability*' or '*capacity to adapt*' (Denevan 1983). In this research sector, the analyst selects the factors or determinants of vulnerability or adaptive capacity, obtains measures, adopts an aggregation function over the measures, and calcu-lates an overall vulnerability value for each system (Kelly & Adger 2000; Rayner & Malone 2001; Adger et al. 2004; O'Brien et al. 2004; Van der Veen & Logtmei-jer 2005; Brooks et al. 2005).

Adaptability is closely related to resilience because it is '*the capacity of ac-tors in a system to influence resilience*' and they argue that this is, in effect, an out-come of individuals and groups acting to manage the system. '*The third key ele-ment they define is transformability*'. *The capacity to create a fundamentally new sys-tem when ecological, economic, or social (including political) conditions make the exist-ing system untenable*' (Walker et al. 2004). Elsewhere, adaptive capacity has been defined as 'the ability of a socio-ecological system to cope with novel situations without losing options for the future' (Folke et al. 2002).

Adaptive capacity in ecological systems is related to genetic diversity, bio-logical diversity, and the heterogeneity of landscape mosaics (Peterson et al. 1998; Carpenter et al. 2001). In social systems, it is related to the existence of in-stitutions and networks that learn and store knowledge and experience, create flexibility in problem solving and balance power among interest groups who play an important role in adaptive capacity (Scheffer et al. 2001 Berkes et al. 2002).

Systems with high adaptive capacity are able to reconfigure themselves without significant declines in crucial functions in relation to primary produc-tivity, hydrological cycles, social relations, and economic prosperity. A conse-quence of a loss of resilience, and therefore of adaptive capacity, is loss of op-portunity, constrained options during periods of reorganisation and renewal, and inability of the system to do different things.

Adaptive capacity is context-specific and varies from country to country, from community to community, among social groups and individuals, and over time. It varies not only in terms of its value but also according to its nature. The

scales of adaptive capacity are not independent or separate: the capacity of a household to cope with climate risks depends to some degree on the enabling environment of the community, and the adaptive capacity of the community reflects the resources and processes of the region (Smit & Pilifosova 2003). Adaptive capacity has been analysed in various ways, including via thresholds and '*coping ranges*', defined by the conditions that a system can deal with, accommodate, adapt to, and recover from (de Loe & Kreutzwiser 2000; Smit et al. 2000; Jones 2001; Smit & Pilifosova 2001; 2003).

Most communities and sectors can cope with (or adapt to) normal climatic conditions and moderate deviations from the norm, but exposures involving extreme events that may lie outside the coping range may exceed the adaptive capacity of the community. Some authors apply '*coping ability*' to shorter term capacity or the ability to just survive, and employ '*adaptive capacity*' for longer term or more sustainable adjustments (Vogel 1998). Watts and Bohle (1993) use '*adaptability*' for short-term coping and '*potentiality*' for the longer term capacity.

Empirical evidence for adaptation
Research in South Asia and other parts of the world has provided preliminary insights into the critical roles which diversification, human mobility (migration and commuting), transportation, financial and communication systems, a resilient 'adaptive' infrastructure, institutional systems, secure water supplies, and natural resources conditions play in livelihood resilience and adaptive capacity at the household and regional level in drought- and flood-affected areas (Hussein & Nelson 1998; Moench & Dixit 2004; Wisner et al. 2003. Experience to date has shown that (the common) adaptation practices commonly involve modifying some existing resource management strategy (water conservation in the Cook Islands), livelihood enhancement initiatives (income diversification in Bangladesh), disaster preparedness plan (flood or hurricane warning and planning in coastal Vietnam), or sustainable development programmes (land management alternatives in central Mexico) (Smit & Wandel 2006: 289).

Moench (2005), using examples from drought in Gujarat, floods in Uttar Pardesh and Nepal, and water scarcity in Yemen, highlights a variety of factors that enable and constrain effective adaptation to climatic variability. In virtually all situations, livelihood diversification represents a central element in the adaptation process (Meze-Hausken 2000; Moench 2005: 30), particularly where local opportunities for diversification are limited. The cases explored here show that diversification was often achieved by proactive migration or commuting strategies. As other studies in areas as diverse as Asia, Africa and the Arctic have also found (Hussein & Nelson 1998; Berkes & Jolly 2001), migration often is not a function of immediate distress undertaken as a consequence of disaster, but instead it is often a proactive diversification strategy. The ability to diversify in this manner, and also through the development of non-agricultural activities in home locations, was shown to depend in turn on access to financial resources, communications systems, the transport infrastructure, social networks, education, and information. In most situations, adaptive capacity within home locations depended heavily on a combination of local factors and external linkages (Moench 2005: 30).

Adger (2000a), analysing the case of coastal risks management in Vietnam, argues that '*state institutions and civil society both facilitate adaptation to social and environmental change*' (Adger 2000b: 754), supporting the suggestion by Blaikie et al. (1994) that political and social change interact with economic determinants of vulnerabilities.

Concluding remarks

This part has shown how concepts of vulnerability, resilience and adaptations have been used to understand environmental change. With that come natural disasters. Today, however, these concepts are also used to understand human society and different types of disturbances such as violence and war. These concepts also constitute parts in the recently arising school of livelihoods research, in which vulnerabilities, shocks and disasters impact on people's assets and abilities to adapt and cope. Such a focus on people – both individually and collectively - represent a more actor-oriented approach. In the next part we will address the humanitarian actors and the role they play in crisis management and potentially also communication.

7 A COMPLEX ACCOUNT OF DISASTER: THE HUMANITARIAN SCENARIO

During the past several decades, the humanitarian sector has been dominated operationally, and in terms of funds received, by non-profit relief and marginally on-state actors. This dominance, combined with the neutrality and independence of providing care, has long kept humanitarian action at the margins of international politics (Levine 2004: 1). Until the late 1980s, humanitarianism '*barely existed as a field*' (Barnett 2005: 729). Since the early 1990s, however, this has started to change, as a result of three key developments.

First, since the 1990s natural disasters have become more frequent and visible (Calhoun 2004) and crises more newsworthy, leading to growth in the '*business*' (Binder & Witte 2007) of humanitarian assistance, not only in terms of financial volume but also in terms of the number participants (World Bank Independent Evaluation Group 2006: 5). This growth is reflected in the dramatic increase in official assistance, from USD 2.3 billion in 1990 to approximately USD 8.4 billion in 2005 (Development Initiatives 2006: 7). As a percentage of official development assistance, humanitarian aid rose from an average of 5.8% for the period 1989–1993 to 14% in 2005 (Development Initiatives 2006: 8). The 2005 financial flows were significantly influenced by the unprecedented response, both private and public, to the Indian Ocean tsunami (Development Initiatives 2006: 49). The steady increase in financial assistance since the early 1990s, as well as the expansion in the number of actors involved, has intensified competition for funding and projects. This, many believe, has created new coordination problems in the field (Minear 1999; Reindorp & Wiles 2001). Moreover, recent business engagement in humanitarian relief has expanded in scope and size in recent years, in both voluntary and commercial ways, and especially in natural disaster relief, contributing to an expansion of conflictive managerial cultures, interests and bringing new issues onto the humanitarian agenda (Binder & Witte 2007).

Second, because of increasing competition and large-scale, well-publicized failures to respond to major disasters such as the Rwandan genocide of 1994 (Borton et al. 1996), there have been pressures from within the community and from donor governments to professionalize humanitarian work (see Terry 2002). In particular, the latter have started to press for greater accountability and the adoption of stricter and more regulated management approaches (such as a greater division of labour, specialization, formalization, and standardization of workflows (see Levine 2004; Barnett 2005: 725; de Torrente 2005). In response to evaluations of a number of crises (Mackintosh 1997; DEC 2001; Herson 2005) such as Rwanda, Gujarat and Sudan, and critiques from within the humanitarian community and from donors, there have been attempts to standardize the previously informal rules guiding humanitarian action (see Gostelow 1999; Barnett 2005). This has led to a proliferation of principles and codes of conduct (see IFRC 1994; Anderson 1999; Levine 2004; The Sphere Project 2004; Barnett 2005; Hopgood 2005), all of which depend on concepts of humanity, neutrality and impartiality.

Finally, since the end of the Cold War, humanitarianism has increasingly

become both the means and end of foreign policy; civil and military interventions for humanitarian purposes are increasing and some argue that they have emerged as an organizing principle of today's international relations (Levine 2004: 3). As a result, governments now seek to exert greater control over how resources are spent (Barnett 2005: 731). Funding decisions are often based on political interest (Levine 2004: 4). At the same time, the increasing dependence of many humanitarian actors on governmental donors makes it easier for the latter to influence the work of the former. This increased presence of donor governments in the humanitarian sphere, and the funding patterns that result, affect both traditional, non-profit actors and for-profit companies alike (Levine 2004: 3; Barnett 2005: 725).

Humanitarianism

Recent years have been characterized by the emergence of a debate around the redefinition of '*humanitarianism*' and the modalities of aid delivery. Much debate has originated from the need to reconcile the character of relief as a neutral intervention within an increasingly politicized arena for action (Minear & Weis 1995; Leader 2000; Minear 2002; Smillie & Minear 2003).

Humanitarian organisations and workers are continuously confronted with '*moral dilemmas*' (Slim 1997) and are increasingly called to account for their choices (Callamard 2001). The role of aid and humanitarian workers, the definition of the relationship between relief and development (European Commission 1996; Macrae et al. 1997; Macrae 2001; Harmer & Macrae 2004), and the need to ensure protection (UNHCR 2003) and rights (Slim 2000) are themes that are engaged in discussion among donors, implementing agencies and research groups with a strong orientation towards practice. These emerging trends have a definite relevance for a discussion on communication.

The 'Global War on Terror' (Macrae & Harmer 2003; Cosgrave 2004) has affected aid workers deeply and resulted in wider confusion between humanitarian and political objectives. There was little pretence of impartiality or neutrality when aid agencies followed the Western forces that defeated the Taliban in Afghanistan. Humanitarian actors were placed firmly under military control through provincial mechanisms, and the overall aid strategy was derived from politico-military perspectives. Similarly in Iraq, aid agencies were coordinated through a system run by Western military. It was practically impossible to operate without collaborating with the armed forces. US leaders made it clear in both cases that they regarded aid agencies as their allies – with special responsibility for '*hearts and minds*' (Vaux 2006).

In the wider perspective, neutrality is only one form of humanitarianism, and perhaps a peculiarly British one. The common model in the USA is the '*Wilsonian*' agency, following the view of Woodrow Wilson, the US President at the end of World War I (Stoddard 2003). Such agencies are basically an extension of the State into charitable activity. They readily accept a responsibility to reflect the interests of their own country, acknowledging that they depend primarily on their fellow citizens for donations. Reflecting the views of donors is

therefore seen as a form of accountability. By contrast, the tendency in the UK has been to try to base decisions on moral principles, to change opinions, and to challenge the State. This school of thought is reflected in the '*Dunantist*' type of agency that abides by Red Cross principles, including that of neutrality.

Recent critiques of humanitarianism have mainly come from a Dunantist perspective. Ignatieff (1998) and Rieff (2003) have advocated a return to humanitarian detachment. However, most aid workers seem to find this impracticable. All this seems to suggest that humanitarianism is not an absolute principle, but instead a cultural phenomenon that may be closely linked to Western values, perceptions, and politics (Vaux 2002).

Reconfiguring policy and knowledge production

Much of the policy literature is based upon the assumption that it is enough for '*truth to talk to power*', or for new and well grounded facts to be transmitted to policy makers, who will recognize them and take rational action to adapt or change policy. While this process must remain central to policy makers, it is not sufficient. '*Facts*' may be framed in different ways and may be seen as irrelevant by those who make or shape policy. Policy formulation, planning and practice may, therefore, be built on different processes of knowledge creation and application than the theoretically coherent and rational accounts often presented through research, theory and practical guidelines. This raises questions as to how potentially disparate knowledge can be understood and integrated, and its outcome measured. Furthermore, how can practice inform policy, and what role is there for researchers as actor-activists? How can emergent '*best practices*' and innovations be realized and transformed into policy at times when this can count? It is expected that knowledge and practice in conflict and non-conflict areas will vary, with overlapping and contradictory understandings.

Goodhand (2001), building on the '*greed and grievance*' debate (Collier & Hoeffler 2001), provides a useful framework for mapping how linkages can and do inform policy and donor funding: conflict may accentuate poverty for the majority, but can also create wealth for some, particularly old or emerging elites. Poverty can be a causal factor in war, though comparative studies suggest that it is seldom the only factor. It is suggested that such distinctions may inform the type of intervention that donors may seek: if conflict leads to chronic poverty, then one should work on poverty in conflict; if poverty contributes to conflict, then one should work on both peace-building and development assistance. Yet do these logics and choices inform or reflect the actions and decisions of operational agencies? Is the logic of theory made compatible with the logic of practice? The answer to these questions is probably in the negative and provides useful insight for the present research document.

Aid can be targeted to minimize negative effects, and ideally to reinforce peace-building. Humanitarian and development interventions 'on the ground' have informed a body of work loosely labelled as 'conflict sensitive'. Work such as that by Anderson (1999) adequately highlight the risks for humanitarian and development agencies bringing.resources into a resource-scarce environment,

and how these resources can (and often do) reinforce or accentuate conflict. However, there is a need to seriously question whether humanitarian or development assistance (the '*peace-dividend*') actually assists or obstructs diplomatic efforts at peace-building, and to what extent practical peace-building through projects is possible at all.

Peace-building interventions are also strongly linked to issues of development and security. The act of giving aid in post-crisis settings is explicitly political, and may have only modest impact on longer term development goals beyond the merely humanitarian ones (i.e. Duffield 2001; Macrae 2001). However, some discourses on 'best practices' in post-war reconstruction (e.g. Barakat 2005) are full of practical prescriptions indicating that reconstruction can, if strategically designed and avoiding blueprints, not only address the material loss of war, but also provide an opportunity to address long-standing impediments to development. Such prescriptions have recently been criticized as being non-reflexive to specific and evolving situations, and have a danger of being static and ignoring qualities of agency and local power structures (Skotte 2003; 2004). This raises the question as to whether peace and post-crisis development can be purchased and engineered by the donor world, and to what extent the national context of governance and the structures of humanitarian and development practice fit or not with the theory.

Humanitarian community and coordination

In acute crises, inter-organisational relationships tend to be denser than in development work: many more actors work side by side and within a shorter time span. The co-presence of different organisations with different mandates can be detrimental, making emergency responses slow and inefficient (Ferretti 2006).

To further complicate the situation, agencies on the ground might have different approaches: broad mandates, sectoral concerns (water and sanitation, shelter, health, etc), and/or may be working in different phases of relief or rehabilitation etc. Coordination thus becomes important to ensure that gaps and needs are not overlooked (Reed 1991). Improved coordination, which facilitates assistance delivery and contributes to ensuring equitable distribution, has been major theme in the debate on humanitarian practice and communication.

The quest for coordination is increasingly an imperative of humanitarian assistance. Coordination mechanisms are routinely put into place in emergency settings, e.g. through the establishment of lead agencies and coordination meetings (Bennet 1995; Van Brabant 1999; Reindorp & Wiles 2001).

There are in practice different views of what coordination should entail, and to what extent coordination can have elements of control. According to a recent ILO report, coordination that is hierarchical and executive (i.e. where binding decisions are taken by those with the greater authority) seems to be ill-suited to respond to a context where organisations are very different and not hierarchically organized, and where they value their independence a great deal.

A model of coordination based on facilitation and consensus (i.e. where conditions for interactions amongst peers are created, but decisions are not

binding) is the one that '*does and can work*' in the humanitarian world (Calvi-Parisetti & Kiniger-Passigli 2003: 24). This kind of coordination can also include the setting of interagency standards, as in the case of Sphere (Sphere Project 2004) promoting common approaches.

Information sharing is clearly a prerequisite for this kind of coordination. In recent years the desire for inter-agency coordination has materialized in a series of projects and programmes for information exchange. Humanitarian Information Centres (HICs) are now a common feature of most emergencies, providing a place and an institutional setting for understanding '*who does what where*'.

The extent to which this information exchange results in coordination is difficult to assess. The assumption is that a push to coordinate is implied in the act of exchanging information: a better knowledge of the situation and of the activities of other agencies will guide and harmonize operational choices. However, as tension in coordination meetings in the field illustrates, the practical enforcement of higher levels of coordination and/or control is difficult (Ferretti 2006).

Coordination is more easily said than done. There is more to coordination than simply information collection and sharing: issues of access, control, and power can only be addressed through trust and mutual respect.

The challenges of humanitarian coordination
In the context of relief, NGOs, international bodies and local actors need to act together, but are constrained by weak linkages. A few actors (key donors, the UN, the largest NGOs) are likely to have stronger relationships, as they find themselves operating together in different crises. The '*problem*' is the existence of a large number of NGOs and new actors that are seen to undermine coordination (Callamard 2001: 7). Calls for the '*rationalization*' of the number of NGOs allowed to operate in a given area have been made, as well as for accreditation and monitoring mechanisms (Callamard 2001: 7).

This trend is of course fraught with dangers, as it could end up in reinforcing the power of the most established organisations and reduce the space for the participation of new actors. On the one hand, it is certainly important to build accountability into the system. Organisations(?) must appreciate the importance of coordinating effectively (and consequently, of acting in such a way as not to undermine the work of the humanitarian system as a whole). On the other hand, there are dangers in using the need for coordination as a pretext for excluding actors: the balance is hard to find, but it is certainly one of the challenges ahead for improving the efficiency of the humanitarian system.

Coordination can be seen in diametrically different ways (as control or as facilitation) and as a consequence, agencies, especially NGOs, remain cautious about it. As a result, organisations seem to draw a line between supplying information to coordinate initiatives, and using this information as a basis for suggesting that agencies work in particular areas or sectors (ALNAP 2003). NGOs are more likely to espouse the concern raised by participants during a seminar on humanitarian coordination: '*It was unlikely, perhaps undesirable, for all parties – the humanitarian, the diplomat, the national authority – to share the same*

objectives. The need was for an alignment of interests rather than a consensus on narrow objectives' (DANIDA 1999).

The fact that humanitarian organisations compete over funding, media exposure and even beneficiaries has been repeatedly discussed (Hilhorst 2001). This constant competition may hinder coordination and networking among humanitarian agencies (Forman & Parhad 2000; Watkins 2001). Organisations may resist sharing information, in particular when security issues are involved or funding is at stake.

Some NGOs, under pressure from donors and their constituents, have been reluctant to share information, seeing themselves as competitors for large amounts of the donor funds available, and '*Another manifestation of this has been the competition for beneficiaries. There are accounts of some beneficiaries being courted by these NGOs on the basis that some offer 'better deals' than others. In the worst instances this has lead to falsely raising the expectations of local communities to a point that cannot be realised as the INGO has been far too optimistic about its capacity to provide*' (Ferretti 2006).

Concluding remarks

Recent years have seen an emergence of humanitarianism, and with a special focus on how humanitarian agencies work before, during and after crisis. This discourse has also been critically assessed for how these agencies manage to work at different levels (local, regional, global) and how they manage to (not) work together. The issue of poor coordination is a particular challenge, which may be an important lesson to be learnt regarding how crisis communication may effectively and efficiently be coordinated and implemented at various scales. This brings our attention to the various practices of disaster management.

8   DISASTER MANAGEMENT: CRITICAL ISSUES AND MODELS

A universal maxim in crisis management literature is that crisis preparedness should be high on institutional and policy agendas (Seymour & Moore 2000; Mitroff & Anagnos 2001). Evidence from Hurricane Katrina and New Orleans, and the tsunami of December 2006 and South Asia, prove the opposite.

In this context, the key task for policy makers and crisis managers is to establish institutional procedures and create cultural climates which develop capacities to cope with whatever extraordinary threats come their way. However, this is not an easy task. Boin and 't Hart (2003) have previously identified a number of crisis leadership tensions (particularly in the acute and post-crisis phases), focusing on the way in which crisis leaders are faced with a '*mission impossible*' (McConnell & Drennan 2006: 59) in balancing popular expectations and political realities along with a multiple presence of disaster management models.

Models and good practices

Lalonde (2004) made a transversal analysis of disaster management, in an effort to identify common elements of nine management cases using the four configurationally imperatives defined in the synthesis by Miller (1987), namely strategy, leadership, structure, and environment. Three archetypes were thus defined and delineated: '*collectivists*', '*integrators*' and '*reactives*'. These are summarized in Table 2.

TABLE 2   Good Practices (adapted from Lalonde 2004: 79).

Tracers Archetypes	Leadership	Strategy	Structure		Environment
			Macro-strategic	Micro-operational	
Collectivists	Collegial	Proximity of location	Known figure	Decentralized teams	Rural
The humanist					
The pragmatic					
The non-conformist					
Integrators	Organizer	Optimizer of key performance	Best known figure	Segmented Teams	Urban Centre
The mobilizer					
The collective of experts					
The periphery					
Reactives	Centralizer	Improvisation	Varying Status	Changing Teams	Mixed nature of Types
The adventurer					
The contingent					
The municipal-centrist					

Collectivists and their modus operandi: 'be prepared for our people'
The first archetype is dominated by the desire to account for the different needs of a variety of communities and municipalities who are responsible for their territorial plan. Collectivists integrate elements of planning in their strategy in a hurry. They evaluate their needs and consult their surroundings before intervening. Their leadership is collegial; hence, each crisis manager joins with one or several people at different stages of the plan or structure, while still remaining the principal strategic planner. The staff know who to refer to in order to express their needs; the hierarchical structure is thus generally clear. Collectivists are renowned as strategic partners who cannot be ignored as much in the domain of current community projects as in crisis management (Lalonde 2004: 80).

Integrators and their modus operandi: 'optimise our key skills'
A second archetype is dominated by a preoccupation to best use the distinctive organisational skills and to ensure action by the other strategic members. Integrators may be defined by their rigor and their preoccupation with finding the best positioning and organisational fit. The modus operandi of the integrators could be called: *'optimise our key skills'*. Integrators prefer an urban or mainly urban region. They take on three different forms:

- The mobilizer, in which the skill values mainly consist of a strong strategic path, with an energetic and clairvoyant leader
- The collective of experts, in which the value of the skills takes shape between an orientation manager and a group of professionals taking new initiatives, in an interactive and iterative manner. The professionals of the operational centre come to give shape to the orientations of the crisis manager.
- The periphery, where the research on competencies is done along a service integration path in the domain of management largely under municipal control. This positioning tends to be normative, which is to say that it is done with respect to specific staff plans, mandates and competencies for crisis situations.

Integrators are preoccupied with the rigour and coherence of their actions, as well as by the rational use of their professional resources. The strategies given by the integrators all revolve around the value of the specific competencies of their organisation, while taking into account the characteristics of their clientele, the requirements of the other strategic members, and most importantly their municipalities and regions (Lalonde 2004: 82). The strategic choices and organisational structure that follow reflect an organizer or an orienting type of leadership. Integrators primarily seek to achieve an equilibrium between professional skills, client needs, and the presence of other members.

Their municipal and community partners already know (integrators) (who the integrators are?), but they have only a partial knowledge of what these actors can concretely offer as services. The ties that develop during the crisis permit the collaborators to engage with them for futu re collaboration.

Reactives and their modus operandi: 'do something, fast'
A third archetype is characterized by its spontaneous nature and confidence in its strategies. Reactives are filled with concern to react, and react quickly, an attitude which tends to put the members of their organisation under pressure. Their modus operandi could be: '*do something, fast*'. Reactives also fall into three categories:

- The municipal-centrist demonstrates his or her strategy by associating with a key player in the crisis management, which has a general effect and which structures future interventions.
- The adventurer takes action based on spontaneous initiatives which finally enter into conflict with existing jurisdictions, which carry a series of risky adjustments for the organisation of work, and which leave a general impression of disorder with respect to the operational plan.
- The contingent takes action based on circumstantial considerations, which bring about different styles of crisis management. The adjustments made to the course of action are ad hoc, which tends to create confusion for the coherence of the plan of acion.

Reactives immerse themselves quickly and spontaneously in the action, without a plan established in advance. Reactives do not formalize emergency measure plans, even when they have one. Another characteristic specific to reactives regarding the strategic plan is their centralizing in downtown regions, which differentiates them from the two other groups which share the ability to incorporate many small municipalities of a rural nature in their region of coverage (Lalonde 2004: 85).

Fragmentations and preparedness
This fragmentation of models and perspectives makes for an understanding of the fact that when it is time to face a hazard there are no universal guides or universal rules, but rather many analysts and practitioners who have developed a broad, movable and often abstract set of principles which then need to be translated into 'good practice' (McConnell & Drennan 2006). The limit of this extension is self-evident if we consider the complexity of the crisis phenomenon, its transboundary character, its temporal evolution, and even more the variety of actors involved that have various goals, culture and resources. Moreover, there is an evident tension among the theoretical '*ideal*' of crisis preparedness and the realities of crisis, as summarised in Table 3.

TABLE 3   Preparedness and Reality of Crises (adapted from McConnell &.Drennan 2006).

Ideal of Crisis Preparedness	Reality of Crisis
High potential impact of crisis	Low priority of emergency management
Need for planning and order	Uncertainty and disorder of crisis
Need for an integrated approach	Reality of institutional fragmentation
Need for active planning and readiness	Symbolic readiness

Critical points between theory and practice

Given the aims of this document and owing to constraints of space, this part will underline some of the critical elements found in the literature on crisis management, drawing on the work of McConnell and Drennan (2006) and Alexander (2008).

Low priority of crisis management: Crises preparedness practices are not always considered of high priority by(?) political leaders, policy makers, etc. In fact, crises are low probability events (and not predictable, so that their preparation is sometimes outside of the specific target), they normally bring long-term and, as a consequence, less tangible benefits (so they do not have much appeal for political interests). Lastly, there is no energy to spend or interest in future crises when a community or an organisation is currently(?) experiencing a crisis.

Uncertainty of crises: Because each organisation can potentially be subject to a multitude of threats, it is difficult to produce a single plan that covers all the potential challenges emerging from a crisis situation (McConnell & Drennan 2006). Regardless of the type of disaster, we can anticipate a degree of shared planning and coordination, comprising a single general plan with measures for all types of disasters, and further separate plans for different types of disasters. The existence of the general plan has high symbolic value because it creates the impression of cohesion and control but does not necessary reflect the real threats and dilemmas. Furthermore, for the most part, general plans can hide subtle political priorities. It should be remembered that the complexity of the plan does not correspond to a more effective response to the crisis in question. In fact, the plan must be read and remembered easily. A good plan allows for improvisation which better fits the circumstances, as well as people's own responsibilities. The limitation is that contingency plans are more symbolic, a form of reassurance both internal and external to the organisation.

Institutional fragmentation: Political systems that have to deal with crises vary: they have different goals, strategies, plans, allocations, and responsibilities, in spite of a policy of a shared network. Furthermore, political systems are not simply fragmented vertically but also horizontally (dispersal of policy and administrative functions across the same levels of governance). This creates tension between the integrated logic of contingency planning and the disaggregated nature of public, private, voluntary, and community bodies (McConnell & Drennan 2006).

Training and testing-simulation limits: There are several reasons for tensions due to pre-crisis simulation exercises. First of all, to be effective, such exercises are costly, especially when they can be executed in every public institution for every type of scenario. Second, even when conducted, adjustments are by no mean inevitable. Third, a crisis does not respect organisational training and planning, and to achieve 'ideal' preparedness is a utopian and a paradoxical notion (McConnell & Drennan 2006).

The scenario: Plans normally tend to be very vague about the nature of the emergency situation they will be applied to. Many plans have no base scenario or they make an uncritical, untested assumption that the last great event in the area covered by planning is exactly diagnostic of what to expect next time. In contrast, a well-constructed plan should be based on a comprehensive analysis of the kinds of event that will eventually have to be put into place (Alexander 2008).

Rise in the cost of disasters (sustainability of disaster management): The economic impact of natural and man-made disasters on both developed and developing countries can be enormous. In fact, in the industrialized countries the spread of capital and technology across hazard zones has led to increased risk-taking, while in developing nations' debt repayments and armaments sales have led to increased instability and marginalization. The increasing tendency to devolve governmental powers for disaster mitigation has not been matched by the ability to fund initiatives well at lower levels of government (Roenigk 1993) Third world countries have also experienced conflict between the goals of short-term emergency management and long-term economic development (IFRC/RCS 1999), while industrialized nations have not found adequate sources of capital to finance mitigation measures (Kunreuther & Roth 1998). Hence, as Walker has stated, '*sustainability in development … has to do not just with environmental management but with political and economic management, from the family up to the international level. Sustainable development is about people's capacity to manage their natural environment, and the systems they use to exploit it in a manner which safeguards their and their children's future*'. It is therefore clear that as the actual tendencies offer no hope of long-term sustainability they will have to be reversed sooner or later (Alexander 2008).

Information technology revolution: The burgeoning information technology system has brought great advantages and accuracy in collecting data of all sorts. The main risk is to over rely on abstract procedures that risk rendering disaster management artificial and less efficient. Furthermore, the huge quantity of data can be overwhelming and draw the focus away from the few essential pieces of information that we need to know. Managers must also remember that there is no substitute for experience and direct contact with problems in the field. Furthermore, the Internet has the great advantage of helping in training, through creating a large number of websites for widespread basic knowledge, and allowing distance learning (Alexander 2008).

The power of the media: In the management of a crisis, consideration must be given to the media, which can play a fundamental role if properly engaged. Managers have to consider that the media cannot stop broadcasting or publishing reports, so it is worth planning relations with the media in order to diffuse correct news and acquire legitimacy from the audience (Alexander 2008).

Relationship between emergency planning and urban and regional planning: The fragmentation of institutions reflects a fragmentation of means, and hence there

is no link between crisis preparedness planning and urban or regional planning. The link between the two disciplines should be evident, as some basic urban norms can help to avoid dangerous practices, such as restricting land use in the most threatened places, e.g. incompatible land uses. Urban planning can also produce an urban texture suitable for good conditions in emergency management, such as the quality and width of roads, and the identification of critical nodes fundamental in disaster operations. The aim should be to integrate these plans with others' plans as much as possible (Alexander 2008).

Recognition of adequate professional standards: As emergency preparedness is not considered a true profession, and as most of the professionals involved actually have a second job, there are no adequate professional standards, no common knowledge-level capabilities,. As a consequence, this creates real problems of communication and management, both vertically and horizontally. This aspect highlights another problem concerning the knowledge of professionals in this field, namely they must have a basic level of political education as they will have to hold a true political arena. This means both being able to integrate themselves into the existing political hierarchy and also that their decisions will have political, legal and social consequences (Alexander 2008).

Disaster phases and the debate on recovery

From a sociological perspective, the immediate response to a disaster situation has been observed to include several phases (see Arnold (1980), in Booth 1993: 102–103):

- Shock at both the individual and the collective level, where the unexpected nature of the event and the severity of its impacts cause stress and a sense of helplessness and disorientation. While the stressfulness of the situation may initially impair adaptive responses, it is also a mobilizing factor for those involved (Faulkner 2001: 138).
- Denial or defensive retreat as an attempt to reach back to the safety of the known, or to avoid the crisis by repressing it. Defensive retreat may involve either evacuation from the effected area, or a strategic withdrawal to safe places within the area. Evasive action is taken to ensure safety and this enables those concerned to regroup,
- An acknowledgement represents a turning point whereby a community accepts the reality of change.
- Adaptation, where a community learns from the crisis, develops new ways of coping and rebuilds.

This sequence is probably as much applicable to the individual level as it is to the collective (i.e. organisational and community) level (Faulkner 2001: 138). Chan (1995) suggests that, beyond the immediate occurrence of the disaster, responses might take one of several broader courses:

- To protect (prevent or modify disasters)
- To accommodate (change human use systems to adapt to disasters)
- To retreat (resettlement elsewhere)
- To do nothing.

For the purposes of exploring these issues further and examining the ingredients of disaster management strategies in more detail, it is useful to look at the frameworks that have been used to describe the stages in response to disasters at the community level. Two such frameworks have been produced, one by Fink (1986) and the other by Roberts (1994). These are shown in Table 4, where a composite set of stages drawing upon both frameworks is presented.

According to the study by Moe and Pathranarakul (2006), disaster management includes five generic phases:

(1) Prediction
(2) Warning
(3) Emergency relief
(4) Rehabilitation
(5) Reconstruction.

The prediction phase includes mitigation and preparedness activities in which structural measures are undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards, and non-structural measures are taken in advance to ensure effective response to the impact of hazards by establishing timely and effective early warnings and the temporary evacuation of people and property from threatened locations (Moe et al. 2007).

TABLE 4 Stages in Community Response to Disaster (adapted from Faulkner 2001:139).

Stages in a community's response to a disaster

Composite stages	Fink's (1986) stages	Robert's (1994) stages
1. Pre-event		Pre-event: where action can be taken to prevent disasters (e.g. growth management planning or plans aimed at mitigating the effects of potential disasters)
2. Prodromal	Prodromal stage: when it becomes apparent that the crisis is inevitable	
3. Emergency	Acute stage: the point of no return when the crisis has hit and damage limitation is the main objective	Emergency phase: when the effects of the disaster has been felt and action has to be taken to rescue people and property
4. Intermediate		Intermediate phase: when the short-term needs of the people affected must be dealt with — - restoring utilities and essential services. The objective at this point being to restore the community to normality as quickly as possible
5. Long term (recovery)	Chronic stage: clean-up, post-mortem, self-analysis and healing	Long-term phase: continuation of the previous phase, but items that could not be addressed quickly are attended to at this point (repair of damaged infrastructure, correcting environmental problems, counselling victims, reinvestment strategies, debriefings to provide input to revisions of disaster strategies)
6. Resolution	Resolution: routine restored or new improved state	

The warning phase refers to the provision of timely and effective information, through identified institutions, that allows individuals exposed to a hazard to take action to avoid or reduce their risk and prepare an effective response.

The emergency relief phase includes the provision of assistance or intervention during or immediately after a disaster to meet the life preservation and basic subsistence needs of people affected. It can be of immediate, short-term, or protracted duration.

Rehabilitation consists of decisions and actions taken after a disaster with a view to restoring or improving the pre-disaster living conditions of the stricken community, while encouraging and facilitating necessary adjustments to reduce disaster risk. Reconstruction refers to the rebuilding of damaged living conditions of the stricken community with the aim of long-term sustainability (Moe et al. 2007: 789).

In a natural disaster management life cycle, four essential activities are conducted:

- Mitigation
- Preparedness
- Response
- Recovery.

Mitigation activities include structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards.

Preparedness deals with the activities and measures taken in advance to ensure effective response to the impact of hazards, including the issuance of timely and effective early warnings and the temporary evacuation of people and property from threatened locations.

Preparedness refers to actions taken before a disaster event to reduce the expected ramifications. The literature suggests that socially vulnerable or disadvantaged households have lower levels of disaster preparedness. For example, Turner, Nigg and Heller-Paz (1986), Edwards (1993), Russell, Goltz and Bourque (1995), and Mileti and Darlington (1997) all find that earthquake preparedness (i.e. possession of first-aid kits, emergency food supplies, evacuation plans, and fire extinguishers) is less common in low-income and minority populations. Peacock (2003) found that both low-income and Black households are less likely to have adequate shuttering to protect homes from hurricane damage.

Similarly, Norris, Smith and Kaniasty (1999) note that Black households have constrained access to hurricane preparedness supplies. Scholars have also observed that minority and lower income homeowners are less likely to hold earthquake (Blanchard-Boehm 1998) and flood insurance instruments (Fothergill 2004). A few studies contradict the observed relationship between disaster preparedness and social vulnerability (see Ives & Furuseth 1983; Gladwin & Peacock 1997; Lindell & Perry 2000).

Response refers to the provision of assistance or intervention during or immediately after a disaster to meet the life preservation and basic subsistence needs of those people affected. Such provision can be of an immediate, short-

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term, or protracted duration.

Studies of disaster communication and response suggest that minority and low-income households are less likely to receive and believe official disaster warnings (Perry & Mushkatel 1986; Perry & Lindell 1991; Fothergill & Peek 2004). To the extent that timely receipt and acceptance of a disaster warning limits the odds of human death and injury, socially vulnerable populations face higher risk (Perry et al. 1982; Perry & Mushkatel 1986; Perry & Lindell 1991; Perry & Nelson 1991; Phillips & Ephraim 1992; Morrow 1997). Research also shows that low-income and minority groups are less likely to act on evacuation orders, particularly with regard to flood events (Perry et al. 1981). Lindell and Perry (2004: 90) maintain that persons of low human capital (i.e. income and education) are less likely to obey evacuation orders, '*due to restricted material resources, knowledge, and skill*'. Gladwin and Peacock (1997), in a large multivariate analysis of households in hurricane evacuation zones, found that low-income and Black households are less likely to act on evacuation calls. They speculate that resource constraints, particularly the lack of privately owned vehicles, ineffective public transportation options, and few refuge alternatives outside the evacuation zones explain the failure of low-income and Black households to leave their homes.

Recovery involves decisions and actions taken after a disaster with a view to restoring or improving the pre-disaster living conditions of the stricken community, while encouraging and facilitating necessary adjustments to reduce disaster risk (Moe et al. 2007: 789).

Source: Moe and Pathranarakul (2006)

FIGURE 3   Phases of Disaster Management (adapted from Moe et al. 2007: 789).

Concluding remarks

This part has shown a selection of models and approaches to better management practices. In various ways they address the various stages of disaster management and the actors involved. Figure 3, for example, represents a synthesis of the lessons learnt about disaster management. The various phases and disaster management approaches are highlighted and show its linkages with planning phases. Elsewhere in this section we have addressed the various actors and stakeholder, who will be involved in such disaster management practices. In our view, models such as these are relevant to understand with respect to crisis communication too. The following section will, from a communication (non-expert) perspective, explore communication in the general literature on crisis and risk with the aim of setting the scene and providing a common framework for the goals of the CrisComScore project.

9 CRISIS AND RISK COMMUNICATION

Crisis communication has a short history as a research field in Europe, while in the USA organisational crisis communication has been a core interest in public relations research and practice for a long period (Falkheimer and Heide 2006: 180). According to Nohrstedt and Admassu (1993), the communicative aspects of crises were neglected for many years and crisis communication did not establish itself as an independent research area until after the Chernobyl disaster in 1986, while in the humanitarian field progress has been made in providing timely, relevant and reliable information for effective humanitarian coordination and response (OCHA 2007), especially through use of the new technologies in sharing, managing and communicating information as a community.

Crisis communication should be distinguished in significance from risk communication. The two have separate origins, a separate history and separate aims. This division has the simple purpose of identifying two phenomena that can, nonetheless, both be considered in crisis management processes.

Risk communication

Risk communication is closely associated with threat, both in the sensing of it and its assessment. Traditionally, as underlined in previous sections, a crisis is seen as a very unusual situation that may threaten an organisation's business, reputation, image, and relations, or in some way harm its clients. In most cases, threats are regarded as external threats from the market or the surrounding environment.

Risk communication is commonly referred to as a process during which people, usually experts and non-experts, exchange information about risks. These exchanges typically involve the transfer of information about risks – termed risk messages – from experts to non-experts. The content of these risk messages generally takes the form of one or more of the following (National Research Council 1989):

- Facts or hypotheses about the level of risk that exists within a system
- The significance or meaning of the risk relative to other issues of concern
- Decisions, actions or policies that may be undertaken to manage or control the risk.

In this stream of thought risk communication has been also analysed as a particular field in multi-cultural communication (Falkheimer & Heide 2006) and media relations (McQuail 2005). According to Arvai (2007), much of what is written about risk communication has focused on managing this process across two dimensions: process and content.

The communication process
From a process perspective, many have discussed, in great detail, the theoretical foundations of risk communication (Slovic 1987). As the field has progressed, much of this information has been condensed into several useful and detailed treatises presented in the form of risk communication 'handbooks' (e.g. Covello 1992;).

Also from this perspective, others have developed methods by which critical evaluations of specific risk communication programmes can be carried out (Arvai 2007).

Crisis communication

Crisis communication is more associated with harm and is in fact a process designed to reduce and contain harm; it seeks to explain the specific event, to identify likely consequences and outcomes and, as a consequence, to provide specific harm-reducing information to affected communities (Reynolds & Seeger 2005).

Often crisis communication situations are handled in a reactive way, hopefully on the basis of well-planned strategies. From a more modern view, a crisis is regarded as a natural stage in an ongoing evolution (Sellnow 1993; Weick 2001; Kersten 2005) and an important part of an organisation's ongoing learning processes (Stern 1997). From this point of view, a crisis is not an anomalous situation but a certain stage in the never-ending development of an organisation.

Several phases of a crisis can be identified, but they are often delimited to three: a pre-crisis or an incubation phase, an acute or crisis phase which follows a dramatic event, and a post-crisis stage when questions on cause, responsibility, and preparation for a new crisis are addressed. This apprehension gives a more holistic view of crisis, and calls attention to the fact that both crisis and '*business-as-usual*' are normal parts of an organisation's life cycle (Falkheimer & Heide 2006: 182).

A weakness in the bulk of the research on crisis communication is the exclusive focus on post crisis. Consequently, crisis communication has mainly focused on production of information – designing material in preparation for crisis, to cope with an existing crisis, and to restore order after a crisis has subsided (Kersten 2005).

Crisis and risk communication: differences and similarities

Both crisis and risks communication produce public messages created to stimulate specific reactions in the public, but the content and sometimes the means are different (Reynolds & Seeger 2005). Crisis communication has its origins in *public relations* and is grounded in strategies to manage and frame public perceptions of an event, in order to reduce the harm to the organisation and the

stakeholders, whereas risk communication is linked to public health systems to identify and correct the public through persuasion, in order to make them adopt healthier attitudes.

Recent trends (Reynolds & Seeger 2005; Seeger 2006) suggest merging the two processes and facing emergencies with a comprehensive approach incorporating both risk and crisis communication. Thus, Reynolds and Seeger suggest a synoptic table that makes explicit the distinguishing features of risk and crisis communication, as shown in Table 5.

TABLE 5   Distinguishing Features of Risk and Crisis Communication (adapted from Reynolds & Seeger 2005).

Risk communication	Crisis communication
Messages regarding known probabilities of negative consequences and how they may be reduced; addressing technical understandings (hazards) and cultural beliefs (outrage)	Messages regarding current state or conditions regarding a specific event; magnitude, immediacy, duration and control/remediation; cause, blame, consequences
Principally persuasive, i.e. advertising and public education campaigns	Principally informative, i.e. news disseminated through media or broadcast through warning system
Frequent/routine	Infrequent/non-routine
Sender/message-centred	Receiver/situation-centred
Based on what is currently known, i.e. scientific projections	Based on what is known and what is not known
Long-term (pre-crisis) message preparation, i.e. campaign	Short-term (crisis), less preparation, i.e. responsive
Technical expert, scientist	Authority figures = emergency manager, technical experts
Personal scope	Personal, community, or regional scope
Mediated commercials, advertisements, brochures, pamphlets	Mediated press conferences, press releases, speeches, websites
Controlled and structured	Spontaneous and reactive

Of particular interest in this regard is the CERC (*Crisis and Emergency Risk Communication)* model proposed by Reynolds (2002), which was developed within the *Centres for Disease Control and Prevention* as an adaptation of the health communication to be implemented after bioterrorism.

The model proposes a crisis as a single process that begins with the prevention stages of risk and risk development (*pre-crisis*), passes through the triggering event (*during crisis*), and ends with a post-mortem and/or clean-up phase (*post-crisis*) (Reynolds 2002).

Each phase in the model requires different messages, different information, different time of information and perception, and different requests. At the same time, a single phase can require more than a single method of communication, as can happen when the audience is variously and differently affected by the crisis in question (i.e. specific and immediate: injured people; general and distant: informed by the media; local but less immediate: people affected but not seriously injured). The table presented in Table 6 shows the details of Reynolds' model.

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TABLE 6   CERC Model (adapted from Reynolds & Seeger 2005).

I	**Pre-crisis (Risk Messages; Warnings; Preparations)** Communication and education campaigns targeted at both the public and the response community, to facilitate: • Monitoring and recognition of emerging risks • General public understanding of risk. Public preparation for the possibility of an adverse event • Changes in behaviour to reduce the likelihood of harm (self-efficacy) • Specific warning messages regarding an eminent threat Alliances and cooperation with agencies, organisations and groups Development of consensual recommendations by experts and first responders Message development and testing for subsequent stages
II	**Initial Event (Uncertainty Reduction; Self-efficacy; Reassurance)** Rapid communication to the general public and to affected groups, seeking to establish: • Empathy, reassurance, and reduction in emotional turmoil. Designated crisis/agency spokespersons and formal channels and methods of communication • General and broad-based understanding of the crisis circumstances, consequences, and anticipated outcomes based on available information • Reduction in crisis-related uncertainty Specific understanding of emergency management and medical community responses Understanding of self-efficacy and personal response activities (how and where to obtain more information)
III	**Maintenance (Ongoing Uncertainty Reduction; Self-efficacy; Reassurance)** Communication to the general public and to affected groups, seeking to facilitate: • More accurate public understanding of ongoing risks • Understanding of background factors and issues • Broad-based support and cooperation with response and recovery efforts Feedback from affected members of public and correction of any misunderstandings/rumours Ongoing explanation and reiteration of self-efficacy and personal response activities (how and where to obtain more information) Informed decision-making by the public based on understanding of risks = benefits
IV	**Resolution (Updates Regarding Resolution; Discussions about Cause and New Risks/New Understandings of Risk)** Public communication and campaigns directed toward the general public and affected groups, seeking to: • Inform and persuade about ongoing clean-up, remediation, recovery, and rebuilding efforts • Facilitate broad-based, honest, and open discussion and resolution of issues regarding cause, blame, responsibility, and adequacy of response • Improve/create public understanding of new risks and new understandings of risk as well as new risk-avoidance behaviour and response procedures • Promote the activities and capabilities of agencies and organisations to reinforce positive corporate identity and image
V	**Evaluation (Discussions of Adequacy of Response; Consensus About Lessons and New Understandings of Risks)** Communication directed toward agencies and the response community, to: • Evaluate and assess responses, including communication effectiveness • Document, formalize, and communicate lessons learned • Determine specific actions to improve crisis communication and crisis response capability • Create linkages to pre-crisis activities (Stage I)

The valuable point of this method is that it connects risk or warning messages and crisis communication into a more encompassing form. In doing so, it is asserted that communication must begin long before an event erupts, and continue after the immediate threat has subsided.

Assuming that crises develop in largely predictable and systematic ways, risk, eruption, clean-up, and recovery help in the management of crises because they reduce uncertainty. However, at the same time they represent a limitation. Some crises may not follow the sequence proposed, and more importantly, all crises can be expected to have unforeseen and equivocal situations. That is why it is so important to define the complexity of the subject in order to perform better crises management and to build more effective communication tools.

Complexities in crisis and risk communication: multicultural perspectives
The complexity of crisis communication should be seen both in the intrinsic nature of crisis and disaster themselves, as previously underlined, as well as in the analysis process of specific cases for their management.

Intrinsically modern society is a various and complex one where multiculturalism and environmental complexity are consistent phenomena; hence it is fundamental that crisis communication considers the differing factors.

In the social constructionist perspective (Giddens 1990; Beck 1992; Murphy 1996; Lerbringer 1997), according to which humans and organisations experience a higher degree of uncertainty, a multicultural context is considered part of the crisis communication strategy. In fact, crisis often results from poor communication between organisations and the public, and it is clear that communication problems tend to be intensified in a multicultural context, even though multicultural issues are neglected (Falkheimer & Heide 2006).

According to Falkheimer and Heide (2006), multiculturalism encounters three different communication problems. First, there is a different meaning system (i.e. language) and a different '*context*'. Context is a fundamental factor in creating cultural diversity because intrinsically it brings with it the notion of cultural variability. The individualism/collectivism of societies does not imply 'in group' thinking but a hierarchy of messages and communication.

Individualistic cultures have many '*in group*' (family friends, professional associations, etc.) situations in which a group has little influence on its members; however, clarity is fundamental in communication and a request is often the most effective strategy to achieve something.

On the other hand, a collectivist culture has very few 'in groups', which of course has a great influence on the individuals in that culture and promotes a less conversational language in which a request is the least effective strategy to achieve something.

With regard to communication, this explains why in individualistic societies the message accounts for the larger part of the communication content, while in collectivistic groups the larger part of the information lies in the physical context or is internalized in the person (Falkheimer & Heide 2006).

Some studies have attempted to categorize the dimensions that differentiate cultures at the national level (Hofstede 1980), including:

- Power distance
- Individualism/pluralism
- Masculinity/femininity
- Uncertainty avoidance
- Long-term orientation.

Ethnicity is another important factor in multiculturalism that helps in understanding cultural group identity. According to the social-constructionist perspective, this is defined as a dynamic factor depending on societal factors that involve everyone. As a consequence, it is radical social change that in the long run produces social spontaneous identification.

In this perspective communication is not merely an information tool, but rather an expression of self-concept and the affirmation of cultural identity: '*People always create meanings in different situations, and their interpretation will inevitably be dissimilar to the sender's original meaning*' (Falkheimer & Heide 2006).

Accordingly, Falkheimer and Heide (2006) suggest a third and last aspect of multiculturalism as an inhomogeneous distribution of educational and financial issues, which involves mainly the relation the audience has with the media in terms of access. The audience is therefore fragmented and has.a differential access to media resources (Internet, newspapers, interest in local news).

Thus, based on a social constructionist epistemology, Falkheimer and Heide (2006: 187) have four proposals for future research and practice in multicultural crisis communication:

- a public perspective – audience orientation
- a proactive and interactive approach – focusing on dialogue
- a community-focused approach – focusing on a long-range pre-crisis perspective
- an ethnicity - approach towards intercultural communication issues.

Following this perspective, risk communication can be seen as a strategy to adapt a hostile environment for the benefit of the organisation. In fact, subsequent to a major accident, even a positive environment can become hostile and distrustful, and this happens because the organisation responsible for the major accident loses legitimacy. Risk communication is the only means to regain a loss of legitimacy. This cycle is therefore not stable. Hence, there is a mutual casualty: the actions of an organisation can both be influenced by societal outlooks and influence the legitimacy constructed by society.

The temporal complexity of crisis communication
Disasters and crisis complexity do not simply characterize the actors involved in a risk communication process or their environment; they have a temporal complexity dimension too. In fact, the evolution of risk communication is not a linear or a predictable process (Chess 2001) although there has always been reference to phases and sequences. The following linear steps to achieve the

intended target in a crisis communication process are unavoidable, considering the extremely complex structure of organisations: there are so many specialized sectors that everyone, according to their sensibility and advantages, can choose different communication strategies, so that the organisation itself evinces different positions at the same time.

Best practices and cases-based research

Empirical case studies dominate the field of risk and crisis communication (Falkheimer & Heide 2006). Basing a study on guidelines often gathered from the experience of practitioners leads to a focus on post-crises, and this has been a weakness in the discipline: crisis communication has mainly focused on the production of information, designing material in preparation for (a) crisis, to cope with an existing crisis, and to restore order after a crisis has subsidised (Kersten 2005).

Best practices have to be intended as a general set of standards, guidelines, norms, reference points, or benchmarks that inform practice and are designed to improve performance (Seeger: 2006).

The best practice approach comprehends both benchmarking (or a process of identifying standards), and a larger process of improvement initiatives and programmes of strategic organisational change (which imply a systematic overview, analysis and assessment of the organisational process in order to improve quality and efficiency).

Seeger (2006: 288) proposes a list of ten best practices in crisis communication focusing mainly on widespread, broad-based crisis management by public agencies. He based his work on the research conducted at the Center for Disease Control, the National Center for Food Protection and Defense, and the North Dakota State University Risk and Crisis Communication Project. The following is a brief summary of the critical issues which emerged in his research:

- *Process approaches and policy development:* Crisis communication is more effective when it is part of the decision process, because the concerns and the needs of the audience are taken into account in the decision-making process. Crisis communication is more comprehensive and systematic in addressing the planned strategies in all the phases: from pre- to post-event.
- *Pre-event planning:* Pre-event planning allows identification of risk areas and the corresponding risk with the benefit of reducing of the risk itself, pre-sets crisis responses to make decision-making during crises more efficient, and identifies necessary response resources. This perspective proposes planning as an in '*progress*' process rather than a single, tangible effect. Moreover, on this view, it is fundamental both to involve a large set of stakeholders (including community) and to include the planning of structures for regular updating and revisions.
- *Partnership with the public:* This means accepting the public as an equal partner who does not simply have the right to know, but also the right to

be concerned. Public concerns have to be accepted as legitimate. Panic is hence a false myth and the public can be a true resource in managing crises.

- *Listen to the public's concern and understand the audience:* Taking concerns into account also means responding according to them. However, as already specified above, this understanding has to be established before the crisis event as the basis for a positive relationship (which also means credibility and trust). In this respect, it is very important to understand that the public's perception, even if not accurate, is its reality and the motivation for autonomic choices. Consequently, it is important to monitor public opinion, because such information will be the basis for modelling the message on the public's evolving needs and for answering public concerns.

- *Honesty, Candour and Openness:* These three issues in the long run promote credibility with both the media and public: more specifically, *Honesty* – to built credibility and trust both before and during the event, *Candour* – in the sense of communicating the entire truth even if it may reflect negatively on the agency, and *Openness* – to promote an environment of mutual responsibilities in managing the risk. The problem with this approach is the fact that risks are uncertain and a characterized by an intrinsic lack of information; however, it is necessary not to leave the public without information, otherwise they will seek the information they need (whether correct or incorrect) from other sources. This results not only in a loss of credibility, but also in the spread of incorrect information, which in turn creates obstacles for good management.

- *Collaborate and coordinate with credible sources:* This too refers to a pre-crisis situation. In fact, an existing strategic partnership, or more precisely the establishment of a pre-crisis network, helps in coordinating messages and activities and offers reliable partners to put trust in. It is very important to maintain the network efficiently and to make for consistency in the message. The network's aim is to maintain an effective crisis response.

- *Meet the needs of the media and remain accessible:* The media do not have to be a burden in a crisis situation, and successful management will see them as useful partners. There must be effective communication with the media. The message that passes through the media must be a sincere message not an overly reassuring one, remembering that uncertainty is the defining factor of a crisis.

- *Communicate with compassion, concern and empathy:* It is necessary to design a spokesperson who will be trained in his or her duty to speak with the appropriate level of compassion, concern and empathy, as these factors, when sincerely felt and expressed, help in creating confidence between managers and public (both before and after the crisis).

- *Accept uncertainty and ambiguity:* Crises involve uncertainty and ambiguity, so it is normal and necessary to issue warnings and recalls. Those who are too firm on uncertain information will certainly be recognized later, compromising both the legitimacy of the spokesperson and the

agency. Sentences such as '*the situation is fluid*' or '*we do not yet have all the facts*' are preferable because they allow for future adjustment.

- *Messages of self-efficacy:* A parallel action is one which provides specific information advising people how to reduce the harm created by the risk factor or helping them to restore some sense of control. These messages must be constructed carefully so that the reason for the action is clear and the action is meaningful. Misunderstanding has to be avoided.

The best practices identified through a review of the literature are characterized by a high degree of consensus and some important differences?. Many of the differences are largely a matter of focus. For example, two of the four independent assessments included planning as a method of risk reduction and crisis avoidance. Almost all the crisis communication literature would advise that planning is a critical, best practices approach. Similarly, coordination with community partners and first responders is universally recommended. Again, almost all crisis communication experts would emphasize coordination as a best practice. In addition, some of the best practices are offered as generalized standards or values to which crisis communicators should adhere. Others have described specific processes of crisis communication that would enhance effectiveness (Seeger, 2006: 286)

What seems important in general is not to accept the leading discipline as a rigid one; rather, managing risk communication is a multiple-way dialogue: the people involved in the crisis must be relevant and have an active role in de-cision-making. This will make the response given by managers richer and most effective (Sandman 2006).

Humanitarian scenario on information and communications

On the ever-changing humanitarian landscape, challenges and opportunities continue to characterize the humanitarian community's ability to share, manage and exchange information. While timely, relevant and reliable information remains central to effective humanitarian coordination and response, users increasingly expect information to support evidence-based advocacy, decision-making and resource allocation. Given these expectations, information professionals recognize they must work together to produce information tailored to serve a range of different needs in affected countries, based on common standards and sound analytical methods (OCHA 2007). Today's technology offers many solutions but real progress is (still) (nevertheless) only possible through the willingness of people and their organisations to collaborate in sharing, managing and communicating information as a community.

The statement of the recent Global Symposium on Humanitarian Information (OCHA 2007) recognized information management as a *horizontal function* to be mainstreamed into cluster work plans as part of the Humanitarian Reform (IASC 2006) process and proposed that this be conducted through an inter-agency mechanism.

Of the 30 recommendations put forward by the Symposium, the need for improved methods for assessments and humanitarian classification was seen as a priority. Information management should be driven by the analysis required for decision-making and the operational needs of the decision makers. The development of improved assessment methods to support global, regional, national, and local decision-making along with developing the concept of a common humanitarian classification system were two of the recommended initiatives. Other key recommendations were to establish a community-wide knowledge base and to strengthen humanitarian information management by creating a professional category supported by an association and curricula developed within academic settings (OCHA 2007).

Concluding remarks

The final part of this section is an attempt to elaborate on various approaches to study communication with respect to disasters and risk and how they are intertwined. It has also accounted for challenges in future research and practices in multicultural crisis communication. It is argued that crisis communication has been dominated by case-study approaches to cope with existing crises, not on early warning, on informing institutional practices, standards and guidelines to generate more effective and efficient crisis communication.

Furthermore, communication with affected communities remains a critically neglected area of humanitarian response. It was first highlighted a few years ago and yet there has been little improvement in how the humanitarian community provides information during a disaster. The power of dialogue between humanitarian actors and affected communities to support, enhance and make more effective and accountable all aspects of risk reduction, humanitarian preparedness, response, and recovery is poorly understood by the humanitarian community. Integrating two-way communications with affected communities into standard operating procedures for emergency preparedness and response will be a first step in addressing this issue.

References

Adam, B., van Loon, J. (2000), Repositioning risk: The challenge for social theory. In: Adam, B., Beck, U., van Loon, J. (eds.), *The Risk Society and Beyond: Critical Issues for Social Theory*, pp. 1–33. Sage, London.

Adger, W.N. (2000a), Social and ecological resilience: Are they related? *Progress in Human Geography* 24(3), pp. 347–364.

Adger, W.N. (2000b), Institutional adaptation to environmental risk under the transition in Vietnam. A*nnals of the Association of American Geographer* 90(4), pp. 738–758.

Adger, W.N. (2006), Vulnerability. *Global Environmental Change* 16(3), 268–281.

Adger, W.N., Winkels, A. (2006), Vulnerability, poverty, and sustaining well-being. In: Atkinson, G., Dietz, S., Neumayer, E. (Eds.), *Handbook of Sustainable Development.* Elgar, Cheltenham.

Adger, W.N., Brooks, N., Bentham, G., Agnew, M., Eriksen, S. (2004), New Indicators of Vulnerability and Adaptive Capacity. Technical Report 7, Tyndall Centre for Climate Change Research, University of East Anglia, Norwich.

Alexander, D.E. (1991a), Natural disasters: A framework for research and teaching. *Disasters* 15(3), pp. 209–226.

Alexander, D.E. (1991b), Applied geomorphology and the impact of natural hazards on the built environment. *Natural Hazards* 4(1), pp: 57–80.

Alexander, D.E. (1993), *Natural Disasters*. UCL Press, London, Kluwer, Boston. 632 pp.

Alexander, D.E. (2000), *Confronting Catastrophe: New Perspectives on Natural Disasters*. Terra Publishing, Harpenden; Oxford University Press, New York.

Alexander, D. (2006), *Symbolic and Practical Interpretations of the Hurricane Katrina Disaster in New Orleans*. Available at: http://understandingkatrina.ssrc.org/Alexander/

Alexander, D.E. (2008), *Managing Hazards and Disasters: New Theories, New Imperatives*. Available at: http://emergency-planning.blogspot.com/2008_02_01_archive.html (accessed July 2008).

Allison, E.H., Ellis, F. (2001), The livelihoods approach and management of small-scale fisheries. *Marine Policy* Vol. 25(5), pp: 377–388.

ALNAP (2003), *Annual Review 2003. Improving Monitoring to Enhance Accountability and Leaning*. ODI, London. Available at: http://www.alnap.org/alnapbooks.html#aar2003 (August 2008).

Alwang, J., Siegel, P.B., Jorgensen, S.L. (2001), *Vulnerability: A View from Different Disciplines.* Discussion Paper Series No. 0115. Social Protection Unit, World Bank, Washington DC.

Anderies, J.M., Janssen, M.A., Ostrom, E. (2004), A framework to analyze the robustness of social-ecological systems from an institutional perspective. *Ecology and Society* 9(1), Available at: http://www.ecologyandsociety.org/vol9/iss1/art18/ (August 2008).

Anderson, M.B. (1999,) *Do No Harm: How Aid Can Support Peace– or War*. Lynne Rienner, Boulder, CO.

Anderson, M., Woodrow, P. (1989), *Rising from the Ashes: Developing Strategies in Times of Disaster*. Westview Press, Boulder, CO.

Arvai, J.L. (2007), Rethinking of risk communication: Lessons from the decision sciences. *Genetics and Genomes* 3, pp. 173–185.

Baer, M., Heron, K., Morton, O., Ratliff, E. (2005), *Safe: The Race to Protect Ourselves in a Newly Dangerous World*. HarperCollins, New York.

Blanchard-Boehm, R.D. (1998), Understanding Public Response to Increased Risk from Natural Hazards. *International Journals of Mass Emergencies and Disasters Vol.* 16(3), pp: 247–278

Barakat, S. (ed.) (2005,) *After the Conflict. Reconstruction and Development in the Aftermath of War.* I.B. Thaurus, London.

Barkun, M. (1977), Disaster in History. *Journal of Mass Emergencies Vol.* 2, pp:219-231

Barnett, M. (2005), Humanitarianism transformed. *Perspectives on Politics* 3, pp. 723–740.

Barrows, H.H. (1923), Geography as human ecology. *Annals of the Association of American Geographers* 13: pp. 1–14.

Barton, A.H. (1962), The emergency social system. In: Baker, G.W., Chapman, D.W. (eds.), *Man and Society in Disaster*, pp. 222–267. Basic Books.

Barton, A.M. (1970), *Communities in Disaster: A Sociological Analysis of Collective Stress Situations*. Anchor Books, Garden City, New York.

Bates, F.L., Fogleman,C.W., Parenton, C.J., R.H. Pittman G.S. Tracy (1962), The Social and Psychological Consequences of a Natural Disaster: A Longitudinal Study of Hurricane Audrey. Publication 1081. National Academy of Sciences/National Research Council, Washington , DC .

Bates, F.L. W.G. Peacock (1987), 'Disasters and Social Change', in R.R. Dynes, B. Demarchi C. Pelanda, The Sociology of Disasters. Franco Angeli Press, Milan pp. 291–330.

Beamish, T.D. (2002), Waiting for crisis: Regulatory inaction and ineptitude and the Guadalupe Dunes oil spill. *Societal Problems* 49, pp. 150–177.

Beck, U. (1992), *Risk Society: Towards a New Modernity.* Sage, London.

Beck, U. (1995), *Ecological Enlightenment: Essays on the Politics of the Risk Society.* Humanities Press, Atlantic Highlands, NJ.

Beck, U. (1999), *World Risk Society*. Blackwell, Oxford.

Beinin, L. (1985), *Medical consequences of natural disasters*. New York: Springer. Books.

Bennet, J. (1995), *Meeting Needs: NGO Co-ordination in Practice*. Earthscan, London.

Benoit, W.L. (1995), *Accounts, Excuses and Apologies: A Theory of Image Restoration*. State University of New York Press, Albany, NY.

Berke, P.R. (1998), Reducing natural hazard risks through state growth management. *Journal of the American Planning Association* 64(1), pp. 76–87.

Berkes, F., Jolly, D. (2001), Adapting to climate change: Social-ecological resilience in a Canadian Western Arctic community. *Conservation Ecology* 5(2), p. 18. Available at: http://www.ecologyandsociety.org/vol5/iss2/art18/print.pdf (August 2008).

Berkes, F., Colding, J., Folke, C. (eds.) (2002), *Navigating Social-ecological Systems: Building Resilience for Complexity and Change.* Cambridge University Press, Cambridge.

Binder, A., Witte, J.M. (2007), *Business Engagement in Humanitarian Relief: Key Trends and Policy Implications.* HPG Backround Paper. London, ODI.

Birkland, T. (1997), *After Disaster: Agenda Setting, Public Policy and Focusing Events.* Georgetown University Press, Washington DC.

Birkland, T., (2007), *Lessons of Disaster. Policy Change after Catastrophic Events.* Georgetown University Press, Washington DC.

Birkmann, J. (ed.) (2006), *Measuring Vulnerability to Natural Hazards. Towards a Disaster Resilient Society.* UNU-EHS, Berlin. Tokyo, NY, Paris.

Bisignano, J.R., Hunter, W.C., Kaufman, G.C., (eds.) (2000), Global Financial Crises: Lessons from Recent Events. Kluwer Academic.

Blaikie, P., Cannon, T., Davis, I., Wisner, B. (1994), *At Risk: Natural Hazards, People's Vulnerability and Disasters.* London, Routledge. 320 pp.

Boano, C. (2007), *Dynamics of Linking Reconstruction and Development in Housing and Settlements for Forced Migrants in Post Disaster Situations.* PhD Dissertation. Oxford Brookes University, Oxford. Unpublished Document.

Bohle, H.G., Downing, T.E., Watts, M.J. (1994), Climate change and social vulnerability: Toward a sociology and geography of food insecurity. *Global Environmental Change* 4(1), pp. 37–48.

Boin, A., Lagadec, P. (2000), Preparing for the future: Critical challenges in crisis management. *Journal of Contingencies and Crisis Management* 8(4), pp. 185–191.

Boin, A., 't Hart, P., Stern, E., Sundelius, B. (2005), *The Politics of Crisis Management: Public Leadership Under Pressure.* Cambridge University Press, Cambridge.

Boin, A., Rhinard, M. (2008), Managing transboundary crises: What role for the European Union? *International Studies Review* 10, pp. 1–26.

Boin, R.A., 't Hart, P. (2003), Public leadership in times of crisis: Mission impossible? *Public Administration Review, Vol. 63*, pp: 544-553.

Bolin, R. (1976), Family Recovery from Natural Disaster: A Preliminary Model'. *Journal of Mass Emergencies* Vol. 1(4), pp: 267–277.

Bolin, R. (1982), *Long-Term Family Recovery from Disaster.* Monograph No. 36. Program on Environment and Behavior, Institute of Behavioral Science, University of Colorado, Boulder , CO .

Bolin, R. (1985), Disasters and long-term recovery policy: a focus on housing and families. *Policy Studies Review Vol.* 4(4), pp: 709–715.

Bolin, R. (1986), Disaster Impact and Recovery: A Comparison of Black and White Victims. *International Journal of Mass Emergencies and Disasters.*Vol. 4(1), pp: 35–50.

Bolin, R., Bolton, P. (1986), *Race, Religion, and Ethnicity in Disaster Recovery.* Monograph No. 42. Program on Environment and Behavior, Institute of Behavioral Science, University of Colorado, Boulder , CO .

Bolin R., Jackson M., Crist, A. (1998), Gender inequality, vulnerability, and disaster: Issues in theory and research. In: Enarson, E., Morrow, B.H. (eds.), *The Gendered Terrain of Disaster: Through Women's Eyes*, pp. 27–44. Praeger, Westport, CT.

Bolin, R., Stanford, L. (1998), *The Northridge Earthquake: Vulnerability and Disaster*. Routledge, London and New York.

Bolt, B.A., W.L. Horn, G.A. Macdonald, R.F. Scott (1977), *Geological hazards: earthquakes, tsunamis, volcanoes,avalanches, landslides, floods*, 2nd edn. New York: Springer.

Booth, S. (1993), *Crisis management strategy: Competition and change in modern enterprises*. New York: Routledge.

Borton, J., Brusset, E., Hallam, A. (1996), *Humanitarian Aid and its Effects.* Study III: *The International Response to Conflict and Genocide: Lessons from the Rwanda Experience*. Steering Committee of the Joint Evaluation of Emergency Assistance to Rwanda, Copenhagen.

Brammer, H. (1990), Floods in Bangladesh: A geographic background to the 1987 and 1988 Foods. *Geographical Journal* 156(1), pp. 12–22.

Britton, N.R. (1986), 'Developing An Understanding of Disaster' *The Australian and New Zealand Journal of Sociology*. 22(2):255-271.

Brooks, N. (2003), *Vulnerability, Risk and Adaptation: A Conceptual Framework.* Working Paper 38, Tyndall Centre for Climate Change Research, University of East Anglia, Norwich.

Brooks, N., Adger, W.N., Kelly, P.M. (2005), The determinants of vulnerability and adaptive capacity at the national level and the implications for adaptation. *Global Environmental Change* Vol. 15, pp: 151–163.

Brown M., Goldin, A. (1973), Collective behavior: A review and reinterpretation of the literature Goodyear Pub. Co. Pacific Palisades, Calif.

Buckle, P. (2005), Mandated definitions, local knowledge and compexities. In: Perry, R.W., Quarantelli, E.L. (eds.), *What Is a Disaster: New Answers to Old Questions.* XLibris Corp., Philadelphia, PA.

Burby, R.J. (2006), Hurricane Katrina and the paradoxes of government disaster policy: bringing about wise governmental decisions for hazardous areas. *Annals of American Academic Political Sociology Science* 604, pp. 171–191.

Burnett, J.J. (1998), A strategic approach to managing crises. *Public Relations Review* 24, pp. 475–488.

Burton, I.R., Kates, R.W., White, G.F.(1968), *The Human Ecology of Extreme Geophysical Events*. Working Paper No. 1. Natural Hazards Research and Applications Information Centre, University of Colorado, Boulder, Colorado.

Burton, I., Kates, R.W., White, G.F. (1978), *The Environment as Hazard*. Oxford University Press, New York.

Burton, I.R., Kates, R.W., White, G.F. (1993), *The Environment as Hazard.* (2nd ed.) Guilford Press, New York.

Butzer, K.W. (1989), *Cultural ecology*. In: Gaile, G.L., Willmott, C.J. (Eds.), Geography in America. Merrill Publishing Co., Columbus

Calhoun, C. (2004), 'Fear, Intervention, and the Limits of Cosmopolitan Order', in *The Transformations of Humanitarian Action*.

Callamard, A. (2001), *Why Humanitarian Accountability? Contextual and Operational Factors*. HAP, Geneva. Available at: http://www.hapgeneva.org/pdf/Why hum. acc II. Revised CG – clean II.pdf (August 2008).

Calvi-Parisetti, P., Kiniger-Passigli, D. (2003), *Coordination in Crisis Response and Reconstruction*. ILO, Geneva. Available at: http://www.reliefweb.int/w/lib.nsf/LibDocsByKey/LGEL-5MT9TR/$FILE/ilo-crisis.pdf?OpenElement (August 2008).

Cannon, T. (1994), Vulnerability analysis and the explanation of 'natural' disasters. In: Varley, A. (ed.), *Disasters, Development and Environment*, 13–30. Wiley, Chichester.

Carpenter, S.R., Walker, B., Anderies, J.M., Abel, N. (2001), From metaphor to measurement: Resilience of what to what? *Ecosystems* 4(8), pp. 765–781.

Carr, L.J. (1932), Disaster and the sequence-pattern concept of social change. *The American Journal of Sociology* 38(2), pp. 207–218.

Carter, W.N. (1991), *Disaster Management: A Disaster Manager's Handbook*. Asian Development Bank, Manila.

Castaños H., Lomnitz, C. (1995), Unplanned and unforeseen effects of instabilities in the nature-society system as possible causes of earthquake disasters. *Natural Hazards* 8, pp. 45–56.

Castells, M. (1996), *The Rise of the Network Society*. Blackwell, Cambridge.

Chambers, R. (1989), Vulnerability, coping and policy. *IDS Bulletin* 20(2), pp. 1–7.

Chambers, R., Conway, G. (1992), *Sustainable rural livelihoods: practical concepts for the 21st centu*ry, IDS Discussion paper 296, Institute of Development Studies, University of Sussex, Brighton, UK.

Chan, N.W. (1995), Flood disaster management in Malaysia: An evaluation of the effectiveness of government resettlement scheme. *Disaster Prevention and Management* 4(4), 22–29.

Chess, C. (2002), Organizational Theory and the Stages of Risk Communication. Risk Analysis, Vol., 21(1), pp: 1179-188

Cisin, I.H., Clark, W.B. (1962), The methodological challenge of disaster research. In: Baker, G.W., Chapman, D.W. (eds.), *Man and Society in Disaster*, pp. 23–54. Basic Books, xxx.

Clarke, L. (1989), *Acceptable Risk? Making Decisions in a Toxic Environment*. University of California Press, Berkeley.

Clarke, L. (1999), *Mission Improbable: Using Fantasy Documents to Tame Disaster*. University of Chicago Press, Chicago.

Cochrane, H.C. (1975), Natural Hazards and Their Distributive Effects. Institute of Behavioral Sciences, University of Colorado, Boulder , CO .

Collinson, S. (ed.) (2003), *Power, Livelihoods and Conflict: Case Studies in Political Economy Analysis for Humanitarian Action*. HPG Report 13. ODI, London.

Collier, P., Hoeffler, A., (2001), On economic causes of civil war. *Oxford Economic Paper* 50(4), pp. 563–573.

Comfort, L., et al. (1999), Reframing Disaster Policy: the Global Evolution of Vulnerable Communities, *Environmental Hazards,* Vol. 1, pp: 39-44

Common, M., Perrings, C. (1992), Towards and ecological economics of sustainability. *Ecological Economics* Vol. 6, pp: 7–34.

Coombs, W.T. (1999), *Ongoing Crisis Communication*. Sage, Thousand Oaks, CA.

Coombs, W.T., Holladay, S.J. (1995), Communication and attribution in a crisis: An experimental study in crisis communication. *Journal of Public Relations Research* 8, pp. 279–295.

Corbett, J. (1988), Famine and household coping strategies. *World Development* 16(9), pp. 109–112.

Cosgrave, J. (2004), *The Impact of the War on Terror on Aid Flows.* ActionAid, London.

Costanza, R., Waigner, L., Folke, C., Maller, K.G., (1993) Modeling complex ecological economic systems: towards an evolutionary dynamic understanding of people and nature. *BioScience* Vol. 43, pp: 545–555.

Covello, V.T. (1992), Risk communication: An emerging area of health communication

research. In S. A. Deetz (Ed.), Communication yearbook 15 (pp. 359–373). Newbury Park, CA: Sage.

CRED (2001), *Center for Research on the Epidemiology of Disasters.* Available at: http://www.cred.org (August 2008).

Cutter, S.L. (ed.) (1994), *Environmental Risk and Hazards.* Prentice-Hall, Englewood Cliff: NJ.

Cutter, S.L. (1996), Vulnerability to environmental hazards. *Progress in Human Geography* 20(4), pp. 529–539.

Cutter, S.L., Boruff, B.J., Shirley, W.L. (2003), Social vulnerability to environmental hazards. S*ocial Science Quarterly* 84(2), pp. 242–261.

Cutter, S.L. (2005), The geography of social vulnerability: Race, class, and catastrophe. *Understanding Katrina: Perspectives from the Social Sciences..* Available at: http://understandingkatrina.ssrc.org/Cutter/ (February 2008).

DANIDA (1999), Coordination of Humanitarian Assistance. Evaluation of Danish Humanitarian Assistance through the UN and International Organisations 1992–98.DANIDA. Available at: http://www.um.dk/Publikationer/Danida/English/Evaluations/DanishHumanitarianAssistanceVolume8/index.asp (accessed December 2003).

Dash, N., Peacock, W.G.,.Morrow, B. (1997), And the Poor Get Poorer: A Neglected Black Community. In W.G. Peacock, B.H. Morrow H. Gladwin, (*Hurricane Andrew: Ethnicity, Gender and the Sociology of Disaster.* Routledge, London pp. 206–225.

Davis, I. (1978), *Shelter After Disaster.* Headington, Oxford: Oxford Polytechnic Press.

Davis, I. (2003), *The Effectiveness of Current Tools for the Identification and Synthesis of Vulnerability and Disaster Risk.* Inter-Americal Development Bank and Universidad Nacional de Colombia. Sede Manizales Instituto de Estudio Ambientales. Available at: http://www.idea.unalmzl.edu.co (April 2008).

Davis, I., Izadkhah, Y.O. (2006), Building resilient urban communities. *Open House International* 31(1), pp. 11–21.

Davidson-Hunt, I.J., Berkes, F. (2003), Nature and society through the lens of resilience: toward a human-in-ecosystem perspective. In: Berkes, F., Colding, J., Folke, C. (eds.), Navigating Social–Ecological Systems: Building Resilience for Complexity and Change. Cambridge University Press, Cambridge, UK.

Dean, M. (1999), *Governmentality: Power and Rule in Modern Society.* Sage, London.

DEC (Disasters Emergency Committee) (2001), *Independent Evaluation of the Response to the Gujarat Earthquake.* Disasters Emergency Committee, London.

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de Loe, R.C., Kreutzwiser, R. (2000), Climate variability, climate change and water resource management in the Great Lakes. *Climatic Change* 45(1), pp. 163–179.

Deyle, R., French, S., Olshansky, R., Paterson, R. (1998), Hazard assessment: The factual basis for planning and mitigation, In: R. Burby (ed.), *Cooperating with Nature: Confronting Natural Hazards with Land-Use Planning for Sustainable Communities*, John Henry Press, Washington, pp. 119–166.

Denis, H. (1993), Technology, structure and culture in disaster management: Coping with uncertainty. *International Journal of Mass Emergencies and Disasters* 15(2), pp. 293–308.

De Torrente, N. (2005) ,*The Professionalization and Bureaucratisation of Humanitarian Action: Some Reflections from MSF's Experience*. SSPC Initiative Report

Denevan, W.M., (1983), Adaptation, variation and cultural geography. *Professional Geographer* Vol. 35(4), pp: 399–406.

Development Initiatives (2006), *Global Humanitarian Assistance 2006*. Geneva Humanitarian Forum, Geneva.

Donohue, J. (1982), Some facts and figures on urbanisation in the developing world. *Assignment Children* 57(8), pp. 21–42.

Douglas, M., Wildavsky, A. (1982), *Risk and Culture: An Essay on the Selection of Technological and Environmental Dangers*. University of California Press, California.

Douglas, M. (1985), *Risk Acceptability According to the Social Sciences*. Russell Sage, New York.

Douglas, M. (1992), *Risk and Blame: Essays in Cultural Theory*. Routledge, London.

Downing, T.E., et al. (2000), *Climate Change Vulnerability: Linking Impacts and Adaptation. Report to the Governing Council of the United Nations Environment Programme*. Environmental Change Institute, University of Oxford/UNEP, Oxford and Nairobi.

Drabek, T. E ., Boggs,K. (1968), Families In Disaster: Reactions and Relatives *Journal of Marriage and The Family Vol.* 30, pp:443-451.

Drabek, T.E. (1986), *Human System Response to Disaster: An Inventory of Sociological Findings*. Springer-Verlag, New York.

Drabek, T.E., Hoetmer, G.J. (eds.) (1991), *Emergency Management Principles and Practice for Local Government*. International City Management Association Wahsington DC USA.

Drabek, T.E., McEntire, D.A. (2002,) Emergent phenomena and multiorganizational coordination in disasters: Lessons from the research literature. *International Journal of Mass Emergencies and Disasters* 20, pp. 197–224.

Duffield, M. (2001), *Global Governance and New Wars.* Zed Books, London and New York.

Dynes, R.R. (1970a), *Organized Behavior in Disaster*. Heath Lexington, Massachusetts.

Dynes, R.R. (1974), *Organized Behavior in Disaster*. Disaster Research Center, Newark, DE.

Dynes, R.R., Drabek, T.E. (1994), The structure of disaster research: Its policy and disciplinary implications. *Interantional Journal of Mass Emergency and Disasters* 12, pp. 5–23.

Edwards, M.L. (1993), Social location and self-protective behavior: Implications for earthquake preparedness. *International Journal of Mass Emergencies and Disasters*, Vol. 11, pp: 293-304.

Egan, M. (2007), Anticipating future vulnerability: Defining characteristics of increasingly critical infrastructure-like systems. *Journal of Contingencies and Crisis Management* 15, pp. 4–17.

El-Sabh, M.I., Murty, T.S. (eds.) (1988), *Natural and man-made hazards*. Dordrecht: Kluwer.

Ellis, F. (2000), The determinants of rural livelihood diversification in developing countries. *Journal of Agricultural Economics* Vol. 51, pp: 289–302.

Enarson, E, Morrow, B.H. (eds.) (1998a), *The Gendered Terrain of Disaster: Through Women's Eyes.* Praeger, Westport, CT.

Enarson, E, Morrow, B.H. (eds.) (1998b), Women will rebuild Miami: A case study of feminist response to disaster. In: Enarson, E., Morrow, B.H. (eds.), *The Gendered Terrain of Disaster: Through Women's Eyes*, pp. 185–199. Praeger, Westport, CT.

Enarson, E. (2000), 'We will make meaning out of this': Women's cultural responses to the Red River Valley flood. *International Journal of Mass Emergencies and Disasters* 18, pp. 39–62.

Enarson, E., Fordham, M. (2001), From women's needs to women's rights in disasters. *Environmental Hazards* 3, pp. 133–136.

Enarson, E. (2002), Environmental management and mitigation of natural disasters: a gender perspective. Paper presented at UN Comm. StatusWomen, 4–15 March 2002, New York.

Enarson, E. (2005), Women and girls last? Averting the second post-Katrina disaster. *Understanding Katrina: Perspectives from the Social Sciences*. Soc. Sci. Res. Available at: http://understandingkatrina.ssrc.org/Enarson (July 2008).

Erikson, K. (1994), *A New Species of Trouble: Explorations in Disaster, Trauma, and Community* W.W. Norton, London.

Eshghi, K., Larson, R.C. (2008), Disasters: Lessons from the past 105 years. *Disaster Prevention and Management* 17(1), pp. 62–82.

European Commission (1996), Linking relief, rehabilitation and Development – Communication from the Commission of 30 April 1996.

Eyben, R. (ed.) (2006), *Relationships for Aid*. Earthscan, London.

Falkheimer, J., Heide, M. (2006), Multicultural crisis communication: Towards a social constructionist perspective. *Journal of Contingencies and Crisis Management* 14(4), pp. 180–189.

Fankhauser, S. (1998), *The Costs of Adapting to Climate Change*. GEF Working Paper 16. The Global Environmental Facility, Washington DC..

Farrington, J., Carney, D., Ashley, C., Turton, C. (1999), *Sustainable Livelihoods in Practice: Early Application of Concepts in Rural Areas*. Natural Resource Perspective, No. 42, June 1999. Available at: http://www.odi.org.uk/nrp/42.html (August 2008).

Faulkner, B. (2001), Towards a framework for tourism disaster management. *Tourism Management* . 22, pp. 135–147.

138

Ferretti S. (2006), *Shelter and settlements for refugees: improving communication to improve practices*. PhD Dissertation. Oxford: Oxford Brookes University.

Fink, S. (1986), *Crisis Management*: *Planning for the Inevitable.* American Management Association (AMACOM), New York.

Foley, D.L. (1980), The Sociology of Housing. *Annual Review of Sociology.*. Vol. 6(1), pp. 457–478..

Folke, C. et al., (2002) *Resilience and Sustainable Development: Building Adaptive Capacity in a World of Transformations.* Scientific Background Paper on Resilience for the process of The World Summit on Sustainable Development on behalf of The Environmental Advisory Council to the Swedish Government. Available at: www.resiliencealliance.org (August 2008).

Folke, C. (2006), Resilience: The emergence of a perspective for social-ecological systems analyses. *Global Environmental Change* 16(3), pp. 253–67.

Forman, S., Parhad, R. (2000), *Paying for Essentials: Resources for Humanitarian Assistance*. Available at: http://www.jha.ac/articles/a021.htm (September 2008).

Fothergill, A. (1998), The neglect of gender in disaster work: An overview of the literature in Enarson, E., Morrow, B.H. (eds.), *The Gendered Terrain of Disaster: Through Women's Eyes*, pp. 11–25. Praeger, Westport, CT.

Fothergill, A., Peek, L.A. (2004), Poverty and Disasters in the United States: A Review of Recent Sociological Findings. *Natural Hazards Vol.* 32(1), pp: 89–110

Fothergill, A. (2003), The stigma of charity: Gender, class, and disaster assistance. *Sociological Quarterly* 44, pp. 659–680.

Fothergill, A., Maestas, E.G.M., Darlington, J.D. (1999), Race, Ethnicity, and Disasters in the United States: A Review of the Literature. *Disasters Vol.* 23(3), pp: 156–173.

Fothergill, A. (2004), *Heads Above Water: Gender, Class and Family in the Grand Forks Flood*. State University of New York Press, Albany, NY.

Fothergill, A., Maestas, E.G.A., Darlington, J.D. (1999), Race, Ethnicity, and Disasters in the United States: A Review of the Literature. *Disasters, Vol.* 23(3), pp: 156–173.

Fothergill, A., Peek, L.A..(2004), Poverty and Disasters in the United States: A Review of Recent Sociological Findings. *Natural Hazards Vol.* 32(1), pp: 89–110

Foucault, M. (1978), *The History of Sexuality*. Penguin, Harmonsworth.

Foucault, M. (1980), *Power/Knowledge*. Harvester, Brighton.

Foucault, M. (1991), Governmentality. In: Burchell, G., Gordon, C., Miller, P. (eds.), *The Foucault Effect: Studies in Governmentality*, pp. 87–104. Harvester Wheatsheaf, London.

Fraser, E.D.G., Mabee, W., Figge, F. (2005), A framework for assessing the vulnerability of food systems to future shocks. *Futures* 37, pp. 465–479.

Freudenberg W.R. (1997), Contamination corrosion and the social order: An overview. *Current Sociology* 45, pp. 19–39.

Friedman, T.L. (2005), *The World is Flat*. Farrar, Straus, and Giroux, New York.

Fritz, C.E., Williams, H.B. (1957), The human being in disasters: a research perspective. *Annals of the American Academy of Political and Social Science* 309, pp. 42–51.

Fritz, C.E. (1961), Disasters. In: Merton, Rk., Nisbet, R.A. (eds.), *Contemporary Social Problems*, pp. 651–694. Harcourt, New York.

Furedi, F. (2007), The changing meaning of disaster. *Area* 39(4), pp. 482–489.

Fussel, H.M. (2007), Vulnerability: a generally applicable conceptual framework for climate change research, *Global Environmental Change*, Vol. 17 pp.155-67.

Gallopin, G.C. (2006), Linkages between vulnerability, resilience, and adaptive capacity. *Global Environmental Change* 16(3), pp. 293–303.

Giddens, A. (1990), *The Consequences of Modernity*, Polity, Cambridge.

Gladwin, H., Peacock, W.G. (1997), Warning and Evacuation: A Night for Hard Houses. In W.G. Peacock, B.H. Morrow H. Gladwin, *Hurricane Andrew: Ethnicity Gender and the Sociology of Disasters*. Routledge, London pp. 52–74.

Gleick, J. (1987), *Chaos: Making a New Science*. Heinemann, London.

Goodhand, J. (2001), *Aid, Conflict and Peacebuilding in Srilanka*, The Conflict, Security and Development Group, Kings College: London.

Gostelow, L. (1999), The Sphere Project: The implications of making humanitarian principles and codes work. *Disasters* 23, pp. 316–325.

Guetzkow, H. (1962), Joining field and laboratory work in disaster research. In: Baker, G.W., Chapman, D.W. (eds.), *Man and Society in Disaster*, pp. 337–355. Basic Books, New York.

Gunderson, L.H., Holling, C.S. (eds.) (2002), *Panarchy: Understanding Transformations in Human and Natural Systems*. Island Press, Washington, DC.

Guth, D.W. (1995), Organizational crisis experience and public relations roles. *Public Relations Review* 21, pp. 123–136.

Hansen, A. , Oliver-Smith, A. (1982), *Involuntary Migration and Resettlement*. Boulder: West View Press.

Harmer, A., Macrae, J. (2004), *Beyond the Continuum. The Changing Role of Aid Policy in Protracted Crises*. HPG Report No. 18. Overseas Development Institute, London.

Harvey, P., Lind, J. (2005), *Dependency and Humanitarian Relief: A Critical Analysis*. HPG Research Briefing 19. ODI, London.

Hays, W.W. (1986), The importance of post-earthquake investigations. *Earthquake Spectra* 2(3), pp. 653–668.

Herson, M. (2005), Real-time evaluations in Darfur: Some suggestions for learning. *Humanitarian Exchange* 30, 16–19 June.

Hewitt, K. (1983a), The idea of calamity in a technocratic age. In: Hewitt, K. (ed.) *Interpretations of Calamity*, pp. 3–32. Unwin-Hyman, London.

Hewitt, K, ed. (1983b), *Interpretations of Calamity: From the Viewpoint of Human Ecology*. Allen & Unwin, Boston.

Hewitt, K. (1998), Excluded perspectives in the social construction of disaster. Quarantelli, E.L. (ed.), *What is a Disaster?*, pp. 75–91. Routledge, London.

Hewitt, K. (1997), *Regions of Risk: A Geographical Introduction to Disasters*, Longman, Harlow

Hilhorst, D. (2001), *Good at Doing Good? Review of Debates and Initiatives Concerning the Quality of Humanitarian Assistance*. International working conference: Enhancing the Quality of Humanitarian Assistance. Government of the Netherlands. Available at: http://www.reliefweb.int/w/lib.nsf/ (August 2008).

Hilhorst, D. (2003), Responding to Disasters: Diversity of Bureaucrats, Technocrats and Local People. In: *International Journal of Mass Emergencies and Disasters*, Vol. 21, no. 3, 37-55

Hilhorst, D., Fernando, U. (2006), Everyday practices of humanitarian aid: Tsunami response in Sri Lanka. *Development in Practice* 16(3-4), pp. 292–302.

Hilhorst, D. (2007), Unlocking disaster paradigms: An actor-oriented focus on disaster response. Abstract submitted for session 3 of the Disaster Research and Social Crisis Network panels of the 6th European Sociological Conference, 23–26 September, Murcia, Spain. Unpublished document.

Hofstede, G. H. (1980), *Culture's Consequences: International Differences in Work-Related Values*, Sage, Newbury Park, CA.

Holling, C.S., (1961) Principles of insect predation. *Annual Review of Entomology* Vol. 6, pp: 163–182.

Holling, C.S. (1973), Resilience and stability of ecological systems. *Annual Review of Ecology and Systematics* Vol. 4, pp:1–23.

Holling, C.S. (2001), Understanding the complexity of economic, ecological, and social systems. *Ecosystems* Vol. 4, pp: 390–405.

Holling, C.S., Sanderson, S. (1996), Dynamics of (dis)harmony in ecological and social systems. In: Hanna, S.S., Folke, C., Mahler, K.G. (eds.), *Rights to Nature: Ecological, Economic, Cultural, and Political Principles of Institutions for the Environment*, pp. 57–85. Island Press, Washington DC.

Holling, C.S., Berkes, F., Folke, C. (1998), Science, sustainability and resource management. In: Berkes, F., Folke, C. (eds.), *Linking Social and Ecological Systems: Management Practices and Social Mechanisms for Building Resilience*, Cambridge University Press, Cambridge.

Holling, C, Gunderson, L., Ludwig, D. (2002), In Quest of a Theory of Adaptive Change. In: L. Gunderson and C. Holling (eds). *Panarchy. Understanding Transformations in Human and Natural Systems.* Washington/ Covelo/ London: Island Press.

Hopgood, S. (2005), The professionalisation and bureaucratisation of humanitarian Action. In *The Transformations of Humanitarian Action.*

Horlick-Jones, T., Fortune, J., Peters, G. (1991), Measuring disaster trends. Part Two: Statistics and underlying processes. *Disaster Management* 4(1), pp. 41–44.

Horlick-Jones, T. (1995), Modern disasters as outrage and betrayal. *International Journal of Mass Emergencies and Disasters* 13, pp. 305–315.

Huq, S., Reid, H., Murray, L.A. (2006), *Climate Change and Development Links.* Gatekeeper Series 123. IEED. Available at: http://www.iied.org/pubs/pdf/full/14516IIED.pdf (July 2008).

Hussein, K., Nelson, J. (1998), *Sustainable Livelihoods and Livelihood Diversification.* Institute of Development Studies 31. Brighton.

Hyndman, J. (2007), The securitization of fear in post-tsunami Sri Lanka. *Annals of the Association of American Geographers* 97(2), pp. 361–372.

IASC (2006), *Guidance Note on Using the Cluster Approach to Strengthen Humanitarian Response*. IASC, Geneva..

IFRC/RCS (1994), *Code of Conduct for The International Red Cross and Red Crescent Movement and NGOs in Disaster Relief*. IFRC, Geneva.

IFRC/RCS (1999), *World Disaster Report.* International Federation of Red Cross and Red Crescent Societies, Geneva.

IFRC/RCS (2004), *World Disasters Report – Focus on Community Resilience.* Kumarian Press., Bloomfield, NJ.

IFRC/RCS (2005), *World Disasters Report 2005: Focus on Information in Disasters.* International Federation of Red Cross and Red Crescent Societies, Geneva.

Ignatieff, M. (1998), *The Warrior's Honor: Ethnic War and the Modern Conscience.* Metropolitan Books New York, NY.

IPCC (2007a), *Climate Change 2007: Impact, Adaptation and Vulnerability.* Working Group II Contribution to the Intergovernmental Panel on Climate Change Fourth Assessment Report. IPCC, Geneva.

IPCC (2007b), *Climate Change 2007: The Physical Science Basis, Summary for Policy Makers.* Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, February 2007. IPCC, Paris.

Ives, S.M., Furusheth, O. (1983), Immediate Response to Headwater Flooding in Charlotte, North Carolina. *Environment and Behavior Vol.* 15(4), pp: 512–525.

Janis, I.L. (1951), *Air War and Emotional Stress: Psychological Studies of Bombing and Civil Defense.* RAND, Santa Monica.

Janssen, M.A., Ostrom, E. (2006), Resilience, vulnerability, and adaptation: A cross-cutting theme of the International Human Dimensions Programme on Global Environmental Change. *Global Environmental Change* 16(3), pp. 237–239.

Jodha, N.S. (1975), Famine and famine policies: Some empirical evidence. *Economic and Political Weekly* 10(41), pp. 1609–23.

Johnson, S. (2001), *Emergence.* Penguin, London.

Jones, R. (2001), An environmental risk assessment/management framework for climate change impact assessments. *Natural Hazards* 23(4), pp. 197–230.

Kasperson, J.X., Kasperson, R.E. (2001), *Global Environmental Risk.* United Nations University Press and Earthscan Publications, Tokyo and London.

Kates, R.W., Burton, I. (eds.) (1986), *Geography, Resources and Environment.* University of Chicago Press, Chicago.

Keller, A.Z., Al-Madhari, A.F. (1996), Risk management and disasters. *Disaster Prevention and Management* 5(5), pp. 19–22.

Kelly, P.M., Adger, W.N. (2000), Theory and practice in assessing vulnerability to climate change and facilitating adaptation. *Climatic Change* 47(4), pp. 325–352.

Kendra, J., Wachtendorf, T. (2002), *Elements of Community Resilience in the World Trade Center Attack.* University of Delaware, Newark, DE.

Keown-McMullan, C. (1997), Crisis: When does a molehill become a mountain? *Disaster Prevention and Management* 6(1), pp. 4–10.

Kersten, A. (2005), Crisis as usual: Organizational dysfunction and public relations. *Public Relations Review* 31(4), pp. 544–549.

King, A. (1995), Avoiding ecological surprise: lessons from long-standing communities. *Academy of Management Review* Vol. 20, pp: 961–985.

Kitano, H. (2002), Systems biology: a brief overview. *Science* Vol. 295, pp: 1662–1664.

142

Knott, R. (1987), The Logistics of Bulk Relief Supplies *Disasters* Vol. 11, pp:113–116.

Kousky, C., Zeckhauser, R. (2005), JARring actions that fuel the floods. In: Daniels, R.J., Kettl, D.F., Kunreuther, H. (eds.), *On Risk and Disaster: Lessons from Hurricane Katrina*, pp. 59–73. University of Pennsylvania Press, Philadelphia.

Kovats, R.S., Campbell-Lendrum, D., Matthies, F. (2005), Climate change and human health: estimating avoidable deaths and disease. *Risk Analysis* Vol. 25, pp:1409–1418.

Krimbas, C.B. (2004), On fitness. *Biology and Philosophy* Vol. 19(2), pp: 185–203.

Kroll-Smith S., Couch, S., Marshall, B.K., (1997) Sociology extreme environments and social change. *Current Sociology* 45, pp. 1–18.

Kunreuther, H., Roth Sr., R.J., (eds.) (1998), *Paying the Price: The Status and Role of Insurance Against Natural Disasters in the United States*. Joseph Henry/National Academy Press, Washington.

Lagadec, P. (1996), Un nouveau champ de responsabilite 'pour les dirigeants'. *Revue Française de Gestion* 108, March–April, pp. 100–109.

Lalonde, C. (2004), In search of archetypes in crisis management. *Journal of Contingencies and Crisis Management* 12(2), pp. 76–86.

Lambin, E.F. (2005), Conditions for sustainability of human-environment systems: Information, motivation and capacity. *Global Environmental Change* 15(3), pp. 177–180.

Lamson, C. (1986), Planning for resilient coastal communities: lesson from ecological systems theory. *Coastal Zone Management Journal* Vol. 13,pp: 265–279.

LaPorte, T.R. (2007), Critical infrastructure in the face of a predatory future: Preparing for untoward surprise. *Journal of Contingencies and Crisis Management* 15, pp. 60–64.

Laqueur, W. (2003), *No End to War: Terrorism in the Twenty-First Century.* Continuum, New York.

Leader, N. (2000), *The Politics of Principle: The Principles of Humanitarian Action in Practice.* ODI, London. Available at: http://www.odi.org.uk/hpg/papers/hpgreport2.pdf (June 2008).

Lerbringer, O. (1997), *The Crisis Manager*, Lawrence Erlbaum, Mahwah, NJ.

Leon Abbott, P. (2005), *Natural Disasters.* (5th ed.) McGraw-Hill Science, New York, NY.

Leichenko, R., O'Brien, K. (2002), The Dynamics of Rural Vulnerability to Global Change. *Mitigation and Adaptation Strategies for Global Change Vol. 7(1),* pp: 1-18.

Levine, I. (2004), A clouded perspective: What is the field of humanitarianism? In: *The Transformations of Humanitarian Action.*

Levy, C. (1997), Institutionalisation of Gender through Participatory Practice' in I Guijt and M Kaul Shah (eds.) The Myth of Community, IT Publications.

Lewontin, R.C. (1969), The meaning of stability. In: Diversity and Stability of Ecological Systems. Brookhaven Symposia in Biology no 22. Brookhaven, New York.

Lindell, M.K., Perry, R.W. (2000) Household Adjustment to Earthquake Hazard, A Review of Research. *Environment and Behavior Vol. 32(4),* pp: 590–630..

Lindell, M.K., Perry, R.W. (2004), *Communicating Environmental Risk in Multiethnic Communities*. Sage, Thousand Oaks , CA .

Lindell, M.K., Perry, R.V. (2004), *Communicating Environmental Risk in Multiethnic Communities*. Sage, Thousand Oaks, CA .

Locke, C., Adger, W.N., Kelly, P.M. (2000), Changing places: Migration's social and environmental consequences. *Environment* 42(7), pp. 24–35.

Logan, J.R, Molotch, H.L. (1987), *Urban Fortunes: The Political Economy of Place*. University of California Press, Berkeley , CA .

Lomborg, B. (ed.) (2004), *Global Crises, Global Solutions*. Cambridge University Press, Cambridge.

Lomnitz, C. (1994), *Fundamentals of Earthquake Prediction*. Wiley, New York.

Lomniz C. (1998), Book Review *Natural Hazards, Vol.*18, pp:87–88.

Long, N. (2001), *Development sociology: actor perspectives*. London, New York: Routledge,. 2001.

Lorenz, E. (1993), T*he essence of chaos*. Washington: University of Washington Press.

Luhmann, N. (1993), *Risk: A Sociological Theory*. Walter de Gruyter, New York.

Mackintosh, A. (1997), Rwanda: beyond 'ethnic conflict'. *Development in Practice* 7(4), pp. 464–474.

Macrae, J., Jaspars, S., Duffield, M., Bradbury, M., Johnson, D. (1997), Conflict, the continuum and chronic emergencies: A critical analysis of the scope for linking relief, rehabilitation and development planning in Sudan. *Disasters* 21(3), pp. 223–243.

Macrae, J. (2001),.*Aiding Recovery? The Crisis of Aid in Chronic Political Emergencies*. Zed Books, New York.

Macrae, J., Harmer, A. (eds.) (2003), *Humanitarian Action and the 'Global War on Terror': A Review of Trends and Issues*. Overseas Development Institute, London.

Manni, C. (ed.) (1989), Disaster medicine: A new discipline or a new approach. *Prehospital and Disaster Medicine* 4(2), pp. 45-52.

Massey, D.D., Denton, N.A. (1993), *American Apartheid: Segregation and the Making of the Underclass*. Harvard University Press, Cambridge , MA .

Martens, B. (2005), Why do Aid Agencies exist?.*Development Policy Review* Vol. 23(6), pp: 643 - 663

May, R.M. (1972), Will a large complex ecosystem be stable? *Nature* Vol. 238, pp: 413–414.

McCarthy, J.J., Canziani, O.F., Leary, N.A., Dokken, D.J., White, K.S. (eds.) (2001), *Climate Change 2001: Impacts, Adaptation and Vulnerability*. Cambridge University Press, Cambridge.

McConnell, A., Drennan, L. (2006), Mission impossible? Planning and preparing for crisis. *Journal of Contingences and Crisis Management* 14(2), pp. 59–70.

McGuire, W.J., Kilburn, C.R.J., Murray, J.B. (eds.) (1994), *Monitoring Active Volcanoes*. UCL Press, London.

McQuail, D. (2005), *McQuail's Mass Communication Theory*. (5th ed.) Sage, London.

Meze-Hausken, E. (2000), Migration caused by climate change: How vulnerable are people in dryland areas? A case-study in Northern Ethiopia. *Mitigation and Adaptation Strategies for Global Change* 5(4), pp. 379–406.

Mileti, D. (1999), *Disasters by Design: A Reassessment of Natural Hazards in the United States*. Joseph Henry Press, Washington, DC.

Mileti, D.S., Drabek,T.E.,Haas J.E. (1975), *Human Systems in Extreme Environments: A Sociological Perspective* Institute of Behavioral Science, University of Colorado

Mileti, D.S., Darlington, J.D. (1997), The role of searching in shaping reactions to earthquake risk information. *Social Problems*, Vol. 44, pp: 89-103.

Miller, D. (1987), The Genesis of Configuration. *Academy of Management Review*, Vol.12, pp: 686–701.

Miles, B, Morse, S. (2007), The role of news media in natural disaster risk and recovery. Ecological Economies, Vol.63(2-3), pp: 365-373.

Minear, L., Weis., T.G. (1995), *Mercy under fire: War and the Global Humanitarian Community*. Westview Press, Oxford.

Minear, L. (1999), The theory and practice of neutrality: Some thoughts on the tensions. *International Review of the Red Cross* 81, pp. 63–71.

Minear, L. (2002), *The Humanitarian Enterprise: Dilemmas and Discoveries*. Kumarian Press, Bloomfield, CT.

Missiroli, A. (2006), Disasters past and present: Challenges for the EU. *Journal of European Integration* 28(5), pp. 423–436.

Mitchell, J. K. (1989), Hazards research. In *Geography in America*, in G.L. Gaile & C. J. Willmott, eds., pp. 410–424. Charles E. Merill.

Mitroff, I.I. (1988), *Break-away Thinking*. Wiley, New York.

Mitroff, I., Anagnos, G., (2001) *Managing Crises Before They Happen*, American Management Association, New York.

Moe, T.L., Gehbauer, F., Senitz, S., Mueller, M. (2007), Balanced scorecard for natural disaster management projects. *Disaster Prevention and Management* 16(5), pp. 785–806.

Moench, M., Dixit, A. (2003), *The Fluid Mosaic: Water Governance in the Context of Variability, Uncertainty and Change*. Kathmandu, Nepal Water Conservation Foundation and the Institute for Social and Environmental Transition,.

Moench, M. (2005), *Water, Climatic Variability and Livelihood Resilience: Concepts, Field Insights and Policy Implications*. Institute for Social and Environmental Transition (USA/Nepal). Available at: http://www.resalliance.org/files/1133262768_swedishwaterhouseresiliencepolicypaper2.pdf (August 2008).

Morrow, B.H., Phillips, B.D. (eds.) (1999), Special issue: Women and disasters. *International Journal of Mass Emergencies and Disaster* 17:1.

Morrow, B.H. (1997), Stretching the Bonds: the Families of Andrew'. In W.G. Peacock, B.H. Morrow H. Gladwin, *Hurricane Andrew: Ethnicity Gender and the Sociology of Disasters*. Routledge, London pp. 141–170

Murphy, P. (1996), Chaos Theory as a Model for Managing Issues and Crises, *Public Relations Review*, Vol., 22(2), pp: 95–113.

Mythen, G., Walklate, S. (2006), Criminology and terrorism: Which thesis? Risk society or Governmentality?' *British Journal of Criminology* 46, pp. 379–398.

Mythen, G. (2007), The postmodern terrorist risk: Plus ça change, plus c'est la même chose? In: Owne, T., Powell, J. (eds.), *Reconstructing Postmodernism: Critical Debates*, Nova Science, New York.

Mythen, G. (2008), Sociology and the art of risk. *Sociology Compass* 2(1), pp. 299–316.

National Research Council, (2006) *Facing Hazards and Disasters: Understanding Human Dimensions*. National Academy Press, Washington, DC.

Neal, D.M., Phillips, B.D. (1990), Female-dominated local social movement organizations in disaster threat situations. In: West, G., Blumberg, R. (eds.), *Women and Social Protest*, pp. 243–55. Oxford University Press, New York.

Nohrstedt, S.A., Admassu, T. (1993), *Communication and Crisis: An Inventory of Current Research*. National Board of Psychological Defence, Stockholm.

Norris, F.H., Smith, T., Kaniasty, K. (1999), Revisiting the Experience-Behavior Hypothesis: The Effects of Hurricane Hugo on Hazard Preparedness and other Self-protective Acts. *Basic and Applied Psychology Vol.* 21(1), pp: 27–47.

O'Brien, K. (2006), Are we missing the point? Global environmental change as an issue of human security. *Global Environmental Change* Vol. 16, pp:1–3.

O'Brien, K., Eriksen, S., Schjolen, A., and Nygaard, L. (2004), 'What's in a Word? Conflicting Interpretations of Vulnerability in Climate Change Research', CICERO Working Paper 2004:04, CICERO, Oslo University, Oslo, Norway.

O'Brien, M., Holland, T.D. (1992), The role of adaptation in archeological explanation. *American Antiquity* Vol. 57, pp: 36–69.

O'Brien, K., et al. (2004), Mapping vulnerability to multiple stressors: Climate change and globalization in India. *Global Environmental Change* 14(3), pp. 303–313.

OCHA (2007), *Global Symposium +5 on Information for Humanitarian Action*. 22–26 October 2007, Palais des Nations, Geneva. Final Report. Available at: http://www.reliefweb.int/symposium/docs/symposium%20outcomes.pdf (August 2008)

OECD (2003), *Emerging Risks in the 21st Century: An Agenda for Action*. Organization for Economic Cooperation and Development, Paris.

Oliver-Smith, A. (1986), *Disaster Context and Causation: An Overview of Changing Perspectives in Disaster Research* in Vinson H. Sutlive *et al* (eds) *Natural Disasters and Cultural Responses*. Williamsburg: Department of Anthropology, College of William and Mary.

Oliver-Smith, A. (1979), Post disaster consensus and conflict in a traditional society: the 1970 avalanche of Yungay, Peru. *Journal of* Mass Emergencies Vol. 4, pp:39-52.

Oliver-Smith, A. (1996), Anthropological research on hazards and disasters. *Annual Review of Anthropology* 25, pp: 303-328.

Oliver-Smith, A. (1998), Global changes and the definition of disaster. In: Quarantelli, E.L. (ed.), *What is a Disaster?* pp. 177–194. Routledge, London.

Pauchant, T.C., Mitroff, T.T. (1992), *Transforming the Crisis-Prone Organization: Preventive Individual, Organizational, and Environmental Tragedies*. Jossey-Bass, San Francisco, CA.

Peacock, W.G., Morrow, B.H., Gladwin, H. (eds) (1997), *Hurricane Andrew: Ethnicity, Gender and the Sociology of Disasters*. Routledge, New York.

Peacock, W.G., Girard, C. (1997), Ethnic and Racial Inequalities in Hurricane Damage and Insurance Settlements. In W.G. Peacock, B.H. Morrow H. Gladwin, *Hurricane Andrew: Ethnicity Gender and the Sociology of Disasters*. Routledge, London pp. 171–190.

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Peacock, W.G. (2003), Hurricane Mitigation Status and Factors Influencing Mitigation Status Among Florida's Single-Family Homeowners, *Natural Hazards Review Vol.* 4(3), pp: 1–10.

Phillips, B.D. (1993), Culture Diversity in Disasters: Sheltering, Housing and Long-term Recovery, *International Journal of Mass Emergencies and Disasters.* Vol. 11(1), pp: 99–110.

Phillips, B.D, Ephraim, M. (1992), *Living in the aftermath: Blaming Processes in the Loma Prieta Earthquake.* Working Paper 80. Natural Hazards Research and Applications Information Center, University of Colorado, Boulder , CO .

Peat, F.D. (1991), *The Philosopher's Stone: Chaos, Synchronicity and the Hidden Order of the World.* Bantam, New York.

Pelling, M. (2003), The vulnerability of cities. In: Pelling, M. (ed.), *Natural Disasters and Social Resilience.* 46–67. Earthscan, London.

Pelling, M. (2005), International data on disaster risk. UNDP *World Disasters Report 2005*, pp. 172–181. IFRC, Geneva.

Perrow, C. (1984),.*Normal Accidents. Living with High Risk Technologies.* Princeton: Princeton University Press.

Perrow, C. (1991), A society of organizations. *Theory Sociological.* 20, pp. 725–762.

Perrow, C. (1994), The limits of safety The enhancement of a theory of accidents. *Journal of Contingencies and Crisis Management* 2(4), pp. 212–220.

Perrow, C. (1999), *Normal Accidents: Living with High-Risk Technologies.* Princeton University Press, Princeton.

Perry, R.W., Mushkatel, E..(1986), *Minority Citizens in Disaster.* University of Georgia Press, Athens , GA .

Perry, R.W., Nelson, L. (1991), Ethnicity and Hazard Information Dissemination. *Environmental Management Vol.* 15(4), pp: 581–587.

Perry, R.W., Lindell, M.K. (1991), The Effects of Ethnicity on Evacuation Decision-making. *International Journal of Mass Emergencies and Disasters. Vol.* 9(1), pp: 47–68

Perry, R.W., Mushkatel, P.(1986),.*Minority Citizens in Disaster.* University of Georgia Press, Athens , GA .

Perry, R.W., Lindell, M.K., Greene, M.R. (1981), *Evacuation Planning in Emergency Management.* Lexington Books, Lexington , MA .

Perry, R.W., Quarantelli, E.L. (eds.) (2005), *What Is a Disaster?: New Answers to Old Questions.* XLibris, Philadelphia, PA.

Peterson, G.D., Allen, C.R., Holling, C.S. (1998), Ecological resilience, biodiversity, and scale, *Ecosystems* 1(1), pp. 6–18.

Phillips, B.D., Ephraim, M. (1992), *Living in the aftermath: Blaming Processes in the Loma Prieta Earthquake.* Working Paper 80. Natural Hazards Research and Applications Information Center, University of Colorado, Boulder , CO .

Pielke, R.A.J. (1998), Rethinking the role of adaptation in climate policy. *Global Environmental Change* 8(2), pp. 159–170.

Pirrotte, C., Husson, B. Grunewald, F. (1999), *Responding to Emergencies and Fostering Development: The Dilemmas of Humanitarian Aid.* Zed Books, London and New York.

Polsky, C., Schröter, D., Patt, A., Gaffin, S., Long Martello, M., Neff, r., Pulsipher, A., Selin, H..(2003), Assessing Vulnerabilities to the Effects of Global Change: An *Eight-Step Approach.* Belfer Center for Science and

International Affairs, Harvard University, John F. Kennedy School of Government, xxx.

Posner, R. (2004), *Catastrophe: Risk and Response.* Oxford University Press, New York.

Possekel, A.K. (1999), *Living with the Unexpected*, Springer, Berlin (1999).

Prigogine, I., Stengers, I. (1985), *Order out of Chaos: Man's New Dialogue with Nature*. Flamingo, Hammersmith.

Prince, S.H. (1920), Catastrophe and social change: Based upon a sociological study of the Halifax disaster. *Studies in History, Economics, and Public Law* 94, pp. 1–152.

Quarantelli, E.L., Dynes, R.R. (1977), Response to social crisis and disaster. *Annual Review of Sociology* 1, pp. 23–49.

Quarantelli, E.L. (1987), Disaster studies: An analysis of the social historical factors affecting the development of research in the area. *International Journal of Mass Emergencies and Disasters* 5, pp. 285–310.

Quarantelli, E.L. (1994), *Disasters and catastrophes: Their roots in and consequences for social change*. Unpublished paper.

Quarantelli, E.L. (ed.) (1998), *What is a Disaster?* Routledge, London.

Quarantelli, E.L. (2001), Statistical and conceptual problem in the study of disasters. *Disaster Prevention and Management* 10(5), pp. 325–338.

Quarantelli, E.L. (2005), *Emergencies, Disasters and Catastrophes Are Different.* Phenomena Disaster Research Center (DRC), University of Delaware. Available at: http://www.udel.edu/DRC/preliminary/pp304.pdf (August 2008)

Ramalingam, B., Jones, H., Reba, T., Young, J. (2008), *Exploring the Science of Complexity: Ideas and Implications for Development and Humanitarian Efforts.* ODI Working Paper, No. 285. ODI, London. Available at: http://www.odi.org.uk/publications/working_papers/WP285.pdf (August 2008)

Rappaport, R.A. (1967), *Pigs for the Ancestors: Ritual in the Ecology of a New Guinea People*. Yale University Press, New Have

Rayner, S., Malone, E.L. (2001), Climate change, poverty, and intergenerational equity: the national level. *International Journal of Global Environmental Issues* Vol. 1, pp: 175–202.

Reed, B. (1991), *Technical Support for Refugees: Lessons from Recent Experiences.* WEDC, Loughborough. Available at: http://www.lboro.ac.uk/departments/cv/wedc/techsupp/techsupp.htm (August 2008).

Reindorp, N., Wiles, P. (2001), *Humanitarian Coordination: Lessons from Recent Field Experience*. Office for the Coordination of Humanitarian Affairs (OCHA), New York.

Resilience Alliance (2007), http://www.resalliance.org/564.php (accessed 21 June 2007).

Reynolds, B., (2002) *Crisis and Emergency Risk Communication*. Centers for Disease Control and Prevention, Atlanta, GA.

Reynolds, B., Seeger, M.W., (2005) Crisis and risk communication as in integrative model. *Journal of Health Communication, Vol. 10,* pp: 43–55.

Richardson, B. (1994), Crisis management and the management strategy: Time to 'loop the loop'. *Disaster Prevention and Management* 3(3), pp. 59–80.

Rieff, D. (2003), *A Bed for the Night: Humanitarianism in Crisis*. Vintage, New York.

Ritchie, B.W. (2004), Chaos, crises and disasters: A strategic approach to crisis management in the tourism industry. *Tourism Management* 25, pp. 669–683.

Roberts, V. (1994), Flood management: Bradford paper. *Disaster Prevention and Management*, Vol. *3*(2), pp: 44-60.

Rochlin, G.I. (1999), *Trapped in the Net: The Unanticipated Consequences of Computerization*. Princeton University Press, Princeton.

Rochlin, G.I. (2001), `Future IT Disasters: A Speculative Exploration', in Rosenthal, U., Boin, R.A. and Comfort, L.K. (Eds), Managing Crisis: Threats, Dilemmas, Opportunities, Charles C. Thomas, Springfield, pp. 251-266.

Roenigk, D.J. (1993), Federal disaster relief and local government financial condition, *International Journal of Mass Emergencies and Disasters* 11(2), pp. 207–225.

Rosenthal, U. (1998), `Future Disasters, Future Definitions', in Quarantelli, E.L. (Ed.), What is a Disaster? Perspectives on the Question, Routledge, London, pp. 146-160.

Rosenthal, U., Charles, M.T., 't Hart, P. (eds.) (1989), *Coping With Crises: The Management of Disasters, Riots and Terrorism*. Charles C. Thomas, Springfield, IL.

Rosenthal, U., 't Hart, P., Kouzmin, A. (1991), The bureau-politics of crisis management. *Public Administration* 69, pp. 211–233.

Rosenthal, U., Kouzmin, A. (1993), Globalizing an agenda for contingencies and crisis management: An editorial statement. *Journal of Contingencies and Crisis Management*, 1(1), pp.1–12.

Rosenthal, U., Boin, A., Comfort, L.K. (eds.) (2001), *Managing Crises: Threats, Dilemmas, Opportunities*. Charles C. Thomas, Springfield, IL.

Rosenthal, U. (2003), September 11: Public administration and the study of crises and crisis management. *Administration and Society* 35(2), pp. 129–143.

Rosenzweig, M.L. (1971), Paradox of enrichment: destabilization of exploitation ecosystems in ecological time. *Science* Vol. 171, pp:385–387.

Rozario, K. (2001), *What Comes Down Must Go Up: Why Disasters Have Been Good for American Capitalism*. in American Disasters Ed. S Biel (New York University Press, New York) pp 72 – 102.

Russell, L., Goltz, J.D., & Bourque, L B. (1995), Preparedness and hazard mitigation actions before and after two earthquakes, *Environment and Behavior*, Vol. 27, pp: 744-770

Sageman, M. (2004,) *Understanding Terror Networks*. University of Pennsylvania Press, Philadelphia.

Sandman, P. (2006), Crisis Communication Best Practices: Some Quibbles and Additions. *Journal of Applied Communication Research*, Vol. 34(3), pp: 257-262.

Sapountzaki, K. (2007), Social resilience to environmental risks: A mechanism of vulnerability transfer? *Management of Environmental Quality*, Vol 18(3), pp:

Sarewitz, D., Pielke, R. (2001), *Extreme Events :A Research and Policy Framework for Disasters in Context*. Available at:

http://www.albany.edu/cpr/xedm/Materials/Sarewitz-Pielke2001.pdf (August 2008).

Scoones, I. (1999), New ecology and the social sciences: what prospects for a fruitful engagement? *Annual Review of Anthropology* Vol. 28, pp: 479–507.

Scheffer, M., Carpenter, S.R., Foley, J., Folke, C, Walker, B. (2000), Catastrophic shifts in ecosystems. *Nature* 413, pp. 591–696.

Scheuren, J.-M., le Polain de Waroux, O., Below, R., Guha-Sapir, D., Ponserre, S. (2008), *Annual Disaster Statistical Review. Numbers and Trends 2007.* CRED, Louvain La Neuve. Available at http://www.reliefweb.int/rw/lib.nsf/db900sid/EVOD-7FVG77/$file/Full_Report.pdf?openelement (September 2008)

Seeger, M.W., Sellnow, T.L., Ulmer, R.R. (2003), *Communication and Organizational Crisis.* Quorum Press, Westport, CT.

Seeger, M.W. (2006), Best practices in crisis communication: An expert panel process. *Journal of Applied Communication Research* 34(3), pp. 232–244.

Seeger, M.W., Sellnow, T.L., Ulmer, R.R. (2003), *Communication and Organizational Crisis*, Praeger, Westport, CT.

Selbst, P., (1978) in Booth, S. (1993), *Crisis Management Strategy: Competition and Change in Modern Enterprises.* Routledge, New York.

Sen, A.K. (1981), *Poverty and Famines: An Essay on Entitlement and Deprivation.* Clarendon, Oxford.

Seymour, M, Moore, S. (2000), *Effective Crisis Management: Worldwide Principles and Practice.* Cassell: London.

Shackley, S., Wynne, B., Waterton, C. (1996), Imagine complexity. The past, present and future potential of complex thinking, *Futures* 28(3), pp. 201–225.

Shrivastava, P. (1993), Crisis theory/practice towards a sustainable future. *Industrial and Environmental Crisis Quarterly* 7(1), pp. 23–42.

Simile, C. (1995), *Disaster Settings and Mobilization for Contentious Collective Action: Case Studies of Hurricane Hugo and the Loma Prieta Earthquake.* PhD thesis, University of Delaware, Newark.

Skotte, H. (2003), *Viewpoint: NGOs Rebuild in Bosnia without Planning.* Reuters Alertnet. Available at: http://www.alertnet.org/thefacts/reliefresources/600083.htm (accessed 11 May 2004).

Skotte, H. (2004), *Tents in Concrete – What Internationally Funded Housing Does to Support Recovery in Areas Affected by War: The Case of Bosnia-Herzegovina.* PhD thesis, NTNU, Trondheim.

Slim, H. (1997), Doing the right thing: Relief agencies, moral dilemmas and moral responsibility in political emergencies and war, *Disasters* 21(3), pp. 244–257.

Slim, H. (2000), Dissolving the difference between humanitarianism and development: The mixing of a rights-based solution. *Development in Practice* 10(3-4), pp. 491–494.

Slovic, P., (1987) Perception of risk. *Science*, Vol. 236, pp: 280–285.

Smillie, I., Minear, L. (2003), *Humanitarian Financing: Donor Behaviour. Some Preliminary Observations from the Montreux Retreat.* Tufts University.

Smit, B., Burton, I., Klein, R., Wandel, J. (2000,) An anatomy of adaptation to climate change and variability. *Climatic Change* 45(1), pp. 223–251.

Smit, B., Pilifosova, O. (2001), Adaptation to Climate Change in the Context of Sustainable Development and Equity, in Climate Change 2001: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge.

Smit, B., Wandel, J. (2006), Adaptation, adaptive capacity and vulnerability, *Global Environmental Change* 16(3), pp. 282–292.

Smit, B., Pilifosova, O. (2003), From adaptation to adaptive capacity and vulnerability reduction. In: Smith, J.B., Klein, R.J.T., Huq, S. (Eds.), Climate Change, Adaptive Capacity and Development. Imperial College Press, London.

Sorokin, P.A. (1942), *Man and Society in Calamity: The Effects of War, Revolution, Famine, Pestilence upon Human Mind, Behavior, Social Organization and Cultural Life.* Greenwood Press, Westport, CT.

Sphere Project (2004), *Humanitarian Charter and Minimum Standards in disaster response*. Geneva: Sphere Project. Available at: http://www.sphereproject.org/ (August 2008)

Stacey, R. D., Griffin, D., Shaw, P..(2000), *Complexity and Management: fad or radical challenge to systems thinking?* London: Routledge

Stern, N. (2006), *The Economics of Climate Change: The Stern Report*. Cambridge University Press, Cambridge.

Stallings, R.A., Quarantelli, E.L. (1985), Emergent citizen groups and emergency management. *Public Administration Review.* 45, pp. 93–100.

Stallings, R.A. (1988), Conflict in natural disasters: A codification of consensus and conflict theories. *Sociological Science Quarterly.* 69, pp. 569–86.

Stoddard, A. (2003), *Humanitarian NGOs: Challenges and Trends.* Humanitarian Policy Group Report 14. ODI, London.

Stott, P.A., Stone, D.A., Allen, M.R. (2004), Human contribution to the European.heatwave of 2003. *Nature* Vol. 432, pp: 610–614.

Sundelius, B. (2005), Disruptions: Functional security for the EU. In: Missiroli, A. (ed.), *Disasters, Diseases, Disruptions: A New D-Drive for the EU*, Chaillot Paper No. 83. Institute of Security Studies – European Union, Paris.

Taylor, V.A. (1977), Good news about disasters. *Psycholology Today* 5, pp. 93–94.

Taylor-Gooby, P., Zinn, J. (2006), Current directions in risk research: New developments in psychology and sociology, *Risk Analysis* 26, pp. 397–411.

TEC (2006), *Coordination of International Humanitarian Assistance in Tsunami-affected Countries*. Tsunami Evaluation Coalition, ALNAP, London. Available at: http://www.tsunami-evaluation.org/The+TEC+Thematic+Evaluations/ (August 2008).

Telford, J., Cosgrave, J. (2007), The International Humanitarian System and the 2004 Indian Ocean earthquake and tsunami. *Disasters* 31(1), pp. 1–28.

Terry, F. (2002), *Condemned to Repeat? The Paradox of Humanitarian Action*. Cornell University Press, Ithaca, NY.

The Sphere Project (2004), *The Sphere Handbook: Humanitarian Charter and Minimum Standards in Disaster Response.* Sphere Project, Geneva.

Thomalla, F., Downing, T., Spanger-Siegfried, E., Han, G., Rockström, J. (2006), Reducing hazard vulnerability: Towards a common approach between disaster risk reduction and climate adaptation. *Disasters* 30(1), pp. 39−48.

Thompson, M., Ellis, R., Wildarsky, A. (1990), *Cultural Theory*. Westview Press, Boulder, Colorado.

Tierney, K.J., Lindell, M.K., Perry, R.W. (2001), *Facing the Unexpected: Disaster Preparedness and Response in the United States.* Joseph Henry Press, Washington, DC.

Tierney, K.J. (2005), Social inequality, hazards, and disasters. In: Daniels, R.J., Kettl, D.F., Kunreuther, H. (eds.), *On Risk and Disaster: Lessons from Hurricane Katrina*, pp. 109–128. University of Pennsylvania Press, Philadelphia.

Tierney, K.J. (2007), From the margins to the mainstream? Disaster research at the crossroads. *Annual Review of Sociology* 33, pp. 503–525.

Turner, B.A. (1978), *Man Made Disasters*. London: Wykeham

Turner, B.A. (1994), The future for risk research. *Journal of Contingencies and Crisis Management*, 2(3), pp. 146–156.

Turner, B.L., Kasperson, I.I., Matson, R.E., McCarthy, P.A., Corell, J.J., Christensen, R.W., Eckley, L., Kasperson, N., Luers, J.X., Martello, A., Polsky, M.L., Pulsipher, C., Schiller, A. (2003), A framework for vulnerability analysis in sustainability science, *Proceedings of.National Academy of.Science*, Vol. 100, pp: 8074–8079.

Turner, R.H., Nigg, J.M., Paz, D.H. (1986), *Waiting for Disaster*. Berkeley, CA: University of California Press.

Twigg, J. (2003), The Human Factor in Early Warnings: risk perception and appropriate communications. In Zschau J, Kueppers AN eds, *Early Warning Systems for Natural Disaster Reduction* (Heidelberg: Springer Verlag) 19-26

Ulmer, R.R. (2001), Effective crisis management through established stakeholder relationships. *Management Communication Quarterly* 14, pp. 590–615.

UN DHA (1993), Internationally Agreed Glossary of Basic Terms Related to Disaster

Management, DNA/93/36, United Nations Department of Humanitarian Affairs,

UNHCR (2003), *Framework for Durable Solutions for Refugees and Persons of Concern.* UNHCR, Geneva. Available at: http://www.unhcr.org/cgibin/texis/vtx/partners/opendoc.pdf?tbl=PARTNERS&id=3f1408764 (August 2008).

United Nations (2004*), Living with Risk: A Global Review of Disaster Reduction Initiatives.* United Nations Internatio

United Nations (2006), International strategy for disaster reduction, available at: www.unisdr.org/ (August 2008)

van Aalst, M.K. (2006), The impacts of climate change on the risk of natural disasters. *Disasters* 30(1), pp. 5−18.

Van der Veen, A., Logtmeijer, C. (2005), Economic hotspots: visualizing vulnerability to flooding. *Natural Hazards* Vol. 36, pp: 65–80.

Vayda, A.P., McCay, B.J. (1975), New directions in the ecology and ecological anthropology. *Annual Review of Anthropology*, Vol. 4, pp: 293–306.

Van Brabant, K. (1999), Opening the black box: An outline of a framework to understand, promote and evaluate humanitarian coordination. ODI,

London. Available at: http://www.oneworld.org/odi/hpg/papers/kvbcord.pdf. (August 2008).

Vaux, T. (2002), *The Selfish Altruist: Relief Work in Famine and War*. Earthscan, London.

Vaux, T. (2006), Humanitarian trends and dilemmas, *Development in Practice* 6(3-4), pp. 240–254.

Vogel, C. (1998), *Vulnerability and Global Environmental Change*. LUCC Newsletter 3, 15–19.

Waldrop, M. (1994), *Complexity: the Emerging Science at the Edge of Order and Chaos*, London: Penguin Books.

Watts, M.J., Bohle, H.G. (1993), The space of vulnerability: the causal structure of hunger and famine. *Progress in Human Geography* Vol. 17, pp: 43-67.

Watkins, B. (2001), Information exchange for humanitarian coordination in the Horn of Africa. *Humanitarian Exchange* No. 19, pp. 47–49. Available at: http://odihpn.org/documents/humanitarianexchange019.pdf (August 2008).

Weiner, A.J., Kahn, H. (1972), Crisis and arms control. In: Hermann, C.F. (ed.), *International Crises: Insights from Behaviour Research*, p. 21. The Free Press, New York.

Westgate, K.N., O'Keefe, P. (1976), *Some Definitions of Disasters,.*Occasional Paper No 4. University of Bradford Disaster Research Unit, Bradford.

Westley, F. (2002), The devil in the dynamics: adaptive management on the front lines. In: Gunderson, L.H., Holling, C.S. (Eds.), Panarchy: Understanding Transformations in Human and Natural Systems. Island Press, Washington DC, pp. 333–360.

White, G.F. (1945), *Human Adjustment to Floods: A Geographical Approach to the Flood Problem in the United States*. Research Paper No. 29. Department of Geography, University of Chicago.

White, G.F. (1974), *Natural Hazards: Local, National, Global*. Oxford University Press, New York.

Winterhalder, G. (1980), Environmental analysis in human evolution and adaptation research. *Human Ecology* Vol. 8, pp: 135–170.

Wright, J.D., Rossi, P.H., Wright, S.R., Weber-Burdin, E. (1979), *After the Clean-Up: Long Range Effects of Natural Disasters*. Sage, Beverly Hills , CA .

Wildavsky, A. (1991), Risk Perception. *Risk Analysis* 11(1), pp. 147–159.

Wisner, B., Blaikie, P., Cannon, T., Davis, I. (2004), *At Risk: Natural Hazards People's Vulnerability and Disasters*, second ed. Routledge, London.

World Bank Independent Evaluation Group (2006), *Hazards of Nature, Risks to Development: An IEG Evaluation of World Bank Assistance for Natural Disasters*. International Bank for Reconstruction and Development/World Bank, Washington DC.

World Food Programme (2004), Vulnerability analysis and mapping: a tentative methodology. Available at http://www.proventionconsortium.org/files/wfp_vulnerability.pdf (September 2008)

Zahran, S., Brody, S.D., Peacock, W.G., Vedlitz, A., Grover, H. (2008), Social vulnerability and the natural and built environment: A model of flood casualties in Texas. *Disasters* 10.1111/j.1467-7717.2008.01054.x

Zimmerer, K.S. (1994), Human geography and the 'new ecology': the prospect and promise of integration. *Annals of the Association of American Geographers* Vol. 84, pp: 108–125.

Zoch, L.M., Duhe, S.F. (1997), 'Feeding the media' during a crisis: A nationwide look, *Public Relations Quarterly* 42(3), pp. 15–20.

SECTION III

BEST PRACTICES IN CRISIS COMMUNICATION: THEORY AND PRAXIS

Zvi Reich and Daniela Korbas-Magal

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CONTENTS

1   INTRODUCTION

This section presents "best practices" in crisis, risk and emergency communication[6]. These practices have been compiled from both the academic and professional literature as well as from a systematic analysis of the activities of seven public agencies in Israel that have dealt with crises and/or with the preparedness for such situations. It is based on a series of interviews with key officials, experts and journalists and a review of the studied organisations' internal documents, procedures, campaigns and websites.

"Best practices" is an interdisciplinary umbrella term, which is derived mainly from the fields of sociology and public administration. It is aimed at improving organisational and professional performance, assuming that it is not only possible but also necessary to identify and determine certain practices which are more successful and effective than others (Seeger, 2006; Grol and Grimshaw, 2003). The present collection of practices aims to provide crisis media managers with a comprehensive, accessible and systematic index of actions and principles to expand their knowledge beyond their always limited direct experience. Our suggestion, however, is not to take any of the suggested practices at their face value, but rather to consider them carefully as initial options— in essence, as a source of inspiration for the.further shaping, planning and implementation of media strategies and specific messages before, during and in the aftermath of crisis situations.

The practices are aimed at enriching the tools available for crisis media managers, expanding the scope of the solutions available to them, the range of options they can consider and their pool of creative ideas (creativity being one of the practices suggested in the literature review). Even a suggested practice that is not found suitable or useful can still raise awareness of the problem it tried to solve and lead the way towards finding a more suitable solution.

Practices can be also very meaningful in a broader sense. They often expose the perceptions and assumptions of their planners and those that use them. Organisation's perceptions and assumptions, on the other hand, give few indications of their practices.

The present section collects together the practices that are mentioned in the international literature and those which the studied organisations actually

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used or intend to use. Practices are included in our lists regardless of whether they were based on empirical evidence, as recommended in the literature, or on mere experience and intuition, as the prevailing norm seems to be.

Generic or Specific Practices?

This study deals with generic communication practices, i.e., practices that can be considered for use in every crisis and emergency situation with appropriate consideration and adjustments. Nevertheless, it is very often more effective to adopt specific practices, which have been developed especially for a specific type of crisis, taking into account its special context and the particular audiences that need to be communicated with. One of the most empirically comprehensive methods for preparing communication plans, procedures and messages for specific contexts is the "mental models" approach. Although developed within the specific framework of risk communication, and implemented in connection with numerous sorts of risks, the mental models approach may be very useful for crises and emergencies as well, especially in all that concerns preparedness for these situations.

The mental models approach uses systematic interviews with experts in the specific field of the risk in question and with members of the public, trying to map the gaps between the parties and suggest strategies and tactics to reduce these gaps. The approach employs practical step-by-step instructions which are straightforward and feasible for any organisation willing to try it. Its only shortcomings are the time and resources it takes for such operations to be carried out. A good starting point for becoming acquainted with the mental models approach can be found in Morgan et al. (2001).

The Structure of this Report

- Section 2 outlines the methodologies used to map the best practices in crisis, emergency, risk, and disaster communication that are suggested both by the international literature and the studied organisations.
- Section 3 discusses the best practices in the existing literature. In this section and the one that follows, practices are displayed according to their relevance to the different stages of crises.
- Section 4 presents the practices found in our empirical work..
- Section 5 examines how the studied organisations learn about the attitudes and perceptions of the public and monitor their own performance..
- Section 6, suggests some initial conclusions and indicates general directions for future studies.
- Appendix 1 presents the basic features of the organisations studied.
- Appendix 2 helps to contextualize the various practices by supplying some background regarding the Israeli case.

2   METHODOLOGY

The data for both this section and two other sections in this book ("Crisis communication guide for public organisations" and "Exploring media relations during crisis") were gleaned using two methodologies: a literature review and a field study carried out within seven leading organisations. Overall, we conducted 36 background interviews with 17 national spokespersons and 19 other employees in focal positions in the studied organisations. The spokespersons were either present or former encumbents. The other employees from these organisations are experts such as public behaviour specialists, instructors, PR personnel etc.

Literature review

The literature-based study reported in this paper is a bibliometric meta-analysis of the existing "best practices" for risk and crisis communication suggested in the scholarly literature of these domains. In order to map the existing literature, the meta-analysis begun with a search for.reference under a series of keywords, in several major academic databases in the social sciences and in the areas of.risk and crisis. Following the inter-disciplinary nature of risk and crisis communication, we searched databases inside the social sciences as well as other related fields such as engineering, psychology, and management.7

The research used a variety of keywords in order to be as comprehensive as possible. Among these were: "best practices", "manual", "instructions", "principle", "guide", "guideline" and suchlike, all narrowed within the fields of "risk communication", "crisis communication", "disaster communication", "emergency communication" along with the single terms "risk", "crisis", "disaster", "emergency", and "terror". The time period for the search was the last two decades (1990-2010).

The search yielded nearly 300 scholarly articles and books, which were thoroughly scanned and reviewed for practical recommendations and references. In 42 main books and articles that are cited in the references below, we located 38 best practices. The practices were revised to avoid duplication and repeatability. Similar practices were united into a revised and integral version. The final wording chosen was the clearest one for both coders and for both writers. These best practices were analyzed in a double coding procedure (inter reliability score: 96.5%).

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7   Proquest, J-stor, Sociological abstracts, Communication abstracts, Journal of risk research, Journal of contingencies and crisis analysis, Society for Risk Analysis (SRA) databases, The risk communication bibliography database, CDC database, Health Communication, Science Communication, The Risk Report, Risk Management, Risk, Decision and Policy, Journal of Health Communication, Risk: Health, Safety and Environment, Journal of Medical Risk, International Risk Management and many others.

The coding addressed the following categories:

1. *Crisis phase*: practices to be used in specific times of pre-crisis, crisis, post-crisis situations (often a practice fitted more than one phase), and general practices which fit all phases. The timing category can teach us whether there are phases which tend to be cared for and others that are neglected or left unattended. The timing category can also teach us whether most practices concentrate on the time of the crisis itself, the core of the phenomenon, or whether a rich discipline has evolved around preparedness on the one hand, and lessons learned on the other hand.

2. *Key players*: Who are the key performers of a particular practice out of the many persons — experts, senior managers, spokespersons, psychologists, journalists, webmasters and/or the public itself — involved in the chains of risk and crisis communication? Indicating the degree of dominance for each player could aid us in determining the level of centrality that player occupies in shaping the process of risk and crisis communication.

Fieldwork within the studied organisations

The second part of the study is based on interviews conducted among seven national leading organisations dealing with crisis communication (see appendix 1).

The interviews were comprehensive, covering different aspects such as analysis of former cases, lessons learnt, media relations, patterns of work, norms, ethical problems, procedures etc.

In the specific context of practices, our challenge was to pinpoint these abstract and evasive entities which include already-performed actions, intended actions, principles of action, values and standards. Since we desired a comprehensive list of practices, without putting any words into the interviewee's mouth and carefully avoiding any additions and embellishment — the research setting was based upon two major principles:

1. In order to assist their memories without suggesting specific practices, interviewees were given a graphic matrix showing the different stages of a crisis, with some general headings such as actions, principles of actions, the different officials in charge of implementing them, etc.

2. In order to reduce dependency on the spokespersons, we tried to detect practices by reviewing internal documents and procedures in each organisation, analyzing its website and focusing on a wider list of interviewees.

In each of the organisations studied, we aimed at interviewing the following seven officials. Those marked by an asterisk were not employed by all the organisations.

1. Senior expert. Though these senior officials do not deal directly with crisis communication, they contribute an authoritative, professional and unmediated background regarding the general aspects of emergency management, including the various emergencies the organisation faces, its criteria for success in emergency management and the ways in which the public and the media fit into the organisational scheme.

2. The spokesperson (in cases where the current spokesperson had served less than one year in this position, their predecessors were interviewed as well).

3. Public information officer. These were asked about long-term campaigns, tools and practices regarding the education and the preparedness of the public

4. Population behaviour officer. These were asked about the ways in which they study public attitudes and perceptions regarding different types of emergencies and measure the performance of their own organisations before, during and after a crisis.

5. The manager of the situation room and call-centre.

6. The webmaster.

7. Manager of instructions for school children.

In organisations which face numerous types of emergencies, interviewees were asked to focus on the dynamics of three major events:

1. An emergency event in which the interviewee has personally participated.

2. An emergency event which the interviewee's organisation considers to be among the most likely to occur.

3. An emergency event which the interviewee's organisation considers to be among the most complex and severe.

The focus on these events was intended to anchor the discussion in a specific context as well as help to identify best practices according to two criteria: either their effectiveness in past events according to our interviewees, or their intentions to employ them in future crises. Five research assistants, who received verbal and written guidance, conducted the research. The assistants were provided with an interview kit, which included the following research tools: The graphic matrix, semi-structured questionnaires for spokespersons and media

people, guidelines for interviews with experts and other interviewees, and an 18-page comprehensive guide for the interviewer.

The spokesperson's questionnaire included questions about past and recent crises and emergencies and relevant examples, common emergency scenarios, and matter-of-fact practices for the pre-crisis, crisis and post-crisis (phases). The questionnaire also incorporated questions such as: Whether and how does the organisation measure success? Does the organisation monitor the public's response? Is any systematic research carried out? In organisations which employ an emergency centre – does it keep and analyze the public's appeals? Is there any media monitoring carried out and by whom? Is it being analyzed?

3 LITERATURE-BASED BEST PRACTICES

The following practices are based on a comprehensive literature review, scanning all the searchable sources under a series of keywords in several major academic databases in the social sciences and in the fields of risk and crisis. The search yielded nearly 300 scholarly articles and books, which were thoroughly scanned and reviewed for practical recommendations. The sources have dealt with various types of crises, from financial and corporate (cf: Mitroff, 2005) to natural disasters (cf: Gallagher et al, 2007) and food-borne risks (cf: Renn, 2006). The main best practices have been systematically collected, revised to avoid duplication and analyzed. The best practices are presented in a long overview according to the relevant phase/s of a crisis:

TABLE 1 Best Practices from Scholarly Literature

No.	Best Practice	Key players	Reference
Pre-crisis			
1	Pre-event planning: have a plan in place.	Seniors; spokespersons; experts	Becker, 2004:198; Cloudman and Hallahan, 2006:368; Fischer, 1996:214; Gilk, 2007; Lundy and Broussard, 2007:222; Reynolds and Seeger, 2005; Seeger, 2006; Samansky, 2002; Lee, Woeste & Heath, 2007
2	Learn about the target audience and its characteristics.	Seniors; spokespersons; psychologists; experts	Perry and Lindell, 2003:340; Reynolds and Seeger 2005:45; Ropeik, 2006:254; Spence, Lachlan and Griffin, 2007:550; Wray and Jupka, 2004:209
3	Educate the public regarding potential threats and encourage appropriate preparation and risk reducing behaviours.	Spokespersons; public; seniors	Fischer, 1996:214; Perry, 2007:413; Perry and Lindell, 2003:345; Reynolds and Seeger, 2005; Ulmer, Sellnow and Seeger, 2007
4	Review emergency plans.periodically, preferably annually in every jurisdiction.	Spokespersons; experts; seniors	Perry and Lindell, 2003:338, 347; Seeger, 2006:238 Samansky, 2002
5	In the planning emphasise response flexibility and focus on principles of response rather than trying to elaborate the process to include many specific details.	Spokespersons; seniors	Perry and Lindell, 2003:342; Bernstein, 2006

No.	Best Practice	Key players	Reference
6	Conclude media training prior to the onset of a crisis situation. Crisis spokespersons should be identified and trained.	Spokespersons; seniors; experts	Cloudman and Hallahan, 2006:368; Fischer, 1996:214; Lundy and Broussard, 2007:222; Seeger, 2006:240
7	Prepare and manage contingency plans and written procedures, in order to reduce improvisations.	Seniors; spokespersons; psychologists; experts	Premeaux et al, 2007 Samansky, 2002
Pre-crisis and Crisis			
8	Collaborate and coordinate with credible inter-organisational sources.	Seniors; spokespersons; experts	Covello, 2003; Fischer, 1996:211; Lundgren and McMakin, 2004; Perry and Lindell, 2003:343; Powell and.Leiss,1997; Reynolds and Seeger, 2005; Seeger, 2006; Taylor and Kent, 2007:144; Ulmer, Sellnow and Seeger,2007; Wray and Jupka, 2004:214
9	Distribute information to the public early, quickly and frequently. Even if information is partial, inform the public that updates will follow.	Spokespersons; seniors	Barrett, 2005:59; Lundgren and McMakin, 2004 ; Powell and Leiss, 1997
10	Use clear and understandable terms when releasing information.	Spokespersons; experts; seniors	Arpan and Pompper, 2003:292; Becker, 2004:204; Lundy and Broussard, 2007:222, Tierney, Bevc and Kuligowski, 2006:60; Wray and Jupka, 2004:214
11	Prepare specific messages for all plausible crisis scenarios, based on tested knowledge of the public's views and concerns over the issue.	Spokespersons; experts	Becker, 2004:199, 204; Ropiek, 2006:256
12	Base planning upon accurate knowledge of the threat and of likely human responses.	Seniors; spokespersons; psychologists; experts	Perry and Lindell, 2003:340; Reynolds and Seeger 2005:45; Ropeik, 2006:254; Spence, Lachlan and Griffin, 2007:550; Wray and Jupka, 2004:209
13	Provide the public with the following information: what the public needs to do and can do, how one should protect itself, and who are the authoritative bodies one should rely upon.	Spokespersons; public	Renn, 2006 Bernstein, 2006

No.	Best Practice	Key players	Reference
14	Advise the public to take self-efficacy actions in order to reduce the risk: how to help oneself and help others, while demonstrating the effectiveness of self-help to the public.	Seniors; spokespersons; psychologists; experts; public	Becker, 2004:204; Reynolds and Seeger, 2005:52; Sandman, 2006:259; Wray and Jupka, 2004:213
Crisis			
15	"Stealing others' thunder" (an organisation being the first to break the news about the crisis to the media) as a method of establishing and gaining credibility.	Spokespersons; journalists	Arpan and Pompper, 2003:291; Arpan and Roskos-Ewoldsen, 2005:4250
16	Maintain the delicate balance between the need to provide information to the public (so that the latter will be able to take rational decisions), and the public tendency to overestimate the risk.	Spokespersons; experts; public	Renn, 2006
17	The crisis management process is ought to include the following elements: documentation, information, joint dialogue, and collaborative decision-making. The public should be able to make its own judgment.	Spokespersons; seniors	Renn, 2006
18	Collaborate with the public: disseminate information early, while maintaining sincerity, fairness and openness.	Spokespersons; experts	Covello, 2003; Lundgren and McMakin, 2004; Mitroff, 2005; Powell and Leiss, 1997; Reynolds and Seeger, 2005; Reynolds, 2006:251; Ropiek, 2006:255; Seeger, 2006; Wray and Kupka, 2004:214
19	Employ creative thinking and rapid improvisation skills.	Seniors; spokespersons; journalists	Mitroff, 2005; Covello, 2003; Samansky, 2002 Bernstein, 2006
20	SWOV (Speaking With One Voice) – Use unified messages. Effective in cases of social homogeny and relative consensus among scientific experts regarding the technical aspect of the message content (technical certainty). Limit the number of spokespersons, as this allows greater message control while reducing contradictory messages.	Spokespersons	Clarke et al, 2006:168

No.	Best Practice	Key players	Reference
21	SWMV (Speaking With Multiple Voices) .–Adjust the messages to different audiences. Effective in cases of social heterogeneity or technical uncertainty.	Spokespersons	Clarke et al, 2006:168; Sandman, 2006:260-1; Taylor and Kent, 2007:143
22	Respect and validate audience feelings and concerns.	Spokespersons; seniors; psychologists	Ropiek, 2006:254;.Sandman, 2006 :260
23	Accept uncertainty and ambiguity; consider admitting a lack of knowledge as a strategy to maintain credibility.	Spokespersons; seniors; experts	Barrett, 2005:59; Ropiek, 2006 :255; Seeger, 2006:241
24	Maintain open and honest communication with the media, while remaining accessible; meet the media's needs and use it as strategic source.	Spokespersons; journalists	Fischer, 1996:216; Seeger, 2006:240
25	Use ICT's (Information and Communication Technologies) for efficient information management.	Experts; spokespersons; Seniors	Samarajiva, 2005
26	Post documents of traditional media tactics on the organisational website: transcripts of news conferences and interviews with organisational leaders, news releases, fact sheets, question and answer formats, letters to relevant publics. Documents of this kind can be ready for rapid dissemination since they have already been approved by different decision makers in the organisation.	Spokespersons; webmasters	Taylor and Kent, 2007:141
Crisis and Post-crisis			
27	Focus on messages of compassion for the victims rather than messages of attribution and who is to blame. Communicate with compassion, concern, and empathy.	Seniors; spokespersons; psychologists	Cloudman and Hallahan, 2006:368; Coombs and Holladay, 2008:255-6; Covello, 2003; Lundgren and McMakin, 2004; Reynolds, 2006:252; Reynolds and Quinn, 2008:138; Reynolds and Seeger, 2005; Ropeik, 2006:256; Seeger, 2006; Ulmer, Sellnow and Seeger, 2007
28	Acknowledge and take responsibility for the role of the organisation in the crisis. It may enable you to handle crisis communication more effectively.	Seniors; spokespersons	Gallagher, Fontenot and Boyle, 2007:218
Post-crisis			

No.	Best Practice	Key players	Reference
29	Communicate lessons-learned both within the organisation and to the public	Seniors; spokespersons; psychologists; experts	Alfonso and Smith, 2008:146; Seeger, 2006:237
Pre, Crisis and Post			
30	Promote integration of.communication strate-gies.into the decision-making process and as a guide for the handling of the crisis itself	Seniors; spokespersons	Seeger, 2006:236-7
31	Strive for feedback: use opinion polls; estimate the public's general under-standing of risks; estimate the public's preparedness level and opinions on the emergency plans	Psychologists; spokes-persons; public	Reynolds and Seeger, 2005; Sandman, 2006:260; Ulmer, Sellnow and See-ger, 2007
32	Integrate and display mate-rials and information promptly. Display informa-tion in as motivating a way as possible	Spokespersons; psy-chologists; experts; sen-iors	Mitroff , 2005; Powell and Leiss, 1997 ; Rey-nolds and Seeger, 2005
33	Keep the message coherent and consistent	Seniors; spokespersons; psychologists; experts	Lundgren and McMakin, 2004; Powell and Leiss, 1997; Ulmer, Sellnow and Seeger, 2007; Bern-stein, 2006
34	Crisis communication best practices would emphasise a dialogic approach regard-ing the public, such as us-ing the Internet to promote two-way communication	Webmasters; spokesper-sons; public; psycholo-gists	Alfonso and Smith, 2008:146; Jay Paul, 2001:748; Seeger, 2006:238; Taylor and Kent, 2007:141 ; Taylor and Perry, 2005:215-216
35	The organisation should commit itself to being the best source of information	Spokespersons; journal-ists; public	Heath, 2006:247-8
36	Realise that crisis response is a narrative and maintain narrative coherence	Spokespersons; journal-ists; public	Heath, 2006:247-8
37	Improve organisational communication among the emergency organisations themselves	Seniors; spokespersons; experts	Chess and Clarke, 2007
38	Monitor the media con-stantly, both to learn from what journalists have found and to immediately correct mistakes or inaccurate in-formation	Spokespersons	Sellnow et al, 2009; Ulmer, Sellnow and See-ger, 2007

Table 1 offers the largest assortment of best practices compared to former works which have listed between two to eleven best practices per paper (Brenstein, 2006; Chess et al, 2006; Cloudman and Hallahan, 2006; Covello, 2003; Heath, 2006; Paul, 2001; Reynolds and Seeger, 2005; Reynolds and Quinn, 2008; Rey-nolds, 2006; Ropiek, 2006; Samansky, 2002; Sandman, 2006; Seeger, 2006; Ulmer, Sellnow and Seeger, 2007)..Since best practices are a major tool for rapproche-ment between researchers and practitioners in crisis communication (Sandman,

2006; Waymer and Heath, 2007), tracking new best practices can help bridge between both communities

Obviously, a selection of thirty-eight practices like the ones presented in table 1 is too heterogenic to make any vast generalizations, yet it is possible to point on a few central trends in this list..Practices in the literature tend to emphasise speed, preparedness and communicativeness..They give priority to public good and life-saving normative values and to ethical forms to the administration of crises. In addition, they refer to spokespeople as the key figures in the management of crisis communication.

4 FIELD-BASED BEST PRACTICES

Following are practices that were identified in the field study, organized according to the crisis stage during which they should be considered. For each practice, we have detailed the organisations that were found to embrace it, in order to indicate the degree of consensus around the practice. Many practices are accompanied by additional examples and explanations, to show possible nuances.

TABLE 2 Best Practices from research

Abbreviation Key

AGR – Ministry of Agriculture
FIR – Israel Fire and Rescue Services
HFC – Home Front Command
MOE – Ministry of Environmental Protection
POL – Police
MOH – Ministry of Health
MDA – Magen David Adom (Israeli "Red Cross")

No.	Practice	Organisation	Context/Examples/Comments
PRE-CRISIS			
1	Developing and document-ing.internal procedures regarding communica-tion and pro-vision of in-formation to the public before, during and after the crisis	AGR FIR HFC MDA MOH POL	In MOH, HFC, and POL: Specific directives for dif-ferent emergency situations.
2	Distinguish-ing between the functions of spokes-manship and public infor-mation offi-cers.	MDA HFC MOE MOH	The two functions have different purposes, orienta-tions, ethical standards and practical tools. Hence, in certain organisations they are carried out by dif-ferent office holders

3	Preparing the public for emergencies through the early distribution of information (see also practice #17).	AGR FIR HFC POL MDA MOE MOJ	In HFC: An annual campaign was organized, including mailing a brochure to every home, promoted by advertising and public relations, along with activities for schools, and practical personal protection drills. In contrast to most of the organisations, MOH expressed doubts regarding the effectiveness of early information, claiming that the public lacks awareness and is uninterested unless there is an actual crisis.
4	Preparing standby materials for the occurrence of emergency cases.	HFC MDA MOH POL	In HFC: A town which found itself within the increased range of rocket-fire into Israel underwent a six-hour campaign to prepare its citizens for emergency situations. The campaign included creating relevant informational materials and printing them, advertising on the local radio station, using inter-personal communication through soldiers who distributed pamphlets in central locations such as intersections and synagogues, aided by local authority information centres and recorded telephone messages to each home. In MOH, for different epidemics: Emergency standby campaigns in different languages including television broadcasts, jingles on the radio, chat groups on the Internet with specialists on epidemics, distributing pamphlets in different languages and opening a call centre. In MDA: Emergency standby announcements to different media for emergency situations such as an urgent need for blood donations. POL: Emergency standby announcements according to the type of event as well as its severity, such as special announcements for earthquakes of different magnitudes.
5	Executing inter-organisational drills which involve communication aspects.	AGR FIR HFC MDA MOE MOH POL	Series of inter-organisational drills relating to different emergency situations, including communication aspects, at the initiative of the National Information Directorate and the National Emergency Administration.
6	Preparing technical and coordination infrastructures with the central newsrooms.	HFC	In HFC: In each newsroom of the broadcast media there is a "hotline" for conference calls, a special fax machine, emergency suitcases with updated informational materials, and a pager for real-time announcements on warning sirens..Once every two months, evaluations are done to update materials and ensure readiness.
7	Placing spokesperson representatives at.critical locations of information	AGR FIR HFC MDA MOH POL	In different organisations, different locations for critical information reception were chosen, in which the spokesperson or his/her representatives were located: situation room (POL), senior command staff (HFC), central forums and discussions with the ministry administration (MOH).

	exchange inside the organisation for the purpose of continuous self updates.		Inter-organisational coordination is carried out primarily between HFC and the rest of the emergency organisations, and in cases of inter-ministry crises such as the avian flu outbreak there is cooperation between MOH and AGR..
8	Choosing leading interviewees and training them.	AGR FIR HFC MDA POL	In HFC: Four leading interviewees of the rank of colonel in the reserves, of authoritative and representative appearance, undergo periodic training on professional and communication topics (and) after which each one is assigned to one of the leading television stations. Thus, each station has "its" own face..Additional interviewees undergo preparation for briefings and interviews. On the dedicated television station of HFC: The General Commanding Officer opens the broadcast during emergency situations. In MDA and FIR: Training of regional spokespersons. In POL, HFC, and AGR: Training for television interviews including video documentation, analysis and feedback to the interviewee, including during the crisis.
9	Use criteria for choosing interviewees and spokespersons.	HFC MOE MOH POL	The criteria for choosing interviewees: In HFC: Rank, professional association with the event, and articulateness. In POL: Commanders or experts capable of transmitting the message clearly, exactly, authentically, and visually. In MOE and MOH: Preference for experts over administrators.
10	Establishment of a regional network of spokespersons for dealing with crises of a regional nature or simultaneous crises.	FIR HFC MDA	In HFC: The district spokespersons are reserve officers active only during emergencies. In FIR: Ordinary firemen who volunteer to serve also as spokespersons.
11	Using different media to backup and improve the effectiveness of warning sirens.	HFC	The only body that activates sirens is HFC. Specific measures: Launching of "silent waves" on the radio: "broadcasting" silence which is broken only when there is a siren (for use during emergencies, i.e., at night or on the Sabbath by religious Jews). Siren alerts in real-time on pagers that are distributed to the electronic media so that they may announce them immediately. In addition, using local radio stations in areas that have partial siren coverage. Distribution of sophisticated beepers to families and institutions in order to ensure that civilians can hear the sirens in their homes and in institutions.

			Civilians can program the beepers with familiar voice warnings (such as a mother requesting her children, in her own voice, to enter a protected area).
12	Leveraging events such as instances of death, rescue stories, or seasonal risks for rescue/life-saving training.	MDA FIR	In MDA: Taking advantage of these types of events in order to explain, e.g., how to resuscitate someone. In MDA and FIR: Publicizing self-protection instructions on the eve of risk-sensitive days/events such as bonfire holidays or fast days.
PRE-CRISIS AND CRISIS			
13	Routing contents according to the medium's characteristics.	FIR MDA POL	In MDA, in general: Routing of PR materials to television, and instructional and educational materials to the print press. In POL: Referring messages to the media in accordance with medium considerations and timeliness. In FIR: The telephone number of the senior officer on the scene is provided to newsrooms in order to prevent delays. Electronic media are granted priority considering their pressing deadlines.
14	Establishing a shared and uniform terminology inside the organisation and between the organisation and the public (see also practice #30)	AGR MOE	In MOE: A tri-lingual dictionary for environmental terms. In AGR: Phrasing of a uniform terminology sheet.
15	Employing celebrities for effective transmission of messages.	HFC	In HFC, on the dedicated television station: Choosing well-known and credible newscasters; on the children's channel well known child stars (among children) provide emergency updates (see also practice #26).
16	Defining and executing representative appearance of interviewees and spokespersons.	FIR HFC POL MDA	In HFC, FIR, and MDA:.Representative dress code for interviewees was distributed. In FIR and MDA: Staffs are instructed to agree to be interviewed only in front of their ambulances and fire engines. In POL: The spokesperson may contact the interviewee during the interview via a text message to correct any problems in his/her personal presentation.

17	Establishing direct communication channels with the public in order to prevent dependency on the mass media and its selection and biases (for specific practices of each channel, see also practices #18-22).	AGR FIR HFC MDA MOE MOH POL	
18	Using interpersonal communication as a supplementary channel.	HFC MDA	In HFC during non-emergency times: Instructional lectures for groups of adults in their workplaces and fifth-grade pupils (for more on the topic of pupils, see also practice #26). In HFC, during an emergency: Dispatching guides and military teachers to assist different populations. These can help answer questions regarding self protection measures, organize activities for children in shelters, direct people how to reach public shelters when warning sirens are heard etc., according to the unfolding needs. In MDA: During extreme emergency situations when communication and power systems are wiped out, the ambulance speakers may be used for broadcasting information to the public.
19	Using the organisational website as a communication platform.	AGR FIR HFC MDA MOE MOH POL	In HFC, in times of emergency: A dedicated emergency website replaces the regular one (with a link to the regular website) in order to focus the public on the current emergency (see also practice #24).. Citizens can ask questions online and receive an answer usually within a few hours, signed "personally" by a senior officer with his/her picture. In POL and MDA: Reservations about relying on the organisational website during emergencies, since most citizens do not visit the website.
20	Opening an informational call centre for public questions/ concerns.	AGR FIR HFC MDA POL	In HFC: Reinforcing the call centre with telephone operators and psychologists to support and assist operators and callers. The telephone operators undergo preliminary training and learn to react according to a set of answering templates. For new questions, they provide a response, mostly within several hours. In MOH, in an event where multiple injured people have been transported to different hospitals:.Special inter-hospital software enables answers to callers' questions as to whether a certain person was injured and in which hospital he or she is being treated (but not their condition). Special phone numbers are publicized in the media. The inter-

			hospital software also assists the hospital staff to identify anonymous casualties..
			In POL, MDA, and FIR: Using (an easy to remember) telephone number.
			In MDA: In high pressure cases, the call "skips" to a call centre in another region, and the call's registration and information is transferred to the appropriate region.
			The use of an informational line with recorded messages for non-urgent questions in order to ease the pressure on lines..The call is answered in less than 14 seconds.
21	Establishing a special television studio for emergency instruction broadcasts.	HFC	In HFC, during times of emergency: Television studio dedicated to broadcasting pre-recorded instructions for personal protection measures alongside live broadcasts..Representatives from other emergency organisations are also hosted in the studio. In extreme emergency cases: The HFC is authorized to temporarily take over the broadcast of leading television channels in order to disseminate life-saving messages.
22	Establishing emergency local radio stations.	HFC	In HFC, currently being established: Regional radio stations for broadcasting emergencies in threatened regions, especially where sirens are not audible enough.
23	Utilizing cellular technology and its wide distribution to save lives.	MDA	In MDA: Cellular phone users in harmed regions may request life-saving or first aid instructions via text message or by downloading files through a cell-Internet phone service. Utilizing the time until the ambulance arrives for briefing the caller on first aid instructions. In MDA, currently being developed: Using cell phones for locating casualties through GPS; personal medical files will be stored in the cell phone memory; informational campaign will suggest subscribers save the contact number of a person who can provide medical information about them when they are unable to communicate with their surroundings. In AGR: Text messages for communication with large groups of farmers who have been identified as one of the main audiences (see also practice #25).
24	Effective presentation of information.	AGR HFC MDA MOH POL MOE	Emphasis on practical self protection instructions In MOH and HFC: Aim to ensure the unequivocal understanding of messages (see also practice #31). Emphasis on the presentation of information on the website: Use of links in order to fit the navigation patterns of users regarding reading speed, order, depth and areas of interest. In HFC and MOE: Localization of information in

			order to allow an information search relevant to the user.
			In HFC: Use of multimedia to illustrate self protection measures.
			On the POL website: Emphasis on user-friendly surfing through the use of Flash software and animation as opposed to the less cordial.circumstances in which meetings between citizens and the police usually take place.
25	Identifying threatened target groups and matching the specific communication techniques to each of them (see also practices #22, 26, 27, and 28).	AGR	In AGR: During the avian flu pandemic, two target audiences were identified (farmers and consumers), and communication patterns were matched to the needs of each (of them).
26	Opening unique communication channels for children as a key population for instilling awareness.	HFC MOE	In HFC: Broadcasting special programs on the children's channel starring well-known puppets which have also been integrated in the HFC's instructional pamphlets; presenting films for children on the website; publishing a special children's magazine; distributing special writing/drawing books for children during times of emergency to help them express themselves emotionally. Series of lectures for fifth-grade pupils; expanding instructional sessions to include additional classes, along with the provision of special training for the permanent educational staff of the schools. In MOE: Establishing a website for children.
27	Transmitting information to populations who do not speak the language of the majority.	AGR FIR HFC MDA MOE MOH POL	All the organisations translate information on at least some of the relevant platforms (websites, call centres, mass media, and a selection of interviewees in foreign languages) but lack consistency regarding the selected languages and the share of materials that get translated (all the materials or only the instructions for self-protection)..Thus, for instance, there are inconsistencies in covering Arabic despite its status as an official language or Amharic, which is spoken by a substantial immigrant group..
28	Making communication channels accessible to people with disabilities.	HFC MDA	In HFC: Option of personal settings on the website for visually impaired individuals; distribution of pagers for the hearing-impaired for announcements of warning sirens In MDA: Option to order an ambulance through text message, fax, or e-mail.
29	Cross-referencing between different communication channels to	AGR HFC MDA POL	In HFC, for example: References from the website to broadcasts and vice versa..The media usually agree to broadcast the telephone numbers and web addresses during emergencies.

	allow the user. a choice of a preferred channel.		
30	Ensuring the uniformity of communicative messages.	AGR FIR HFC MDA MOE MOH POL	In times of emergency: Conference calls with different governmental spokespersons and distribution of lists of desired messages initiated by the National Information Directorate.
31	Designing messages while ensuring the following values: precision, unambiguity, reliability, transparency, honesty, and life-saving.	AGR FIR HFC MDA MOE MOH POL	In HFC: Preference is given to saving lives when this value conflicts with that of transparency. In POL: The value of speed is prioritized from the moment the information reaches the media's hands..Until then, the emphasis is on reliability. In MDA: Transparency is overruled when information could risk lives (e.g., by publicizing suicides) or could harm the work of MDA (false emergency calls).
32	Pro-active spokesmanship strategy.	MOH POL	Viewed by spokespersons as a way of minimizing the damage caused by negative information related to the organisation versus a reactive spokesmanship strategy.
33	Adopting a pattern of self-updating and updating the media with developments.	AGR FIR HFC MDA MOE MOH POL	
CRISIS AND POST-CRISIS			
34	Media Monitoring.	AGR FIR HFC MDA MOE MOH POL	Carried out usually by an external clipping service; generally spokespersons only engage in an impressionistic analysis of the publications.
35	Visual documentation of arenas of unscheduled events for media use.	MDA FIR POL	In the three first respondents (POL, MDA, and FIR): Initial documentation of emergency situation arenas which are inaccessible to the media, at least during the initial stage. According to the organisations, this documentation is required primarily for internal purposes. The footage or photographs are passed on to the media to obtain prominent and positive coverage..
POST-CRISIS			

36	Learning les-sons.	AGR FIR HFC MDA MOE MOH POL	All of the organisations claim that they strive to learn lessons..Information sources for analysis: Statistical quantification of public correspondence via telephone and the Internet, surveys, analysis of journalistic correspondence (HFC), initiated an investigation of journalistic reports by the organisation (AGR), as well as tracking of user comments on online news stories. HFC even publicizes, in a partial manner, results of analyses of events in the media.
PRE-CRISIS, CRISIS AND POST-CRISIS			
37	Gathering information about the population (knowledge, preparedness, confidence in authorities, emotional state etc.) from different channels to consolidate effective.. messages.	AGR HFC	In HFC: Public opinion polls are carried out during emergencies every 2-3 days and during non-emergency periods every 2-3 months; also leading up to and after the annual campaign (see practice # 3). Analysis of public questions/queries received on the website and at the call centre and their distribution according to demographic variables. Made possible through the use of identification numbers required from each caller; population behavioural officers, placed in each of the local authorities, collect information on public behaviour and attitudes from the different institutions and welfare services. In AGR: One-time survey which was intended to check the consumption of poultry products following the avian flu pandemic (funded and initiated by the poultry farmers union).

Table 2 shows that our attempt to identify the best practices from the field has yielded a similar scope of best practices (37 versus 38 literature-based). The variant applications of these practices in the different organisations are turning table 2 into a wealthy reservoir of practices, as well as a complex challenge for making generalizations. Nonetheless, we will point out some key trends, comparing and contrasting the content with the literature-based practices presented in table 1.

While literature-based practices often have a general and fundamental nature, the practices from the field tend to be handy, matter-of-fact, professional and tangible. Moreover, the field-based practices place a large emphasis on practical resources and technologies and do not look down on tactics such as using celebrities to attain exposure. Likewise, they are mainly dealing with ways to achieve media exposure – an immediate organisational need – than the extent to which such an exposure is fulfilling meta-goals and values, such as life-saving and humanistic care. In general, ethical values are apparent indirectly in the attempt to put an emphasis on preparedness and practice, the principle of a swift response which can surely assist in life-saving, other ethical principles such as transparency and precision, and remembering audiences with special needs such as children, the handicapped and speakers of a foreign language. Hence, it will not be just to say that the practitioners are ignoring ethical aspects, but it may be fair enough to say that these aspects are not placed at the top of their explicit agendas.....

The gap between literature-base best practices and practices used by the studied organisations provides some important reflections, which should be noticed and considered by policymakers and stakeholders organisation-wide. Some differences, it appears, are due to inherent barriers to use literature-based best practices in every-day practice..Practitioners are overloaded with duties, tasks and responsibilities. These lead them to take the shortest step toward a specific goal, possibly leaving out of consideration other factors such as intellectual dilemmas and normative value.

Even though our study has focused on the Israeli context, some of the practices that were presented here may have general validity – or at least should be considered for implementation in other contexts, based on careful examination, as suggested in the conclusions of this book section.

5 STUDYING THE PUBLIC (AND THE ORGANISATION'S PERFORMANCE)

As one can easily see from Table 3, most of the organisations studied have failed to develop a systematic culture of learning about and understanding their audiences' perceptions and attitudes and the acceptance of their messages among the various recipients, let alone a systematic examination of the practices which comprise their communication policy before, during and in the aftermath of crises.

As a substitute for a systematic review, the organisations continue to rely mainly on intuition and on their practical media experience. It is important to note that intuition in and of itself can be useful, and is more common and sometimes even more effective than certain professional circles would consider or admit it to be (Dreyfus & Dreyfus, 1986). Nevertheless, within the field of risk and crisis communication, there is a clear preference for evidence-based practices over intuitive ones (Lee, Woeste & Heath, 2007).

Among the organisations studied the only one to perform public surveys regularly during times of routine and emergency, and to analyze them meticulously and systematically is the Home Front Command. The Home Front Command is also one of two organisations that employ a population behaviour officer with a background in social sciences and with diverse empirical experience (The second body with such an organisational function is the Israel Police). Nonetheless, the Home Front Command mainly focuses on general questions such as public knowledge and preparedness for an emergency, along with the level of trust in different authorities, avoiding concrete testing of communicative practices..

Frustratingly enough, even information that the studied organisations already possess seems to get lost in the shuffle instead of being utilized. For example, most organisations employ call centres, but do not analyze their data to identify perceptions and trends. Most of them use external media monitoring services, but do not explore the data systematically. These examples indicate that the main barrier to studying systematically the public reception of crisis situation is not lack of financial resources (which is always the case) but rather a lack of awareness and the lack of a professional and scientific backdrop emphasizing the importance of these measures.

On the other hand, almost all the organisations claim to conduct post-event inquiries regarding their communicative performance (as well as their operational activities). It may well be that the popularity of post-hoc explorations is influenced by the inquiry-performing culture in the IDF (Lipshitz, Popper & Oz, 1996), as well as by the character of these inquiries, which is episode-based rather than longitudinal and has an administrative rather than a scientific character.

TABLE 3   Measures for studying the public and the organisation's performance

	Media monitoring	Post-hoc analysis of the crisis [a]	Analysis of the public's applications [b]	Public opinion polls [c]
(The) Home Front Command	●	●	●	●
Israel Police	●	●	●	○
MDA	●	●	○	○
Israel Fire and Rescue Services	●	○	○	○
Ministry of Health	●	●	○	○
Ministry of Environmental Protection	●	○	●	○
Ministry of Agriculture	●	●	○	●[d...]

Notes:

●-.Measure employed

○-.Measure not employed

[a].Post-hoc analysis of the organization's crisis communication.
[b].Applications to the call centres and/or the organization's website.
[c].During regular times and during crises.
[d] Conducted only once.

6   CONCLUSIONS

This report maps a rich reservoir of best practices for crisis communication that were collected from the international literature as well as from case-studies of seven leading Israeli organisations which have experienced a multitude of emergencies – mostly security emergencies, such as wars and terror attacks, but also civil ones, such as avian flu and swine flu.

Both the field-based and literature-based practices described here can, with due consideration, be implemented in different organisations, countries and settings. In the course of such consideration, a specific practice can be identified according to whether it is recommended in the literature (Section 2), by the studied organisations (Section 3), or by both. It can also be seen to what extent the practice is consensual among different organisations (for field-based practices), in which stages of a crisis it could be implemented, and where additional references to it can be found (for literature-based practices).

During the process of consideration and implementation, it should be borne in mind that several practices may have a vast range of performance qualities. For example: messages should not only be translated into the required languages but also adjusted carefully to the different groups of users in each language; organisations should not only subscribe to a press clipping service but also perform a systematic and long-term analysis of the contents these services supply; at the end of an event, organisations should not only perform sporadic investigations but also, develop a long-term culture of "learning lessons".

Although the different practices invite a meticulous analysis in further studies, it is already clear that there are prominent disparities of emphasis and focus between the literature-based and the fieldwork-based practices. The literature-based practices, formulated primarily by academics and consultants, tend to emphasise the general and the fundamental, and are phrased as relatively abstract assertions; the field-based practices, on the other hand, were formulated by practitioners, and emphasise concrete actions, delineating them in micro-level terms, and describing the context of their specific implementation.

The studied organisations employ a relatively rich variety of practices and means for direct communication with the public, thus bypassing the news media and avoiding media selection and distortion of their messages. These organisations also appear to excel in creative practices that employ new technologies and in fast and efficient processes for the "self-update" of spokespersons or distribution of materials for the media and the public.

While they have developed an assortment of practices that are meant to satisfy the media's needs for "fresh" information, the studied organisations were less equipped to address the needs of their different audiences (see section 4). Except for the Home Front Command, that can serve as a professional and ethical role model for others inside and outside Israel (Reich 2009), the organisations had a limited assortment of systematic practices for studying the population and its preferences and needs. Another challenge which emergency organisations will face during the coming years is the development of a new set of practices, along with interactive modes of communication, in order to incorporate the social media and the new technologies which invite the public to play a

growingly active role, with greater deliberation and more symmetric modes of communication.

The greatest challenge, according to our findings, involves an evidence-based revolution. Crisis communication must shift from the current status of mainly intuition-based and "gut feeling"-based conduct into evidence-based conduct, with systematic acquaintance with the public and its perceptions and preferences during crises. Even the single organisation which systematically employed social research methods (in our case the Home Front Command) did not utilize them to test their communicative practices, but rather for studying broader phenomena such as trust in public institutions or the reach and understanding of instructions regarding measures for self protection. However, in view of the complex nature of the research and the wide theoretical scope that are required to substantiate or refute such practices, it is the scientific community that must play a dominant role here, while the public organisations that face such emergencies can only help them to become acquainted with the issue and map the practices that need substantiation..

Best practices should further be explored as a bridge between academics and practitioners, thus allowing us to understand more deeply the controversial relations between descriptively-driven academics and prescriptively-driven practitioners. There might not be any obligation to choose either the wisdom of academic generalisations and abstractions, or the practitioners' tendency towards the practical, concrete and technical. Each of these communities has much to learn from the emphases the other community is placing in its best practices, and discussion between the two communities should be seen as a potential bridge to a mutually beneficial integration between these perspectives..

The first move in this direction must be made by the emergency organisations. They are the agencies that can initiate the necessary dialogue with scholars in the relevant fields, such as crisis communication, crisis management, social psychology, cognitive psychology, public opinion and public understanding of science, in order to kick-off collaborative efforts to promote the research on their practices, by creating, for example, mutual forums, conferences, research grants and collaborative research projects.

In order to form a research agenda which is systematic, realistic and agreed upon by both parties, a.collection of literature-based and field-based practices, such as the one suggested here, can serve as an effective starting point. Hence, both parties should contribute to the task of mapping both good and bad practices, which are central enough to the operation of crisis communication mangers and are used widely enough to merit research priority. The parties should examine whether practitioners perceive one practice as more effective than another on the basis of empirical evidence, practical experience and indications, or untested hypotheses and intuition. In addition to the public, scholars and emergency people should consult and study the relevant media people, who are not only the addressees of many of the crisis communication messages, but also have one of the best vantage points, as continuous and intense observers of crisis communication mangers during crises.

Executive summary – section III
The reservoir of practices that has been collected from the literature, as well as from the organisations studied in this section, makes a major contribution to the Crisis Communication Guide and through it also to the development of the Crisis Communication Scorecard. The best practices that have been detected during the work on this section have a broad array of roles:

1. *As a pool of instructions to adopt in the Guide*: The most meaningful and straightforward contribution was of specific practices; these have been included in the guide itself. This is the case with most of the practices found here. Yet even the practices that were less directly relevant to the purposes of the guide (e.g. practices that were too specific to a particular organisation or particular circumstances) made a contribution in compiling the guide.
2. *As an index*: The practices derived from the literature, as well as those supplied by our interviewees, have been used by us as an index or a reminder of aspects of crisis communication that should be included in the guide.
3. *As an indicator of problems*: Even when a practice was not directly incorporated in the guide, we have often regarded it as an indicator of the existence of a genuine problem. This impelled us to look for the solution to the problem in the literature or try to see if other interviewees had the answers.
4. *As a basis for establishing other practices*: Often we found a practice concerning a certain phase of a crisis that we could derive further practices from. These extra practices concerned, for example, preparations required in earlier phases to be able to make effective use of the base practice when the time comes.
5. *As reinforcement*: The distribution of the practices themselves, as well as the overlap between those from the literature and those contributed by our interviewees' own experience, served as an indicator of the prevalence of specific problems as well as their solution.

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References

Adoni, H.,& Nossek, H. (2007), Reader's Voices: The Act of Reading in a(?)Multi-.Media *Environment* [Hebrew]. Jerusalem: Magnes Press.

Arpan, L. M., & Roskos-Ewoldsen, D. R. (2005), Stealing Thunder: Analysis of the Effects of Proactive Disclosure of Crisis Information. Public Relations Review (31/3), pp. 425-433.

Arpan, L. M., & Pompper, D. (2003), Stormy Weather: Testing "Stealing Thunder" as a Crisis Communication Strategy to Improve Communication Flow between Organisations and Journalists. Public Relations Review (29/3), pp. 291-308.

Barrett, M. S. (2005), Spokespersons and Message Control: How the CDC Lost Credibility .During the Anthrax Crisis. Qualitative Research Reports in Communication (6/1), pp. 59-68.

Becker, S. (2004), Emergency Communication and Information Issues in Terrorist Events Involving Radioactive Materials. Biosecurity and Bioterrorism: Biodefense Strategy, Practice and Science (2/3), pp. 195-208.

Bernstein. J. (2006), Making a crisis worse: The eleven biggest mistakes in crisis communications, Journal of Promotion Management 12(3/4), pp. 39-45.

Chess, C. and Clarke, L. (2007), Facilitation of Risk Communication During TheAnthraxAttacks of 2001: The Organisational Backstory. American Journal of Public Health(97/7), pp. 1578-1583.

Chess, C., Clarke L., Holmes, R. and O'Neill, K. M. (2006), Speaking with One Voice: Risk Communication Lessons from the US Anthrax Attacks.. Journal of Contingencies &Crisis Management (14/3), pp. 160-169.

Cloudman, R. & Hallahan, K. (2006), Crisis Communications Preparedness among U.S.Organisations: Activities and Assessments by Public Relations Practitioners, Public Relations Review (32/ 4), pp. 367-376.

Coombs, W. T. & Holladay, S. J. (2008), Comparing Apology to Equivalent Crisis Response Strategies: Clarifying Apology's Role and Value in Crisis Communication, Public Relations Review (34/3), pp. 252-257.

Covello, V. (2003), Best Practices in Public Health Risk and Crisis Communication..Journal of Health Communication (8/1), pp. 148-151.

Dreyfus H.L., Dreyfus S.E. (1986), Mind Over Machine: The Power of Human Intuition and Expertise in the Era of the Computer. Oxford, UK: Basil Blackwell.Fischer, H. W. (1996). What Emergency Management Officials Should Know to EnhanceMitigation and Effective Disaster Response. Journal of .Contingencies & CrisisManagement (4/4), pp. 208-217.Gallagher, A. Hall, Fontenot, M. and Boyle, K. (2007), Communicating During Times of Crises: An Analysis of News Releases from The Federal Government Before, During, and After Hurricanes Katrina And Rita. Public relations review (33/2), pp. 217-219.

Glik, D., Harrison, K., Davoudi, M. & Riopelle, D. (2004),.Public Perceptions and Risk Communication for Botulism, Biosecurity and Bioterrorism: Biodefense. Strategy, Practice, and Science (2/3) pp. 216–233.

Grol, R. and Grimshaw, J. (2003), From best evidence to best practice: effective implementation of change in patients' care, The Lancet (362/9391), pp. 1225-1230.

Heath, R. L. (2006), Best Practices in Crisis Communication: Evolution of Practice through Research. Journal of Applied Communication Research (34/3), pp. 245-248.

Horowitz, D. & Lisak, M. (1996), "Democracy and National Security in Ongoing Conflict" [Hebrew]. In (Eds.).Neuberger, B. & Ben-Ami, I. Democracy and national Security in Israel. Tal Aviv: Open University.

Lee, J., Woeste, J. H., Heath, R. L. (2007), Getting ready for crises: Strategic. excellence. Public Relations Review; (33/3), pp. 334-336.

Lipshitz, R.,.Popper, M. & Oz ,S. (1996), Building Learning Organisations: The Design and Implementation of Organisational Learning Mechanisms. Journal of Applied Behavioural Science, 32(3), 292.

Lundgren, R.E. and McMakin, A.H. (2004), Risk Communication: A Handbook for . Communicating Environmental, Safety and Health Risks, 3rd edition, Ohio Battelle Press.

Lundy, L.K. and Broussard, J. C. (2007), Public Relations in the Eye of the Storm: Lessons from.Professionals in the Wake of Hurricanes Katrina and Rita. Public Relations Review (33), pp. 220-223.

Mitroff, I.I. (2005), Why Some Companies Emerge Stronger and Better From a.Crisis: 7 Essential Lessons for Surviving Disaster. USA: Amacom (American ManagementAssociation).

Morgan, M.G., Fischhoff, B., Bostrom, A., & Atman, C. (2001), *Risk Communication: .TheMental Models Approach.* New York: Cambridge University Press.

Negbi, M. (1995), Freedom of the Press in Israel – the Legal Aspects [Hebrew].Jerusalem: The Jerusalem Institute for Israel Studies.

Paul, M. J. (2001), Interactive Disaster Communication on the Internet: a Content .Analysis of Sixty-Four Disaster Relief Home Pages. Journalism & Mass.Communication Quarterly (78/4), pp. 739-753.

Perry, R. W. & Lindell, M. K. (2003), Preparedness for Emergency Response: Guidelines for the Emergency Planning Process. .Disasters (27/ 4), pp. 336-350.

Perry, S. D. (2007). Tsunami Warning Dissemination in Mauritius. Journal of Applied Communication Research (35/4), pp. 399-417. Powell, D. & Leiss, W. (1997), Mad Cows and Mother's Milk: The Perils of Poor Risk Communication. Montreal: McGill-Queen's University Press.

Premeaux, S. F. & Breaux, D. (2007), Crisis Management of Human Resources: Lessons from Hurricanes Katrina and Rita, HR. Human resource planning (30/3), pp. 39-47.

Renn, O. (2006), Risk communication :Consumers between Information and Irritation. Journal of Risk Research (9/8), pp. 833-849.

Reynolds, B. & Seeger M. W. (2005), Crisis and Emergency Risk Communication as anIntegrative Model. Journal of Health Communication (10/1), pp. 43-55.

Reynolds, B. & Quinn, S. C. (2008), Effective Communication during an Influenza

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Pandemic: The Value of Using a Crisis and Emergency Risk Communication Framework. Health Promotion Practice (9), pp. 13-17.

Reynolds, B. (2006), Response to Best Practices. Journal of Applied Communication Research(34/3), pp. 249-252.

Reich, Z. (2009), *Sourcing the News.* Cresskill , N.J. : Hampton Press.

Ropeik, D. (2006). Best Practices Response. Journal of Applied Communication Rresearch(34/3), pp. 253-256.

Samansky, A. W. (2002), RUN!: That's Not The Crisis Communications Plan You Need, Public Relations Quarterly 47 (3), pp. 25- 28.

Samarajiva, R. (2005), Mobilizing Information and Communications Technologies for Effective Disaster Warning: Lessons from the 2004 Tsunami. New Media & Society (7/6), pp. 731-747.

Sandman, P. M. (2006), Crisis Communication Best Practices: Some Quibbles and Additions. Journal of Applied Communication Research (34/3), pp. 257-262.

Schiff, Z. (1996), "Information in Security Pliers" [Hebrew]. In (Eds.) Neuberger, B. & Ben-Ami, I. Democracy and national Security in Israel. Tal Aviv: Open University.

Seeger, M. W. (2006). Best Practices in Crisis Communication: an Expert Panel Process. Journal of Applied Communication Research (34/3), pp. 232-244.

Sellnow, T.L. et al (2009), Effective risk communication: A message-centered.. approach, Springer.

Spence, P. R., Lachlan, K. A. a & Griffin, D. R. (2007). Crisis Communication, Race and Natural Disasters. Journal of Black Studies (37/4), pp. 539-554.

Taylor, M. & Kent, M. L. (2007), Taxonomy of Mediated Crisis Responses. Public Relations Review (33), pp. 140-146.

Taylor, M. & Perry D. C. (2005), Diffusion of Traditional and New Media Tactics in Crisis Communication. Public Relations Review (31/ 2), pp. 209-217.

Tierney, K., Bevc C. & Kuligowski E. (2006), Metaphors Matter: Disaster Myths, Media Frames, and their Consequences in Hurricane Katrina, The ANNALS of the American Academy of Political and Social Science (604), pp. 57-81.

Ulmer, R.R., Sellnow, T.L. & Seeger, M.W. (2007), Effective Crisis Communication: Moving from Crisis to Opportunity. Thousand Oaks, CA: Sage

Winograd, E., Gabizon, R. Dror, Y., Nadal, H. and Einan, M. (2008), The Committee for Examination of the 2006 Lebanon Campaign, A Final Report, Jerusalem.

Wray, R. & Jupka, K. (2004), What does the Public Want to Know in the Event of a Terrorist Attack Using Plague? Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science, (2/3), pp. 208-215.

.

Online Sources

Barda, M. (2008), "Readiness and preparedness of the state of Israel for earthquakes" [Hebrew], Research and information centre of the Knesset. Retrieved on April 25, 2010:
http://www.knesset.gov.il/mmm/data/docs/m01947.doc

Central Bureau of Statistics (2008), Press Release: On the eve of the 60th. Anniversary – About 7,282,000 Citizens [Hebrew]..Retrieved on April 25, 2010:
http://www.cbs.gov.il/reader/newhodaot/hodaa_template.html?hodaa =200811082

Ethnologue (n/d), Languages of Israel. Retrieved on April 25, 2010:http://www.ethnologue.com/show_country.asp?name=IL

Golan, Y. (2009), "The operational perception and future challenges of Home Front

Command". In: (Ed.) Elran, M. The Civil Front. Retrieved on April 25, 2010:http://www.inss.org.il/upload/(FILE)1257414153.pdf.

Peri, Y., Tzfati, Y. and Tukachinsky, R. (2007), "Does the Media affect national morale badly?" [Hebrew]. Retrieved on April 25,
2010:http://www.tau.ac.il/institutes/herzog/report7.pdf

Shapira, A. (n/d), Earthquake Risks in Israel. Retrieved on April 25, 2010:
http://www.eqred.gov.il/eqred/prepare/risk-avi.htm

Tausig, S. (2006), "Israeli Media Ownership Chart" [Hebrew]. The Seventh Eye.Retrieved on April 25, 2010:.http://www.the7eye.org.il/articles/Documents/Ownerships0.pdf

The 15th Caesarea Forum (2008), Homefront as a War Zone: Economic Aspects in Light of Changes in the Nature of Conflicts [Hebrew]. Jerusalem: The Israel . Democracy Institute.

The State's Comptroller and Ombudsman, Israel (2002), Annual Report 53A for the

Year 2002 [Hebrew]. Retrieved on April 25, 2010:
http://www.mevaker.gov.il/serve/contentTree.asp?bookid=239&id=153 &contentid=&parentcid=undefined&sw=1024&hw=698

Tidhar, S. (2007), "Israel's National Security Strategy, Civilian Defense Regulations for The Municipal Councils" [Hebrew]. Home Front Command. Retrieved on April 25,
2010:.http://www.oref.org.il/sip_storage/FILES/9/869.pdf

Appendix A: The Studied Organisations

The criteria by which the organisations were chosen for the study were as follows:

1. Public organisations such as government ministries and rescue services, which are primarily responsible for risks to human life, not property.
2. Organisations responsible for handling crisis events, including its media aspects..
3. Organisations which operate on the national level, communicating with the general and domestic public rather than with specific populations, such as school pupils or international constituencies..

Based on these criteria, seven leading Israeli organisations were chosen.

Table 4 presents some necessary background on the organisations with links for further information and table 5 mentions the main structural and infrastructure characteristics of the studied organisations.

TABLE 4   The studied organisations: basic background

Organisation	Basic background	For more information
(The) Home Front Command	An IDF (Israel Defense Forces) regional command, responsible for threats of different kinds to civilians. Established in 1992 as a lesson from the first Gulf War. Harshly criticized for its performance in the Second Lebanon War (2006), revolutionized itself and was highly praised for its performance during operation "Cast Lead" (2009).	http://www.oref.org.il/82-en/PAKAR.aspx
(The) Ministry of Agriculture and Rural Development	Harshly criticized for the way it handled the "bird flu" outbreak in 2006. Criticism was incentive catalyst for substantial reforms. The ministry is subjected to high pressures from commercial farming associations.	http://www.moag.gov.il/agri (Hebrew site)
(The) Ministry of Environmental Protection	Responsible for protection of natural resources and prevention of environmental hazards	http://tinyurl.com/8wpe4l
(The) Ministry of.Health	Ministry with the third highest budget. Health care insurance in Israel is universal and compulsory.	http://www.health.gov.il/english/
Israel Police	In charge of law enforcement and security issues.	http://www.police.gov.il/english/Pages/default.aspx
"Magen David Adom" (Israeli "Red Cross")	Emergency medical services organisation. Tries to address volunteers and donors with its image and visibility.	http://www.mdais.com/271/
Israel Fire and Rescue Services	Decentralized structure. Regional stations are under the supervision of local authorities. Regional spokespersons are firefighters who volunteer for the job.	http://www.102.co.il/en

TABLE 5   The structural and infrastructure characteristics of the studied organisations.

	TV broadcasts[a]	Video news subsidies[b]	Information officer[c]	Written procedures	Population behavior officer[d]	Communication in different languages	Emergency center	Organizational Website
Home Front Command	●	●	●	●	●	●	●	●
Israel Police	○	●	○	●	●	●	●	●
MDA	○	●	●	●	○	●	●	●
Israel Fire and Rescue Services	○	●	○	○	○	●	●	●
Ministry of Health	○	○	●	●	○	●	●	●
Ministry of Environmental Protection	○	○	○	○	○	●	●	●
Ministry of Agriculture	○	○	○	●	○	●	●	●

Notes:

● - Characteristic exists

○ - Characteristic does not exist

[a] Independent broadcasts from organization's own TV studio.

[b] Video releases, taken by the rescue staffs, are handed over to the media.

[c] In addition to the spokesperson, generally responsible for long-term campaigns and in formation regarding preparedness of the public.

[d] Specializes in emergency situations, with background in social sciences or psychology.

Appendix 2 Contextual Background

Although this study was conducted in Israel, its outcomes may be generally relevant, with such modifications as may be required, for consideration in crisis communication management in other countries as well. In the evaluation of our data, the reader should bear in mind the following points regarding the Israeli context:

- *Limited size* - Israel's population is over 7.5 million and the area of the State of Israel is 20,330 square kilometers (Central Bureau of Statistics, 2010). Its capital, Jerusalem, has a population of over 700 000 people, followed by Tel Aviv, with 390 000 and Haifa, with 260 000 people.
- *Multiple threats* – In addition to a wide array of security threats, including wars, rocket, missile and terror attacks, the Israeli population faces civilian threats from industrial accidents to natural hazards, the most severe of which is earthquakes (Tidhar, 2007; Barda, 2008; Shapira, n/d). These threats have led to a leading role for Israel's Ministry of Defense and Israeli Defense Forces' Home Front Command in dealing with them, including civic cases (Golan, 2009).
- *Continuous emergency status* – The state of Israel is a parliamentary democracy which has experienced a prolonged state of emergency since its establishment in May 1948, due to continues threats to national security and civilian life (Horowitz & Lisak, 1996). This emergency status, enshrined in law and declared at Israel's inception, allows the state to take various measures, including shutting down newspapers which publish "harmful" reports (Negbi, 1995: 219-223). However, such sanctions are infrequent and the Israeli press is usually open when dealing with military coverage (Schiff, 1996).
- *Crisis readiness and infrastructure* – Israel's crisis infrastructure is relatively developed, including nation-wide siren deployment, designated emergency television studios prepared for nonstop broadcasts, annual drills that include media aspects, online crises tutorials, prepackaged emergency campaigns, self-defense instructions in various languages and more. In addition, Israel's highly trained and cooperative local and national personnel is a product of the fact that 75% of the men and 60% of the women serve in the army, and in addition have taken part in past military combats and serve as veteran's forces (State comptroller, 2002). Due to this continued state of emergency, Israeli society is well acquainted with crisis situations preparedness as public emergency drills are conducted annually, children are trained for emergencies in schools, and since the "gulf war" in 1991, gas masks are distributed to each citizen for self-protection.
- *Diffuse threats, centralized media* – While new threats such as terror and missile attacks target specific areas, the current Israeli media map is quite centralized (Tausig, 2006). Israel has neither local dailies nor local television. The strongest form of local media is radio, comprising 14 privately owned and publicly regulated stations, most of which are regional. Local online news is still in its infancy, as online news market leaders have

only recently entered the local online scene. The national media comprises four general national dailies (one of which is a free paper), two commercial, national TV channels and one public channel, as well as cable and satellite services which enable their subscribers to watch hundreds of foreign channels (Adoni & Nossek, 2007: 44-49).

- *Softer news, serious agenda*. Despite the growing pressures of commercialism and competition, and a growing tendency towards adversarial coverage and an emphasis on soft news (Reich, 2009, pp. 5-12), the top headlines of most of the national media still reflect a "serious" news agenda and are focused mainly on the "hard news" of security, political and economic issues. The most popular news source in Israel (during ordinary times) is television, which is used at least once a day by 51% of the population, followed by radio (45%) the print press (42%) and the Internet (32%) (Perry, Tzfati and Tokchinski, 2007: 9-10).

- *One voice, fragmented spokesmanship*. Although the Israeli PR industry has grown and become more professional in recent decades (Reich 2009), the specific field of public spokesmanship is highly decentralized, due to the nature of the Israeli parliamentary democracy. Under this regime, different ministries are often held by different political parties, each possessing its own agenda, constituency and priorities. Furthermore, the roles of public spokesmanship are often divided between spokespersons who are considered civil servants dealing with their ministries' affairs, and media advisors who are considered political staff, dealing with their ministers' political and personal affairs. While expected to speak with one voice during crises, this system often yields a cacophony of voices. A report issued by the State Comptroller and Ombudsman's Department in 2002 contained severe criticism regarding the lack of coordination between the different spokesmanship departments.

- *Turning point* – The Winograd Committee appointed to examine the events of the 2006 war in Lebanon criticized poor crisis management, including media management. It claimed that the IDF failed to control the flow of sensitive and harmful information to the press and that there was an absence of systematic and effective spokesmanship presenting Israel's position during the war (Winograd et al, 2008: 460-472; 563-564). Operation "Cast Lead" in Gaza 2009, however, appears to be characterized more by restrictions on the exposure of information to the public and the media.

- *New national emergency agencies* - In 2007, two special bodies established in order to improve coordination between governmental and public agencies. The first is the National Emergency Administration (NEA) in the Defense Ministry, responsible for coordinating, integrating and prioritizing the operations of different government agencies during times of crisis. The second is the National Information Directorate in the Prime Minister's office, which coordinates the work of the different spokespersons.

SECTION IV

EXPLORING MEDIA RELATIONS BETWEEN SPOKES-PERSONS AND JOURNALISTS DURING CRISES

Zvi Reich

CONTENTS

1   **INTRODUCTION**

It is important to explore the relations between the media and life saving or-
ganisations during crises in order to strengthen the public's resilience, maxi-
mize cooperation between the organisations and the media and improve the
performance of both in their different roles during crises. These roles may in-
volve, among others, communicating with different audiences effectively, help-
ing to save lives, minimize casualties, mobilize local residents to self-protect
and make informed decisions based on reliable, up-to date information, estab-
lish trust and credibility, and support society's ability to face a crisis and get
back on track as quickly as possible.

This chapter[8] explores the media relations existing between seven stud-
ied organisations and the journalists in the mass media who cover them during
crises. Social media and mobile phones, which play a growingly important role
in direct communication with different audiences, are treated widely in the Cri-
sis communication guide for public organisations (see appendix 2 in this book).
The main aim of this chapter is to map the flow of information between both
parties, and the characteristics of the relations between the studied organisa-
tions and the journalists who cover them.

The Israeli case (whose characteristics and peculiarities are discussed in
a previous chapter on best practices in this book) was chosen in this paper
mainly due to the relatively high frequency of emergencies in this country,
which increases the likelihood for experience and cumulative insights regarding
the relations between spokespersons and the press in crisis situations. The
study is based on a series of 51 interviews with both parties: experienced
spokespersons and information officers of leading national Israeli public or-
ganisations and a group of national and local journalists who cover them. The
seven organisations studied were: The Home Front Command, The Ministry of
Agriculture and Rural Development, The Ministry of Environmental Protection,
The Ministry of Health, Israel Police, Magen David Adom (Israeli 'Red Cross'),
Israel Fire and Rescue Services.

The study yielded the following insights regarding media relations between spokespersons of public organisations and journalists before, during and after crises: (1) Even when lives are at stake, both parties have no special news paradigm to handle crisis situations, rather they employ their routine paradigm, which involves the regular emphasis on dramatization and newsworthiness. (2) Although both parties speak in the name of the public, they tend to ignore it and to avoid studying its needs and preferences. (3) Both parties tend to focus on practical aspects, overlooking ethical dilemmas. (4) Regular spokespersons' units are too small to handle large-scale and continuous crises. (5) Even during times of crisis competition persists both among rescue organisations and among journalists. (6) Spokespersons tend to prefer the use of textual, one-to-many communication, while journalists prefer oral, one-to-one communication, which may generate exclusive information. (7) While hazards tend to be regional, it is not easy for journalists in the local and regional media to cover these effectively, since their area of operations rarely matches the exact borders of the affected zone and they are often discriminated against in favour of the national media, due to the more professional and lucrative staffs, better public reach and improved resources of the latter.

The present chapter detects, among other things, areas of consonance and areas of conflict between the parties, mutual and differing interests, principles and values that guide their conduct, the unique patterns in which each party uses communication channels, their professional and ethical dilemmas, and their lesson learning from crises.

2   METHODOLOGY

In order to understand the dynamics of media relations before, during and after a crisis, we had to study both parties – the organisations and their spokespersons on the one hand and the journalists who cover them on the other. The organisations' side was studied using a best practices approach (see an earlier chapter in this book on best practices) while the journalists' side was studied by interviewing a sample of reporters who regularly cover the seven organisations studied. From each of these organisations we chose at least three reporters -- one from each of television, radio and the print press -- in order to understand the perspective, nuances, preferences and needs of these three different media. Online reporters were excluded, assuming that their immediacy is represented largely by the broadcast media, which play a dominant role during crises (Hindman & Coyle, 1999; Seeger, 2009) and that their textual and pictorial characteristics are represented by the print journalists.

Both parties were asked mirror-like questions, using a semi-constructed questionnaire in order to be able to compare their versions. All in all we interviewed 20 reporters (some of whom cover more than one organisation). All the interviews were conducted face-to-face (except for two reporters who refused to meet) and lasted approximately one hour each. In-depth interviews were chosen for this study since they can capture not only specific actions and interactions of interviewees in the complex crisis situations, but also help to understand the meanings interviewees give to their experience, and capture attitudes, opinions, values and perceptions..In addition in-depth interviews fit the explorative nature of the study and enable to build rapport with interviewees that was essential for the study, considering its sensitivities.

For this chapter we compared the perceptions and concepts of spokespersons with those gathered in the fieldwork conducted within the public organisations..During the analysis, the versions of both parties were juxtaposed in order to compare their answers and detect similarities, dissimilarities, inconsistencies and gaps between declarative statements and real actions.

3 MAIN FINDINGS

3.1 Lack of a special news paradigm for crises, or "business as usual"

The most fundamental problem is that both parties do not employ a special news paradigm for the coverage of these crisis situations, at least as far as 'limited' crises are concerned – even though human lives in their own community are at stake. The problem is fundamental since in the absence of a crisis paradigm, journalists continue to act according to their regular news paradigm with its routine emphasis on competition, exclusivity, dramatization and personalization, and – as far as spokespersons are concerned – an emphasis on promotional behaviour. This paradigm encompasses the regular "media logic", news practices, newsworthiness judgement, power relations, and role perceptions of themselves and those regarding the other party. This pattern, which is known in the literature as a journalistic tendency to "routinize the unexpected" during situations such as accidents and scandals (Berkowitz 1992; Lawrence 2000; Molotch and Lester 1974; Tuchman 1978) seems to work similarly in more extreme cases of crisis.

It is possible, nonetheless, that in large-scale disasters, such as a tsunami or a hurricane (cf. Gallagher et al. 2007; Perry 2007) that fortunately have not thus far occurred in Israel, the regular news paradigm will lose some of its hold. In that case, the problem would be the lack of an alternative paradigm, unless both parties prepare one as a joint project. Meanwhile, according to our findings, there are four areas in which both parties adjust their everyday paradigm, the fourth of which is relevant only for reporters:

- Increased time pressure – both sides agree on the importance of immediacy and accelerate their practices in accordance, although journalists expect spokespersons to operate even faster. Television and Radio journalists emphasized immediacy while print journalists emphasized depth. Some of the spokespersons indicated that the print press becomes a relatively irrelevant channel during continuous emergencies such as a serial bombardment of civilians, as the frequency of their publication is too slow to allow timely updates..
- Both parties declare their commitment to saving lives as the most important value; however, it is not clear whether this declaration is accompanied by actual conduct, especially on the part of spokespersons, who seem to give it a lower priority.
- Both parties express their commitment to the prevention of general panic; however, it seems that journalists tend to dramatize news even during regular times (Bennett 2003) and that spokespersons tend to collaborate with that tendency rather than resist it.

- During a crisis that involves a clear and present danger to human lives, journalists are willing to suspend, at least to a certain extent and temporarily, some of their adversarial and critical roles. Furthermore, they are willing to serve as a neutral conduit for the messages of the public institutions that take care of the situation and even help them bring things back to normal (Bennett 2003; Vincent 1989)..When the hazard is associated with national security or a war, they tend to substitute their adversarial role in favour of a more patriotic one (Allan & Zelizer 2004). We feel that journalists would be willing to suspend their critical position also in situations where there are mass casualties. Some of our interviewees observed that being relatively freer than other media from constant cycles of reporting and updates gives print reporters the freedom to remain more critical than their counterparts working in other media.

  The reasons for the temporary suspension of criticism are probably varied: lack of alternatives and authoritative news sources (Roth, 2002; Samarajiva, 2005), at least during the initial stages of the crisis, patriotism and the aforementioned "normalization bias", which leads journalists to support the authorities' efforts to restore order, rather than present them with tough questions regarding their responsibilities.

  The willingness of journalists to withhold their criticism under these circumstances enhances spokespersons' opportunities for manipulation and "spin", at least during the early stages of the crisis, if they are not apprehensive about losing their credibility in the longer run (Shin, 2006).

3.2   The invisible public

Both parties draw their legitimacy from their care for the public and its interests. However, the public generally serves as an "imagined community", whilst its interests, perceptions, priorities and needs are left unexamined (Clarke et al, 2006).

One organisation in our study uses methods of social science on a relatively wide and routine basis (HFC). This includes mainly public opinion polls that are conducted regularly during times of piece and (more frequently) during times of crises in order to monitor public opinion, detect the levels of trust in different authorities, and check whether different audiences received their messages, understand them properly, trust these instructions and plan to use them in due time. Occasionally the HFC had also used focus groups in order to test specific instructive materials before their print and dissemination.

Lacking a real representation of, and valid knowledge about the public, both parties operate according to their (often unfounded) intuitions and untested assumptions regarding their audiences, their preferences, needs, feelings and intentions. This situation enables them to feel free to give priority to their own needs or the needs of the other party, without being aware whether or when their mutual satisfaction is due to serving the public's expectations and priorities.

3.3   Ethical dilemmas

Whereas most of the ethical dilemmas encountered by journalists arise from their tendency towards dramatization and immediacy, the ethical dilemmas of spokespersons are triggered mainly by the priority they assign to the protection or even the promotion of their organisation's image (Reich 2009). Both journalists and spokespersons are in agreement concerning some ethical dilemmas, such as refraining from the presentation of gory pictures (Milburn & McGrail 1992).

Generally speaking, journalists and spokespersons, like practitioners in many other occupations and professions, emphasize the practical over the ethical. Some of the ethical aspects presented here surfaced during the interviews only in the context of talk about spokespersons' and journalists' descriptions of their practice. This tendency may aggravate during a crisis, when both parties become too busy with these super hectic events, and less concerned or less aware of the ethical aspects of their work.

Below are two lists of mainly-journalists' and mainly-spokespersons' ethical dilemmas. These lists are obviously partial:

Mainly-journalists' ethical dilemmas

- The necessity to check and verify information prior to publication, to avoid jeopardizing accuracy and credibility, as well as to wait with a news story until the families of casualties are informed against the tendency to be the first to break a story.
- Avoidance of infringement of the right to privacy – especially that of disaster victims against the tendency towards personalization and human-interest.
- The wish to abstain from showing harsh images and causing panic against the tendency towards dramatization, "mirroring" reality, uncovering human suffering and telling the story as it is.

Print journalists generally have more leeway to prioritize accuracy over immediacy, and are less inclined to violations of privacy than their live-broadcasting counterparts who have less control over their information. Nevertheless, the press sometimes dramatizes stories more than other media and hence may cause public confusion (Rodrigez et al. 2007).

Mainly-Spokespersons' ethical dilemmas
- Tendency to give priority to the protection and even promotion of their organisations image during a crisis (Reich 2009)..
- Shooting photos and videos at scenes of disasters and terror attacks by rescue teams in order to hand over footage to the media, without distracting and harming the rescue efforts.
- Releasing information about the crisis which may disrupt investigations against suspects such as arsonists or leakers of hazardous materials.
- Stealing and leaking information regarding other rescue organisations, in

order to score points among media people and eventually win
advantageous coverage.

- Concealing or delaying information allegedly to avoid panic or wait for a
more convenient timing.

3.4 Continuous competition

Even during times of crisis, internal competition persists both among rescue
organisations and among journalists in such a fashion that it structures their
behaviour and shapes the news coverage as a whole (Coombs and Holladay,
2002)..Competition among first responders (Police, Fire and Rescue Services
and MDA) focuses on the prominence of their coverage and on public recogni-
tion of their part in the rescue activities. Since most crises end within a matter of
hours, the competition between rescue organisations over the media's attention
is usually condensed into a very short time slot. Hence, organisations become
aggressive and use creative methods, involving the release of images and vid-
eos, which have been shot on scene by their own staffs, in order to improve the
prominence and the positive tone of their coverage.

Although in some studies it has been claimed that the competition be-
tween journalists, is somewhat halted during major disasters (Scanlon, 2006),
both the interviewed spokespersons and journalists reported continuation of
the competitive motive, which again confirms the lack of a special crisis cover-
age paradigm, as mentioned above. During times of crisis, journalists struggle
over exclusive information more bitterly -- though usually less successfully --
than during routine times, since some spokespersons strive to minimize and
sometimes even abolish exclusivity and provide all reporters with the same in-
formation.

3.5 Shortage of communication manpower

It seems that all the spokespersons' units (excluding one – HFC) suffer from
varying degrees of bottlenecks. While news organisations can reinforce their
personnel easily by re-assigning journalists from different news beats to the
coverage of the crisis, spokespersons rely on the same limited number of per-
sonnel, often no more than one person per organisation or ministry, without
any accessible reservoirs for reinforcement. This problem becomes more and
more acute as crises become more complex and as the numbers of news outlets,
communication channels and journalists increase, while spokespersons' units
remain unchanged..This conflict often appears as a struggle between parties
over the issue of immediacy. While reporters claim that spokespersons are
sometimes unable to satisfy their demand for more information more promptly
during crisis situations, spokespersons say in response that they need more
time in order to come up with accurate information, and criticize reporters for

having an insatiable demand for prompt information and expecting another party to do their job.

Obviously, the availability of public information experts may differ from one case to another, depending on the resources of the respective organisation and its level of preparedness. However, even resource-rich organisations may face a shortage of trained public information officers acquainted with complex, large-scale and continuous crises, which can monitor, learn, consult experts, coordinate and respond to unfolding events and situations.

3.6   Written communication versus oral communication

The communication channels through which the two parties exchange information – and through which information mainly flows in a unidirectional manner, from spokespersons to the journalists – reflect a conflict of interest between the parties.

While spokespersons are inclined to prefer the use of textual one-to-many channels, such as instant messaging systems (pagers), SMS and in certain organisations e-mails as well, journalists prefer one-to-one oral channels, mainly the cellular and the landline telephone. Under the pressures of crises, spokespersons tend to favour the textual channels as they enable an easy dissemination of uniform information to numerous subscribers and an improved control over outgoing information, whereas reporters prefer oral channels since these enable them to pose questions, use interview techniques, obtain more detailed information, and receive, if not exclusive information, at least exclusive wording of source versions (Reich 2008).

This struggle between the oral and the textual, which is interrelated with the aforementioned aspects of competition and shortage of personnel.(Militello et al, 2007), often involves limitations of access. Reporters claim that spokespersons are often inaccessible: either because their telephone lines are busy – they are speaking to other reporters or getting themselves updated – or because they are present at rescue scenes which are closed to journalists. Spokespersons claim they switch into oral channels when they identify "problematic" journalists who require special treatment in order to settle disputes, and calm down those with critical, adversarial and hostile attitudes.

While our evidence here may be limited to the studied case, one cannot single out the possibility that these or other conflicts over the use of particular channels of communication exist also in other places, reflecting the priorities of the parties, their media strategies, interests and available technologies.

3.7   Local hazards, preference for national reporters

Although most crises are regional events, it is not easy for the local and regional media to cover them as their area of operations rarely matches the exact borders of the affected zone. Furthermore, local and regional reporters are often dis-

criminated against in favour of the national media, due to the more professional and lucrative staffs, better public reach and improved resources of the latter. Local reporters tend more to be "generalists" (Althehide 1978; Gans 1979; Marchetti 2005) than their national counterparts, who specialize in particular news beats. This preference is stronger insofar as the organisation is not used to working regularly with local and regional reporters or does not employ local or regional spokespersons.

Initial recommendations

If journalists and spokespersons wish to address the special challenges that characterize crises and cope with their complexities effectively, professionally and ethically, they must face two major challenges. Although these challenges require the cooperation of both parties, it is the spokespersons who can and should take the lead, since their organisations bear the public responsibility for preparedness in the event of crises, have the professional know-how for dealing with them, and the appropriate organisational culture of planning – aspects which are rarely found among news organisations.

The two challenges are:
- To develop a special news paradigm for crises. In order to achieve this, spokespersons must first realize the numerous downsides of the regular news paradigm. The regular paradigm undermines the supremacy of saving lives and of helping the population to recover well and fast, and brings both parties to invest their limited resources in distractive dynamics such as competition, exclusivity, dramatization, personalization and promotional culture. Both parties should occupy the status of equal partners in the development of that paradigm and the practices deriving from it for their actual conduct..

- Both parties – especially the spokespersons – should realize the urgent need for systematically learning about their publics' characteristics, perceptions, needs, preferences and information seeking habits, at least during what their organisations consider as major anticipated crises or hazards. In order to do this, they should first understand the limitations of their current reliance on intuitions and rules of thumb, and the heavy social toll such tools may involve. Second, they should become familiar with social research and its contribution to the development of communication plans and crisis messages by consulting experts from different domains such as public opinion, social psychology, sociology and communication, giving priority to those experts who specialize in situations of crisis, risk and disaster. They may begin this endeavour by utilizing already existing channels of information about their publics' attitudes and needs, such as systematic analysis of the public appeals that reached their hot lines, information centres and websites. Evidence on the relevant publics' attitudes and preferences may not only better guide the planning of crisis communication, but also transform the whole operation of crisis communication from a bilateral exchange of information into a trilateral relationship. In bilateral exchange,

spokespersons and journalists strive to satisfy their own goals and some of those of the other party, while the public's presence is mainly declarative and "imagined". In a trilateral relationship, on the other hand, the public becomes not only a real and present partner, but also a source of valuable information and the ultimate criteria for effective, professional and ethical crisis communication.

Additional recommendations:

- More research efforts and discussion in separate and mutual forums of journalists and spokespersons will be required in order to identify the full range of ethical dilemmas concerning the news coverage of crises, especially those dilemmas which both parties are less reluctant to admit, or less conscious of. Case studies may be helpful here. A committee comprising ethics experts and other representatives of both parties along with representatives of rescue organisations and experts in crisis communication should be formed to develop guidelines for ethical communication during a crisis.

- Despite the obvious limits to enhancing their manpower, spokespersons should consider creative solutions for reinforcement of their staffs during times of crisis in order to address the growing demand for more output, more timeliness, and more learning about the public and the unfolding events, and for more personal communication with more and more journalists. Possible reservoirs of trained, proficient and dedicated practitioners may be found among veteran spokespersons of the same organisation, local and regional spokespersons (if existing) who may be less busy, veteran journalists who covered a relevant news beat, or suitable workers from other units of the organisation. However, spokespersons and their organisations should bear in mind that it might be too late to utilize this reinforcement properly when a crisis has already materialized. Hence, the chosen candidates must participate in many kinds of training, drills and other measures of preparedness in order to keep updated and knowledgeable on the subject matter of the crisis and in order to establish rapport and trust with both spokespersons and journalists..The minimal frequency of such training should be predetermined.

- Spokespersons, especially those who are dealing with crises that are local or regional by nature, must become acquainted with the local and regional media map, its demographics, areas of coverage and specialized segments. Although the national media are generally more prestigious, proficient and attractive, and although the national media cover major local crises, the local media are often no less effective, being more focused on, acquainted with, involved in and concerned about the specific community suffering directly as a result of the crisis, especially where the crisis is too local to arouse the genuine and constant interest of the national media. Furthermore, the local media are naturally more committed to the community and thus willing to accompany it also

through the pre-crisis and post-crisis stages. In this way the local media contribute more than the national media during the pre crisis and post crisis stages, assisting both crisis preparedness as well as the implementation of lessons in the aftermath.

- Local and regional radio can be especially helpful during crises, since this medium is relatively cheap, reliable, flexible, portable and does not need electric power. It can target effectively damaged areas and people, inside and outside their homes, supply immediate and continuous updates,. and serve as a backup for alert and siren systems.

Executive summary – section IV
Understanding of the relationships between spokespersons of public institutions and journalists during times of crisis, despite their seemingly abstract and theoretical nature, has high applied value. The insights provide by this chapter delineate the social map and the communicative arena in which specific decisions and practices take place.

An analysis of the relations between these spokespersons and journalists is necessary to understand the background and the context of best practices (in the previous book section) and the media logic behind the recommendations given in the crisis communication Guide (in Appendix 2). Many of the lessons learned that are reported in this section were translated into specific guidelines in the Guide, the aim being to help overcome conflicts between parties, resolve or mitigate disagreements, counterbalance biases, restrain adversarial relationships, and push for high ethical and professional standards of communication before, during and after crises.

...Clearly, the insights provided in this section of the book, which are based on the Israeli case, should be handled with care before making generalizations to other places and contexts. Yet, despite the peculiarities of the Israeli case (explained in the previous section of this book) it seems that many of the social patterns described here are relevant, at least to some extent, to other places as well.

It is likely that both spokespersons and journalists in other places may have difficulties in making the switch from routine media relations to a special crisis communication paradigm, if they have not experienced serious crises before. It is also likely that both spokespersons and journalists will emphasize practices over ethical considerations, and persist in competitive behaviour even during crises.

Local differentiation in all that concerns the insights presented in this chapter is expected in areas that have higher or lower levels of preparedness and crisis experience, different levels of trust in the media and authorities, and different arrangements, investments and infrastructures for the management of crises. Thus, the extent to which scientific methods of social research are employed regularly to study the public and its perceptions and preferences may change substantially from one place to another, as also may the power balance between the local and the national level and the availability of different resources – including human resources that are trained in crisis communication.

References

Allan, S., Zelizer, B. (2004), Rules of engagement: Journalism and war, in Allan, S., Zelizer, B. (ed.). Reporting War: Journalism in Wartime, Rutledge, New-York.

Altheide, D. L. (1978), "Newsworkers and newsmakers: A study in news use, Urban life, 7, October 1978: 359-378.

Bennett, L. W. (2003), News: The politics of illusion 5th Edition, New York: Longman.

Berkowitz, D. (1992), Non-routine news and news work: Exploring a what-a-story, Journal of communication, Vol. 42, 1992

Clarke, L., Chess, C., Holmes, R., O'Neill, K. (2006), Speaking with one voice: Risk communication lessons from the US Anthrax attacks, Journal of contingencies and crisis management (14/3), pp. 160- 184.

Coombs, T.W., Holladay, S. J. (2002), Helping crisis managers protect reputational assets, Management communication quarterly (16/2), pp. 165- 186..

Gallagher, A., Hall, S. Fontenot, M. and Boyle ,K. (2007), Communicating during times of crises: An analysis of news releases from the federal government before, during, and after Hurricanes Katrina and Rita, Public Relations Review, 33/2, pp. 217-219.

Gans, H. J. (1979), Deciding what's news. New York: Pantheon books.

Lawrence, R. G. (2000), The politics of force: media and the construction of police brutality. Berkeley: University of California Press.

Merchetti, D. (2005), Sub-fields of specialized journalism, in Benson, R. Neveu, E. (eds). Bourdieu and the journalistic field, Cambridge, Polity, pp. 64-82.

Milburn, M., McGrail, A. (1992), The dramatic presentation of News and its effects on cognitive complexity, Political psychology (13/4), pp. 876-904.

Militello, L.G. et al (2007), Information flow during crisis management: Challenges to coordination in the emergency operations center, Cogn tech work (9), pp. 25-31.

Perry, S.D. (2007), Tsunami warning dissemination in Mauritius. Journal of Applied Communication Research, 35/4, pp. 399-417.

Tuchman, G. (1978), Making news. New York: Free Press.

Reich, Z. (2008). The Roles of communication technology in obtaining News: staying close to distant sources, Journalism and Mass Communication Quarterly, 85 (3): 625-646.

Reich, Z. (2009), Ethical weaknesses in emergency communication between national authorities and the public, The Communication Review, 12: 262–271.

Rodríguez, H., Quarantelli, E., Dynes, R. (Ed). (2007), Hand book of disaster research, Springer science & Media business. P. 416.

Roth, A.L. (2002), Social epistemology in broadcast news interviews, Language in society (31), pp. 355-381.

Samarajiva, R. (2005), Mobilizing information and communications technologies for effective disaster warning: Lessons from the 2004 Tsunami, New media and society (7/6), pp. 731- 747.

Scanlon, J. (2006), Unwelcome irritant or useful ally? The mass media emergencies, in Rodriguez, H. Quaranettli, E.L. Dynes, R.R. (ed.). Handbook of disaster research, Springer 2006. 413-429.

Seeger, M.W. (2009), Informational needs and information seeking after crises events: the case of natural disasters. Paper presented at the International Conference: Crisis Communication at the Beginning of the 21st Century, Ilmenau, Germany, October 10th, 2009.

Shin, J. (2006), Conflict, contingency and continuum: A conceptual model of the source-reporter relationship between public relations professionals and journalists, paper presented at the annual meeting of the international communication association, Dresden, international congress centre, Dresden, Germany.

Vincent R., Crow B. K., Davis D..(1989), When technology fails – the drama of airline crashes in network television news", in: Berkowitz D. (ed) Social meaning of news, California: Sage publications, 1997: 351-361.

SECTION V

INFORMATION CHANNELS AND RESPONSE PATTERNS IN A SITUATION OF RISK

Halliki Harro-Loit, Triin Vihalemm and Kadri Ugur

CONTENTS

1 INTRODUCTION

This paper focuses on the topic of informing the general public in the event of a natural disaster or human systems failure (like pollution). A great deal of scholarly attention has been devoted to people's reactions to warnings. This study has been based theoretically and methodologically on the disciplines of psychology and social psychology: the impact of the framing of risk messages (i.e. Fogas, 1995; Rothman et al 1999, Johnson & Tversky, 1983; Lener & Keltner 2001), the impact of language intensity and vividness (i.e. Frey & Eagly 1993), the emotions involved in the message (i.e. Witte 1992) etc. Some studies have shown that the framing effect (gain or loss) becomes visible only in cases where participants have processed the message carefully (Umphrey 2003). Thus, people's motivation to seek and process information cannot be overlooked.

Some case studies touch on the impact of the medium on the process of reception of warning messages (i.e. Trumbo & McComas 2008, Lachlan et al 2007, Aldoory & Van Dyke 2006). These studies refer to the perceived trustworthiness of the communicator and the channel as a crucial issue. Some case studies have explored the impact of people's general methods of information seeking in the interpretation of warning messages, and have recommended using different message appeals for passive and active information seekers (Choi & Lin 2007). Although authors and practitioners agree that the perceptions and practices of target audiences are crucial in the effectiveness of crisis communication, research-based suggestions on how to consider the different segments in the general public are rare in the academic literature of the field.

The analysis presented below addresses an issue which deserves much more scholarly attention than it receives today: communication planning according to the public's motivation and habits of searching for information from different sources. The ambition is to introduce and discuss how the complicated phenomenon of reception can be taken into consideration in targeting crisis communication to the general public. A segmentation of publics is suggested, according to their information gathering and processing strategies in relation to their behavioural intentions in a crisis.

The empirical segmentation suggested, is based on qualitative as well as quantitative research[9]. The quantitative study shows possibilities of operationalizing an important element that shapes the reception of crisis messages – peoples' everyday habits in seeking for and processing information from mass media and personal communication networks. The qualitative study consists of a text analysis of interviews conducted with civilians and gives more detailed insight into the cognitive and emotional cues utilized in selecting information channels and processing crisis messages.

The research questions and design were based on an earlier qualitative case study.that was conducted by the authors in 2008 in Pärnu, a port-town on the Western coast of Estonia where inhabitants severely suffered from storms and floods in 2005. In the retrospective focus groups interviews their response to the warnings, information seeking and processing practices, but also the reactions to the simulated warnings about other types of threats like pollution, were explored. The results of this earlier case study revealed that the response patterns were related to the general habits of media usage and information processing. Different types of responses to the warnings showed itself: active additional information seeking from official and non-official channels, shock, passive wait-and-see reaction and taking action on the basis of ones' previous knowledge about wind, water, construction of buildings, family legends etc (Harro-Loit, Vihalemm & Ugur, submitted).

The question arose whether it is possible to create means to describe the heterogeneous body of single responses as certain sub-groups or patterns which could also serve as a tool for crisis communication planning?

2 METHODOLOGICAL CONSIDERATIONS AND DATA

This study consisted of quantitative as well as qualitative research.

Quantitative research

The aim of the quantitative research was to find out whether similar patterns appear also on the basis of standardized responses to the questions about imagined risk situations, to map the possible response patterns to a warning of an (imagined) risk and to analyze these in connection with general media consumption habits. The earlier case study in Pärnu in 2008 (Harro-Loit, Vihalemm & Ugur, submitted) had indicated that a radiation threat was considered as the most "serious" category of risk, and consequently in the mapping of the behaviour strategies for the quantitative study we based the test questions on the (imagined) radiation threat.

In our survey we asked two questions – the first question concerned the preferred information channels (*"In the case of a real threat - radiation, storm, floods, bomb threat – what channels of information would be important to you?"*) and the second was about the respondent's likely behaviour in the event of a threat. A radiation threat was used as the example here. The question was: *"Please imagine the following situation: You hear on the radio that there has been an accident in … and the winds might bring radioactive clouds to Estonia. What would you do?"*.Both questions offered different answer variables (see Tables 1 and 2).

We are aware that the survey method has several limitations. Firstly, the risk is imagined and *therefore* the respondents may refer in their answers more to their general beliefs about the mass media, institutions, personal networks etc.

Secondly, we were only able to use only a list of standardized indicators of behavioural possibilities. In *order* to compensate somewhat for this shortcoming, we used factor analysis to be able to interpret more general latent variables, not just single indicators. Our empirical assumption is that factors, in binding together indicators according to the logic of answering, also represent the meta-level patterns people employ in extraordinary situations.

The questions used different scales and numbers of variables. Therefore, rather than mixing them together in one factor analysis we carried out a two-step analysis. First, we ran a factor analysis (the principal components method with Varimax rotation) separately on the information channels and the respondents' reported behaviour in the case of a radiation threat. To be able to analyze and compare different factor solutions according to their natural internal structure, we used the criterion of eigenvalues over one, not any pre-given number of factors, in extraction. The analyses resulted in three information channels factors and three case behaviour factors (see the tables 2 and 4).

As the next step, we used the factor scores resulting from the initial factor analysis (that is, each individual's scores on both factor solutions created new

variables) as an input to the secondary factor analysis. The two-step factor analysis enabled us to find out which groups of information channels are related to which behaviour in the case of a radiation threat and to reduce more than twenty single indicators to three general response patterns (see table 5).

The quantitative analysis is based on the data from the survey "I. The World. The Media", which covered the population of Estonia aged 15-74. The survey took place in October 2008. A proportional model of the general population (by area and urban/rural division) and multi-step probability random sampling was used with a total sample size of 1,506. A self-administered questionnaire, together with a follow-up interview, was used.

In addition to the questions about crisis behaviour the questionnaires included more than 700 other indicators. On the basis of these variables a number of aggregated Index Variables was formed which helped to increase the reliability of the data and to reveal more general tendencies. The Index Variables were formed by summarizing the codes of the answers given to several questions measuring the same phenomenon. We analyzed the correlations between the factor scores of the secondary factors and a set of other indicators (see table 6).

Qualitative research

The research tasks for the follow-up qualitative study were formulated after the quantitative data analysis. The main objective was to gain an insight into the perceptions and behavioural habits of the members of theoretical target groups formed in the course of statistical analysis. The questions for the focus-group study were formulated as follows:

- How do respondents belonging to a certain theoretical target group interpret different type of warnings and (imagined) risk situations? Do their interpretations of the concrete warnings presented by the group moderator match the response patterns which appear in the survey?
- How do the respondents interpret the questions and select answers (i.e. various information sources and channels/used in the survey questionnaire?)

The quantitative analysis showed three types of response patterns in the (imagined) risk situations, formed as a result of factor analysis of answers to the questions about the preferred information sources/channels and likely behaviour of the respondents in risk situations. These response patterns were labelled as follows: the pattern of immediate communication (factor 1); the pattern of following the mass media and 3) the pattern of relying on oneself (factor 3) (a more detailed overview is presented below)..Thus we decided to compose the focus-groups from the respondents whose answer pattern showed higher scores in factors which mark certain response patterns in the event of the imagined threat.

The quantitative analysis showed that the second factor (following the mass media) had high correlations with the Index Variables showing active fol-

lowing mass media channels, trust in social institutions and awareness of global risks (Table 6). We concluded that the people in this target group are those who can most easily be warned and informed in risk situations..The relevant habits and perceptions of the members of two other groups – the pattern of immediate communication and the pattern of relying on oneself - remained vaguer. Thus we decided to conduct a focus-group study with respondents who showed higher personal scores in the relevant factors. As media- following habits and overall social integration differ significantly by ethnicity/language in Estonia, we decided to conduct four focus groups – two with ethnic Estonians and two with Estonian Russians.

The potential respondents were selected from the sample base of the survey based on their personal factor score, place of residence, language of interview and agreement to participate in the follow-up studies. Recruitment was conducted by the company who carried out the quantitative survey. The final sample of the focus groups is shown in table 1.

TABLE 1   The sample of the focus groups

Tallinn		Tartu	Narva
Ethnic Estonians	Estonian Russian-speakers	Ethnic Estonians	Estonian Russian-speakers
Above average factor loadings (<0,5) in the factor of relying on oneself	Above average (<0,5) factor loadings in the factor of network communication	Above average (<0,5) factor loadings in the factor of relying on oneself and network communication	Above average (<0,5) factor loadings in the factor of relying on oneself and network communication
1 male, 4 females	2 males, 8 females	2 males, 3 females	2 males, 5 females

The focus groups were moderated by the members of the research team. The respondents were presented with warnings of different types of risks (storm, chemical pollution and radiation) and their reactions were recorded and analysed their reasons for reported behavioural strategies and usage of certain information channels/sources were also probed. The groups also discussed the advantages and disadvantages of different types of information channels/sources.. For background information, questions were asked about their earlier experience of crises and risk situations.

3 RESULTS

The results are presented in integrated form – in each chapter the quantitative data are presented in the form of tables and/or graphs, followed by the interpretation enriched with descriptions from the focus-group study.

The importance of information sources and channels in risk situations

In general people admitted in the focus-groups that in a situation of threat they would use several media channels in parallel – switch on the radio and television, consult the Internet and call their family members and acquaintances. The first warning is most likely to be received from the channels used regularly..

Table 2 includes the "ranking" of information sources and channels. The question asked in the survey was:.*In the case of a real threat - radiation, storm, floods, bomb threat – what channels of information would be important to you?* It is assumed that *one* already knows about the threat and thus the answers should reflect what channels and sources people would use in order to obtain more/follow-up information the trust towards channels and sources.

As there are considerable differences in media usage across the ethnic groups/language in Estonia (see appendix A), the results are also broken down by the *interview* language.

TABLE 2   The importance of information sources and channels in a situation of threat.

Results are given in per cent NA/DK answers are not shown in the table		Total sample	Language of interview	
			Estonian	Russian
The Rescue Centre	Very important	63	63	63
	Rather important	22	22	23
	(Rather) unimportant	12	15	12,5
Estonian Radio (public broadcasting)	Very important	61	69	42
	Rather important	27	20	41
	(Rather) unimportant	12	10	15
Estonian Television (public broadcasting)	Very important	59	76	23
	Rather important	26	18	45
	(Rather) unimportant	14	6	31
Police	Very important	53	55,5	48
	Rather important	30	28	35
	(Rather) unimportant	16	16	15
Family members and friends	Very important	52	51	54
	Rather important	36	37	33
	(Rather) unimportant	11	11	11
Local radio	Very important	39	38	41
	Rather important	27	23	38
	(Rather) unimportant	31	37	20
Nationwide newspapers	Very important	35	39	25
	Rather important	34	32,5	38
	(Rather) unimportant	29	27	34
Acquaintances who are experts on the issue.	Very important	32	32	32
	Rather important	39	39	38
	(Rather) unimportant	27	28	26
Local newspaper	Very important	31	33	26
	Rather important	31	29	34
	(Rather) unimportant	37	36,5	37
Local authorities	Very important	30	29	30,5
	Rather important	39	37	43
	(Rather) unimportant	29	32	23
Commercial television channels	Very important	23	26	15
	Rather important	37	37	36,5
	(Rather) unimportant	38	35	44
Internet	Very important	20	19	21
	Rather important	28	27	28,5
	(Rather) unimportant	50	52	47

Table 3 also presents the ranking of different information channels by importance by ethnic Estonians and Russian-speakers in Estonia..

TABLE 3   Ranking of information sources and channels by ethnic Estonians and.Russian-speakers in Estonia.

Among Estonians:	Among Russian-speakers:
1. Estonian Television (public broadcasting)	1. Rescue Centre
2. Estonian radio (public broadcasting)	2. Family members and friends
3. Rescue Centre	3. Police
4. Police	4. Estonian Radio (public broadcasting)
5. Family members and friends	5. Local radio
6. Nationwide newspapers	6. Acquaintances who are experts on the issue.
7. Local radio	7. Local authorities
8. Local newspaper	8. Local newspaper
9. Acquaintances who are experts on the issue.	9. Nationwide newspapers
10. Local authorities	10. Estonian Television (public broadcasting)
11. Commercial television channels	11. Internet
12. Internet	12. Commercial television channels

Thus the hierarchy of information channels differs significantly by ethnicity. For Estonians, the mass media channels are more important (positive correlation .170**)[10], whereas Russian-speakers prefer to turn directly to institutions and gather information through their personal network.

Albeit the variable indicating earlier risk experience was also used in the survey, it did *not* show any statistically significant correlation between the preferred information sources/channels and (imagined) behaviour strategies.

Below the *different* channels and sources of information used in a situation of threat are characterized in depth.

According to the survey, the Rescue Centre was considered to be an important source[11] of information in the case of a threat by both the Estonians and the Russian-*speakers* (see table 2). Thus, at a time of real threat/crisis the Rescue Centre should be able to manage public information needs, not only in Estonian but also in Russian. The police are also a rather important source in emergency situations.

In the focus-groups, the respondents commented that the Rescue Centre is trusted because it can give specific advice on what to do in a situation of crisis. People know the *emergency* number 112. The Estonians stated that this number

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[10]   All variables mentioned in the text have undergone correlation analysis (Pearson) with respect
    to gender, age, education, language of interview and residence (urban-rural). Here and henceforth the socio-demographic peculiarities are mentioned only where a statistically significant correlation (*p<.05*) exists between the variables. When a socio-demographic feature is not mentioned in the analysis, it means that there are no statistically significant correlations and the socio-demographic profile is similar to the Estonian average.

[11]   The survey did not specify via which channels people would prefer to receive information from those institutions..

would be used only as a last resort if other sources do not provide information or if there is a concrete threat. For example:

> -(Would call 112) if the crisis was really big. If there has already been a warning I would not bother the Rescue Centre. Only if I was the one who discovered something dangerous… or if only I or somebody else needed help… not just to communicate (F, middle-aged, Tallinn, Estonian).

The Estonian Russian-speakers seemed to have some experience of the Rescue Centre. Some of them had called about various issues. The readiness of Russian-speakers to turn to *this institution seems to be related to the matter of trust. For example, a respondent* from Narva reported that she had called the centre when there were rumours that the tap water in Narva was of very bad quality. She did not trust the local authorities and regarded the information from the Rescue Centre as more reliable. In Tallinn, on the contrary, a respondent was sure that the Rescue Centre would give biased information:

> -*There was smoke coming from Finland via Leningrad Oblast to Tallinn… I can say for sure, that many people, who have asthma, lung problems or children with weaker health* suffered *a lot during these days! I was also calling different institutions and 112 and I heard from everywhere that there was no danger, that it was just a bad smell. But it was not the truth! (F, older age, Tallinn, Russian-speaker).*

According to the survey, local authorities have the role of an additional, not the main/first, information source. One in every three Russian-speakers and one in every four Estonians would not turn to the local authorities at all.

The participants in the *focus*-groups did not consider the local authorities to be an important source of information because of their limited accessibility (opening-hours). People did not suppose spontaneously that that in a time of crisis working hours might be extended..Neither was there any mention of city's websites. Among the Russian-speakers in Narva, there was also strong distrust of the local authorities and local media channels:

> -*The officials are afraid of making decisions. In a situation of crisis the authorities would try to avoid panic and thus diminish the threat.*

Among Estonians, public broadcasting is a far more important channel of information compared to the commercial media channels (radio, television, newspapers and the Internet). The Russian-speakers regularly follow broadcasts from Russia and do not have a habit of following the Estonian state television channel, which for them is not an important channel important in a situation of threat either.

In the focus-group study, the Estonians said that they would prefer the Estonian state television channel because they believed that it had some kind of "direct" connection with *the* relevant institutions. The respondents said that although public broadcasting is trusted most, information should also be disseminated through other channels. For example:

> -*ETV [the public broadcasing channel] is the most reliable channel but it is not very popular.*

> -*Channels should be duplicated; however, ETV is the most reliable channel.(---)*

> -If I heard from a friend that there is such thing going on [a warning about the threat of chemical pollution]…I would immediately switch on ETV; however, Kanal 2 is effective because I watch it often and then I may just happen to hear about the crisis (group discussion in Tartu, Estonian).

In the focus-groups composed of Estonian Russian-speakers, Estonian state television was not considered an important source of information as Russians do not watch this channel regularly because of their poor knowledge of Estonian (although the channel also broadcasts news in Russian). For example:

> - I am in a worse situation, as my Estonian is not so good and I don't even know where these channels on my TV are, I mainly watch Russian TV and I hardly believe that there will be.adequate information about this..Radio – yes, plus the Internet... plus telephone... (F, middle age group, Tallinn, Russian-speaker).

Where the first warning were to come from some other source, it was considered likely that people would switch on the Estonian state television channel:

> -There is not much sense in watching Russian TV channels, they would not say much about Estonia. May be PBK (Pervoi Bribaltiskii Kanal – a TV channel which is owned by a Russian company and produces special programs in the Russian language for the Baltic states) would have something, but ETV is more reliable in this case (M, middle age group, Tallinn, Russian-speaker).

The survey results show that the public broadcasting radio channels are also considered important by the Estonians (Table 1). The Estonian Russian-speakers follow Radio 4, which belongs to the public broadcasting system,[12] and also the local radio in Russian language. Accordingly, the results of the survey show that the nationwide and local radio channels would be more important than television in delivering warnings in Russian.

In the focus-groups some Estonians said that the radio is switched on almost all the time either in the car or at home; therefore it is quite likely that they would "catch" the warnings from this channel. Here the state radio channels were also trusted more than commercial radio channels (including the local radio stations). The main reason for preferring the state radio was the belief that there is a "direct" information line (analogous to belief about the state television) and also that the broadcasting style of this channel is more serious and accurate. People are afraid that the commercial channels may create panic in order to sell better. For example:.

> -I would trust the state radio. I think that they have better opportunities to receive information (F, middle age group, Tallinn, Estonian).

> -I would stay with ETV and not switch to Kanal 2 or TV 3… these are commercial channels that offer wonderful entertainment… but they have too much "canned" material. Even their news programmes are filled with supplementary and archive materials... (M, younger age group, Tallinn, Estonian).

People also believed that the local radio could not react quickly enough. For example:

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[12]   Radio 4 is followed at least once a week by every other adult Russian speaker Source: database of the survey "I.The World. The Media 2008".

-I think that they (the local radio) are damn slow. They broadcast news of local importance – for example that the trees have come into leaf in the town (M, younger age group, Tallinn, Estonian).

In the Russian-language focus groups the state radio channel (Radio 4) was considered to be better than the local (commercial) radio stations because people believe that it is more quick. The respondents said, however, that they did not listen to this channel all the time so they would probably miss the warnings broadcast on it. In Narva the local radio stations were not trusted:

-Local media channels are used for power struggles by the political parties and we can see how the actual situation is constantly distorted by the media..

In Tartu, in a focus group consisting of men who had the relevant experience, the respondents said that although the radio is.quick channel of information it may not be available during a longer power cut because both mobile and radio transmitters fail. They said that there was a need for a medium wave channel.

The survey results show that the information picked up by word-of-mouth communication with acquaintances and family members potentially has an important role in a *situation* of threat.

The focus groups supported this finding – the respondents supposed that in a situation of some kind of natural or technological threat (storm, pollution, etc.) each of them *would* call about 5 to 10 persons: family members, friends, acquaintances..The focus groups supported the thesis that telephone calls within personal networks seem to serve two functions: to warn others/ discuss the situation (to be together mentally) and to search for additional information. People admitted that telephone calls would be made even if it was not recommended in order to keep the telephone lines open. For example, a lady from Tartu said that she had to inform her grandmother who did not use the mass media channels and was therefore outside the mass media information sphere. For example:

-What concerns me, if I hear a warning like that I immediately pick up the phone and start checking where my children and relatives are and whether they are safe, just to be sure (F, younger age group, Tallinn, Russian).

People hoped to alleviate the risk that word-of-mouth communication would distort information and create panic by using multiple information sources. For Russian-speakers in particular word-of-mouth information is important as the source of a warning because they do not regularly follow the Estonian media channels. Quotations from the Russian-language group in Tallinn:..

-I would rely in the first place on the information I get from the people I know.

-I would follow the media, but I would also contact as many people as a can...

-Trust but check... Friends might tell you something others would not. I used to work in the police for a while and keep in contact with my former colleagues. Sometimes people may distort the information.

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Communication with acquaintances who are experts on the issue was considered important by both the Estonians and the Russian-speakers. Such expertise was expected to arise mainly in connection with the institutions people's acquaintances are working for; therefore, people working for the relevant institutions should be trained to deal with situations of this kind. People also rely on multi-step informal communication. Examples from the groups:

> *-I would definitely call my friends! They have friends too, there are some experts in different areas among them (F, middle age group, Tallinn, Russian).*

> *-I would call the people on charge, the people who are in Tallinn. I have a … in the Ministry of Internal Affairs, he would be informed and know what is happening (F, middle age group, Tartu, Estonian).*

The survey showed that the Internet would be consulted rarely in a situation of threat – it is considered to be an important information channel by one in five habitants of Estonia and is not used at all by half of the population.

The participants of the focus groups said that use of the Internet in a risk situation depended on their general habits of media usage. Some older participants admitted *that* they did not like the Internet and believed that it would be extra trouble to search the Internet for information. The Internet was also considered to be less quick than radio. The news portals were considered to be more quick but less reliable than online newspapers. For example:

> *-The information might not get onto the Internet as quickly as it should (F, middle age, Tallinn, Estonian).*

> *-You cannot use the Internet as a background source. The Internet is less convenient because you would have to drop everything else and search for the information you need (F, middle age, Tallinn, Estonian).*

> *-The on-line newspapers are slow. The news portals are better; forwarding the news is their main activity. On the other hand, the newspapers have professional staff that can be used when needed (M, younger age, Tallinn, Estonian).*

The men in the Tartu focus group said that if there was a storm warning they would go immediately to the website of the Estonian Meteorological and Hydrological Institute because all the measurements were performed there and the results made available on their website. The respondents saw no sense in seeking for information on other websites that merely mediate information. Thus, the websites of institutions producing information have their own small circle of users.

In the Russian-language groups the Internet (news portal Delfi and other portals) was considered to be an important source of information:

> *-Oh yes, they are very important. News portals, especially those that are in 2 languages (F, middle age, Tallinn).*

> *-I would definitely surf the Internet (M, younger age, Tallinn).*

In order to discover the connections between different orientations in information search in a situation of risk, we used factor analysis (see *methodology* above).

Three groups of information sources/channels were formed (see Table 4). The public broadcasting channels formed a separate factor from the factor of the other mass media channels. This supports the thesis of the hierarchy of information channels. Institutions and personal communication networks are joined into one factor. This means that a distinction is drawn between mediated (mass) communication and immediate communication, where information is obtained from personal calls and other contacts, rather than between official and non-official channels. Therefore, we labelled the factor "information obtained from immediate communication".

TABLE 4   The Factor Structures formed from the evaluation of information channels.in a situation of threat/risk.

F1 Information obtained from immediate communication	
Rescue Centre	.85
Police	.80
Local authorities	.62
Acquaintances who are experts on the issue.	.59
Family members and friends	.45
F2 Other mass media channels	
Local newspapers	.72
Internet	.70
Nationwide newspapers	.68
Commercial television channels	.63
Local radio	.34
F3 Channels of public broadcasting	
Estonian Radio	.79
Estonian Television	.77

The correlation analysis of the relevant survey data revealed that in general the mass media channels are more important information source for ethnic Estonians, people with higher education (positive correlation .171**), rural dwellers (positive correlation .059*) younger people. Institutions are a more important information source for men (positive correlation .058*). Word-of-mouth communication is more important for younger people.

Reactions in a simulated situation of radiation threat

The use of information and general behavioural strategies in the case of a specific type of (technological) risk – radiation – was analysed. Table 5 presents the results concerning reactions to a warning of a radiation threat. The offered standardised answer variables were worked out on the basis of a focus-group study and the theoretical literature.

The results show that contemplating and continuing to follow the same source/channel are *the* most widely internalised behaviour strategies. Also, personal networks would be alerted..Every other inhabitant of Estonia would very likely also search for additional information from other mass media channels (TV, radio, the Internet). Russian-speakers would be less likely than ethnic Estonians to turn towards the mass media.

The focus-group also revealed a difference between the Estonians and Russian-speakers. The Russian-speakers expressed more concern over the warning about the radiation warning which was read by the group moderator. The focus group in Narva expressed a suspicion that power elites and the mass media may minimize the threat in order to avoid panic. They referred to the Chernobyl incident about which the Soviet authorities did not immediately and adequately inform the population..

The Rescue Centre was mentioned most often as an important source of information in a situation of *risk* in the survey. However, the test question with the radiation warning shows that ethnic Estonians tend to follow the mass media rather than contacting the Rescue Centre or other institutions..The respondents reported that they would only resort to calling the Rescue Centre if the other sources did not provide the information needed.

The survey results suggest that one in three respondents would call an expert acquaintance. The focus group interviews revealed that the respondents hoped to get additional information from people they knew who worked in the relevant institutions or had an experience in this field (in many families men were summoned to work in the Chernobyl area after the nuclear disaster. The strategies of immediate behaviour (evacuate, buy iodine, stay indoors) were internalised as "contingency strategies" (would likely do this), more often among the Russian-speakers than among the ethnic Estonians.

The focus groups showed that the risk of radiation was considered to be the most serious of the risks studied. The respondents from a group conducted in Tartu pointed out that such a risk is even more serious due to the fact that a nuclear power station was *planned* to be built in Estonia. The respondents in the Russian-language groups conducted in Tartu, Narva and Tallinn, who listened to a longer official warning of radioactive pollution (the message included the assurance that it was sufficient to stay inside), wished to evacuate immediately. As a short and general warning was used in the survey questionnaire we can assume that the respondents in the quantitative survey did not take the threat as seriously as did the respondents in the focus groups and therefore their willingness to evacuate was not very strong. It is likely that in a real risk situation such a warning may induce people to move ahead of time despite the instructions to stay at home which may create traffic jams and confusion.

On the basis of the qualitative study we posited the hypothesis that people do not have the requisite knowledge about radiation (need for iodine, staying indoors, etc). For example, pupils in Southern Estonia regarded this message as the most "incomprehensible" – they did not understand what either a radioactive cloud or radiation is.

In the focus-groups *the* Russians were more ready than the Estonians to evacuate if there was a chance. Some of them expressed a suspicion that the authorities might not protect the (Russian-speaking) population.

TABLE 5   Imagined behaviour in a situation of (a radiation) threat

Results are given in per cent NA/DK answers are not shown in the table		Total sample	Language of interview	
			Estonian	Russian
Contemplate whether/ how this could be a threat to me	Certainly would do this	79	82	71
	Probably would do this	16	13	22
	Would not do this	2	1,5	3
Follow the radio and wait for further instructions and information	Certainly would do this	72	82	50
	Probably would do this	24	16	42
	Would not do this	3	1	5
Call family members and friends and discuss the situation	Certainly would do this	63	63	64
	Probably would do this	31	30	32
	Would not do this	4	3	4
Search for additional in-formation on TV and radio	Certainly would do this	51	54,5	44
	Probably would do this	39	36	45
	Would not do this	7	7	7
Search for additional in-formation on the Internet	Certainly would do this	38	39	35
	Probably would do this	30	31	27
	Would not do this	24	23	27
Seek additional informa-tion from the Rescue Cen-tre and other institutions	Certainly would do this	33	27	48
	Probably would do this	41	44	35
	Would not do this	19,5	23	12
Call persons whose knowl-edge I trust and ask for advice	Certainly would do this	31	28	36
	Probably would do this	47,5	48	46
	Would not do this	15	16,5	12
Try to evacuate	Certainly would do this	31	34	23
	Probably would do this	46	40	60
	Would not do this	12	14	7
Stay indoors	Certainly would do this	29	33	19
	Probably would do this	48	41	61
	Would not do this	12	13,5	8
Buy iodine chloride tablets and other medication	Certainly would do this	14	15	12
	Probably would do this	42	38	51
	Would not do this	22	24	16
Do nothing. The relevant institutions should take action in the event of a threat	Certainly would do this	5	5	5
	Probably would do this	16	15	19
	Would not do this	69	68	69

The follow-up focus group study showed that tacit knowledge is very impor-tant in understanding the nature of a threat. For example, the participants in the middle and older *age* groups who had completed civil defence courses at school during the Soviet era demonstrated more knowledge about the need for iodine

pills. However, some younger people also referred to knowledge acquired at school. For example:

> -First I would remember the when the stuff is expected to reach Estonia – how much time do I have to do something. Another thing is that you should stay inside and not wander outside after it happens. I would follow that advice. One thing I would do is to move from a timber house to a concrete building – reinforced concrete is supposed to be good protection against radiation
>
> *I: And this* you *know from…?*
>
> *-From secondary school physics class (M,* younger *age, Tartu, Estonian).*

The option of relying only on the authorities and doing nothing was rejected by the vast majority of respondents.

The *focus* groups supported this finding. Unlike the younger participants, who considered this scenario *very unlikely,* the middle aged and older participants remembered the nuclear accident in Chernobyl and were ready to follow the advice given in the warning message.

The focus groups showed that the reactions to the radiation warning varied depending on the respondents' ethnicity, age and gender. Young people formed a heterogeneous sub-group – some respondents were ready to seek actively for information, some were satisfied with the information they would receive from word-of-mouth communication. Middle aged women were often ready to wait for further news and instructions. Men were more critical of the messages communicated to the public.

The survey data *analysis* brought out a statistically relevant picture of socio-demographic peculiarities in responses to an (imagined) radiation threat.

The strategy of following the radio and waiting for further instructions was most frequently internalized by the inhabitants of rural areas (positive correlation .139**) *and* older people (positive correlation .086**). The active strategy of searching for additional information on TV, radio and the Internet was more characteristic of the ethnic Estonians, people with higher education and younger people (the Internet). Russian-speakers would tend to call the Rescue Centre and other institutions (positive correlation .190**). This strategy was also more frequently internalized in urban areas and by people with higher education (correlation .083**).

Word-of-mouth strategies (calling family members and acquaintances) was more frequently internalized by females (positive correlation .051*) and Russian-speakers (*positive* correlation .095**). The evacuation strategy was more often internalized in urban areas and by people with higher education. Trusting solely in the authorities was seen more often among the ethnic Estonians (correlation .057*) and older people (correlation .073**).

We also used factor analysis to organize the (imagined) behaviour strategies (see *methodology* above). Three groups of possible behaviours were formed (see Table 6).

TABLE 6   The Factor Structures formed from the actions considered most likely to be taken in a situation of radiation threat.

F1 Strategy of immediate communication	
Call persons whose knowledge I trust and ask for advice	.76
Call family members and friends and discuss the situation	.69
Seek additional information from the Rescue Centre and other institutions	.68
F2 Strategy of following mass media	
Follow the radio and wait for further instructions and information	.81
Search for additional information on TV and radio	.70
Contemplate whether/how this could be a threat to me	.66
Search for additional information on the Internet	.44
F3 Strategy of relying on oneself	
Stay indoors	.77
Buy iodine chloride tablets and other medication	.75
Try to evacuate	.65
Do nothing. The relevant authorities should take action in the event of a threat.	.41

The first factor was labelled the *Strategy of immediate communication* and it combines the strategy of calling family members and acquaintances and public institutions such as the Rescue Centre. This accords well with the results of the factor analysis of information sources, where institutions and personal communication networks are combined into one factor. The second factor could be called the *Strategy of following the mass media* as it includes the variables of use of the mass media and the contemplation strategy. The third strategy was labelled the *Strategy of relying on oneself* because the proactive component of proactive actions (stay indoors, buy iodine, evacuate) is much stronger here than the component of doing nothing.

Response patterns in an (imagined) situation of threat

In order to obtain a more generalised picture, secondary factor analysis, which integrates the two factor solutions, was employed (see *Methodology* above). The results are shown in Table 7.

TABLE 7　The Factor Structures of response patterns in a risk situation formed from the secondary factor analysis.

	F1 Pattern of immediate communication	F2 Pattern of following mass media	F3 Pattern of relying on one-self
F1 Strategy of immediate communication	**.80**	-.00	.05
F1 Information obtained from immediate communication	**.61**	-.04	-.46
F2 Strategy of following mass media	-.01	**.78**	.00
F3 Channels of public broad-casting	-.35	**.56**	-.39
F2 Other mass media chan-nels	.38	**.54**	.37
F3 Strategy of relying on one-self	-.06	-.01	**.71**

Three factors emerged from the secondary factor analysis. We labelled the first of these the *Pattern of immediate communication,* as it combines the general evaluation of information obtained from family/friends and from institutions with readiness to turn to the same sources in the case of a (concrete, imagined) radiation threat. The second factor was labelled the *Pattern of following the mass media,* as it links a general evaluation of the mass media channels with the concrete situation of a radiation threat. The third factor was labelled the *Pattern of relying on oneself* as it has no media component at all. Thus, the last pattern reflects a certain ignorance about communication and information-gathering in a pre-crisis situation (risk).

These patterns are rather similar to the three types of information consumers seen in the qualitative study (see *Research Tasks* above). The *Pattern of following the mass media* is analogous to the type of *active information seekers*. The *Pattern of immediate communication* has an analogy with *neutral information consumers* and the *Pattern of relying on oneself* has links with *passive information consumers*.

We conducted focus groups with representatives of the pattern of immediate *communication* and the pattern of relying on oneself own (the respondents showing higher personal scores in the relevant factors; see *Methodology*).

The focus groups showed that the above-described response patterns formed in the *course* of the factor analysis in part matched the way people responded to the different types of test warning and explained their answers.

The pattern of immediate communication was reported by Russian-speakers who have no regular habit of following the Estonian media. Some participants in the focus groups admitted that they would most likely receive warnings from friends and then would turn to the mass media. They suggested that official announcements on the radio and on TV should also contain the warning that people should pass this information to as many people as possible, especially to those who do not follow the media regularly.

Some respondents also told how they had called the Rescue Centre when they had suspected that air or water might be polluted (see above, *The informa-*

tion channels). In some cases the mass media is not trusted. For example, the respondents from Narva said that they did not trust either the local authorities or the local media channels, as these were believed to be under the influence of different political parties. They would place greater trust in the central media channels (which they do not follow regularly) and information given by friends and acquaintances.

The younger people both in the Estonian and Russian groups admitted that they did not usually follow the radio or TV. In the test question where we asked about the proper behaviour in a situation where one has just received a telephone call from his/her acquaintance about the pollution of air and water with chemicals, the younger people considered this word-of-mouth information sufficient in order to deliver it by calling friends. They did not mention the need to check it in the mass media or elsewhere.

It is *most* likely that the pattern of immediate communication does not exclude following the mass media. The two sources complement each other. For example:.

> -I would follow the media, but I would also ask as many people as I can... (F, younger age group, Tallinn, Russian-speaker).

The pattern of relying on oneself was also evident in both the Russian and Estonian language groups. If, for example, they heard a radiation warning, many respondents stated that despite the test message saying that in the case of a radiation threat it is sufficient to stay inside they would leave the area and go somewhere else:

> -I would take my family and leave the area; I would also call my friends. I would not stay at home when this (cloud) moves over Tartu. It is a big threat and I would not take any risks. A storm is a storm but radiation is something else. You never know how it might affect you (F 1, middle age group, Tartu, Estonian).

> - If the wind turned to the islands or Sweden there would be enough time… I would not stay in Tartu, not even inside and with iodine pills, to wait for radiation to reach us..I would move to the North of Estonia. If there was enough time I would not wait (F 2, middle age group, Tartu, Estonian).

> -Considering that there has not been system of Civil defence in Estonia since 1991 … I would consider the experience of Chernobyl and if the border was open and if I had a car, I would try to drive as far from the border as possible and then I would get more information. It is about 500 km to Ignalina, a very short distance. The strength of the pollution of course depends on the weather as well. Still, it would be the safest to be as far from this place as possible… (M, middle age group, Narva, Russian-speaker).

The pattern of relying on oneself became evident in the responses to the test warning about radiation. The participants in both the Russian-language and Estonian-language groups in Tartu were very worried about the issue. They stated that there were no bomb shelters or other means that would protect people against radiation (such as existed in the Soviet era) and they were not ready to fully trust the information forwarded by the mass media. They referred to the experience of Chernobyl where the population was not informed. The par-

ticipants of Russian-language groups in Tallinn and Narva said that their first reaction would be to escape to Russia or another region.

The *pattern* of relying on oneself seems also to characterize people who have some experience of extraordinary situations.

> *-Actually, we all have been in this situation – remember the recent snow storm… You assess the situation really by looking out of the window or by going out in your garden and* check-ing *whether the branches are breaking on the trees (F, middle age group, Tallinn, Estonian).*

Also a young man from an Estonian-language group in Tallinn told how he had helped other people who had suffered a car accident and when hiking in high mountains. He relied on his own experience and knowledge in case of a warning against going out during a storm.

The behaviour of relying on oneself (and thereby causing harm or panic to oneself and others) can be minimized by giving information and instructions in a very clear and *well*-grounded way but also by assuring the (Russian-speaking) population that the measures taken by the government can be trusted.

Immediate (word-of-mouth) communication should be considered and integrated into the information given via mass media channels. The suggestion made in the *Russian*-language groups that the official announcements on the radio and on TV should encourage people and urge them to pass this information on to those who are thought unlikely to follow the Estonian mass media regularly should be considered.

Media consumption and socio-demographic peculiarities related to the three response patterns

We performed a correlation analysis between the factor solutions and the other questions in the survey questionnaire. Table 8 gives an overview of the results of the correlation analysis.

Characteristic of the *Pattern of following mass media* is active and varied media usage in general – including public broadcasting, the Internet, television, radio and newspapers. This pattern is connected with high social integration (tight personal networks, active participation in civic society and strong trust in the mass media. Also, general awareness about (global) risks is high in this pattern.

The *Pattern of immediate communication* is characterized by tight personal networks as well as by active participation in civic society (the ethnic Estonians) and *awareness* about the (global) risks (the ethnic Estonians).

The *Pattern of acting on one's own* in characterized by a modest habit of following the mass media (there are some negative correlations in Table 6) and lower social integration (albeit there is a positive correlation with active participation in civil society among the Russian-speakers).

Figures 1-4 show the socio-demographic peculiarities of the three patterns. No absolute numbers are used in the figures; the numbers here mark the mean factor scores of the different socio-demographic groups in relation to the three patterns.

The *Pattern of following the mass media* is more frequently employed by ethnic Estonians *compared* to Russian-speakers (Figure 1), by people with higher education (Figure 2), by 30-44 year olds (Figure 3) and by women (Figure 4)..

The *Pattern of immediate communication* is more widespread among Russian-speakers (*Figure* 1), people with higher education (figure 2), younger people (15-29yrs, see Figure 3) and women (Figure 4).

The Pattern of relying on one's own is more common among Russian-speakers (figure 1), the younger and middle age generation (see figure 3) and men (Figure 4).

TABLE 8   Correlations between Crisis Strategies and Index Variables. + / - statistically significant positive / negative correlations (p<.05)

Index variables	F1 Pattern of immediate communication		F2 Pattern of following mass media		F3 Pattern of relying on one-self	
	Estonians	Russian-speakers	Estonians	Russian-speakers	Estonians	Russian-speakers
Use of mass media:						
-Frequent use of the Internet			+	+		+
-Frequent use of the channels of public broadcasting			+		-	
-Frequent and varied watching of TV			+	+		
-Frequent and varied listening to the radio	+		+	+		
-Frequent and varied reading of newspapers			+	+		-
Social integration:						
-Strength of personal networks	+	+	+	+		
-Participation in civic society (NGOs, activities)		-	+	+		+
-Trust in (the?) mass media	+	+	+	+		
Awareness of global risks	+		+	+	+	+

Note: The labels in the first row are common denominators for several index variables measuring the same phenomenon.
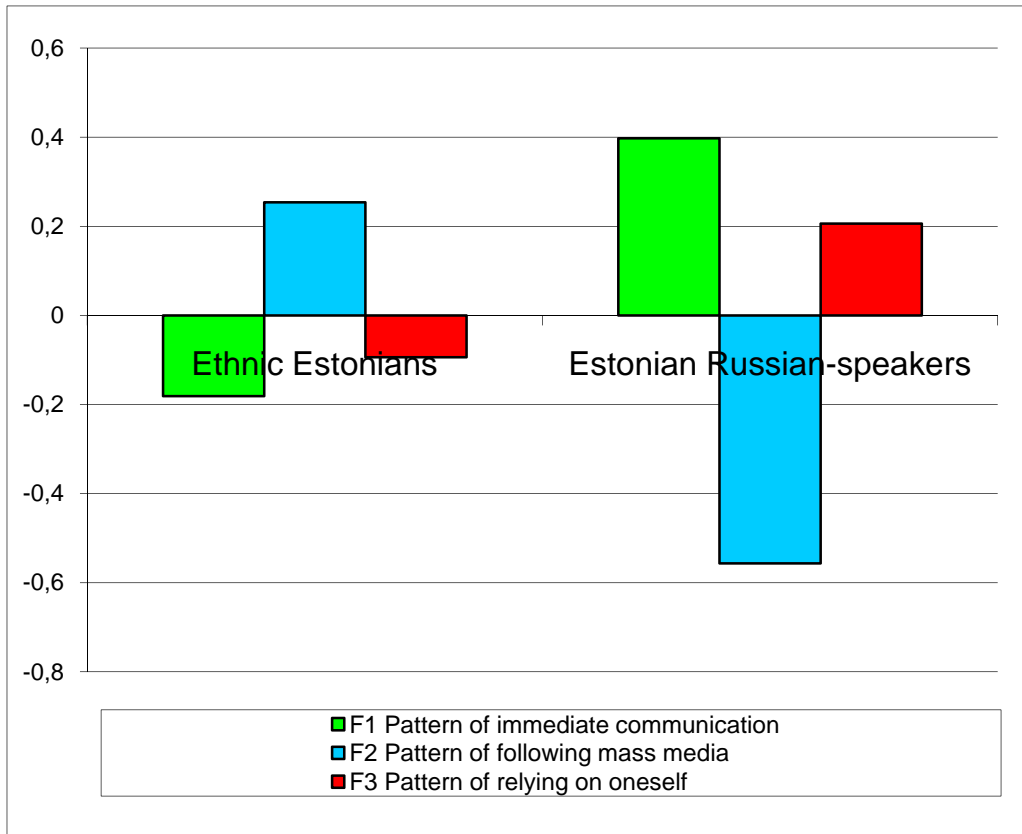
FIGURE 1   The response patterns by the ethnic majority (ethnic Estonians) and.minority groups (Estonian Russian-speakers) in Estonia
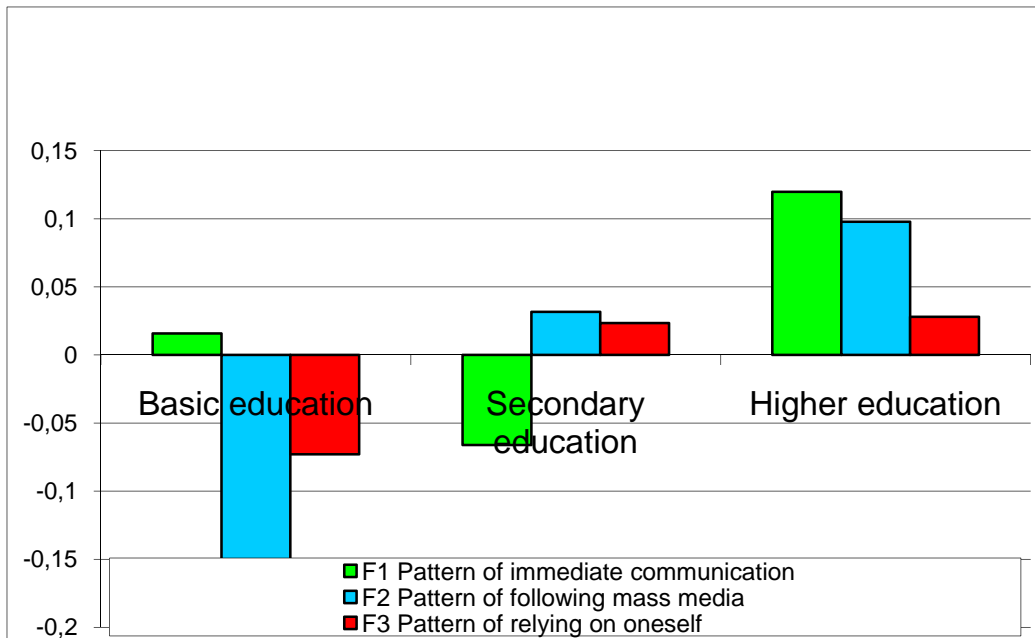

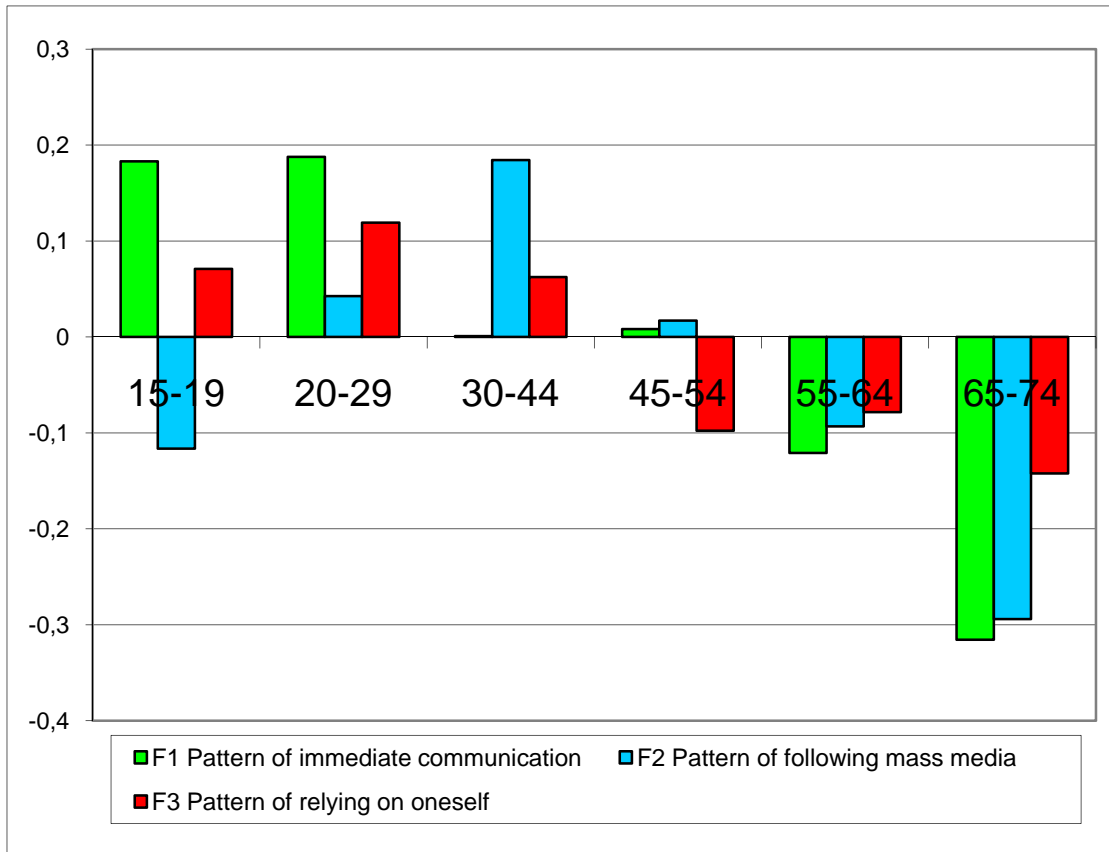FIGURE 2   The response patterns by education in Estonia

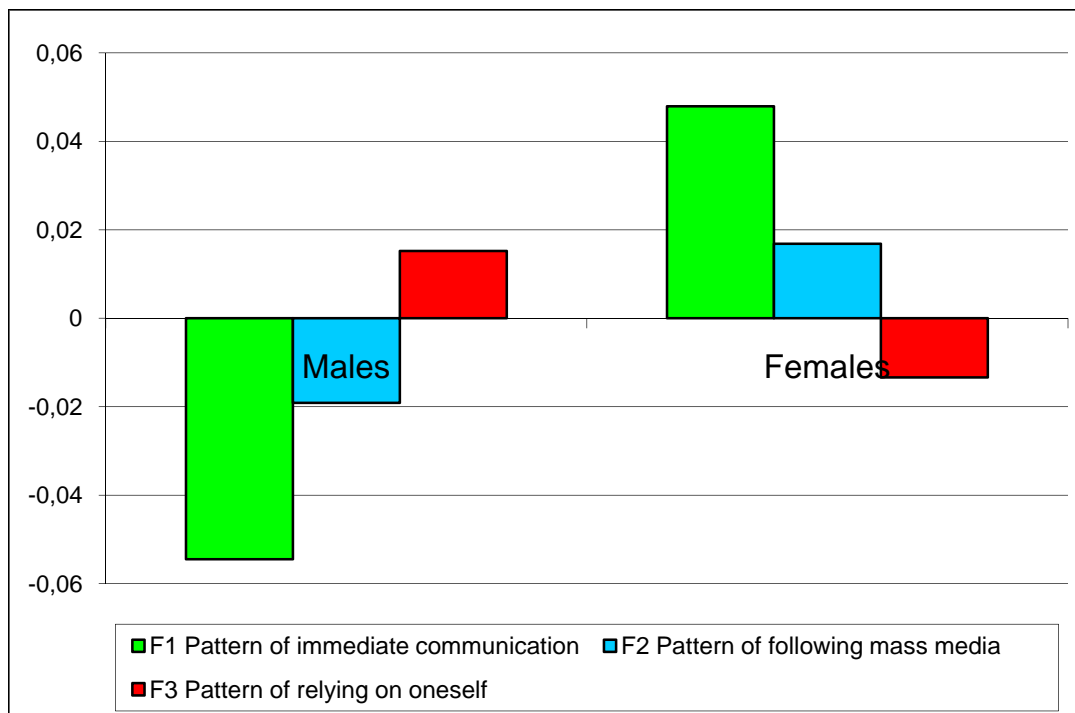FIGURE 3   The response patterns by age groups in Estonia

FIGURE 4   The response patterns by gender in Estonia

4. CONCLUSIONS

The analysis offers empirical support for the idea that information delivery and content creation for the general public should originate with the public's motivation and habits of searching for information from different sources. This indicates a possibility of segmentation of publics according to their information gathering and processing strategies in relation to their behavioural intentions in a crisis. Although one should be careful in making generalizations based on this case study, some careful conclusions can be suggested.

The results of quantitative and qualitative research suggest that there are several strategies of information seeking and processing that people may employ in a threatening situation. The strategy of following the mass media and relying on information and instructions given in times of crisis is the best option for communications institutions. These people also very likely actively seek information from various channel, are socially well-integrated and aware of risks. In formulating crisis communication strategies, however, consideration should also be given to how to reach those members of the general public who have no habit of following the news regularly and who may not trust the mass media (and who might be poorly integrated into the public sphere in general).

A segment of the general public may also choose the strategy of obtaining additional *information* by contacting other people with the aim of building up one's own picture by collecting fragments of information (strategy of immediate communication)..

There may be a specific group of people who tend to take action on their own, and who do not turn to either the mass media or the Rescue Centre or other institutions for more in-depth *information*. They may, having heard about a possible threat, rely on their own knowledge and 'leave' the information space to take action (e.g. escape) or they may ignore a warning (e.g. go out to look at a storm). Panic and harm could result because these people are poorly informed.

The use of different strategies will likely vary depending on the socio-demographic *idiosyncrasies*, general trust in institutions, type of threat and other variables.

The mapping and taking into account of everyday media usage habits is very *important* in relation to the giving of warnings and instructions. It is important to manage the information so that people turn to the appropriate media channels and follow the instructions given via those channels. For example, if the Russian-speaking population of Estonia does not regularly use the Estonian media channels, the warning messages should urge people to inform their families and acquaintances and ask them to turn to the appropriate media.

The scope of communication networks and the activeness of communication affects people's attitude towards warnings and their responses. Word-of-mouth communication is very important in Estonia, and for young people and the Russian-speaking population it is often the main/only source of information. Direct *communication* is an important source of advice and additional information. For example, people who work for relevant institutions may find themselves in a situation where they are asked for advice and have to answer questions of acquaintances about the threat. This may also include, for example,

teachers, physicians, policemen etc. Next to official spokespersons also possible unofficial spokespersons should be prepared for this role as much as possible.

How information is received in a situation of crisis depends largely on how much the *public* institutions – the government, local authorities, etc. – are trusted by people. People may suspect that not the whole truth is being revealed or that the authorities are trying to convince people that the risk is less serious than it actually is. For example, a risk of radiation is perceived as a very serious one and as the Estonian Government is planning to build a nuclear power station in Estonia, people are afraid that the government has not assessed all the risks adequately and may try to minimize the seriousness of a potential risk. A part of the Russian-speaking population is very weakly integrated into Estonian society; these people are not ready to trust official information and follow instructions (e.g. in the case of a radiation warning they wished to evacuate immediately despite the fact that the test warning said that it was sufficient to stay inside). Problems of more local character may also arise – for example, the inhabitants of Narva do not trust the local authorities and wish to receive information from central sources. Thus a potential "misreading" of the warning message should be also taken into account when composing the message in a particular context.

People could also use tacit knowledge in evaluating the threat. It might be beneficial to analyse, *for* example, what is said in the school textbooks about, for example, weather phenomena. It is an overall trend that the younger generation is losing contact with nature and may lack observation skills that may be needed in order to evaluate a situational threat.

In sum – a careful mapping of publics could be suggested in order to plan the *communication* not only via the mass media but also considering alternative ways and channels of communication.

We suggest that when making the crisis communication strategy for citizens the following questions may be beneficial to achieve public involvement:

- What are the everyday habits of following the mass media among the public? Who are the vulnerable segments in terms of infrequent mass media consumption? (For example, in the case of Estonia a big part of Russian-speaking segment of the population has no habit to follow local mass media regularly.)
- What segments may turn to the informal communication network – by mobile phones, social media, and direct contacts with institutions? (For example, in the case of Estonia this is a big part of the Russian-speaking segment and the younger generation). What are the possibilities to disseminate the warnings to these networks, offer competent advice and help avoid panic?
- Who are the communicators and channels trusted most by the public? (For example, in the case of Estonia these are the Rescue Board and public broadcasting.) These have the public legitimacy to give instructions in order to save peoples' health and property.
- What could be the critical aspects which counteract the aims of the warning and may generate negative consequences of the response pattern "relying on oneself"? (This could, for example, be stigmatisation

of the threat; suspicious attitude towards certain communicators like politicians; little tacit knowledge and skills etc.)

Executive summary – section V

This study investigated the effectiveness of warning messages, focusing on the response to warnings and information seeking and processing. A number of response patterns in crisis situations were found that are related to general habits of media usage and information processing. These response patterns facilitate communication planning in crisis situations. The authors caution against planning communication for 'the general public', as an approach that acknowledges the diversity of public groups will be more successful in reaching and connecting with a broader audience.

People employ several strategies of information seeking and processing in a threatening situation. Some people in times of crisis may follow the mass media and rely on the information and instructions given. They may also actively seek information. Others may rely on immediate communication and collect information from various people they actively contact. Again, others may be self-reliant and not actively seek information or contact sources.

Based on the quantitative and qualitative research conducted on this issue, advice on defining target groups and message strategies is provided in appendix 4 of this book.

Appendix A: Contextual background

The empirical studies for this book section were conducted in Estonia. Estonia is a post-Soviet transformational country. During the Soviet period, as an outcome of the cold war, stressing the threat of a nuclear war was one of the corner-stones of the official ideology. The general public was drilled in how to evacuate schools and workplaces. Higher education included military medical preparation for women and military training for men. After the peaceful restoration of independence, the civil defence ideology and its means were abandoned by the new power elite.

Estonia has not been subject to any nationwide, big natural or technological crises, although there have been crises on the regional level. In January 2005 a storm caused a significant rise in the sea level, with the result that coastal households in Pärnu *town* and the surrounding district suffered severely from flooding. In the public memory also includes experience of the Chernobyl catastrophe.

Estonia is a multi-ethnic society where the titular group, ethnic Estonians, forms 68 per cent of the population. The biggest group among the ethnic minorities comprises Russians, who *form* 26 per cent of the population. Also large segments of the other ethnic groups use Russian as their main language..Approximately one-fourth of the Russians have acquired the Estonian language skills to the point where they could communicate; others know Estonian passively or not at all (see Vihalemm, T (2002). "Usage of Language as a Source of Societal Trust", In.Lauristin, M, Heidmets, M. The Challenge of the Russian Minority: Emerging Multicultural Democracy in Estonia, Tartu: Tartu University Press, 199 - 218.) Thus a significant part of the population cannot participate in the public sphere because of poor knowledge of the national language (Estonian). As a legacy of the Soviet period two language domains exist within the main social institutions such as basic education and the mass media. The Russian-speakers predominantly follow TV broadcasts from Russia. For a detailed overview please consult Vihalemm, P. (2008), "The Infosphere and Media Use of Estonian Russians", Estonian Human Development Report 2007, Tallinn: Eesti.

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References

Aldoory, L., & Van Dyke, M. (2006), 'The roles of perceived "shared" involvement and information overload in understanding how audiences make meaning of news about bioterrorism', Journalism and Mass Communication Quarterly, Volume 83, Number 2, pp. 346-361.

Choi, Y. and *Lin*, Y. (2007), 'Communicating risk: the effects of message appeal and individual difference on risk message processing', Internet: www.allacademic.com/meta/p171672_index.html, *assessed in 27.04.2010*

Fogas, J. P. (1995), 'Mood and judgment: The affect infusion model (AIM)', Psychological Bulletin, Volume 117, pp. 39-66.

Frey, K. P., & Eagly, A. H..(1993)..'Vividness can undermine the persuasiveness of messages',.Journal of Personality and Social Psychology, Volume 65, pp. 32-44.

Harro-Loit, H, Vihalemm, T. Ugur, K (submitted), 'Cultural experience in crisis communication planning', manuscript submitted to Journal of Contingencies and Crisis Management.

Johnson, E., & Tversky, A. (1983), 'Affect, generalization, and the perception of risk', Journal of Personality and Social Psychology, Volume 45, pp. 20-31.

Lachlan, K., Sepnce, P., Burke, J. (2007). 'The Role of Medium Choice in Perceptions of Crisis Message Adequacy and Responses during Hurricane Katrina', http://www.allacademic.com/meta/p_mla_apa_research_citation/1/8/8/3/3/p188339_index.html, Assessed on 26.04.2010.

Lerner, J. S., & Keltner, D. (2001), 'Fear, anger, and risk', Journal of Personality and Social Psychology, Volume 81, pp. 146-159.

Rothman, A.J., Martino, S.C., Bedell, B.T., Detweiler, J.B., Salovey, P. (1999), 'The systematic influence of gain-and loss-framed messages on interest and use of different types of health behavior', Personality and Social Psychology Bullettin, Volume 25, pp. 1355-1369.

Trumbo, C. W., McComas, K. A. (2008), 'Institutional trust, information processing and perception of environmental cancer risk',.International Journal of Global Environmental Issues, Volume 8, Number1/2, pp.

Witte, K. (1992), 'Putting the fear back into fear appeals: the extended parallel process model',.Communication monographs, volume 59, pp. 329-349.

Umphrey L. R (2003), 'The effects of message framing and message processing on testicular self-examination attitudes and perceived susceptibility', Journal Communication Research Reports, Volume 20, Issue 2, pp. 97 – 105.

APPENDIX 1

The crisis communication scorecard: a tool for crisis communication evaluation

Pauliina Palttala and Marita Vos

Public authorities nowadays are required to pay much attention to crisis management; this in turn entails the ability to meet the challenge of communication in emergency situations. The Crisis Communication Scorecard is a strategy tool designed to improve the preparedness of public authorities to manage crises. It offers a framework for evaluating and improving emergency crisis communication, and assists in communication planning.

The Crisis Communication Scorecard presents critical factors in the communication of public authorities with stakeholders such as citizens, news media, and other response organisations before, during and after emergencies. It also pays attention to the kind of cooperation in the crisis response network that is crucial in the successful management of complex crisis situations. The response organisation network includes public authorities such as rescue services, the police, health care, and various municipal and state officials.

The form of the Crisis Communication Scorecard is inspired by the 'balanced scorecard' of Kaplan and Norton, originally developed for business organisations. It concentrates on key success factors with the aim of revealing and reveals strong and weak points in performance, thereby enabling the prioritization of resource allocation. The approach of the scorecard is integrative as it connects the tasks of communication with crisis management and provides quality criteria for crisis communication.

The tool can be used in two ways. The first phase, Preparation, is suitable for assessing the crisis preparedness of the organisation and its communication plan. This pre-crisis evaluation takes place, e.g., alongside the annual strategy development process. The second and the third phases are used to evaluate a crisis exercise or to reflect on real-life performance after an emergency situation. The second phase concerns Warning and Crisis response when the situation is at its peak, whereas the last phase, Reconstruction and Evaluation, concerns actions when the situation has calmed down. The tool is divided in three phases for ease of use.

The assessment is conducted by scoring performance indicators, which describe the communication actions taken, on a scale. The electronic software provides an overview of the end results. The evaluation is done as a self-assessment by the organisation itself, preferably by engaging an external auditor.

The user guide further explains how to utilise the scorecard. Below each indicator is an explanation of why it is important. The scorecard is based on theory and empirical research. The tool has been developed in an international research project funded by the EU and coordinated by the University of Jyväskylä, Finland[13].

STAKEHOLDER	COMMUNICATION TASK	PERFORMANCE INDICATOR	
		Assessment scale 1 This is not taken cognizance of 2 Its importance has been recognized, but hardly any action is being taken 3 We act on this to some extent but not systematically 4 This is to a large extent a systematic part of the action 5 This is fully a systematic part of the action 0 Do not know, or this indicator is not relevant for our organisation Plus space for open comments	
PHASE 1. PREPARATION (PREDICTION, PREPAREDNESS AND MITIGATION)			
CITIZENS	1.1 Knowing the public groups and their media use	1.1.1 The various public groups are identified according to how they seek and receive information about risks. *Explanation: The relevant public groups are identified, and it is well known and ana-lysed how they seek and receive risk information. People use different communication channels and react differently to information based on their experience of risks and crises and cultural background. Vulnerable groups should be listed, e.g. schools and homes for the elderly. Knowing the relevant) public groups and how they tend to seek information helps in making the right choice of media during a crisis.*	1 2 3 4 5 0 comments:
		1.1.2 It is known which sources and intermediaries the various public groups consider reliable. *Explanation: People will trust some sources more than others and this influences the 'communication climate'. A message that is received from a trustworthy channel is accorded greater credibility. Trust in sources differs among public groups and can be affected by rumours, e.g. on the Internet. Trust in the source affects people's willing-ness to follow instructions given.*	1 2 3 4 5 0 comments:

	1.2 Monitoring of risk perception and general public understanding of risks	1.2.1 Regularly, different monitoring tasks are conducted arranged to analyse risk perception and the information needs of public groups. *Explanation: Monitoring provides information on how groups of citizens see risks. Surveys can be conducted on a regular basis, and there can be a continuous monitoring of news media content along with social media to follow what kind of interests people have. The results need to be interpreted and explained to others in the response organisation. Even if gathering these data is the task of another organisation, the responsibility nevertheless remains for internally disseminating the information and making sure that it is sufficient.*	**1 2 3 4 5 0** **comments:**
	1.3 Contribution to the general public preparedness	1.3.1 Different means of communication are used to educate and instruct people how to be prepared for various types of risks. *Explanation: For educational purposes a diversity of means and channels should be used, e.g. preparatory campaigns in the media and discussions in schools, e.g., the content of an emergency kit at home, when to close doors, windows and ventilation channels, how to act in the case of a fire, poor quality of drinking water, flooding or threat of terrorism.*	**1 2 3 4 5 0** **comments**:
		1.3.2 Background information is given to further explain causes and consequences of risks. *Explanation: Background information leads to better understanding and motivates people to act according to advice. For instance, how a vaccine works and what radiation is. A balance is needed as there should be enough and not too much information given actively, while more details can be made available online such as maps showing industrial and other risks in the area.*	**1 2 3 4 5 0** **comments**:
NEWS MEDIA	1.4 Establishing cooperation with news media and journalists for crisis situations	1.4.1 The various news media and key journalists are known. *Explanation: It is known which the main news media are, both locally and nationally. Names and specializations of journalists in public and commercial channels are listed. Relations with journalists are regular. An up-to-date media database is maintained along with email lists to enable the various categories of the media to be reached without delay.*	**1 2 3 4 5 0** **comments:**
		1.4.2 Media coverage of risk information is stimulated throughout the year. *Explanation: Discussion with journalists about risks, consequences and preparation takes place. The media are encouraged to provide information about risks and how to prepare for them by being given enough background information, e.g. in press briefings. Risks that are not likely to happen or are constantly present do not fit the news criteria well.*	**1 2 3 4 5 0** **comments**:

		1.4.3 Media coverage on risks is followed and analysed. *Explanation: Monitoring is done to discover and actively correct possible misperceptions in the media via the organization's own channels, but also to determine the needs of public groups as portrayed in the news.*	**1 2 3 4 5 0** **comments:**
		1.4.4 Cooperation with the news media, focusing on the interests of citizens and protecting victim privacy, is initiated. *Explanation: Guidelines for public notification are provided. The organisation also develops procedures to protect victims and families, in the event of a crisis, from overwhelming media attention. A dialogue with journalists is established regarding the organization's objective of finding a balance between the need to report the incident and the requirements of official investigations. Matters for discussion include, for instance, avoiding drawing attention to a criminal act that may lead to the copying by others of the same violent behaviour or publishing graphic pictures that could cause panic.*	**1 2 3 4 5 0** **comments:**
RESPONSE ORGANISATION AND NETWORK	1.5 Improving preparedness in the organization and in the network of response organizations	1.5.1 The responsibilities and tasks of communication experts in relation to response management in the organisation and within the response network are clearly laid down. *Explanation: The roles and competencies of communication experts are clarified with response managers. This requires: a communication expert in the crisis command centre who takes part in strategic crisis management, a competent team to operate and conduct crisis communication, and the possibility to build up a backup team for communication tasks when needed, e.g. for monitoring, and web updating during crises. Competence profiles can be established for communication experts working with journalists, the social media, web editors, call centre coordinators, etc.*	**1 2 3 4 5 0** **comments:**
		1.5.2 Agreements are made regarding coordination in the network of response organisations, including responsibilities for communication. *Explanation: In order to cooperate efficiently the communication responsibilities of the organisations involved should be transparent to others in the network. Also, 'up scaling procedures' should be clear, i.e. in situations where the coordination of communications moves up from the local to the regional and national levels. It should be established who are involved during the different crisis phases in coordinating communication, as this may change from the early to later phases. Agreements may also concern when specific crisis facilities will be used, such as a national crisis website and call centre.*	**1 2 3 4 5 0** **comments:**

		1.5.3 Communication plans and strategies for various crisis scenarios are developed within individual organisations as well as with other participants in the response network. *Explanation: Communication plans need to be developed for the organisation in question. However, it is not enough that individual organisations have crisis communication plans; such plans should be synchronized to match the plans of the other key participants in the network. Communication plans and strategies should be developed for several scenarios, e.g. natural disaster, major accident, a pandemic, power cut or terrorism attack. These, plans, including prepared warning messages and information campaigns, should be tested for effectiveness.*	**1 2 3 4 5 0** **comments:**
		1.5.4 Local organizations, institutions and companies, are stimulated to draw up their own crisis communication plans and exercises. *Explanation: the preparedness of other organisations outside of the response network, e.g. schools, homes for the elderly and companies, should be encouraged to the extent that they formulate their own crisis communication plans and exercises. Agreements on cooperation in a crisis situation should be discussed.*	**1 2 3 4 5 0** **comments:**
	1.6 Improving facilities and the availability of manpower	1.6.1 Communication facilities to serve public groups and exchange information within the response network in a timely and effective manner are arranged. *Explanation: For communication with different publics, facilities are arranged that include alert systems (e.g. sirens and cell broadcasts), group emails and social media interventions. The crisis website and call centre needs enough capacity to field the expected volume of inquiries from citizens and thus could be set up on the regional or national level. The Information and Communication System within the response network should be independent of public telephone systems, including mediated communication (e.g. via group email and phones) between the crisis command centre and the crisis site, as well as among the response network partners.*	**1 2 3 4 5 0** **comments:**
		1.6.2 The pooling of communication expertise is arranged and there is enough manpower for each communication task. *Explanation: The pooling of communication expertise is needed in major crises, e.g. within a district. Also, it should be ensured that there is sufficient manpower for a three-shift 24-hour operation in the event of a long lasting emergency. In particular, a major and long-lasting crisis requires the pooling of manpower and expertise.*	**1 2 3 4 5 0** **comments:**

	1.7 Improving information exchange and training of crisis communication activities in the organisation and within the response network	1.7.1 Knowledge of the responsibilities of other parties, persons to be contacted, procedures and means for the exchange of information in the organisation and within the response network is established in advance. *Explanation: Exchange of information should be arranged to gain familiarity with the organization's partners so that it is not only after a crisis has occurred that they meet each other for the first time. Procedures of information exchange are established so that everybody knows whom to contact and how in the case of a crisis, and how information will be shared, including between shifts, about decisions made and the reasons for them.*	**1 2 3 4 5 0** **comments:**
		1.7.2 Training for communication expertise and skills is offered for communication officers and response managers. *Explanation: Continuous education for communication should be provided so that different competence profiles are developed both for communication experts and managers. Different competencies are needed for, e.g. spokespersons, website editors, call centre officers, and those who monitor the online and traditional media. Training may include certification, so that only certified personnel will be able to do certain tasks.*	**1 2 3 4 5 0** **comments:**
		1.7.3 Crisis exercises emphasizing communication are conducted regularly. *Explanation: Exercises in advance enable the practising of roles and tasks, as well as coordination of the communication within an individual organisation and between the response organisations. These exercises can be undertaken for the different crisis phases, and input by citizens and media should also be simulated. A thorough evaluation should be conducted.*	**1 2 3 4 5 0** **comments**:
PHASE 2. WARNING			
CITIZENS	2.1 Targeting and distribution of warning messages	2.1.1 Channels for public warning are selected carefully. This includes both news media (press and broadcasting) and direct channels of communication. *Explanation: Procedures for public notification are followed, and warnings are sent to publics via different communication channels, reaching more public groups. People use and trust different information sources. In the choice of media, attention should also be paid to reaching vulnerable groups (e.g. handicapped), who should be listed. Special groups (e.g. speakers of minority languages) can be effectively addressed, for instance via intermediaries.*	**1 2 3 4 5 0** **comments:**
		2.1.2 The core content of the warning is the same for everyone while additional information is given to specific public groups. *Explanation: Public information must be coherent. However, the diversity of the public groups can be addressed, for instance, by including additional information on the topic in the case of groups who are directly affected or who do not have previous experience of a crisis situation.*	**1 2 3 4 5 0** **comments:**

		2.1.3 Public groups can easily find more information about the warning online or by telephone. *Explanation: For people seeking information actively, a website should be provided with a well known address and well linked through other related web pages. A phone number should also be available, for instance a crisis call centre number, where people can obtain more information. When the lines are busy a tape-recorded message should at least give the currently available information.*	**1 2 3 4 5 0** **comments:**
	2.2 Issuing instructions to public groups and monitoring reactions	2.2.1 Warning messages to civil public groups: are provided in a timely manner and their content is well checked stand out to attract attention give clear instructions for action to reduce the likelihood of harm include advice on how to find more information encourage people to contact persons who might not know of the warning. *Explanation: Warnings should be noticeable and clearly phrased as alerts. People should be able to take action according to the instructions given. Messages should be short and important instructions repeated, e.g. references to time and place. It should also be stated what to do rather than what not to do, unless taking the wrong action could harm people. It is also important to mention where more information can be found, e.g. on a webpage. As social networks are effective sources of information, people can be encouraged to communicate with neighbours and relatives. For some groups, e.g. foreigners, social networks might be the dominant source of information.*	**1 2 3 4 5 0** **comments:**
		2.2.2 The effect of warning messages is checked. *Explanation: It is important to monitor that all public groups have been reached, citizens' need for information is met, instructions are understood, and people act accordingly, e.g. they are able to evacuate, and find safe areas and necessary supplies. In situations in which the warning phase is relatively long, e.g. a foreseen evacuation in case of a flooded river, this can be done by observation in the field and monitoring of traditional and social media. When the warning phase is short the dissemination of the warning messages, and how people react to the warning should at least be checked. A follow-up of reactions is needed to direct further messages.*	**1 2 3 4 5 0** **comments:**

NEWS MEDIA	2.3 Informing the news media	2.3.1 Warning messages to the news media: are provided as soon as possible to the news media provide clear information and instructions give background information about the warning in a clear and open way. *Explanation: Message content should be consistent with the information given directly to public groups and any instructions given should be clear. Essential features like place and time should be repeated, while it should also be stated and advice given on how and where to find more information. The purpose is to empower citizens so as to prevent further damage. Background information about the situation should also be transparent. This demonstrates that the response organisation is reliable in its motives and actions, and clear about its own responsibilities.*	**1 2 3 4 5 0** **comments:**
		2.3.2 Media coverage is monitored and analysed. *Explanation: Monitoring should be done to discover possible misperceptions in the media and correct these in the response organization's own channels, and also to see what needs of public groups are described in the news.*	**1 2 3 4 5 0** **comments:**
RESPONSE OR-GANISATION AND NETWORK	2.4 Information exchange and coordination in the organisation and within the response network	2.4.1 In the organisation and within the response network warnings and initial information about the organization's own activities are actively shared. Other participants in the response network are consulted when formulating key warning messages. *Explanation: In the warning phase it is important to operationalize the network cooperation, so that there is an exchange of current activities. This ensures that the key warning messages of the different response organizations are consistent. Contradictory messages create confusion among the publics, hinder rescue operations and lessen trust towards response organisations.*	**1 2 3 4 5 0** **comments:**
PHASE 3. CRISIS RESPONSE (EMERGENCY)			
CITIZENS	3.1 Instructions on how to prevent further damage	3.1.1 Instructions are given in a clear manner, including how and where to get more information. *Explanation: Instructions should be given as clearly as possible. They should be short, with repetition of important guidelines. Instructions should be issued separately from background information and emotional messages.*	**1 2 3 4 5 0** **comments**:
		3.1.2 The information targeted at citizens is updated continuously. *Explanation: Instructive information provided via call centres and web pages must be correct and up to date.*	**1 2 3 4 5 0** **comments:**

		3.1.3 All public groups, including vulnerable groups, have access to information. *Explanation: The diversity of public groups should be taken into account by using various channels of communication. Possible stress or anger on the part of certain involved groups should also be taken into consideration.*	**1 2 3 4 5 0** **comments:**
		3.1.4 Citizens are encouraged to use their social networks. *Explanation: Personal networks function as an effective information source, through which the response organisation's messages can also be distributed. Persons who might not be reached by the official information channels can then receive information via their social networks, families and friends.*	**1 2 3 4 5 0** **comments:**
	3.2 Clarifying the situation to help public groups to cope with the situation	3.2.1 Understanding of the crisis and its circumstances is increased. *Explanation: The situation should be clarified on the basis of the available information in order to increase general understanding about the situation, its duration, severity and likely consequences.*	**1 2 3 4 5 0** **comments:**
		3.2.2 Empathy with the public groups affected by the crisis is shown by official spokespeople. *Explanation: Empathy helps to overcome uncertainty in difficult situations, and assists psychological recovery.*	**1 2 3 4 5 0** **comments:**
		3.2.3 Special attention is given to provide information and support for those directly affected by the emergency. *Explanation: A contact person should be named to serve victims and families. Professional support and post-trauma care should be offered where needed. This also applies to the crisis management employees, who should be protected from media attention and e.g. assisted in visiting the emergency location.*	**1 2 3 4 5 0** **comments:**
	3.3 Continuous monitoring of needs and perceptions of public groups	3.3.1 The needs and perceptions of public groups are monitored and analysed, which also involves following debate in the social media. *Explanation: Monitoring should be done by analysing, e.g. questions asked at the crisis communication call centre, content of social media, results of fast surveys and so forth. Attention is also given to foreign language speakers and vulnerable groups, such as the handicapped or elderly.*	**1 2 3 4 5 0** **comments:**
		3.3.2 Questions and misinterpretations are identified and addressed. *Explanation: While conducting monitoring, questions and misunderstanding that exist should be listed to be answered via direct communication means or media relations. Incorrect rumours should also be listed and addressed, e.g. by participation in social media.*	**1 2 3 4 5 0** **comments:**

	3.4 Direct means of communication	3.4.1 Direct means are used to support the communication with diverse public groups, which include at least a website and call centre. *Explanation: Information centres need to be built up immediately after a crisis erupts. Communication should not be a mere one-way distribution of messages but also facilitate individual information seeking. At least, a well-known and easy-to-find Internet website for crisis situations and a call centre for questions by the public are needed. Face-to-face meetings and communication via intermediaries, e.g. of minority groups, should also be considered. Depending on the situation, written or audiovisual material as well as social media can also be used.*	**1 2 3 4 5 0** **comments:**
		3.4.2 Sufficient and competent manpower is allocated to provide information and respond to public distress. *Explanation: Sufficient and well-trained staff should be arranged for direct communication tasks (answering requests in a call centre, updating website). Pooling of expertise, within the organisation or with similar organisations in the district, should be used to ensure the availability of enough communication expertise now that the need is at its peak.*	**1 2 3 4 5 0** **comments:**
NEWS MEDIA	3.5 Designated crisis agency spokespeople and services for journalists	3.5.1 Emergency management activities are explained to journalists. *Explanation: The response organisation should clarify the crisis situation and describe the crisis management operations (how the situation is being dealt with,) including who are in charge. This is done so that the news media gain a proper overall picture of the event in order to report on it. The way in which the organisation takes care of its media relations in this phase should have the aim of prioritizing saving lives and reducing harm.*	**1 2 3 4 5 0** **comments:**
		3.5.2 The information provided is accurate and trustworthy. *Explanation: The information should be thoroughly checked and verified when needed. It is important to relate what is known and not yet known; this gives a clearer picture of the crisis situation as a whole and increases understanding. To prevent further damage, the content should be consistent with the instructions given directly to citizens.*	**1 2 3 4 5 0** **comments:**
		3.5.3 In contacts with the media, spokespeople clarify what happened and show empathy with those affected. *Explanation: Spokespeople give meaning to what has happened by stating how they interpret the situation. Also they should show empathy with those affected.*	**1 2 3 4 5 0** **comments:**

		3.5.4 A 24-hour media service and sufficient trained manpower are arranged to deal with questions from the press. *Explanation: In crisis time a round-the-clock service is needed to answer press questions and inform journalists about the development of the situation. People dealing with the media should be trained to do so. Trained manpower should also be available at the crisis site. In the case of a criminal act, the requirements of official investigations should be met and, if needed, explained. Providing enough information about rescue activities may help in distracting attention away from violent acts that can lead to copy-cat behaviour by others.*	**1 2 3 4 5 0** **comments:**
		3.5.5 When providing media services near to the crisis site, the organisation tries to protect victims and family from intrusions on their privacy and over-whelming media attention. *Explanation: Media officers at the crisis site should provide information and point out suitable sites for filming and photographing. They should give instructions (e.g. with the police) about where the media are allowed and where not, the aim being to ensure that while reporters are able to do their job the privacy of (family of) victims is not unnecessarily invaded and investigations and rescue work are not hindered.*	**1 2 3 4 5 0** **comments:**
		3.5.6 The media coverage is monitored and analysed. *Explanation: Media reports should be scanned in order to spot and correct possible misperceptions and to see what needs of public groups are described in the media.*	**1 2 3 4 5 0** **comments:**
RESPONSE ORGANISA-TION AND NETWORK	3.6 Assist cooperation in the organisation and within the response network	3.6.1 Information is exchanged actively in the organisation, also between work shifts. *Explanation: Information needs to be exchanged among all groups involved in the response activities. Where work is done in shifts, not just the decisions taken but also the reasons why and how they were communicated should be shared. An updated log of press relations and other communication activities should be kept.*	**1 2 3 4 5 0** **comments:**
		3.6.2 Information is exchanged actively within the response network, including how the communication tasks are handled. *Explanation: It is very important that information be exchanged about actions taken so that the organizations within the response network can make informed decisions and know how their counterparts are proceeding in communicating with the media and citizens.*	**1 2 3 4 5 0** **comments:**

		3.6.3 There is coordination in the response network for communication tasks. *Explanation: Tasks for communication in the organisation and between other participants in the response network must be clear. Coordination serves consistency in communication. When the organisations in the network communicate along similar lines with the media and citizens, this prevents misunderstandings and balances resources. If problems in cooperation with other response organisations occur, action should be taken to improve this.*	**1 2 3 4 5 0** **comments:**
PHASE 4. RECONSTRUCTION (RECOVERY)			
CITIZENS	4.1 Instructions for recovery efforts	4.1.1 Clear instructions are provided which enable citizens to recover their own life, home and property. *Explanation: After the response phase one of the most important things in crisis communication is to help people regain control over their lives, e.g. by explaining how they can act to help themselves and their family in the post-emergency recovery.*	**1 2 3 4 5 0** **comments:**
		4.1.2 People are stimulated to contribute to the coordinated recovery efforts in the community by means of clear instructions. *Explanation: Collective efforts are needed for recovery, and many are willing to assist as a volunteer if they know how. This can be on the level of the individual household, neighbourhood, sector, region, and/or country. When a community, such as a school or company, has been disrupted by an emergency, it needs to get functioning again. This includes not only social activities but also e.g. rebuilding after a fire. When it takes a long time to recuperate from a crisis, it is important that the citizens and organisations involved stay motivated to support the reconstruction of e.g. their neighbourhood; this is a task that can be done by, for instance, the municipality.*	**1 2 3 4 5 0** **comments:**
	4.2 Stimulating a more accurate public understanding of the recovery and ongoing risks	4.2.1 The information provided about the recovery activities, and possibly ongoing danger, is accurate and transparent. *Explanation: Citizens are in this later phase entitled to accurate and honest information to better understand the consequences of the crisis, the recovery activities and ongoing risks, e.g. the possibility of new volcanic eruptions or earthquakes.*	**1 2 3 4 5 0** **comments:**
		4.2.2 Communication about the crisis and its consequences is open and encourages participation in the decision-making about the plans for recovery. *Explanation: Citizens, local communities and organisations should have a broad understanding of the recovery options and be involved in decisions that have important consequences for them, e.g. plans about how a neighbourhood is to be rebuilt.*	**1 2 3 4 5 0** **comments:**

		4.2.3 Information and care for those directly affected by the emergency is continued as long as they need it. *Explanation: Care, including professional help for victims and families should continue, depending on how serious matters are; for example, organizing memorial events in cooperation with the families involved.*	**1 2 3 4 5 0** **comments:**
	4.3 Ongoing monitoring of needs and perceptions of public groups	4.3.1 The information needs and perceptions of public groups are monitored and analysed. *Explanation: Also in this phase, expectations should be met and questions addressed. Monitoring at this stage focuses on public support for the recovery activities of the response organisation and the active involvement of the public in the collective recovery effort. The monitoring includes reactions in the traditional and social media and e.g. the use of surveys.*	**1 2 3 4 5 0** **comments:**
NEWS MEDIA	4.4 Ongoing media relations	4.4.1 The media are encouraged to report about and to motivate the recovery effort. *Explanation: Although the news value of the activities in this phase is not as high as in the emergency phase, recovery initiatives and decisions are nevertheless newsworthy, since paying attention to the recovery process motivates individuals to contribute to it. Cases could be cited that inspire citizens and organisations to continue their recovery efforts.*	**1 2 3 4 5 0** **comments:**
		4.4.2 Empathy for those involved is present in information given to the news media. *Explanation: Spokespeople should continue to show empathy with those affected in order to support psychological recovery. This also demonstrates that those affected are not yet forgotten.*	**1 2 3 4 5 0** **comments:**
		4.4.3 The organisation explains its role and responsibility regarding the recovery. *Explanation: The organisation must accept its responsibility and communicate about it. Organisations that caused or contributed to the crisis will be held accountable, but other response organisations may also encounter criticism regarding their performance in the response and recovery process.*	**1 2 3 4 5 0** **comments:**
		4.4.4 The media coverage on recovery is monitored and corrective information is provided when needed. *Explanation: Monitoring of the organization's own communication channels should be undertaken to discover and correct possible misperceptions about recovery activities and to see what needs of what public groups in this phase are reported in the news.*	**1 2 3 4 5 0** **comments:**

RESPONSE ORGANISATION AND NETWORK	4.5 Stimulating cooperation and co-ordination in the organisation and within the response network	4.5.1 Information exchange and coordination of current tasks and issues to stimulate recovery is arranged in the organisation and within the response network. *Explanation: Exchange of information on recovery efforts should be enhanced and coordinated. Although the composition of the response network, leadership and responsibilities changes during a crisis, the exchange of information must be ensured so that people remain committed to the recovery process. Coordination of communication prevents inconsistencies that damage public support. Moreover, the response organisations themselves need a shared understanding of the factors that could hamper the recovery. All key institutions defined as such should have participatory mechanisms to involve the general public, along with affected groups and organisations, in the recovery effort.*	**1 2 3 4 5 0** **comments:**
		4.5.2 Contacts in the organisation and with other participants in the response network are *evaluated* throughout the process to improve these where needed. *Explanation: If problems relating to cooperation within the organisation (between units) or with the other response organisations arise, remedial action should be taken.*	**1 2 3 4 5 0** **comments:**
PHASE 5. EVALUATION			
CITIZENS	5.1 Supporting reflection	5.1.1 Public knowledge about what happened is increased with the objective of helping public groups to better cope with similar situations in the future. *Explanation: Although affected public groups may be eager to forget their recent difficulties, it is nevertheless important from a future perspective to look back on what has happened.*	**1 2 3 4 5 0** **comments:**
NEWS MEDIA	5.2 Evaluation and conclusions for the future via media and public debate	5.2.1 Public dialogue about the crisis situation its causes and consequences is promoted to limit damage in similar cases in the future. *Explanation: Society needs to cope with similar crises in the future and a public debate about this helps in developing preparedness for these. This may involve discussion about measures to be taken to prevent or limit such risks in the future.*	**1 2 3 4 5 0** **comments:**
		5.2.2 Media relations are evaluated throughout the process to improve procedures where needed. *Explanation: Where problems arise in cooperation between the organization and the media, remedial action should be taken,. Feedback must be noted, as the tone in which the media report the situation may indicate the state of the relations between the two parties.*	**1 2 3 4 5 0** **comments:**

RESPONSE ORGANISA- TION AND NETWORK	5.3 Supporting evaluation and learning about communication in the organisation and within the response network	5.3.1 Communication is evaluated in the individual organisation and with other participants in the response network. The lessons learned are well documented. *Explanation: An evaluation of the communication is needed both at the organisational and network level, so that performance is assessed and learning facilitated. Lessons learned should be seen as windows of opportunity for improvement. Documentation enables learning from others as well.*	**1 2 3 4 5 0** **comments:**
		5.3.2 Actions are determined and initiated to improve the coordination of future crisis communication in the network. *Explanation: Plans should be initiated that address concrete actions at certain phases of the crisis situation, e.g. setting up an improvement team with members of some organisations to prepare a joint exercise.*	**1 2 3 4 5 0** **comments:**

APPENDIX 2

User guide for the Crisis Communication Scorecard

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CONTENTS

INTRODUCTION

The crisis communication scorecard is a measurement instrument for public authorities to evaluate and improve crisis communication[14]. It allows users to audit pre-crisis preparedness and evaluate communication performance in a real crisis situation or crisis exercise in a systematic way that facilitates organisational learning and steers strategic decision making..This user guide[15] introduces the step-by step instructions in section five will help users to make effective use of the scorecard. The measurement instrument is available as an online solution and support materials are provided on the same web site[16].

The scorecard has been especially tailored for crisis communication. It tackles the problems that *public* authorities face in practice. Instead of providing a quick test, the instrument rather challenges an organisation to engage into a deeper analysis of its performance. This is based on the principle that crisis communication is goal-driven and strategic, and therefore must be evaluated according to previously defined objectives.

The purpose of the crisis communication scorecard is to:

- point out critical factors that have usually caused problems in crisis situations,
- show the balance between the different communication tasks and stakeholder groups in different phases of a crisis life cycle,
- encourage discussion about the results and lessons learned, and
- -   further develop crisis communication policies and plans.

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[14] The research project 'Developing a crisis scorecard', leading to these results, has been funded as part of the European Community's Seventh Framework Programme (FP7/2007-2013) under grant agreement n° 217889.

[15] This user guide does not explain the principles of crisis communication as such. For additional information users are advised to read 'A Crisis Communication Guide for Public Organisations' and 'Defining Target Groups and Message Strategies During Crisis'.

[16] All project outcomes can be found on the project web site: www.crisiscommunication.fi

Step by step instructions follow. First, we explain implementing the prepared-ness audit, second, the evaluation of a crisis response exercise and, third, the post-crisis evaluation.

Next, an explanation of the scores is given. Finally the benefits in using the scorecard are *summarized* and a glossary of terms is provided. The scientific background of the scorecard is provided elsewhere[17].

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[17]   The scientific basis of the scorecard and user guide is reported in section I of this book.

STEP BY STEP INSTRUCTIONS ON HOW TO USE THE SCORECARD

The tool can be used for various purposes:

- – to conduct a preparedness audit and test the crisis communication plan.beforehand
- – to evaluate communication in a preparedness exercise or in an actual crisis situation
- – to learn from what happened, a post-crisis.evaluation.

The instrument is divided into three audit sections that can be filled in randomly: **Before**, **During** and **After**. For each audit a scorecard is used to evaluate preparedness or performance, after which the results are discussed in a reflection session.

Preparedness audit

The purpose of this audit is to measure crisis communication preparedness and to test the crisis communication plan in the home organisation. This concerns only the first phase of Preparation (prediction, preparedness and mitigation).

1. Getting started:
   Choose the right moment for an audit: for instance the audit can be connected to the strategy process annually or every second year..Select a person to preside over the audit session in the home organisation, and a coordinator and choose a team to score performance. The team may consist of managers and other important employees who have knowledge about the organisation's communication performance and planning. External specialists may also be invited. Before the scorecard is filled in, everybody is asked to go through the crisis communication plan or those parts of the preparedness plan that concern communication. To get a login for the online scorecard, the coordinator registers online.

2. Preparing for the session:
   The coordinator invites the team members to fill in the scorecard via an email link..Each team member does the evaluation individually, reflecting on the instructions given in the plans and on the current level of preparedness. Before the team gets together for discussion, the coordinator runs the report to view the results as a whole. The report shows the scores for the separate indicators and in addition averages are calculated per task. The colours indicate whether a certain communication task or indicator is handled well, or needs attention. When there are big differences of opinion among the team members, this is also shown in the result report.

3. The session:
   In the reflection meeting each indicator is dealt with separately. Areas where there is much difference of opinion are discussed. Strong and weak points are commented on, paying special attention to weak areas and how they might be improved. The areas that were the target of the exercise are prioritized.

4. Reporting the session:
   Notes should be made in the meeting and documented; for instance, strong and weak points should be listed and explained, and options for changes and improvement projects proposed. Education, training, improvement of systems or changes in structures or procedures might be needed and therefore it is important to save the results for the purposes of comparison during the next audit round.

Evaluation of a crisis response exercise

The purpose of this audit is to evaluate how the organisation manages crisis response. Performance can be scored in a crisis exercise or in a real situation. This audit usually concerns the phases Warning and Crisis Response. However, it is also possible to simulate Reconstruction and Evaluation.

1. Getting started:
   Choose the right moment, for instance, connect the evaluation to an already planned exercise, or conduct the assessment immediately after a crisis situation. Collect together the people who are to participate in the evaluation. Select a person to coordinate the evaluation in the home organisation and choose a team to score performance..The team may consist of managers and employees with responsibility for contingency planning and management who have participated in an exercise or been part of a crisis management team in a real situation..External specialists may also be invited. Before the scorecard is filled in, everybody is asked to memorize the instructions of the crisis communication or preparedness plan and memos of the exercise or crisis. To get a login for the scorecard, the coordinator needs to register online.

2. Preparation for the exercise:
   Preparing for an exercise is time consuming and thus should be commenced well in advance. First, the goal of the exercise must be set, after which the scenario and setting can be designed. A detailed guide on how to conduct the exercise is supplied. The scorecard fits both table top and simulation types of exercises. In a table-top exercise, performance is initiated by a scenario on paper and the action takes place around a meeting table. This is easier to organize as there is no need for complicated physical arrangements. If decision making about communication strategies or the formulation of crisis messages is to be practised, a table top might be enough. The advantage

of a simulation exercise, however, is in getting real-time pressure on people. Stress is more likely to be present when a crisis is played at an imagined crisis-site, making it easier to anticipate how one would actually act in a real situation. To be effective, the exercise should involve all the persons who would deal with the situation in a real life case. This is the only way to practise cooperation in the network. Also, the roles of citizens and journalists should be played. Time lapses can be included to simulate that time has passed and the situation has changed.

A checklist for a simulated exercise follows.

- Set up a goal for the exercise, e.g. testing a specific crisis communication function or overall performance.
- Select the exercise type (Is it about decision making or rehearsing action?).
- Decide the scenario and duration: What kind of a crisis it is, who are affected, what are the causes, what needs to be done to respond, and how long the crisis is to last.
- Write a script that has a starting point with crucial backup information, feeds for players (the plot development story) and an ending.
- List the participants and their roles. Both players and organisers (game centre) are needed in order to run the game. Make sure that each player has a part in the scenario, and if not, make sure that the game centre provides such. Ensure that everybody in the game centre knows what they have to do. Those who rehearse cannot be given too much information beforehand as preparation might affect reactions in the exercise.
- Decide the location for the exercise and make the necessary arrangements, for instance technical requirements, logistics, reservations, catering and so on.
- Give notice that you are (practising) (rehearsing a crisis situation) and compile exercise instructions for all participants. No one should (inadvertently) (mistakenly) conclude that the exercise is a real crisis situation
- Decide how the exercise is to be documented and evaluated.

3. After the exercise, preparing for the session:
After the exercise the coordinator invites the team to fill in the scorecard via an email link..Each team member does the evaluation individually, reflecting on the preparedness plans and goals of the exercise, and assesses performance.
Before the team sits down to discuss the results, the coordinator runs the report to calculate the collective results. The report shows the scores for the separate indicators and averages are calculated per task. The colours indicate whether a certain communication task or indicator is handled well, or if it needs attention. Also differences of opinion between the team members are shown in the result report.

4. The session:
In the reflection meeting each indicator is dealt with separately. Areas where there is much difference of opinion are discussed. Strong and weak points are commented on, paying special attention to weak areas and how they might be improved. The areas that were the target of the exercise are prioritized.

5. Reporting the session:
Notes should be made in the meeting and documented; for instance, strong and weak points should be listed and explained, and options for changes and improvement projects proposed. Education, training, improvement of systems or changes in structures or procedures might be needed and therefore it is important to save the results for the purposes of comparison during the next audit round.

Post-crisis evaluation - learning from what happened

The purpose of this audit is to evaluate communication after a real crisis situation, to help analyse problems occurring and find processes that can be improved in a future case. In implementing a post-crisis evaluation all the phases mentioned on the scorecard may be relevant; alternatively, the focus could be on particular parts of the phases.

1. Getting started:
Choose the right time to perform the evaluation. This could be after a technical evaluation of crisis management has taken place, or, to add to a broader evaluation, at the same time as the communication analysis is done. Select a person to coordinate the evaluation and choose a team to score performance. The team can include external experts, or the evaluation can be outsourced to expert-auditors using inside informants. People with enough knowledge of the situation and with enough distance to it should be involved. The team can also gather information needed

for the evaluation. To obtain the login code for the scorecard, the coordinator registers online.

2. Preparing for the session:
   The coordinator invites the team to fill in the scorecard via an email link..Each team member does the evaluation individually, reflecting on the communication tasks performed..Before the team sits down together to discuss the results, the coordinator runs the report to calculate the collective results. The report shows the scores for the separate indicators and averages are calculated per task. The colours indicate whether a certain communication task or indicator was handled well, or needs attention. Differences of opinion between the team members are also visible in the result report.

3. The session:
   In the reflection meeting each indicator is dealt with separately. Areas with much difference of opinion are discussed. The strong and weak points are commented and special attention should be paid on to the weak areas, considering how these can be improved. The areas that were the goal of the evaluation are prioritized.

4. Reporting the session:
   Notes should be made in the meeting and documented, for instance, strong and weak points are listed and explained, and options for changes and improvement projects proposed. Education, training, improvement of systems or changes in structures or procedures might be needed. It is important to save the results to compare them with the next evaluation round. .

The audit results are stored for four months in the temporary database of the scorecard, during which time they should be downloaded and saved into the organisation's information management system.

Explanation of the scores

The indicators are formulated as statements and assessed using the following scale. For each indicator, an open space for the rater's own comments is available.

1 = This is not taken cognizance of
2 = Its importance has been recognized, but hardly any action is being taken
3 = We act on this to some extent but not systematically
4 = This is to a large extent a systematic part of the action
5 = This is fully a systematic part of the action
0 = Do not know, or this indicator is not relevant for our organisation.

The last option "Do not know, or this indicator is not relevant for our organisation" is meant for indicators that are beyond the remit of the user organisation.

However, it should not be selected too easily and, when selected, should be accompanied by an explanation in the space for comments.

The results are also shown in graphs that present an overall picture of the various phases. The phases can be compared and highlighted according to the relevant stakeholder groups.

Benefits in using the scorecard

By using the scorecard more effective communication strategies that are based on research and thorough evaluation are possible. The tool indicates critical factors, reveals strong and weak points in the organisation's crisis communication and shows how crisis communication is balanced between the stakeholder groups.

It also works as a reminder of important communication tasks in different phases of the *crisis* and with various stakeholders. Hence, it provides guidelines and standards for crisis communication and promotes discussion on further improvements.

Finally, it is meant to improve interaction among the response organisations in the network. Although organisations managing crises have their own particular responsibilities and tasks, the common goal of helping people and maintaining the *functioning* of society remains. This goal is better reached when planning, training and evaluation is done in cooperation within the communication network.

Glossary

Several terms are used parallel in the practice of crisis management and communication and in the corresponding literature. Some key terms used in the crisis communication scorecard are explained here.

Crises

Crises are situations which require an emergency response from public authorities. These could be major accidents, natural disasters or criminal activities (i.e. a school shootings or acts of terrorism) that have a negative impact on people and the environment.

Crisis communication

Crisis communication is interaction about a crisis event, its probable outcomes and causes, aimed at reducing harm to affected communities.

Own channels

By an organisation's own channels are meant the direct communication channels which a response organisation uses to address its stakeholders, e.g. Internet (home page), call centres, letters and emails, public address systems etc.

Monitoring

Monitoring is detecting and interpreting developments in the environment, e.g. following stakeholder opinions and perceptions on possible threats.

News media

The news media report crisis events in print and broadcast media. These include online versions of newspapers, radio and television produced by journalists, but not the social media in which citizens communicate directly.

Response organisation network

Response organisations are public authorities who are responsible for managing crisis situations.

Risk communication

Risk communication is interaction about threats that may endanger people and the environment. It also refers to communication activities before a crisis situation occurs that aim at preventing damage through education and by influencing behaviour.

Self-efficacy

Self-efficacy refers to an individual's belief that (s)he is able to take action and help protect her or himself and other affected people.

APPENDIX 3

A crisis communication guide for public organisations

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CONTENTS

INTRODUCTION

Life-threatening crises, such as natural and environmental disasters, terror attacks and epidemics are among those rare moments when communication with the public[18] may become an issue of life and death. Under these circumstances, effective communication with the public can save the life of many civilians.[19]

This guidebook is designed for public institutions that are interested in increasing their crisis readiness by enhancing crisis communication preparedness. Its target population consists of all those decision makers, spokespersons and public information officers whose roles involve dealing with crises. Practitioners are referred to as *crisis communication managers*.

The guidebook integrates the extensive international academic literature in this area with hands-on crisis communication experience based on interviews with spokespersons, journalists and other experts[20].

Before turning directly to the core of the guide, the reader is advised not to skip the important framing sections which are located in the introduction and appendixes. In the introduction, the objectives of the guide and the typical life-cycle of a crisis are explained and described so as to enable a better understanding of the basic structure of a crisis and the dynamics that characterize its different phases.

The central part of the guide focuses on practical issues. It presents a composite of the kinds of actions, preparations, guidelines and principles that are needed to guide communication managers in each phase of a crisis: preparedness, warning, emergency, resolution and evaluation.

In the appendix vital background information is provided and the major challenges that foreground the pivotal role of crisis communication managers during times of crises are discussed. Next the main dilemmas which every crisis communication manager should consider in advance are listed. Finally a list of recommended crisis communication guides is given.

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[18]   The terms "the public" or "the audiences" are used in this guide only as a shortcut; obviously, there are different groups of citizens with distinctive needs, as stated in many places in this guide when the needs of these groups might be overlooked.

[19] The scientific basis of this guide is reported in sections II.and IV of this book .

[20]   The research leading to these results, has received funding from the European Community's Seventh Framework Programme (FP7/2007-2013) under grant agreement n° 217889.

For every phase of a crisis, the guidebook distinguishes between three stakeholder groups. The first relates to the public, which is the ultimate addressee of all crisis communication activities and the final measure of its effectiveness. The second marks the communication activities, which mediate between the public and the crisis communication managers. The third embodies the response network, including the organisation on whose behalf the crisis communication manager is acting as well as the collaborating organisations.

Crisis management

Crises have become an inseparable part of life's routines. Around the world, humans face various threats and disasters, both natural and human-caused, the frequency and severity of which is greater now than ever in the past.[1] Handling.these situations, first and foremost by trying to avoid or at least mitigate them, becomes the role of public institutions, including national and local governments, city councils, rescue organisations and various other organisations concerned with public safety.[2]

While the crises addressed in this guidebook fall into various categories, most share the following characteristics:

- A chaotic situation that threatens the current order; as the situation persists, the known reality undergoes a drastic change and the public's ability to comprehend and attribute meaning to what is happening is seriously challenged.[3] The public experiences stress, fear for the future and at times helplessness.[4]
- Large-scale crises present complex dangers, which include, in addition to the threat or damage to human lives, the collapse of infrastructures, technological and communication systems, as well as obstruction and blockage of roads that may impede rescue teams' access.
- The scope and level of complexity of a crisis render it into a systemic phenomenon that involves various authorities and institutions. The multiplicity of agents involved in the management of a crisis creates challenges for cooperation and possible conflicts of interest that may further complicate the situation and exacerbate the effects of the crisis.
- For public agencies and leaders involved in crisis management, crises represent a danger in terms of the potential for loss of control, reputation and public legitimacy and support; at the same time, these are rare opportunities for exhibiting vigorous and sensitive leadership, competency and resourcefulness.

These are some of the reasons why, so as to be able to meet the highest standards of the field, these agencies must continually strive to improve their crisis readiness in systematic ways. Early preparation is essential as it enables individuals and communities to experience as little impact as possible.[5]

Public organisations, that are responsible for public safety during times of crises, also have a substantial communicative role. The public has a right to receive, at all times, reliable and up-to-date information, to be able to make informed choices on which the safety and welfare of the individual and his or her

family will depend. This right is substantially enhanced during times of crisis, when the welfare and fate of people are endangered.

Therefore, organisations and public institutions striving to fulfil their roles properly must develop the competencies to communicate with their different publics in an effective manner. This can help save lives, minimize casualties, mobilize local residents to self-protect and make informed decisions based on reliable, up-to date information, and support social resilience, which is the foundation for a society's ability to face a crisis. They need to know what information people need about practical matters, such as food, water, medical treatment or shelter, and to provide it accordingly; they must learn how to monitor the acceptance of information, the degree of its comprehension and the extent to which additional information is required.

To carry out their task successfully, the various public organisations involved in dealing with a crisis must develop, ahead of time, a crisis communication strategy and make systematic arrangements, based on this strategy, that take into account the probability and severity of the risks associated with each specific crisis. They must become acquainted with or develop their own set of inner work practices, messages, methods and instruments for dealing with crisis communication in order to fulfil their role in the wider efforts to encourage preparedness and minimize loss of life and other damage.

To accomplish all this in accord with high professional and ethical standards, crisis communication managers must sometimes use different, non-routine methods in working with the public. While routinely they and their organisations feel that they are in control, during crises this may no longer be the case. While routinely they may, understandably, be concerned with their organisation's image, in a crisis they must focus on the higher purpose of saving lives. While routinely they may be convinced that they know well what "the public" needs and wishes to know, in a crisis, they must face the complexity of society and the particular needs and preferences of different publics. While routinely they base their decisions on experience and intuitions, during the different stages of a crisis they must strive to rely on evidence, which in turn entails the need to learn to obtain such evidence by monitoring public perceptions throughout all the phases of the crisis.

Crisis communication managers who wish to carry out their roles properly now have at their disposal research-based resources that have been continually expanding in recent decades. The areas studied include, among others, risk communication, which deals with information, facts, their implications, decisions policies that concern potential risks to society; crisis communication, which deals with events characterized by a high level of threat, short timeframe for decision making, sense of urgency and instability that can cause public anxiety; and disaster communication, which deals with situations such as natural disasters, plagues, diseases and regional conflicts. These areas, leaning mainly on the systematic exploration of case studies from the past and on pointing out the lessons that may be learned from them, supply a rich knowledge base concerning different aspects of crisis communication, including practices, applications, types of messages, the public's perceptions of risks and its patterns of information seeking during crises.

This knowledge is valuable for those wishing to improve their communicative preparedness, adopt efficient strategies and practices, and formulate effective messages for various population segments. To accomplish this, crisis communication planners must seek ways to go beyond their always limited and partial experience they or their organisations have accumulated and utilize the existing knowledge for developing a broad-minded, evidence-based approach to crisis communication management.

Objectives of the guidebook

- To serve as a compass and a set of roadmaps for organisations and public agencies engaged in comprehensive preparedness for crisis communication management based on the professional and ethical stance that saving human lives and reducing harm is the highest priority...
- To assist public agencies, in general, and those handling crisis communication, in particular, in forming effective crisis communication strategies.
- To establish stepping-stones for early crisis communication planning and the adoption of early problem-solving strategies that will allow for higher preparedness.
- To clarify ahead of time what situations, challenges, dilemmas and activities communication managers and their organisations are likely to face at times of crisis.
- To supply a set of practical instruments and guidelines of use to public agencies coping with crises.

Distinctive features of this guide

This guide has a *non-prescriptive approach*. It does not pretend to supply prescriptions and ready-made solutions for any situations. It functions as a *reminder service*, reminding of things to be considered at every phase. It is meant to be a *friendly interface*. The use of academic language and professional jargon that is often found in works of reference is avoided here. However, terms that have become widely accepted have been included with an explanation. The references aim to equip the reader with arguments and evidence to combat inaccurate myths, such as the myth that one can cause panic by providing the public with information. Readers interested in references and further research-based recommendations will be able to find them in the endnotes.

Overarching values

The development of this guidebook has been inspired by these primary values:

1. The public as the ultimate priority
The highest goal of any crisis communication effort is the public welfare – not promoting the image of the communication manager's organisation or pleasing the media, as is often the case in ordinary times. The public is the ultimate recipient of the communication, the purpose of which is to enable survival of the crisis with the least damage (see section IV of this book). The public is also the highest criterion for the success or failure of crisis communication efforts. The centrality of the public, its perceptions and needs, should guide every action taken in any phase of a crisis. Hence, we gave priority to practices that addressed the following criteria: they emphasize vital information that may reduce casualties and injuries, strengthen public resilience, urge the recovery from the crisis, and take into consideration different sub-audiences that otherwise might be neglected. Furthermore, the structure of the chapters in this guidebook is lead by this principle, as each phase of a crisis begins with an observation regarding the public and its characteristics and needs in that phase, and it is from these issues that the recommended actions and ways of handling the public's perceptions, preferences and needs are derived.

2. Generalization as a reference point for specific events
No two crises are alike – each is unique. While this guidebook makes an effort to point out the commonalities between the various types of crisis that endanger human lives, it is no replacement for a detailed communication plan designed for the specific types of events an organisation is likely to face. It is our intention to help crisis communication managers reach that stage and form their own plan, which, as will become apparent, will require substantial modifications.

3. Key figures – crisis communication managers
The guidebook sees public agency crisis communication managers as the key figures in the process of building high professional and ethical standards of crisis communication. It is true that others – for example, journalists and the news organisations that employ them – also have an important role to play in this process. Nonetheless, crisis communication managers enjoy a strategic positioning that enables them to exert the most important influence, by virtue of the combination of their organisational affiliation, professional outlook, communication skills, knowledge and access to experts in the domain of the crisis..
.
4. Involving communication managers in decision-making processes
Involving those in charge of communication in decision-making processes is essential, even in ordinary times, as part of the bidirectional, two-way symmetrical communication with the public.[6] During crises, communication managers' involvement becomes even more essential, as they embody a critical link connecting the organisation's policy makers and administration with the public.[7]

Only when they are present among decision makers and participate in the decision-making process, can they fulfil their dual function of representing the organisation for the public and vice versa. This, in turn, enables them to participate in a tangible way in the rescue efforts and in the protection of human lives. The practice whereby the administration makes all the decisions and "informs" the communication specialists after the fact is outdated can be harmful for both the organisation and the public.

5. The media are indispensable, but should not be the only communication channel.
Its shortcomings notwithstanding, and despite the development of the alternative communication channels that allow direct communication with the public, the media have retained their pivotal role in crises. Mass media channels make it possible to communicate with large groups of citizens, allow journalists to ask questions, and help the public analyze the situation so as to make informed decisions.[8] However, it is also important to make use of the ever-increasing supply of channels that bypass the media and reach the public directly, such as personal messages, alarms and sirens, the organisation's website, and direct and social networks. These channels may allow immediate updates, bypassing the selection and bias that sometimes characterize messages mediated by the news industry. Direct channels, such as the distribution of leaflets or the employment of a public address (PA) system can become extremely important during mass disasters such as earthquakes, which involve a collapse of the communication infrastructure. Under such circumstances, these can be the only reliable channels for communication with the public.

6. Collaborating with other agencies
Because crises are by nature systemic and involve various organisations, effective communication in crises cannot be the project of a single organisation; rather, it requires close collaboration and coordination between organisations and their communication managers..Cooperation of this kind has an added value, enhancing the consistency of key messages and increasing the efficacy of the division of labour between the parties. Poor communication and lack of coordination, on the other hand, open the door to contradictions between messages and exchange of blame, which may interfere with the public's trust and e.g. reduce its willingness to follow the safety instructions.

7. Avoiding common pitfalls
The research literature points out a number of common errors concerning public information during a crisis. These errors include double or contradictory messages from various expert sources, delayed release of information, over-reassuring messages, recommendations that are not based on reality testing, failure to dispel rumours or myths, power struggles, inefficiency and the use of inappropriate humour.[9] The best way of averting these and other errors is to learn about them and to avoid exclusive reliance on one's experience, intuition or unexamined beliefs.

8. Crisis as a circular phenomenon

It is customary to think of a crisis as a circular phenomenon, or a spiral movement, in which the end of one crisis signals the beginning of the learning process that can help prepare for the next.[10] The moment the crisis is over, the preparations, thinking, planning, resource allocation, practising and other crisis preparedness-related activities begin anew. This circular view forces us to see a crisis as an integral part of the organisation's routine ongoing activity. In line with this idea, any message can be viewed as a circular learning process: did it reach its destination? Was it publicized? Was it understood properly? If not, how can this be corrected in the next version or update?

Crisis life cycles

In the past, experts saw a crisis as "bad news": a surprising and threatening event that the authorities had to mitigate and bring to an end. Today, however, following the newer research and paradigm change, a crisis is viewed as a more complex process, coping with which requires, primarily, understanding of the full context within which it is unfolding, including its conditions, unique characteristics and consequences. In addition, contemporary approaches also view crises as carrying a potential for positive change – for example, a crisis may bring about needed reforms that might not occur otherwise.

The present chapter deals with crises that endanger human lives, such as natural and man-made disasters, epidemics, terror, wars and so forth. This focus brings us close to the neighbouring concepts of *disaster[11]*, *emergency[12]* and *catastrophe[13]*, which are typically used to describe more severe situations.

The main characteristics of a crisis are as follows (see section II of this book):

- There exists a high level of threat, the need to make decisions within a short timeframe and a general sense of urgency.
- Some of the people who have been directly hurt by the crisis feel unable to cope.
- The event is accompanied by situations that are fluid, unstable and dynamic.
- From the perspective of the organisations involved, the crisis represents a turning point that, be it positive or negative, is unavoidable. It has the power to bring about changes in the organisational structure and work routines. It can even strengthen or weaken the organisation's survival instinct.

It is customary to divide a crisis into several distinct phases. Some propose three phases, while others suggest five or even six. All the divisions recognize the distinctions between the three basic states: before, during and after the crisis[14]. Each phase has its own challenges, demands and needs, which are manifested, among other things, in the area of communication. Here five phases are distinguished, as follows:.

1. Preparation (Prediction, preparedness and mitigation)

This is the most comprehensive and decisive preparation phase. It takes place when everything is still routine and the possibility of the crisis may seem remote. The challenges in this phase are, first of all, to mobilize all the agents and means for identifying the likely scenarios and studying them. The second is getting to know the population and the most effective ways for communicating with it, mobilizing the public for self-defence, increasing its awareness of the potential crisis, and coordinating expectations about the ways in which the public authorities can help and those in which self reliance is needed. The third challenge is to develop a comprehensive plan for a communication strategy which will include the organisational and inter-organisational infrastructure and the human and technological resources required. The fourth is to engage in activities that will enhance the preparedness of the population and organisation, including periodic training and drills, educational campaigns, and the ongoing testing of messages and their effectiveness.

2. Warning

In many, though definitely not all crises, a specific threat expectancy period that lasts from the moment an approaching threat is identified until that threat materializes and becomes a crisis, or alternatively – gradually dying out and disappearing. In all other situations, this phase will not appear at all; rather the crisis will erupt without further warning. Therefore, if the warning phase does appear, the first challenge is to utilize fully this precious and sometimes brief period, motivating the public to take the proper measures – this time, under the shadow of the approaching threat, which might increase the public's motivation to prepare itself properly. In order to do this a realistic and updated picture regarding the nature and scope of the threat needs to be delivered and the public's memory refreshed regarding the safety instructions. The second challenge is to carefully review, update and prepare all the steps that are required during the next phase, the emergency, particularly all those which concern the alerts regarding its eruption and the required responses. Media outlets, which in this phase will tend to devote significant coverage to the threat − at times around the clock − are likely to assist in this task.

3. Crisis Response (Emergency)

This is the core phase, in which the crisis actually breaks. The main challenge of crisis communication managers is to mobilize themselves for the task of saving lives, to motivate the public to take specific actions for self protection and assist the rescue operations, and to help minimize damage and uphold public resilience. This can be achieved by listening carefully to the ways in which various groups in society perceive the crisis, by identifying their needs for information and empathy, and by efforts to meet these needs as fully as possible, among other channels by connecting to the leadership and social networks. This phase is the ultimate test of the organisation's capacities, first and foremost the extent to which it is able to understand the crisis and its significance appropriately, and to manage it skilfully. The organisation must combine its readiness and

preparedness with resourcefulness, creativity, sensitivity and the capacity to adapt to changing circumstances.

4. Reconstruction (Recovery)

The crisis has just ended. Some people may have lost their lives, while others may have suffered physical, mental or financial damage. This is the time for physical and mental recovery on the way back to routine. The first challenge is to assist the immediate recovery and help society get back on track, to participate in the recovery of the damaged region and reinforce the resilience of society as a whole. Some crises require long-term relief and recovery, which presents a challenge in itself. The second challenge is to improve preparedness for similar future events, while utilizing the freshness of participants' experiences and memories, as well as accessibility to information, people and evidence, for comprehensive data collection that will allow for honest, thorough and courageous organisational lesson learning. It is essential to avoid falling into exchanges of blame, which is unfortunately, what tends to happen after some crises. Information gathering must be done quickly, with the understanding that some of the follow-up – data analysis, conclusion drawing and preparing for similar crises in the future – may get postponed until the next phase.

5. Evaluation

In this phase, the damaged areas should be thoroughly rehabilitated. The main challenges in this phase are to conclude learning the lessons based on the data collected in the former phase, to implement the required changes in a determined and systematic manner, and prepare for future crises accordingly. This phase embodies the beneficial aspects of the crisis, as it is the opportunity for structural reforms, budget reallocations and rebuilding of the affected regions in a way that does not merely recreate their prior conditions, but actually improves their state. The main challenge during this phase is to implement decisively and systematically the changes and tasks that were defined and prepare for future crises..

For each crisis phase, the focus is on three main stakeholder groups:

1. Citizens – Made up of people with different needs, will always be featured in the first stakeholder group, to emphasize its being the ultimate addressee of all crisis communication. The public's perceptions, needs and preferences are the base which supports all the other aspects.

2. News Media – For the second stakeholder group the role of mass communication channels is addressed – radio, television, Internet and press – that constitute the primary means by which information is disseminated to the public. [15] Furthermore, the role of the direct communication channels is discussed, such as social networks or organisational websites, whose importance increases at times of crisis. [16]

3. Response organisation and network – The third stakeholder group concerns organisations that deploy crisis communication managers as well

as other organisations that are also involved in managing the crisis. These are likely to have a significant impact on the crisis policy, resources, means and priorities, which in turn may have an indirect impact on the communicative aspects of the crisis.

CRISIS COMMUNICATION GUIDE FOR PUBLIC ORGANISATIONS

PHASE 1 Preparation (Prediction, Preparedness and Mitigation)

This is the most comprehensive and decisive preparation phase, also known as "the golden hour". It takes place when everything is still routine and the possibility of the crisis may seem remote. The challenges in this phase are, first of all, to mobilize all the agents and means for identifying the likely scenarios and studying them. The second is getting to know the population and the most effective ways for communicating with it, mobilizing the public for self-defence, increasing its awareness of the potential crisis, and coordinating expectations about the ways in which the public authorities can help and those in which self reliance is needed. The third challenge is to develop a comprehensive plan for a communication strategy which will include the organisational and inter-organisational infrastructure and the human and technological resources required. The fourth is to engage in activities that will enhance the preparedness of the population and organisation, including periodic training and drills, educational campaigns, and the ongoing testing of messages and their effectiveness.

1.1 Citizens

• To be effective, crisis communication needs to be based on an in-depth understanding of the relevant public, the mosaic of the various populations that make it up and their perceptions, needs, preferences and communication habits, during both the crisis and pre-crisis. Extra attention should be paid to populations with special needs: people with disabilities, immigrants, foreign language speakers, socioeconomically vulnerable groups, sick or medicated people and so forth. [17]

• Knowing the public also means knowing its information gaps and false perceptions regarding the nature of the crisis and the behaviour required throughout it. For example, before the launch of a vaccination campaign against an epidemic disease, the organisation must first learn what false perceptions are prevalent among different publics, such as those who resist vaccination "ideologically", in order to try to convince them of the importance of having the vaccination..

• Learning about the population has to be carried out in as systematic a way as possible. Relying on intuition, or on acquaintance with a selection of salient "characters" in the population, or reading online user's comments, are all questionable methods. The following can serve as better information sources:

- Social science research, such as surveys or interviews.
- Existing data obtained by agencies specializing in statistical data gathering on demographics and social issues (national bureau of statistics, local government planning departments, academic centres and research institutes).
- Population researchers, psychologists specializing in crisis management and regional trauma centre directors.
- Compilations of questions addressed by the public to the organisation's information centre during a similar past crisis are one example of a valuable source that may be found in the organisation's archives or in the memory of its former employees.
- Case studies of similar crises handled by other organisations, including in other countries.

- Population research should ideally encompass three levels:

  - The physical level: understanding the residents' basic needs, such as food and shelter.
  - The psycho-social level: understanding the citizens' psychological and social needs, such as the need for family and community support in times of crisis.
  - The interpretative level: understanding the ways in which individuals from various cultural, social and economic groups process messages and information. [18]

- Though it may seem that only the interpretative level is directly related to crisis communication managers, the second and third levels may also contribute in a significant way to the effectiveness of their messages, as they supply a wider context for understanding the population and its needs.
- The preparedness phase research should try to obtain information related to the public's understanding and behaviour: the extent to which individuals know about the crisis and understand the risk factors involved. If any messages on this topic have been disseminated, there is a need to examine the participants' level of exposure to these, their ability to comprehend and remember them, whether they trust the instructions to be useful and whether they plan to follow these and other instructions issued by the authorities. Trust is the key to mobilizing the public to engage in the self-protective activities. [19]
- It is important to identify the most effective channels for communicating with each population group during a crisis. However, the patterns of media consumption tend to change when the crisis sets in. Hence, it is vital to analyze media consumption during former crises and be alert to the shifting efficiency of each channel according to factors such as time of the day, workdays and weekends and seasonal differences. There is also a need to get to know the pre-crisis patterns of media consumption, for conducting drills and educational and awareness-raising campaigns to improve preparedness.

- It is important to identify the audience, the most effective communication channels and the languages into which every message will be translated. These languages need to be determined in a systematic manner, based on unified criteria that will be binding for every platform and every organisation that communicates with the public during the crisis. The public includes, among others, the various relevant stakeholders: the specific public that is situated in the area that might be affected by the crisis or disaster, their family members, rescue teams and their families, government officials, employers, religious, political and community leaders, the international community and so forth. [20]

- This is the phase for selecting the most effective speakers who will be in charge of bringing the organisation's messages to the public: the organisation's leaders, the spokesperson, professional experts (such as epidemiologists or seismologists), or perhaps a cooperative communications team. [21] In crises which involve professional issues, such as medical or hazardous materials aspects, professional experts who are interviewed in the media can do a more effective job than ordinary spokespersons and politicians, being perceived by the public as more authoritative and credible. The next step is to establish the training format for crisis communication managers, in both communications issues and professional issues pertaining to the crisis (such as communicativeness or standing in front of a camera). Periodical training is essential to ensure that they are competent and up to date.

- Regular and ongoing communication with the public, which begins pre-crisis, can help facilitate efficient communication in the emergency phase, by which time the organisation and its spokespersons will have already established rapport and public credibility.

1.2 Planning

- Specific planning for each envisioned scenario is the most effective approach. Where it is not possible for an organisation to cover all the scenarios – for example, due to the excessive number of possible scenarios and prohibitive costs– the focus should be put on the most crucial scenarios based on considerations such as the prevailing national strategy and the probabilities and risks associated with each crisis.

- The planning process necessitates partnership between all the relevant agents: administrators, rescue agencies, professionals and crisis communication specialists, in order to ensure integration, cooperation, coordination and multidirectional information flow. This process also helps ensure that communication management is bound to the overarching goals of the organisation, particularly the goal of saving lives, instead of remaining preoccupied with the issue of image. If the need arises, it may be advisable also to involve representatives of other organisations that are likely to take part in handling the event. In times of crisis, leadership – organisational, local and even national – is of enormous importance for communicating with the pub-

lic. Crisis communication managers do not always have a practical opportunity to utilize this resource, particularly with respect to higher-ranking officials; however they should be aware at least of its importance and do what they can to engage the relevant figures..

- During crises, communication managers are required to supply three types of communication: practical instructions for the public (do's and don'ts), public information (what happened, what is expected to happen); and messages (for support and self-control). When formulating media messages related to crises, the following issues need to be considered:
- The possibility of bringing the messages to the public at various levels of uniformity, according to needs and circumstances: [22]

  o Highly uniform strategy – using shared overarching messages and a minimal number of speakers, so as to achieve a consensus. This approach, called SWOV (Speaking with One Voice), is suitable for relatively homogeneous societies. Sometimes, the phrase "uniform" is exaggerated, and it is more realistic to aspire to a high level of coordination, while taking into consideration the various factors and groups that act in the same sphere each with its organisational voice, priorities and emphases..

  o Highly diverse strategy –– addressing various audiences within the society in their own language, with a different speaker addressing each group. This approach, called SWMV (Speaking with Multiple Voices), is suitable for relatively heterogeneous societies. It requires more alertness and coordination in order to avoid contradictions. A diverse strategy is also required when there is no agreement among experts regarding the extent of the risk and the required self-protection measures.

- It is important to fight the all-too-natural temptation to phrase messages in such a way that they blur the existence of the direct, concrete threat, making it sound abstract. Research has demonstrated that a sense of clear and present danger can mobilize the public to take the required preparedness steps.
- For the public to comprehend the goals and usefulness of messages, they need to be embedded in practical steps to be taken for self-protection or to minimize risks.
- Messages should remain simple and clear and be easy for foreign language speakers to understand. Overwhelming the public with too much information should be avoided.
- Messages are to generate in the public a sense of self-efficacy – that is, of having the requisite skills, learning ability and resilience for coping with

the crisis. Having developed this sense will enable the public to function well and to reduce its dependence on the authorities.

- Truth is always best [23] – in any phase and in any situation. Credibility is a precondition for the public to take communication managers' instructions seriously. An organisation that has been caught spinning lies will lose its credibility – and with that, its ability to handle the crisis.
- Transparency and openness are essential. It is vital to give the public the information that is required for understanding the threat and the ways of coping with it, and not to withhold relevant information on grounds that are not well founded – e.g., the concern about provoking panic. Distributing information in the preparedness phase increases awareness and motivates the public to action. Openness means 1) keeping the organisation accessible to the media, 2) willingness to share information, and 3) honest messages. [24]
- It is important to make it clear that an early warning is not possible in every crisis [25], and that is why preparedness needs to be ongoing.
- In all phases, messages should be issued repeatedly, on both the same and parallel channels. [26] Repetition has many benefits: it allows effective distribution of the information to populations who have missed a certain broadcast or news edition; it makes it possible to reach risk groups, which may change as the crisis unfolds; it enhances the ability to absorb new information, which may temporarily be impaired during crises, and the ability to remember messages, which differs from person to person; it raises the perceived trustworthiness and importance of the information. [27] At the same time, repetitiveness has the potential to bore and repel the public. Hence, it is important to look for creative ways to repeat the same messages. [28]
- More effective strategies for delivering messages include making use of non verbal tools, initiation of media events and unexpected choice of spokespersons. A media event can be initiated during which community leaders themselves set a personal example to the public, such as taking a vaccination or exploring a damaged region and encouraging survivors' resilience. Sometimes, figures such as political and religious leaders, experts in epidemiology or hazardous materials and celebrities can be of greater benefit than customary spokespersons.
- Has the message been delivered to the public? This is not the end of the process – just the beginning. Now it is time to assess whether the message has indeed reached all the relevant populations, has been understood properly and has mobilized them to take the required steps. It is important to remember that information- seeking habits during times of crisis vary so widely that no one has the ability to foresee them on the basis of intuition alone. [29] Studies which investigated information seeking patterns and the channels used in times of disaster showed significant differences between citizens according to gender, race, socioeconomic status, prior exposure to disasters and, to some extent, psychological proximity to the event. Intuition would not have been able to produce these insights. [30]

- Preparedness for crisis communication begins with sober assessment of the crisis and its meanings, shaping the communication strategy to be employed and preparing the groundwork in terms of personnel, knowledge, procedures, instruments and techniques of communication management in times of crisis. At this stage one should find out what kind of resources, such as communication technologies and other types of equipment, may be required to enable effective communicate with your different audiences, including journalists, other organisations and the public at large. When a crisis occurs, it might be too late to start realizing your needs, let alone acquiring missing resources in due time.

- Communication managers should ensure that their activities are carefully documented for subsequent conclusion drawing. Effective learning processes require accessible information regarding managers' decision-making procedures, meeting protocols, incident logs, records of messages that have been distributed and published, calls received at the information centre, and any other information worth analyzing for the purposes of learning lessons.

- Communication managers should adopt a culture of measuring their readiness and how well their planning matches the public's actual learning from the messages sent and drills practised. Although crisis readiness is far from being an exact science and despite the fact that some of the people involved in this field will not be excited about the idea, measurements can help in assessing preparedness, whether plans and goals match and the suitability of messages for the various publics. Large parts of the preparedness activities are measurable; examples include the percentage of the public who have been exposed to the self-defence instructions and intend to follow them, the percentage of the training activities for the organisation's spokespersons that has been completed, rate of progress of carrying out emergency preparations and the learning efficiency level, determined by internal tests in the organisation.

- It is important to monitor the media regularly and analyze systematically and longitudinally how the organisation is represented, to identify bottlenecks in the message delivery and map out the types of messages that the media tend to subject to undesirable changes.

1.3   Communications

- The list of channels that are available to crisis communication managers before, during and after a crisis, is long, including mass media and direct channels that enable non mediated communication with the public. Obviously, the variety of available channels will change over the years; however, what remains constant is the core question that needs to guide crisis communication planners: by utilizing the existing variety of channels, how well is each target population covered? The different communication channels and their reach to the primary population segments should be mapped systematically before a crisis occurs. Channels should be selected according to

their compatibility with the nature of the crisis, the relevant publics, budget and circumstances. This is also the time to make proper preparations for each channel and drill it, so in time of crisis it will serve as planned. Apart from the mass media, which will be detailed later, some channels to consider are the following:

- **Annual drill that involves the public** – A drill in which the public actually performs practical self-defence measures is the most effective way of improving crisis preparedness. [31] A drill like this cannot be carried out for each scenario, but only for the most salient and prolonged core scenario. The results of the drill enable assessment of the public's preparedness and point out where improvements are warranted [32] Allowing for the involvement of the rescue forces and the public in its natural habitat (home, workplace, school and entertainment venues), this drill is an instrument for efficient learning and consciousness raising, particularly when accompanied by the following item.

- **Media campaigns** – Media campaigns, which involve advertising, news coverage and social networks etc., can help raise various populations' awareness of particular risk factors and ways of dealing with them. [33] Combining a major annual drill with a broad-based media campaign and the accompanying social activities can help cultivate a national culture of preparedness. In media campaigns, it is important to focus on ways to motivate the public to deal with threats by taking practical actions.

- **Pre-packaged campaign** – A ready-to-use corpus of messages that is meant for optimal coping with a sudden and complex scenario that requires an immediate reaction with a minimal error margin. The messages are kept ready, having been approved by all relevant decision makers, and may include educational films, broadcasts, brochures, slogans and handouts. If possible, these pre-packages campaign massages should be exposed to control groups of citizens for criticism. It is important to try to locate misunderstood instructions, unfamiliar terms, problematic wording which may generate mistrust or deterrence. Group meetings with citizens may help the crisis communication manger learn whether certain reactions characterize specific individuals or wider groups. It is important to ascertain before their distribution that messages do indeed match the characteristics of the crisis that is happening and perform last-moment adjustments.

- **Instructing grade schools students** – Enables the raising of crisis awareness among the younger generation. Children are effective and accessible agents for change: not only are they more open to change their own behaviour, but, they can also encourage the rest of the family to prepare for a crisis. Other agents of change who are capable of motivating the public to higher awareness include political leaders, celebrities, social workers and teachers, and in certain communities, religious leaders.

- **Dedicated radio and television channels** – crisis communication managers should consider whether the crises for which their organisation is preparing itself and the resources available for that purpose justify establishing and operating special radio and television channels wholly dedicated to crisis broadcasts. These may be particularly efficient in severe crises, or as a complementary communication channel for instructing the public. On the one hand, this may allow direct use of a channel that suits the public's preference for radio and TV during crises, without interference from the media. On the other hand, such channels also have more than a few disadvantages, of which the most salient is their high cost in terms both of budget and the preparations that need to be made.– equipment, studio teams, announcers in various languages, demos etc. Another disadvantage is that in order to make use of these channels, the public is required to change its media consumption habits, which may be radically different from those in ordinary times. If it is decided to operate a dedicated studio of this kind, investment in a comprehensive effort will be required, in order to learn how to maximize its utility during the different phases of the crisis. Most organisations around the world tend to avoid operating such channels, making do instead with interrupting broadcasts on regular channels and broadcasting life-saving messages.

- **Life-saving emergency announcements** – Calling on the public to take immediate steps for self-protection requires early coordination and scrupulous joint planning with the relevant radio and television stations. [34] The ability to broadcast,.particularly on television, an emergency message – whether textual, auditory or visual –.requires detailed agreements, which involve, inter alia, editorial, legal, and technological issues. In urgent crises, broadcasting stations can be equipped, ahead of time, with films and pre-packaged campaign materials, and designated representatives of the organisation who will step into the studio in time of emergency.

- **Warning and alarm signals** – During crises that require the public to engage in urgent self-protective acts, it is impossible to rely exclusively on the media. Special alarm signals and/or urgent warning messages can cover large areas immediately and effectively; however they require a combination of technological means, operational skills and communicational preparedness. It is important for the public to understand the meaning of each signal and know exactly what it is instructing them to do. It is important to avoid introducing a confusing multitude of alarms and warnings designed for a range of different situations. Warning messages should be integrated into a large communication system to improve and back up the effectiveness of their dissemination. For example, broadcast media can be used for voicing alarms in real time in regions where they may be difficult to hear for technical reasons. Pagers are also a complimentary means for areas that are not effectively covered by alarms, as well as for specific disabled populations, such as the hearing

disabled. It is important to routinely inspect the functioning of these systems, including their reliability and breadth of coverage.

- **Website** – The organisation's website can serve as an effective and economical channel for delivering messages suited to different populations. It may contain options to interact with the organisation, forums for asking questions, and the use of multimedia for instructing different publics in different languages. The website can establish dedicated spaces for children that are based on experiential learning, a function that enables enlarging fonts for the visually disabled and textual messages for the hearing disabled. [35] In complex and ongoing crises that require it, it is worth considering the building of a dedicated website, which will assemble all the information that it is essential for the public to know. This may include self-protection measures, a guide for those who have been harmed, options for assistance, property compensation procedures, crisis laws for employers, and channels of communication with the crisis service centre, governmental and non-for-profit organisations that supply assistance etc. Such a website not only suggests non-mediated assistance, but also provides an accessible channel of communication, presence and service. This option is recommended, because it allows the public and the organisation to focus on the crisis, provides a sense of being up-to-date, and supplies detailed answers to questions relating to the crisis. The regular website, by contrast, may contain materials that are outdated, not related to the crisis or do not match the crisis atmosphere. It is important to remember, however, that certain populations, such as the elderly and immigrants, may be slow in adopting new technologies.

- **Emergency call centre** – It is important to establish an emergency call centre or be prepared to do so quickly once the crisis sets in. The public should be enabled to contact the centre through a variety of means: phone, Internet, instant messages or social media. Establishing an emergency call centre has a soothing effect on the public, who now know that they have an address to turn to with their questions..The centre should be operated by well-trained staff including speakers of the relevant languages. Calls and questions should be analyzed in an orderly fashion, and the most frequent publicized, along with comprehensive answers, on the website. The most frequent questions should be highlighted. An updated directory of questions the public is worried about is an effective tool for improving preparedness. [36] The emergency call centre itself should be located in the area where the impending crisis is not likely to interfere with its work. For crisis with a regional character, where the communication infrastructure may cease to work, it might be worthwhile adding regional information centres that will provide residents with information on basic services, such as medical treatment, shelters, water and food supplies and information relating to those injured: a list of hospitals taking care of victims, emergency evacuation points and cemeteries. These centres, too, have the dual function of both distributing and

collecting information about the public and its physical and informational needs.

- **Communication centre** – It should be considered whether opening a communication centre would be helpful for the press corps when they arrive to cover a particular crisis. In unusual and large-scale crises, these may include the foreign press. In the communication centre, journalists, crisis managers and communication managers can interact and exchange information in a non-mediated manner, and messages can be disseminated efficiently. Establishing a communication centre requires pre-crisis preparations, including the finding of suitable locations, preparing the infrastructure, training and sometimes even planning basic accommodation arrangements for the press corps.

- **New Media** – It is important for communication managers to make themselves familiar with the new types of communication channels and their ability to assist them in communicating – particularly with target populations who are not easily reached through the traditional channels. Cell phone companies can help by passing on alarm signals to their customers, pager companies can reach people who are hard of hearing or out of range, and telephone blast services can provide ways of contacting large populations in regions without effective local broadcast media. Additionally, social networks can be used to contact their members[37], and instant messaging systems, such as SMS, can be of use in updating the organisation's headquarters or other organisations' staff. The latter can also serve in the performing the task described below.

- **Radio and television sets** – Locations where large concentrations of residents may form, such as public bomb shelters, temporary housing and schools, should be mapped and prepared for equipping with relevant devices (television, radio or internet platform, according to circumstances.and budget) so that residents can receive updates while they are there.

1.4 The news media

- In times of crisis and emergency, media consumption habits and the functioning of certain media channels undergo substantial change. Typically, television and radio become the most widely used information sources during emergencies.[38] The radio has an especially essential role: it is available even to people who stay outside their homes, does not require mains voltage and overcomes distance constraints easily. Newspapers, in turn, are easy to distribute in regions without electricity, with the addition of inserts and pamphlets with detailed information and instructions. However, the effectiveness of newspapers as a source of information diminishes due to limitations of timeliness and the actual circulation among different target groups.

Despite this, newspapers regain their effectiveness later on, particularly in the post-crisis phase, when conclusions are drawn, providing in-depth information.

- In a local-regional crisis – and most crises are as such – despite the natural appeal of the national media, the local and regional media should not be neglected or ignored. Local or regional media better correspond with the needs of potentially affected communities, as they are more willing than the national media to deal with everyday practical issues and preparedness on the local level; the national media, on the other hand, will be less interested in a local crisis, especially in the pre- and post-crisis phases.

- "Exclusive" does not apply during crises[39] – not even for renowned reporters. As far as possible, all the information should be available to everybody. At least in situations where human lives are in danger, the public deserves to receive comprehensive information through all the available channels, free of the distortions of competition that exist between media outlets during ordinary times. Suspending exclusivity does not mean, however, that certain channels should not be favoured where this can be justified.on the basis of the information distribution needs, such as effective display of audiovisual instructions, reach of the largest audiences, or coverage of certain populations and regions.

- Crisis communication managers should personally meet the relevant reporters and their editors and directors and try to lay a foundation for a long-term working relationship and mutual trust. Journalists should be briefed about the risks to public safety during potential crises and how these can be mitigated by effective crisis communication. More specifically, they should be advised how they can help in delivering life-saving messages. Relationships with them should be periodically maintained. In crises, these relationships may allow greater openness to managers' messages and greater ability to fix problems quickly and efficiently. Background information files and briefings for reporters should be prepared that may be "parachuted" into the field during emergencies, as "reinforcement" to the teams that regularly cover these areas. This will help minimize delays, disruptions, and heavy editing of life-saving instructions. In addition, it is important to remember that the press corps – reporters, technical staffs, photographers, editors and anchors – are all human beings with fears, anxieties and concerns..A newscaster who is concerned about his or her family cannot be expected to provide coherent and calming massages. Therefore, it is important to meet with the press corps, guide them and integrate them into the preparations for the crisis.

- Potential key interviewees whose characteristics make them suitable to become the "face" or "voice" of the organisation in times of crisis should be

identified. It may be useful to have a separate "face" or "voice" for each leading broadcast outlet. In this way, both parties will already be acquainted with each other by the time the interviewee steps into the studio during a crisis. The best choices for this role are those who may excel at effective communication with the public: individuals who are articulate and charismatic, have an authoritative appearance that evokes trust and possess the required experience and professional background. The selected individuals should be trained periodically, with an emphasis on the ability to phrase messages, deliver them to the public, repeat them, be focused, monitor their body language and be comfortable with the microphone and the camera. Additional interviewees should be prepared in case the media demand new faces.

1.5   Response organisation and network

- It is important to map out the authorities that are going to be involved in crisis management. Those of them that are perceived by the public as the most credible are usually the best candidates for communicative cooperation..Crisis communication managers from the organisations involved should coordinate their work; they should be acquainted with their respective procedures and working patterns, and rehearse working jointly. Shared headquarters should be agreed on where communication specialists from all the relevant organisations can be represented. Getting to know each other, coordination and mutual trust between the different organisations and their crisis communication managers as well as clear division of responsibility among them will reduce the risks of mutual blame and evasion of responsibility during the crisis.

- The public information system should be tested periodically at regular intervals to identify glitches and areas that need improvement. From time to time, joint exercises should be conducted with the partner organisations and their crisis communication staffs and, if at all possible (there may be resistance on their part), with the journalists who cover them, to identify bottlenecks and various disruptions in the information flow.

- A suitable infrastructure should be prepared for intra- and inter-organisational communication which will enable those in charge of crisis communication and other decision makers to communicate with each other in a timely manner, give and receive updates confidentially, and minimize interferences with their work. This infrastructure is intended to facilitate the delivery and reception of urgent messages, tracking relevant events and following up with the outgoing information and published final versions. If a number of different departments are authorized to release information to

the media, it is important that all the announcements be pre-approved by one official, who is assigned this role ahead of time.

- An agreed glossary of terms should be established for use both within the organisation and between the partner organisations involved in managing the crisis. A unified glossary allows everyone to speak with the same language, increasing unity and consistency in communicating with the public. The glossary should make minimal use of professional jargon and be understood correctly by the public. This may require constant awareness toward the tendencies of certain terms to carry more than one "correct" interpretation among different audiences. The same terms should be used on the organisational website and in educational campaigns..

- During a crisis, the crisis communication team will need reinforcement, due to the heavy workloads that are to be expected when working simultaneously on various fronts. Creative ways to get such reinforcements an be found using the following resources:

  - **Regional spokespersons** whose region has not been affected by the crisis. Advantages: their knowledge of the field, the organisation and at least some of the media, as well as their being up to date by virtue of their earlier participation in the organisation's drills.

  - **Past spokespersons with the organisation who** may be mobilized in times of crisis or other organisations' spokespersons who are as close as possible to the field and with whom the crisis communication manager has made mutual support arrangements. Disadvantages: these are outsiders; involving them may be more complex as they require periodic training and participation in drills; at the critical moment, their other commitments may interfere with their ability to serve.

  - **Other staff from within the organisation.** Advantages: they know the organisation, are trained and are up to date. Disadvantages: they may lack background in communications and hence require intensive training. An alternative option is to appoint "communication trustees" from various departments in the organisation who will coordinate incoming information for updating crisis communication teams and conduct focused research, elucidating specific questions the communication teams may encounter.

The organisation's own employees and their preparation for possible crises should not be forgotten. They are members of the community and are probably also consumers of their own organisation's services. Analysis of the organisation's workforce can help realistic estimation of the proportions of staffs who are going to be available during the crisis or absent for various reasons, to mobilize them for planning and brainstorming, and recruit them to a social network for effective communicating with the public.

PHASE 2 Warning

In many, though definitely not all crises,.a specific threat expectancy period that lasts from the moment an approaching threat is identified until that threat materializes and becomes a crisis, or alternatively – gradually dying out and disappearing. In all other situations, this phase will not appear at all; rather the crisis will erupt without further warning. Therefore, if the warning phase does appear, the first challenge is to utilize fully this precious and sometimes brief period, motivating the public to take the proper measures – this time, under the shadow of the approaching threat, which might increase the public's motivation to prepare itself properly. In order to do this a realistic and updated picture regarding the nature and scope of the threat needs to be delivered, and the public's memory refreshed regarding the safety instructions. The second challenge is to carefully review, update and prepare all the steps that are required during the next phase, the emergency, particularly all those which concern the alerts regarding its eruption and the required responses. Media outlets, which in this phase will tend to devote significant coverage to the threat – at times around the clock –, are likely to assist in this task.

2.1 Citizens

- This period is the last moment before the crisis itself to assess the public's readiness, sense of self-efficacy and trust in the authorities and their instructions. The warning phase is a critical period for establishing public trust in the authorities. On the one hand, success here can lay a firm foundation for the distribution of messages during the crisis; On the other hand, mistakes or faults at this stage, which damage trust, may be too late to.repair during the crisis. It is important for communication managers to look for any information source that is likely to enrich their understanding of the public's attitudes, needs and preferences, while giving priority to systematic and scientifically well-founded information, such as population surveys. Information that is already available in the organisation, such as the emergency call centre's data, that can be subjected to systematic analysis, should not be neglected.

- The early warning phase can be utilized by choosing from the tools and human resources designated for the next phase – the crisis itself – those likely to be helpful in meeting the challenges of the present phase..This will help in forming a realistic picture regarding the nature and extent of the threat and educating the public about ways of preparing itself and the self-defence measures that will be required once the crisis breaks. Suitable professional experts [40] and direct media channels should be activated, including the organisation's website and emergency call centre, which must be up to date and suited to the impending crisis.

- Messages in this phase should thoroughly cover the following issues: what exactly the citizens should be doing between this point and the onset of the crisis, what they should do the moment the crisis breaks, how they can protect themselves, and which agencies are available for assistance. Along with the various messages delivered to the public, emphasis should be placed on practical self-defence measures – personal or familial – that the public can take to minimize the risks. [41]

- When phrasing the messages, it is important to be aware that at least some members of the public are likely to feel stressed at this time. This emotional state may temporarily reduce some individuals' ability to absorb and process information in an independent and critical way, particularly when the information is new. [42] Therefore, it is valuable to reiterate the instructions in various creative ways that emphasize and elaborate the same messages. As in the other phases, here too attention should be paid to the basic principles of phrasing announcements: simple and clear language; avoidance of professional jargon; precision and credibility.

- Ask the public that has been exposed to the information to pass it on personally to other people in their environment who may have missed it, not received it on time or have difficulties understanding it. They should be directed specifically to inform such populations as children, people with disabilities, seniors and those who may not speak the language, such as tourists, immigrants and foreign workers.

- The temptation should be resisted to gloss over the situation or voice excessive reassurances when there is room for worry.[43] Optimistic and overly reassuring information is likely to instil complacency that will prevent preparations being made. Mentioning unpleasant details should not be avoided and openness is recommended even when the information presents the organisation in a less than favourable light. The heightened attention and the fact that the crisis is now a specific one can be used to refresh the public's memory of the hands-on instructions and elucidate the steps that the organisation is taking.

2.2 The media

In this phase, with the crisis hanging in the air, journalists can be expected to contact communication managers with questions and demands, or possibly even budding accusations. In their dealings with them, managers should be prepared to act as follows:

- **Make the ongoing crisis** management **process visible to the media.** Make sure the organisation's representatives are available at all times for media contacts.

- **Avoid sacrificing precision and credibility for expediency's sake –** particularly in this phase, when the public and media are expecting news about the crisis onset. Make sure that only information that has been subjected to at least a preliminary verification process is publicized. When not one hundred percent sure that something is the case, state this, explaining that this is as much as is currently known. In addition, state what else is required to complement and support the existing data (lab results, additional investigation, damage control and so forth), and when the next update is expected. If, nevertheless, a false alarm has been given to the public, an immediate, open and reasoned explanation should be given, in order to minimize the damage to the organisation's trustworthiness.

- **Make sure to answer reporters' questions.** Avoid bargaining, evasions and "no comment" answers all of which may create an impression that there is something to hide.

- **Monitor closely the coverage and its updates,** so as to be able to correct errors and distortions of messages in real time.

Monitor social media (forums, user's comments, prominent blogs, social media, etc.) to find out how the public is discussing the crisis and what hitherto unconsidered questions, needs and information gaps are being raised

2.3 Direct means of communication

- Insofar as this applies to the crisis, special attention should be paid to devices for announcing the outbreak of the crisis such as siren and alert systems and making sure they are checked and ready for the next phase. Personnel should refresh their memories regarding their operating procedures and make sure that the public understands what each signal means and what action is to be performed upon receiving the alert.

- If understanding the crisis requires the delivery of substantial and detailed information, it may be worth summarizing it in a concise guidebook, with questions and answers, to be distributed in print or made available online – depending on the needs of the target populations and budget considerations.

- This is the phase, for organisations that have chosen this strategy in the first place, to replace their regular website with a special emergency one. The website should be operated in the mode of continuous, around-the-

clock updating and maintenance. A site that is constantly updated, supplies useful information and provides answers to questions that bother the public is likely to become an essential information source that will attract a growing audience. By contrast, a neglected website, which is not updated regularly and leaves questions unanswered, is likely to repel users and even damage the organisation's image. If it is decided to retain the regular website, information related to the crisis should be emphasized on the homepage. Updates should be provided regarding specific circumstances and educational materials, videos, and references to additional information and questions and answers posted, as well as translations of the information into the relevant foreign languages. Materials should also be provided that speak to diverse publics (children, citizens of high-risk regions, the disabled and foreign language speakers), allowing them easily to find information addressing their questions and needs in their own language during this phase.

2.4   Response organisation and network

- This is last chance to ensure that the organisation is prepared and ready for the crisis, the nature of which is already known by now. At this point the crisis phase procedures should be gone over, paragraph by paragraph, making sure that all the tools, people, messages, plans, practices, partnerships, pre-packaged campaigns and other matters required to be crisis-ready are in fact available and suited to the characteristics of the impending crisis. Last-minute adjustments can be made where necessary.

- Despite the crisis situation, it is important to hold regular meetings on all organisational levels. This is an important management and coordination tool, which enables managers to remain up to date as to what is happening in each department and improves departments' functioning, the coordination between them and organisational coherence.

    – Collaboration with partner organisations is important, as the goals of all concerned are similar enough. Data should be exchanged regarding the public's expectations, with links to the other organisations' websites and cooperation on tools, instructions and recommendations for coping with the public's informational needs during the crisis.

It is important to be ready for situations in which the warning phase is prolonged or shortened, and for the possibility that at least certain collaborating organisations will attract accusations regarding their responsibility for the crisis.

PHASE 3 Crisis Response (Emergency)

This is the core phase, at which the crisis actually breaks. The main challenge of crisis communication managers is to mobilize themselves for the task of saving lives, to motivate the public to take specific actions for self protection and assist the rescue operations, and to help minimize damage and uphold public resilience. This can be achieved by listening carefully to the ways in which various groups in society perceive the crisis, by identifying their needs for information and empathy, and by efforts to meet these needs as fully as possible, among other channels by connecting to leadership and social networks. This phase is the ultimate test of the organisation's capacities, first and foremost the extent to which it is able to understand the crisis and its significance appropriately, and to manage it skilfully. The organisation must combine its readiness and preparedness with resourcefulness, creativity, sensitivity and the capacity to adapt to changing circumstances.

3.1 Citizens

- When individuals or their loved ones are physically or psychologically hurt or have sustained damage to their property, and when others, too, feel threatened and unsafe, crisis communication managers have to focus on five main goals: distributing life-saving information; publicizing the requisite practical information about assistance and support services; strengthening.public resilience; meeting the need for assertive and credible leadership; and assisting the population in making sense of the chaotic reality around them.

- Life-saving information consists primarily of the previously tested practical instructions that individuals and their families can immediately follow. The instructions provide responses to questions such as: Should we stay or go? Where is it safe to be? How can we cope with the crisis that has just struck?.The information given out may include essentially different – sometimes even contradictory – instructions targeted at different publics. For example: populations close to the disaster area may be asked to evacuate while more distant ones are advised to protect themselves or stay at home and entrench themselves. This diversity of instructions requires very clear messages: who exactly should be evacuated, until when, at what range etc, accompanied by repetitions and emphasis to avoid confusion and misunderstanding.

- Useful information that the public often require in this phase concerns basic needs and crisis logistics – how, where and when it is possible to obtain medical treatment, water, food (including baby food), shelter, beds, medicine, cash and means of communication. Populations with special needs will

require information about specific services and needs: the elderly might need information on medications; foreign language speakers will need explanations in their own language and disabled persons and their families may need special self-protection guidelines.

- Despite the early planning that has been done, it is important to stay flexible and be prepared to adapt messages and ways of delivering them to specific circumstances. This will require sensitivity, creativity and the capacity to improvise. For instance, if many of the victims speak a particular language, it is important to ensure briefings are added in that language, easy access allowed to journalists who can speak it, and the emergency call centre staffed accordingly.

- It is important to understand the public's needs, be capable of representing it well in the decision-making processes and be able to supply it with the required information. Crisis communication managers need to clarify a series of questions related to the public's attitudes towards, needs and perceptions of the crisis: how the public is experiencing it, what, besides information, is needed and how well the public understands the instructions. Feedback from the public is essential also in order to learn about the absorption of messages and the level of trust in the authorities, which are crucial to social resilience. Without this information, the authorities cannot know whether and to what extent the public is convinced that the former are doing their best, despite the difficulties, and working effectively and with dedication to regain control and order, and has trust in them. The following are some of the channels that can be of help:

  - Public opinion surveys are the preferred channel, where conditions allow. Surveys not only help to map the range of attitudes, but also their distribution. If the crisis continues, it is recommended that a series of surveys be conducted with recurring questions, in order to identify changes and trends which can be used during the crisis as well as be subjected to a detailed analysis post-crisis. These surveys should deal with the public's physical needs, such as food, medical treatment and shelter; its social needs, such as staying in touch with family members who are far away; and its communications needs, such as additional informational on certain topics and on specific channels of communication. When surveys cannot be conducted, the following alternative tools should be considered:

  - Online surveys, interviews and focus groups can provide information on various attitudes that exist among the public, although not necessarily all of them and not their distribution.

  - Feedback supplied by different teams working in the disaster-stricken region or maintaining intensive contacts with the community.

- Analysis of the information that accumulates at the emergency call centre will give insight into the public's perceptions of the crisis and provide up to date information on public questions and needs in real time.

- Media monitoring, looking for the ways in which the media represents the public voice, sometimes using their own surveys.

- Social media or different forms of user-generated content: in the absence of alternatives, monitoring social media contents, such as blog posts, user comments and twits. Despite their obvious limitations, they can provide some insights on the sentiments held by some publics.

- Gathering data from various authorities that assess the condition of the population, including data from local authorities and the welfare, education and health authorities. For instance, the GIS – Geographic Information Systems – can suggest various databases, which can even be accessed by task forces in the field by means of mobile devices.

- Tracing online key words searches, using tools such as Google trends, enables changes to be detected in public interest, identify its rising concerns and address its information seeking habits. These can be analyzed according to time, location, and to some extent also according to social segments.

- Cameras: video footage with relevant information can arrive from closed circuit camera systems, spread out around cities and in various venues, from teams documenting their rescue operations, and sometimes also from occasional eye witnesses equipped with cameras and cellular phones, who now increasingly tend to send their photographed or video-taped reports to media outlets for publication. [44]

3.2 News media

- When the organisation is in charge of crisis management, while not acting impulsively and risking human lives, the crisis communication managers should try to be the first to inform the public at large about the crisis, before other organisations or the media are in the know."[45] Stealing others' thunder can help establish the organisation as a competent, relevant and credible crisis information source. Crisis communication managers are to be full partners in the decision-making processes. Their deep involvement is essential for finding opportunities to assist in the rescue efforts by means of appropriate messages, forming a general and unmediated idea of what is happening, and acting as advocates for the public and its preferences when decisions are being made. Taking part in the decision making may also help communication mangers learn about the internal dynamics of their own organisation and its policies and preferences; this is a type of knowledge that cannot be acquired in other forums. Furthermore, their very presence

around the decision making table symbolizes that communications special-ists are a part of the organisation's main efforts, not marginal figures to be filled in after the fact so they can sing the praises of others.

- This phase is likely to be accompanied by extensive coverage, where most if not all of the media's attention will be devoted to the crisis, employing marathon broadcasts and expanded teams of reporters. If properly prepared, crisis communication management teams will also function in an expanded format. During the crisis, a communication team may face several chal-lenges: to constantly receive and deliver updates, which requires a broad-ened attention span and self-control, as well as the ability to prioritize, coor-dinate and ensure consistency across the messages being sent out, that is, required for effective communication. It may also be useful to distribute a factsheet, containing a small number of easily absorbable ideas, among eve-ryone who is involved in public information (crisis communication manag-ers, experts, key interviewees, the organisation's senior management, emer-gency call centre directors, webmasters and so forth). This step should be repeated every so often.

- The setting of a personal example by decision makers and leaders has a sig-nificant impact on the effectiveness of messages and instructions, and on the level of importance the public attributes to them. It is important to ensure that decision makers are aware of expectations that they set a personal ex-ample regarding appropriate conduct, such as using a bomb shelter, taking self-defence measures, and complying with the emergency instructions.

- Key points in phrasing messages:
  - Emphasis should be placed on the principle of helping individuals help themselves and their relatives. Instructions should focus on simple and practical self-defence actions, which amplify the recipients' sense of con-trol and their motivation and willingness to stay up to date. [46]
  - The effectiveness of self-protection instructions can be illustrated with specific and fresh anecdotes about citizens who have survived the crisis by following them.

  - The ultimate test for the information that is been supplied to the public is the extent to which it enables individuals to make their own decisions regarding the crisis, based on mindfulness of the situation and of the ramifications of their decisions. [47]

  - It should be ensured that messages include issues that are of interest or concern to the public, based on the overall analysis of all the sources that are available regarding the public's attitudes.

- It should be ascertained that the messages sent have indeed reached the population as a whole, including the previously mentioned special populations, such as foreign language speakers, persons with disabilities etc. In this phase, too, all the recipients of messages should be asked to pass them on to those in their environments who may not be exposed to them or have trouble understanding them properly.

- Messages should not be limited to cognitive channels – emotional ones should also be used. However, to ensure effective communication, information-oriented messages should be separated from empathy-oriented ones (see section V of this book).

- Fears should be acknowledged. When the population is fearful, it is no use pretending that they are not or telling them not to be. [48] It is important to validate their perception that the situation is a hard and frightening one while also emphasizing the relatively reassuring facts, such as the low numbers of casualties and the effectiveness of the rescue operations. The public's legitimate concerns should be respected and accepted. [49]

- Over-pacifying people should be avoided, particularly when there is cause for concern. In the right proportions, concern actually puts people on guard and motivates them to take self-protection measures. [50] Over-pacifying people may boomerang, particularly if the situation deteriorates, causing damage to the organisation's credibility.

- The focus should be on messages that are unifying, and take a prospective stance, emphasizing the future and the measures that must be taken, as opposed to a retrospective stance, which focuses on the past accompanied by blaming and pinpointing those at fault. If it seems possible to briefly address such attributions of fault, without sliding into a scandal that may subsequently jeopardize the ability to take the required steps, this may be attempted; if not, it is best to postpone inquiry till the end of the crisis.

- To discourage dramatization, cautious language should be used. Explaining how to protect against a situation is preferable to providing a shockingly detailed description of its consequences. "The ways the public can protect itself" is better than "the ways the terror attack can hurt you", "virus spreading" is better than "plague".

- If possible – and without violating the general principle of no exclusivity in crises – messages should be directed to the most suitable media channels, based on considerations of urgency, timeliness, exposure, the presentational needs of the information and the target audiences.

- The media should be provided with convenient working space without interrupting the emergency forces. In this way the press corps can be assem-

bled on a single site that will enable easy transfer of information. In case of high profile coverage, it might be worth considering opening a "communication centre" that will serve local and foreign media, which are likely to arrive in the event of a large-scale crisis.

- Even in times of crisis, when many journalists get involved, including those representing national and international media, room should nevertheless be made for the local media – particularly local radio and television, and especially if they can reach substantial audiences. From the crisis communication manager's perspective, the local channels have multiple advantages, first and foremost of which is the ability to communicate in a focused way with a distinct population that is directly affected by the crisis. In addition, the local media enjoy geographic and psychological proximity, possess superior knowledge regarding the region and its residents, escort the community long before the national media arrives on the scene, and remain long after the national media exhausts its interest in the crisis.

- A prolonged crisis state presents a challenge for those in charge of communication, as they enter an emergency routine that tests their long-term resilience: their ability to work long shifts around the clock, constantly receiving and delivering updates, without burning out or becoming emotionally numb. To deal with these pressures, there is a need for plenty of trained staff who can serve as reinforcements.

- A prolonged crisis is likely to cause excessive reiteration of the same messages. One solution is to refresh messages creatively – for instance, by using onscreen textual instructions on television, instead of studio interviews with experts. [51]

3.3   Direct means of communication

- This is the time to utilize all the direct channels that have been chosen: dedicated radio and television studios, or at least breaking into regular broadcasts, emergency call centres, emails, SMS, telephone blast services, the organisation's website, social networks, handouts for personal delivery, announcement devices or public address (PA) systems etc.

- Where possible, direct channels should be used first and foremost in order to reach publics that are not adequately accessible via regular media channels. Using direct channels allows messages to be repeated, so that the public can absorb them better. Creating communicational redundancy in this way catches the public's attention and helps overcome the decreasing capacity to comprehend new information, as mentioned earlier.

- The various channels should be cross-referenced. For example, radio and television broadcasters should be asked to direct their audiences to the organisation's website for additional information or to the call centre for answers to specific questions..Combining information with cross references can improve reach to various target populations, enhance the familiarity and authority of the instructions and help to get them across, and provide answers to specific questions as they arise.

3.4 Response organisation and network

- It is important to have full coordination between the communication team and the crisis management and operations staffs. This may not be as easy as it seems. Without this, however, information gaps between the true circumstances and conditions on the ground and the organisation's statements can be expected. These may be interpreted by the media and the public as evidence of a loss of organisational control..

- If needed, the staffs that supply information to the public should be reinforced, preferably using the teams pre-assigned for this role.

- If care has been taken, in an earlier phase, to clearly allocate responsibilities among the agencies jointly managing the crisis, issues such as denying responsibility or mutual blame may be avoided or minimized at this point. Clear **inter and intra** division of responsibilities and accountabilities guarantees a more efficient handling of the crisis, providing for greater trust between the organisations and, ultimately, from the public as well. [52] Insofar as the crisis is being co-managed by a number of organisations, the communication manager should be careful not to overstep the limits of his or her responsibility without first discussing this with the partner organisations.

- It is important that messages are delivered not only outside of the organisation, but also internally, to all ranks. Any member of the organisation may have to speak on its behalf, particularly in a crisis situation.

- The response phase is the leadership's opportunity to prove itself. It is worth considering whether to involve the organisation's heads in delivering announcements to the public, as people who personify the organisation and its accountability to society. Nevertheless, it should be borne in mind that sometimes the head of the organisation is far from being the ideal person for this task. In any event, the organisation's heads should be kept in the update loops to prevent contradictory messages or assertions that will present them

as being out of touch or as officials who learn from the media about.what is going on (in their offices)..

- During significant or large-scale crises, there is a special value in involving high-ranking officials, such as mayors, state governors or even national leaders, to address the public and provide a personal example. For them, this is an opportunity, not just to display leadership and resourcefulness, but also to demonstrate caring for the public, commitment to solving the crisis, and personal and direct involvement as well as help strengthen its resilience and ability to cope with the crisis.

PHASE 4 Reconstruction (Recovery)

The crisis has just ended. Some people may have lost their lives, while others may have suffered physical, mental or financial damage. This is the time for physical and mental recovery on the way back to routine. The first challenge is to assist the immediate recovery and help society get back on track, to participate in the recovery of the damaged region and reinforce the resilience of society as a whole. Some crises require long-term relief and recovery, which presents a challenge in itself. The second challenge is to improve preparedness for similar future events, while utilizing the freshness of participants' experiences and memories, as well as accessibility to information, people and evidence, for comprehensive data collection that will allow for honest, thorough and courageous organisational lesson learning. It is essential to avoid falling into exchanges of blame, which is unfortunately, what tends to happen after some crises. Information gathering must be done quickly, with the understanding that some of the follow-up – data analysis, conclusion drawing and preparing for similar crises in the future – may get postponed until the next phase.

4.1 Citizens

- The end of a crisis, or its relief, signals the rise of the public need for assorted new information. For example, the public may wish to understand the new, post crisis reality in relation to various aspects of life, want to know whether another eruption of the crisis is likely, at least in the short term, and how soon they will be able to resume normal life.
- The information required will vary, according to the nature of the crisis. There are strong possibilities that answers will be expected to questions regarding basic needs: do we still need the means for self protection? Until when? What is the availability or scarcity of different supplies and services such as food, housing, medical aid, transportation? What information is there concerning relatives, education etc?
- The period immediately after the crisis presents a short window of opportunity for improving the public's resilience and future readiness. These steps will only be effective if accompanied by learning from both the failures and the successes of the organisation's crisis communication and of.reinforcing.positive action.by the public. [53]

When analyzing their activities, crisis communication managers should focus on the following aspects:

- **Message analysis.** Both quantitative and qualitative methods should be applied to comparing the messages that were disseminated with the subsequent media coverage. It is worth investigating the degree to which these messages were able to penetrate the media, on what occasions messages retained their original form, and when they were modified or distorted by the media. The tone, salience and visual aspects of coverage should be exam-

ined. Contradictory messages, terminological problems and misinterpretations of professional information should also be identified. The findings can be used for deriving broader principles and insights regarding future information delivery – both through the media and through direct channels.

- **Public attitudes analysis.** By combining methods such as surveys, interviews and focus groups, it can be ascertained which of the types of information that were supplied to the public actually reached it, through which media channels, and how aware the public was of the direct media channels that the organisation had made available, how closely the instructions were followed, and which of the public's informational needs and expectations were not met. Attention should be paid in particular to populations who were neglected, messages that did not receive a wide distribution and instructions that were not well absorbed. All the questions put by the public to the organisation's information centre and Internet forums.should be analyzed.to identify major types of questions and the typical audiences who tend to ask them, recurring questions, unforeseen problems and questions that were left unanswered.

- **Analyzing the communication strategy.** Based on the above evidence, managers should inquire into their organisation's overall level of success in meeting its communications goals: Which goals were not achieved and why, and which vital information failed to reach the public? In particular, the relationship between the coverage and delivery of information on the one hand and decision-making on the other should be investigated: were the crisis communication managers actually fully involved in decision-making? What was the ratio between the information they delivered to the public and the information about the public delivered to the decision makers? By focusing on the conclusions that may be drawn from this, the organisation can set new goals for crisis situations, and better plan and prepare for future crises.

- All the findings and the conclusions drawn should be processed into lesson learning documents, accompanied by a binding organisational decision to adopt the necessary steps. The organisation's crisis communication plan should be reassessed accordingly [54] and detailed goals established for improving it using a clear timetable..

- The main conclusions – particularly those related to improving the public's readiness and mobilizing it for action in the future – should be made known to the public at large. [55] It is important to be honest in outlining the organisation's strengths and weaknesses to the public, focusing on the main issues, and presenting each problem along with the solution that the organisation has found.

- At this point, the media are likely to ask tough questions about the organisation's functioning during the crisis. Serious and candid answers should be given and blame games avoided.

4.2 News media

Media relations. Managers should examine how the events unfolded in time by inquiring into decision-making processes, messages, various media outlets, journalists' involvement, and the subsequent publications, looking for associations and meaningful patterns between these elements. Attention should be paid to informational bottlenecks, and to difficulties encountered by journalists in accessing news scenes and contacting interviewees. This can be done by locating continuities and discontinuities in the contacts with reporters and the degree of media cooperation at various points. It is important to try to understand why certain messages did not make it through or got modified or distorted – did the problem start with the organisation's decision-making process? What is the way the message was originally phrased? How it was delivered? Or was it to do with the media's production and adaptation processes? Practical conclusions can then be drawn for improving the accuracy and effectiveness of the organisation's messages in the future.

- **Journalists and media people.** Journalists who covered the crisis could contribute to an evaluation, as they have been closely observing crisis communication managers' working under pressure. However, seeking to involve them in post hoc investigations may strike some journalists as an attempt by the establishment to co-opt them. Managers could develop a reflective dialogue with the relevant journalists, emphasizing how the collaboration can further both public and journalistic interests. Another useful strategy is to invite journalists to identify weak points in the crisis manager's interaction and suggest possible solutions. Involving journalists can also help the organisation develop good relations with them.

4.3 Response organisation and network

- When gathering the information for lesson learning, the following actors should be consulted:

  - **Crisis communication managers.** Interviews and brainstorming sessions can be held with everyone who was involved in the crisis communication management, including reinforcement personal and the spokespersons of other organisations that took part in managing the crisis The functioning of the communication managers in the inter-organisational

framework and their collective ability to achieve their goals should be examined.

- **Organisational forums.** Managers should be fully involved in the internal forums engaged in reviewing the organisation's functioning and its decision-making processes during the crisis. They should be prepared to reassess their emergency plans in general and aspects of their communication in particular and to discuss their procedures and organisational strategy. [56] Were attempts made to exploit every opportunity to assist the rescue efforts? Was the manager's positioning – physical and managerial – in the course of the rescue operation an optimal one? Was the manager appropriately involved in the various crisis phases?

- **Inter-organisational level**. The inter-organisational level does not stop being crucial in this phase. Here, it is important to obtain and analyze input from the other organisations that have shared the emergency, including the crisis managers who dealt with aspects of the crisis not related to communication.

- **External consultants.** External crisis management experts or senior staff members in the organisation who possess the relevant experience can help in conducting a balanced and honest assessment of the communication manager's activities. An external expert can also help in designing new procedures for handling crises in the future. [57]

PHASE 5   Evaluation

In this phase, the damaged areas should be thoroughly rehabilitated. The main challenges in this phase are to conclude learning the lessons based on the data collected in the former phase, to implement the required changes in a determined and systematic manner, and prepare for future crises accordingly. This phase embodies the beneficial aspects of the crisis, as it is the opportunity for structural reforms, budget reallocations and rebuilding of the affected regions in a way that does not merely recreate their prior conditions, but actually improves their state. The main challenge during this phase is to implement decisively and systematically the changes and tasks that were defined and prepare for future crises.

5.1 Citizens

- This is the main phase in which the crisis can prove itself as an opportunity for positive change: the decision to conduct wide organisational, structural and financial reforms, including investment in large-scale projects that will lead to improved preparedness in the future. The relevant agents -- decision makers, the public and the media -- are likely to feel readier to make such decisions after the crisis, insofar as the latter has exposed erroneous perceptions and irrelevant political considerations, thereby making space for substantial change.[58] The awareness of the effects of the crisis among both the public and the decision makers can make it easier to allocate the budgets that these reforms will require. Implementing these reforms should be carried out as immediately as possible, before the issue fades from the public agenda.

- At this point, the data analysis conducted during the previous phase can be included to gain a broader perspective on the recent crisis with reference to similar crises in the past. With the public as its main reference point, the conclusion-drawing process should be conducted on the basis of all the evidence that has been gathered. . Some of these conclusions may necessitate difficult decisions, such as broad organisational changes, letting go of certain shared wisdoms, or modifications of organisational tactics and strategies of crisis management and its communicational aspects.

- At this stage, if not in the former one, the media and the public may have their own assessments and views regarding the performance of the organisation during the crisis and the levels of its success in handling it. These may determine the levels of public criticism that communication managers will have to face..Such criticism should be used constructively and effectively while leveraging the momentum in order to improve the preparedness of the public for the next crisis.

5.2 News media

- Communication managers should follow internal forums in which journalists and media people discuss their roles during the crisis. Such forums may be initiated by the media themselves, by their associations (journalist associations, ethics committees or press councils), or by academic institutions. Managers should try to participate in these forums, at least in a listening role. In this way, they are likely to learn about hitherto unknown issues.

- It is important to explore the functioning of the media in the temporal framework: do the reporters' choices during the crisis make sense at this point? How is the media itself different now that the crisis is over, compared to what it was before it started? What does this say about the capacity of the media to cover crises in the future? What adjustments should be made to be able to deal with these changes?

- Severe and dramatic crisis situations are likely to lead to journalistic investigations and even documentary films examining the events from an after-the-fact perspective. Such initiatives are likely to have a long-term influence on the symbolic representations of the crisis, its central players and the lessons to be learned from it. Managers need to be prepared to collaborate with these efforts as much as possible and use them as opportunities to deliver messages concerning future readiness.

5.3 Response organisation and network

- Post crisis learning processes are complex and replete with obstacles. Organisations tend to avoid learning processes owing to factors such as mental fixation, tendency to rely on intuition and improvisations and disrespect for the process and its importance among decision makers. One of the greatest difficulties in lesson learning is the necessity of the heads of the organisation to admit that there are problems, before trying to find a way to solve them and implement their conclusions. Successful learning processes are based on several factors, such as developing new and updated procedures, changing work patterns and jurisdictions, developing organisational and inter-organisational consensuses that will serve as a firm base for future optimal decision making.

- Learning from others can help communication managers form a comprehensive, broad-based view of their organisation. This can be done by going back to the communication managers from the other organisations that were involved in the crisis to complete the post-crisis investigations and lesson

learning. Managers should try to learn from each other, for example by sharing documentation summarizing their respective conclusions. The focus should be on both failures and successes.

- The post-crisis learning process is now about to be completed. This is the phase to redefine the plan for managing the next crisis, establish organisational and inter-organisational procedures and begin implementing them in the organisation and among the public. For the communication manager this is the return to the starting point: the preparedness phase, but with an improved crisis communication action plan.

Appendix A: Main challenges

Since effective communication during a crisis is a matter of life and death, and due to the fact that crisis situations are highly complex, crisis communication managers in agencies responsible for public safety face serious challenges. Here are some of the salient ones:

1. Delivering information in the absence thereof

During a crisis, communication managers find themselves trapped: on the one hand, the public need for information increases, as do also the media's demands to supply the information right now; on the other hand, in many cases neither communication managers nor their organisation have any access to the expected information, or they possess information that is partial, initial, unexamined and contradictory. In these situations, understanding exactly what is happening can be problematic for crisis communication managers and their organisations.

2. Realizing the civil right to information for the purpose of self defence

Imparting information to the public leads to the realization of the individual's general, overarching right to information concerning hazards and risks – particularly in times of life-endangering crises, when the public authorities, at least temporarily, are incapable of guaranteeing his or her safety. [59]In these situations in particular, it is individuals' right to receive information and specific instructions, based on accurate knowledge that will allow them to make informed choices concerning their own safety and that of their loved ones.[60]

3. Meticulous planning, openness to change

To prepare well, meticulous planning and preparation for concrete scenarios is required; however, not every incident can be foreseen in a precise manner or be expected to follow the scenario. Hence, it is important to plan and do drills, but when the "real thing" happens, it is no less important to be willing to makes quick changes in plans if the situation so requires it.

4. Temporary decrease in the ability to absorb information

It is precisely when the public's need for information and guidance soars, that the ability to absorb information among certain people is likely to drop temporarily as the crisis comes to be experienced as increasingly immediate and intimidating. This is likely to translate into a real challenge for communication managers, who are now required to refine their messages and find ways of delivering them to reach these distressed members of the public. [61]

5. Pre-crisis credibility as a key to trust in a crisis

For an agency interested in being seen by the public as an effective information source, particularly in times of crisis, credibility is the most precious asset. The problem is that when the crisis is on, it is too late to begin building a credible image. In fact, it is easier to lose credibility during a crisis than build it.

6. Integrating leadership with crisis communication efforts

As familiar, symbolic and authoritative figures, decision makers and especially local and national leaders have a special status during the crisis. During the pre crisis phase, they can help motivate the public to prepare. During the crisis phase, they can prove their leadership, set a personal example, inspire and offer a sense of safety and calm, and encourage the public's resilience. At the end of the crisis, they can lead processes of rehabilitation, lesson learning and implementation of reforms. However, recruiting the leadership, and national leaders in particular, may be a complex task, especially for organisations that are located far from decision-making centres. These will sometimes need a mixture of preparation, initiative, creativity and persistence in order to recruit such leaders during times of need. [62]

7. Emphasizing.the activities of the authorities without sliding into public relations

The public's trust in the authorities, knowing that they are acting effectively and taking the right course despite possible difficulties that were revealed during the crisis, is an essential component in the public's resilience and motivation to act as instructed. In order to establish that trust, the public needs to know that the authorities are indeed acting vigorously, devotedly and effectively to minimize the damage caused by the crisis and that there is someone to trust. [63]For that matter, it is important to provide the public with accurate, reliable, comprehensive and convincing information regarding the specific actions taken by the authorities. However, the borderline between this type of information and mere public relations is thin, and crossing it may actually damage public trust.

8. Mobilizing the public to prepare even when the threat seems remote

For the public to be ready for a crisis, there need to be drills and instructions, which are carried out primarily during ordinary times. The problem is that during such periods, the public tends to perceive threats as abstract and remote, and its motivation to pay attention to instructions, participate in drills and prepare for threats is consequently low, as is also the authorities' motivation to invest time and resources in scrupulous preparation at this point.

9. Helping the public help itself

Contrary to expectations that the crisis is the business of the authorities, and they will take care of everything, it is important to provide the public with the tools and the motivation to take personal responsibility for its own prepared-

ness. Personal responsibility-taking enables society as a whole to increase its preparedness as well as empower its citizens by giving them a sense of "there is something to be done". It is also the only way of preparing residents for situations in which they may find themselves in charge of their own fate and the fate of those around them, such as large-scale disasters, in which it takes a long time for the rescue forces to reach all the victims. At the same time, it is important that this process is not perceived as the renouncement of responsibility by the authorities; hence, the authorities should provide support and supply the public with instruments for independent coping with the crisis. [64]

10. Nurturing inter-organisational collaborations and information networks

Contrary to the tendencies of organisations to act independently, crises require inter-organisational collaboration. Coordinated action is highly important in modern crises, which tend to be systemic and to involve a whole range of organisations. Inter-organisational forums are critical for the development of tight collaboration and coordination among different organisations and their communication managers, for building cross-organisational systems that function synchronically during crises, and to enable a coordinated policy that projects power to the public. Such collaboration makes for consistency in major messages, helps in securing a more effective division of labour and promotes efficiency. On the other hand, lack of cooperation and coordination opens the door to contradictions in information and instructions that might harm the public's trust and its willingness to act accordingly. The challenge, therefore, is to nurture close collaboration and coordination between these authorities, particularly where obtaining and distributing information are concerned – which may go as far as building shared information networks, coordinating procedures and shared drills.

11. Working with the media and minimizing distortions.

When covering crises and disasters, the media exhibit a number of problematic tendencies, including dramatization, personalization, excessive emphasis on "human angles" and marginal issues, preoccupation with blame and nurturing myths[65] that have no factual basis. These tendencies sometimes lead to exacerbation of the dramatic, and a sense of catastrophe and helplessness. [66] Despite all this, it is impossible not to rely on the media as the primary information delivery channel. The challenge – particularly with respect to life-saving messages – is to learn to communicate information to the public accurately and with the right emphasis. This requires establishing a partnership with the media [67] and taking steps to restrain its troublesome tendencies.

12. Staying up to date at the moment of truth

While crisis communication managers are perceived as those who deliver the information, they are, at the same time, heavy consumers of information in their need to form a comprehensive and substantial picture of the crisis situation. They are themselves continually in receipt of rapid updates, which becomes challenging in certain situations. For example, when the crisis is prolonged,

when information is delayed and when there are several agents involved in the management of the crisis, each taking a different stand as to what the public needs or wishes to know.

13. Coping with limited resources

To cope successfully with crises, the resources an organisation has at its disposal pre-crisis are typically insufficient; a significant increase in human and other resources is required. In the communication field specifically, a small communication team, which often consists of no more than one spokesperson per organisation, becomes inadequate. Reinforcement is needed to deal with the complexity and pressure of having to cope on multiple fronts: the public, impatient for more information; the press, working in an expanded format and demanding more information, faster, and occasionally blaming the organisation for the crisis or criticizing its handling of it; the need to closely examine the ways in which the information has been absorbed by the media and the public; and the need to participate in many time-consuming organisational meetings. In addition to these multiple pressures, there is a need to keep working around the clock, deal with informational overload, keep up to date and coordinate with other agents. All these can hardly be met seriously without substantial reinforcements.

14. Identifying and taking care of special populations

Special populations need special attention. Contrary to the natural tendency to focus on "the public", in a crisis, there is a need to address various population groups, which may differ in their needs, levels of experience, habitual channels of communication and attitudes towards the authorities. Special-needs population groups may include, among others, children, the elderly, minorities, immigrants[68], foreign language speakers[69], tourists, the blind, the hearing-impaired, people with other disability issues, sick and medicated people. These population groups may be at risk for greater harm and may not rely as heavily on the communication channels serving the majority population. Communicating with these populations may require distinct messages, languages, speakers, and even at times distinct communication channels and technologies.

15. Combining communication and rescue plans.

At odds with what may seem a natural division of labour, in which rescue forces focus on rescue while crisis communication managers focus on promoting the organisation's image and aggrandizing the rescue efforts, the challenge in crises is to integrate the communication activity into the organisation's primary effort to save lives. Crisis communication managers need to participate in wider forums within their organisation, including meetings with the organisation's rescue forces, and be involved in their processes of thinking, planning and decision-making. They need to make use of their skills to try and minimize or prevent risks by effectively instructing the public and finding other creative ways to contribute to rescue efforts. [70]

16. Preserving and passing on knowledge and experience

With the passing of time and changes in personnel much of the knowledge and experience in dealing with crisis that the organisation may have paid a very high price for is likely to be lost. This is particularly likely to happen when the organisational culture tends on rely on oral tradition, rather than documentation, and retain the staff's skills in the form of tacit knowledge [71] that is not systematically brought into awareness and documented.. On the other hand, organisations with a crisis culture not only document their procedures and experience in writing, but also update them constantly.

17. Dealing with criticism and blame

At a certain point during a crisis and sometimes after, the organisation is likely to face criticism, blame and attributions of responsibility for the crisis or its management from the public, from other organisations and from the media, whose tendency for finger-**pointing intensifies during these situations. There is also a likelihood of criticism from within** the organisation, which may evoke a sense of inconsistency, lack of control and damage credibility..In facing all these, communication managers have to maintain public trust in the authorities, as this is a critical condition for sustaining resilience and motivating the public to act according to instructions. This also requires sincerity and accountability for personal or organisational decisions taken during the crisis.

18. Bridging the gap between expert knowledge and the general public

During crises (as well as in situations of danger or catastrophe), communication managers are sometimes required to bridge complex gaps between the professional experts and commentators on the one hand, and the general public on the other, who might not understand, or understand incorrectly, the information and guidance provided by experts and commentators. The public may find it difficult to absorb the information and instructions that the experts are providing and distortions may follow.[72] This becomes even more challenging when understanding the situation and the required actions involves scientific knowledge, as in the case of epidemics, natural disasters, or exposure to toxic substances. The communication problem in such instances is co-created by both parties: the experts, who bring knowledge, viewpoints and professional terms that are difficult to translate into popular language and the public, who bring varying education levels, misperceptions of risks and scientific issues and, occasionally, distrust of experts or the fields they represent. [73]

19. Learning from the crisis after it is over

After the crisis is over, just as before it started, there remains the challenge of mobilizing the public and the relevant organisations to learn from it. Although the freshness of memories and the easy accessibility of the information make it a precious learning opportunity that could lead to better crisis preparedness in the future, most people are naturally eager to return to their routine activities and forget the crisis or whatever lessons may be learned from it, until another one looms. [74]

Appendix B: Core dilemmas and common myths

Crises tend to evoke a number of dilemmas that stem from contradictions between various values, between the desired and the actual, and between needs and the necessities. To act in the right way, ethically and professionally, it is vital to get to know these dilemmas and reflect upon them, in order to make informed choices about what is best for the public and for the organisation in any given crisis situation.

Core dilemmas

Dilemma 1: Satisfying the public's need for information regarding the actions that were taken by the authorities versus sliding into self aggrandizing information and propaganda.

> **On the one hand**, in crisis situations information about the measures the authorities' are taking is essential to enable the public to make its own assessment of the extent to which the authorities are acting in a dedicated, effective and competent manner, and moving in the right direction. These impressions shape the public's willingness to rely on the authorities and act according to their instructions.

> **On the other hand,** it is easy here to cross the borderline and slide into mere propaganda, protection and promotion of the organisation's image and its heads, which are inappropriate objectives particularly when lives are at stake. [75]

Dilemma 2: Preparing for generic or specific scenarios

> On the one hand, a general scenario will cover various crises, allow flexible preparation, and exempt organisations and the public from having to deal with a variety of scenarios that might require responses of very different, at times even contradictory or confusing, types. General scenarios take less time to implement, can be adapted to various circumstances and can be altered as the situation requires.

> **On the other hand**, a specific scenario is more effective in addressing a specific threat, particularly when that threat is severe and has a high probability of occurring. Preparing for a specific scenario involves pinpointing bottlenecks, needs, tasks and issues requiring coordination and care, to better allocate resources and define areas of responsibility and accountability. Focusing on a specific scenario increases coherence and consistency in working methods and decreases uncertainty. In addition, communication strategies for specific scenarios should be considered; for example, health risks require different treatment than e.g. power cuts caused by a storm, and involve different organisations in the response network.

Dilemma 3: Transparency and honesty versus withholding information

On the one hand, research shows that it is the absence of information – and not its presence – that is likely to aggravate the public's fears, undermine its trust in the authorities and interfere with social resilience. Partial information is also likely to evoke a sense that the authorities have something to hide.

On the other hand, organisations and public agencies cannot act efficiently and be fully transparent at the same time. Extensive transparency during a war, for example, may expose sensitive information to the enemy. During shortages of protective resources, such as vaccines, it may interfere with public order and rescue efforts..The borderline between withholding information based on this serious consideration and doing so for the sake of convenience or for political reasons is likely to be thin and blurred at times.

Dilemma 4: Immediate response versus precision about details

On the one hand, it is important, in all phases, not to delay information, particularly when it is related to a threat to human lives or ways of coping with such a threat. In addition, delivering the information fast prevents rumours and narrows the space for unofficial and less reliable sources to distribute inaccurate information of their own.

On the other hand, at times, the required information is unavailable, or there may be a concern about its completeness, consistency or precision..Rashness may lead to loss of trust and at times even endanger human lives.

Dilemma 5: Local versus national media

On the one hand, there is a natural tendency to prefer the national media in crisis situations due to its superior quality, credible image, reputable journalistic teams that it has at its disposal, wider distribution scope and better media coverage opportunities.

On the other hand, there is a need to avoid overlooking or neglecting the local and regional media. First, since crises are usually local or regional occurrences. Second, since local and regional media are usually well equipped to cover the crisis in a focused way, due to their strong acquaintance with the region, the population and its needs, their willingness to devote more news space to the crisis, and their greater empathy and concern for the residents..Third, the local and regional media will follow the crisis all along, starting in the pre-crisis phase of preparing the population and continuing into the post-crisis phase of lesson-learning, whereas the national media may find interest only in the emergency phase.

Dilemma 6: The media versus direct communication channels

On the one hand, direct channels, such as the organisational website, information centres, and sometimes dedicated television and radio studios, can allow full control over the messages that go out to the public, while bypassing the media and thereby avoiding its distortions and disruptions. In very extreme cases, when a total collapse of the communication systems occurs, direct means of communication such as the distribution of printed brochures or the use of local public address (PA) systems might become, in fact, the only reliable channels of communication with the public.

On the other hand, at times of crisis the majority of the population is likely to prefer traditional communication outlets, primarily radio and television. Furthermore, overreliance on direct communication channels may give the organisation the misleading impression that the information has been distributed effectively. Adding these channels also increases the likelihood of contradictions, lack of coordination and non-updated flow of information.

Myths and misperceptions

Crises are sometimes accompanied by pseudo-dilemmas, which stem in part from unfounded myths about the crisis and the way it is perceived by the public. It is important for crisis communication managers to become acquainted with these myths, in order to be ready to refute them. References to research can be of help here. The following is a list of common myths.

Myth 1: Revealing information will cause the public to panic

This is a widespread yet unfounded myth that typically serves as an excuse for withholding information. Multiple research studies conducted since the 1940s demonstrate consistently and with certainty that this is a superstition, fed by the media and popular film. [76] What is more likely to provoke panic in crisis is in fact the absence of information, not its presence. [77] Of course, matters should be well explained, and anyhow, information alone cannot prevent worries. A certain level of worry is actually productive, helping mobilize the public for readiness and motivate it to follow instructions. The overwhelming majority of the population not only remains panic-free during crises, but acts rationally, stays focused and displays altruism. [78] Most people not only manage to act appropriately, but actively assist in rescuing others and in re-establishing order. [79] Many survivors are rescued and cared for by their neighbours and relatives long before the rescue forces reach them. [80] However, this insight should not be seen as licence for non-selective distribution of information that may confuse, overload and distract the public from the organisation's main messages.

Myth 2: Crisis communication management is best done intuitively
Definitely not so! With all due respect for the role of intuitions in routine communication management, in a crisis, relying on intuition can cost lives and so should be avoided. [81]

When human lives are in danger, each agent must act in a systematic manner, based on the best evidence available. Intuition is particularly unreliable when the situation at hand has not been experienced on a number of occasions in the past. [82] At times of crisis or disaster, different publics have different informational needs and patterns of information seeking, [83] which cannot be speculated in the absence of solid evidence, and learning about them is crucial for effective communication. Even experienced communication experts may have difficulties foreseeing how their crisis messages will be perceived and interpreted by different segments of the public. [84] This is the reason why it is important to monitor reactions and use feedback in an ongoing communication process.

Myth 3: There is no point in preparedness, since every crisis is unique

This approach tries to provide rationalizations for avoiding preparedness, under the pseudo philosophical excuse that every crisis is unique anyway, as is its resonance among the public. Some even claim that excessive attachment to plans may lead to rigidity in thinking and interfere with reality testing, and that it may be better to "keep an open mind", improvising according to the exigencies of the moment. Such approaches are not to be tolerated. Lack of planning and preparedness puts human lives at the mercy of fate, setting the phase for inconsistency and neglect of the necessary actions. The better an organisation has prepared for a crisis, by adjusting its plans to its specific risk factors and conditions, the better that organisation's ability to function during the crisis and to respond efficiently and appropriately. [85]

Myth 4: "We will tell the media what to say"

The media does not work for the crisis communication manager. In most cases they wouldn't recruit themselves to distribute managers' messages fully and verbatim -- even if they were written proficiently, replete with good intentions and focused on saving lives. Even if the press selects the organisation's messages for publication, the scope, the tone, the emphasis and the frequency of some of the published material at least will probably not be conform the organisation's intentions, targets and standards. The media might also give voice and exaggerated exposure to dubious information which comes from rumours, anecdotes, "eye witnesses" and pseudo experts who seek to exploit the crisis to promote their services or agendas.

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Appendix C: List of additional recommended guides

(2007) Disasters preparedness and mitigation, Unesco's role. United Nations Educational, Scientific and Cultural Organisation. Paris.

(2006) Advancing the Nation's Health: A Guide to Public Health Research .Needs, 2006-2015. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention.

(2005) Crisis Management, Crisis anticipation and management committee,.general conference of the seventh day Adventist church.

(2004) Developing and Promoting Mitigation Best Practices and Case Studies Communication Strategy, September 2004, FEMA.

(2003) A Citizen Guide to Disaster Preparedness, Federal Emergency Management Agency.Washington DC.

(2003) Crisis/Emergency communication guidelines, Crisis communication.unit, Health Canada.

(2002) Communicating in a crisis: risk communication Guidelines for public officials. Washington, D.C.: Center for Mental Health, Services, substance abuse and mental health Services Administration.

(2002) Food service distribution topics IFDA crisis communication manual. International food service distributors association.

(1994) Yokohama Strategy and Plan of Action for a Safer World, Guidelines for Natural Disaster Prevention, Preparedness and Mitigation World Conference on Natural Disaster Reduction Yokohama, Japan.

References

Aguirre, B.E., Anderson W.A., Balandran S., Peters B.E., & White H.M. (1991), .*Saragosa, Texas, Tornado, May 22, 1987: An Evaluation of the Warning . System*. Washington D.C.: National Academy Press

AIDMI (All India Disaster Mitigation Institution) (2008), *Institutionalizing.Disaster Risk Reduction: Lessons for South Asia* (Special section),.Southasiadisasters.net, 55, 1-11. Retrieved November 26, 2009 from: .http://www.aidmi.org/publications.asp.

Allan, S. (2006), *Online News*. Maidenhead: Open University Press.

An, S. & Gower, K. (2009), How do the news media frame crises? A content . analysis of crisis news coverage. Public Relations Review, 35, 107–112.

Arpan, L.M. & Pompper D. (2003), Stormy weather: testing "stealing thunder" .as a crisis communication strategy to improve communication flow . between organisations and journalists, Public Relations Review, 29, 291–. 308.

Ball-Rokeach, S.J. (1985), The origins of individual media-system dependency: A . sociological framework. Communication Research, 12, 485–510.

Bergmans, A. (2008), Meaningful communication among experts and affected .citizens on risk: challenge or impossibility? Journal of risk research, 11(1), .175-193.

Blanchard-Boehm, R.D. (1998), Understanding Public Response to Increased .Risk from Natural Hazards: Application of the Hazards Risk .Communication Framework. International Journal of Mass Emergencies and .Disasters, 16 (3), 247-278 .

Boin, R. A., and Lagadec, P. (2000), 'Preparing .for the Future: Critical Challenges in Crisis Management'. Journal of .Contingencies and Crisis management, 8 (4): 185-191.

Castaños H. & Lomnitz, C. (1995), Unplanned and unforeseen effects of . instabilities in the nature-society system as possible causes of earthquake . disasters. Natural Hazards, 8, 45–56

Chess, C., Clarke L., Holmes, R. & O'Neill, K. M. (2006), Speaking with One . Voice: Risk Communication Lessons from the US Anthrax Attacks. . Journal of Contingencies & Crisis Management, 14(3), 160-169.

Cho, S. H. & Gower, k. (2006), Framing effect on the public's response to crisis: . Human interest, frame and crisis type influencing responsibility and . blame, Public Relations Review, 32, 420–422.

Coleman, C. (1993), The Influence of Mass Media and Interpersonal . Communication on Societal and Personal Risk Judgments. . Communication Research, 20(4), 611-628 .

Coombs, W.T. (2006a), Code red in the boardroom: Crisis management as . .organisational DNA. Westport, CA: Praeger.

Coombs, W.T. (2006b), Crisis management: A communicative approach. In C. .H. Botan & V. Hazleton (Eds.), Public relations theory, Mahwah, NJ: Lawrence Erlbaum Associates, pp. 171–197.

Coombs, W.T (2007), Ongoing Crisis Communication: Planning, Managing and . Responding. Los Angeles: Sage.

Drabek, T.E. (1986), Human system responses to disaster: An inventory of . sociological findings. New York: Springer-Verlag.

Dreyfus, S. & Dreyfus H. (2005), Peripheral Vision. Organisation Studies, 26(5), . 779-792.

Dynes, R.R. (1970), Organized behavior in disaster. Lexington, MA: Heath . Lexington.

Dynes, R. R.& Drabek, T. E. (1994), The structure of disaster research: Its policy .and disciplinary implications. International Journal of Mass Emergency .and Disasters, 12, 5–23.

Egbert, N. & Parrott, R. (2001), Self-efficacy and rural women's performance of . breast and cervical cancer detection practices. Journal of Health . Communication, 6, 219–233.

El-ran, M. (2009), The Civil Front. The Institute for National Security Studies. . No. 99. Retrieved November 26, 2009 from:. http://www.inss.org.il/upload/(FILE)1245981931.pdf

Fischhoff, B. (2002), Assessing and Communicating the Risks of Terrorism. In A. .Teich, D. Nelson & S. Lita (Eds.) Science and Technology in a Vulnerable .World, (pp.51-64). Washington, D.C.: American Association for the . Advancement of Science.

Fischhoff, B. (2005), Scientifically Sound Pandemic Risk Communication, Paper . prepared for House Science Committee Briefing, December 14, 2005. . Retrieved November 26, 2009 from: . https://www.healthsystem.virginia.edu/internet/ciag/conference/. articles/s2006/fischhoff_pandemic_risk_communication.pdf

Fischhoff, B. (2006), The Psychological Perception of Risk. In Kamian D.G. (Ed.) The. McGraw-Hill Homeland Security Handbook, (p.463-492). New York: McGraw- Hill

Freimuth, V., Linnan, H. W. & Potter, P. (2000), Communicating the threat of .emerging infections to the public. Emerging Infectious Diseases, 6 (4). .Retrieved November 26, 2009 from: .http://www.cdc.gov/ncidod/eid/vol6no4/freimuth.htm

Furedi, F. (2007), The changing meaning of disaster, Area 39 (4), 482–489.

Gallagher A.H., Boyle, M.F. (2007), Communicating during times of crises: An .analysis of news releases from the federal government before, during, and .after hurricanes Katrina and Rita. Public Relations Review, 33, 217–219

Gilpin, D.R. & Murphy, P.J (2008), Crisis Management in a Complex World. Oxford: .Oxford University press.

Gonzalez-Herrero, A. & Pratt, C. B. (1995), How to manage a crisis before – or. whenever – it hits. Public Relations Quarterly, 40(1), 25 – 29.

Guth, D.W. (1995), Organisational crisis experience and public relations roles. . Public Relations Review, 21, 123–136.

Gutteling, J.M. & Kuttschreuter, M. (2002), The role of expertise in risk . communication: Laypeople's and expert's perception of the millennium . bug risk in the Netherlands. Journal of risk research, 5(1), 35- 47.

Grunig, L. A., Grunig, J. E., & Dozier, D. M. (2002), Excellent public relations and .effective organisations: A study of communication management in three . countries. Mahwah, NJ: Lawrence Erlbaum .

Health Canada, Crisis communication Unit (2003), Crisis / Emergency . communication Guidelines: Communication, Marketing and Consultation . Branch .Approved by the DEC Committee on risk management (January . 31, 2003) Retrieved November 26, 2009 from: .http://www.phac-aspc.gc.ca/sars-sras/cecg-ctcu/hc-cecg.pdf

Heath, R.L. & Palencha, M. (2000), Community Relations and Risk . Communication: A Longitudinal Study of the Impact of Emergency . Response Messages. Journal of Public Relations Research, 12(2), 131-161.

Hindman, D. B., & Coyle, K. (1999), Audience orientations to local radio .coverage of a natural disaster: A case study. Journal of Radio Studies, 6(1), 8–. 26.

Horowitz, D., & Lisek, M. (1988), Democracy and national security in ongoing . conflict. In: Noiberger, B. & Ben-Ami, A. (Eds.), Democracy and National . Security. Tel Aaviv: The Open University of Israel.

Kasperson, J.X. & Kasperson, R.E (2005), The social contours of risk, 1. London:. Earthscan.

Korbas-magal, D., & Reich Z. (2009), Best Practices in Risk and Crisis . Communication: Meta Analysis, Paper presented at the NordMedia 2009. conference, 13-15 August 2009, Karlstad, Sweden.

Kroll-Smith S., Couch, S. & Marshall, B.K. (1997), Sociology extreme .environments and social change. Current Sociology, 45, 1–18.

Lindell, M.K & Perry R.W. (2004), Communicating Environmental Risk in .Multiethnic Communities. Thousand Oaks, CA: Sage.

Leidner, D.E. (Ed.) (2000), Knowledge Management and Knowledge .Management Systems [Special Issue]. Journal of Strategic Information .Systems, 9 (2–3), 101–261.

Lowrey, W. (2004), Media Dependency During a Large-Scale Social Disruption: . The Case of September 11. Mass Communication & Society, 7(3), 339–357

Mileti, D.S. & Beck, E.M. (1975), Communication in Crisis: Explaining . Evacuation Symbolically. Communication Research, 2 (1), 24-49

Mileti, D.S.& Fitzpatrick, C. (1992) Causal Sequence of Risk Communication in . the Parkfield Earthquake Prediction Experiment. Risk Analysis, 12 (3), .393-400.

Mileti, D.S (1993), Great Earthquake Experiment: Risk Communication and Public . Action. Boulder, CO: Westview Press.

Mitchell, J.T, Thomas, D.S.K, Hill A.A, & Cutter, S.L. (2000), Catastrophe in real . life versus real life: Perpetuating disaster myth through Hollywood . films. International Journal of Mass Emergencies and Disasters, 18, 383-402 .

Murray-Johnson, L., Witte, K., Liu, W., & Hubbel, A. P. (2001), Addressing . cultural orientations in fear appeals: Promoting AIDS-protective . behaviors among Mexican immigrant and African American adolescents . and American and Taiwanese college students. Journal of Health .Communication, 6, 335–358.

Murdock, G., Petts, J. & Horlick-Jones, T. (2003), After amplification: . Rethinking the role of media in risk communication. In N. Pidgeon, R.E . Kasperson, & P. Slovic (Eds.) The Social Amplification of Risk, (pp. 156-. 178) Cambridge, MA: Cambridge University Press

OECD Guidance Document on Risk Communication for Chemical Risk . Management (2002), OECD Environment, Health and Safety . Publications Series on Risk Management No. 16. Retrieved November . 26, 2009 from: . http://www.env.go.jp/chemi/entaku/kaigi04/shiryo/oecd_guidance.pdf

Pauchant, T.C. Mitroff, I.I. & Lagadec, P. (1990), Toward a Systemic Crisis .Management Strategy. Learning from the Best Examples in the US, .Canada and France. Industrial Crisis Quarterly, 3(5), 209-232.

Pauchant, T.C. & Mitroff, I.I. (1992), Transforming the Crisis-Prone Organisation: . Preventive Individual, Organisational, and Environmental Tragedies., San . Francisco, CA: Jossey-Bass .

Perry, R.W., Lindell, M.K., & Greene, M.R. (1982), Crisis Communications: . Ethnic Differentials in Interpreting and Acting on Disaster Warnings. Social Behavior and Personality, 10 (1), 97-104.

Perry, D.C., Taylor, M. & Doerfel, M. (2003), Internet based communication in .crisis management. Management Communication Quarterly, 17, 206–233 .

Peters, R.G., Covello V.T., & McCallum, D.B. (1997), The Determinants of Trust . and Credibility in Environmental Risk Communication: An Empirical .Study. Risk Analysis, 17(1), 43-54.

Posner, R. (2004), Catastrophe: Risk and Response. New York: Oxford University .Press.

Quarantelli, E.L. & Dynes, R.R. (1972), When disaster strikes (It isn't much like.what you've heard and read about). Psychology Today, 5, 66-70.

Quarantelli, E.L. (1987), Disaster studies: An analysis of the social historical factors affecting the development of research in the area. International Journal of Mass Emergencies and Disasters, 5(3), 285-310.

Quarantelli, E.L. (2001), Statistical and conceptual problems in the study of disasters. .Disaster Prevention and Management, 10(5), 325–338.

Reich, Z. (2009a), Ethical Weaknesses in Emergency Communication Between National .Authorities and the Public. The Communication Review, 12(3), 262-271.

Reich, Z. (2009b), Sourcing the news: key issues in journalism - an innovative study of the Israeli . press.Cresskill, N.J: Hampton Press.

Reynolds, B. (2002), Crisis and Emergency Risk communication. Center for Disease Control and Prevention.

Reynolds, B. & Crouse Q.S. (2008), Effective Communication during an Influenza Pandemic: TheValue of Using a Crisis and Emergency Risk Communication Framework. Health Promotion Practice, 9, 13S-17S.

Reynolds, B. & Seeger M. W. (2005), Crisis and Emergency Risk Communication as an .Integrative Model. Journal of Health Communication, 10 (1), 43-55.

Rodríguez, H., Trainor,J. & Quarantelli E.L. (2006), Rising to the challenges of a catastrophe: The emergent and prosocial behavior following Hurricane Katrina. Annals of the American Academy of Political and Social Science, 604, 82-101 .

Rosenthal, U., Boin, A. & Comfort, L.K. (eds.) (2001), Managing Crises: Threats, Dilemmas, . Opportunities. Springfield, IL: Charles C. Thomas.Scanlon, J. (2006), Unwelcome irritant or useful ally? The mass media emergencies,

in: (Eds.) Rodriguez, H., Quarantelli, E.L. & Dynes, .R.R, Handbook of disaster .research, Springer, pp.413-429.

Seeger, M., Sellnow, T. & Ulmar, R. (2003), Communication and organisational crisis, . Westport: Praeger Publishers.

Seeger, M.W., Ulmer, R.R, Noval J.M & Sellnow, T. (2005), Post crisis discourse and .organisational change, failure and renewal. Journal of Organisational Change . management, 18 (1), 78-95.

Seeger, M.W. (2006), Best practices in crisis communication: An expert panel process. .Journal of Applied Communication Research, 34(3), 232–244.

Seeger, M.W. (2009), Informational needs and information seeking after crises events: the.case of natural disasters. Paper presented at the International Conference: Crisis .Communication at the Beginning of the 21st Century, Ilmenau, Germany, October .10th 2009.

Sellnow, T.L, Ulmer, R.R, Seeger, M.W & Littlefield, R.S (2009), Effective Risk Communication: A Message-Centered Approach. New York: Springer.

Semetko, H.A. & Valkenburg, P.M. (2000), Framing European Politics: A Content Analysis .of Press and Television News. Journal of Communication, 50(2),.93-109.

Scheuren, J.M., Le Polain de Waroux, O., Below, R., Guha-Sapir, D. & Ponserre, S. 2008),.Annual Disaster Statistical Review: The numbers and Trends 2007. Center for .Research on the Epidemiology of Disasters (CRED), Melin, Belgium: Jacoffset Printers.Retrieved November 26, 2009 from: http://www.reliefweb.int/rw/lib.nsf/db900sid/EVOD7FVG77/$file/Full_Report.pdf?openelement

Sorensen, J. & Mileti, D. (1991), Risk Communication in Emergencies. In R.E. Kasperson & . J.M. Stallen (Eds.) Communicating Risks to the Public: International Perspectives, (pp. .367-392) .Boston, MA: Kluwer Academic Publishers.

Taylor, M., & Perry, D.C. (2005), The diffusion of traditional and new media tactics in crisis . communication. Public Relations Review, 31, 209–217.

Tierney, K. (2003), Disaster, beliefs and institutional interests: Recycling disaster myths in .the aftermath of 9-11. In: Clarke (Ed.) Research in social problems in public policy, .11.Terrorism and disaster: New threats, new ideas.(pp 33-51). NY: Elsevier Science.

Tierney, K., Bevc, C. & Kuligowski ,E. (2006), Metaphors Matter: Disaster Myths, Media .Frames and Their Consequences in Hurricane Katrina. The ANNALS of the American .Academy of Political and Social Science, 604, 57-81.

Ulmer, R. T., Sellnow, T. L. & Seeger, M. W. (2007), Effective crisis communication: moving from crisis to opportunity. Thousand Oaks, CA: Sage.

Urquhart J & Heilmann, K. (1984), Risk Watch: the Odds of Life. New York: Facts on File . Publications.

Van de Walle, B. & Turoff, M. (2007), Emergency Response Information Systems: Emerging .Trends and Technologies. Communications of the ACM, 50(3), 29-31.

Wenger, D. (1985), Mass media and disaster. Preliminary paper # 98. Newark, Delaware: .Disaster Research Center.

324

Wilson, L. (2004), Media Dependency during a Large-Scale Social Disruption: The Case of . September 11. Mass media and society, 7, 17-30.

Wray, R., & Jupka, K. (2004), What does the public want to know in the event of a terrorist .attack using plague? Biosecurity and Bioterrorism Biodefense Strategy. Practice, and . Science 2(3), 208-215.

Zack, M.H. (2007), The role of decision support Systems in an Indeterminate World. Decision Support Systems, 43(4), 1664-1674.

[1]. Scheuren et al., (2008)

[2]. Lowrey, (2004)

[3]. Seeger et al., (2003)

[4]. Van de Walle & Turoff, (2007)

[5] Ulmer et al., (2007)

[6] Grunig et al., (2002)

[7]. Lindell & Perry, (2004)

[8]. Lowrey, (2004)

[9] Reynolds, (2002)

[10]. Coombs, (2006)

[11] Disaster: an event that: Involves more groups who normally do not need to interact in order to manage emergencies; Requires involved parties to relinquish the usual autonomy and freedom to special response measures and organisations; Changes the usual performance measures; Requires closer operations between public and private organisations (The University of Delaware's Disaster Research Center, cited in section II of this book).

[12]. Emergency: an event that may be managed locally without the need of added response measures or changes to procedure (The University of Delaware's Disaster Research Center, cited in section II of this book).

[13]. Catastrophe: an event that: Destroys most of a community; Prevents local officials from performing their duties; Causes most community functions to cease; Prevents adjacent communities from providing aid (The University of Delaware's Disaster Research Center, cited in section II of this book).

[14]. Coombs, (2006)

[15] Ulmer et al., (2007)

[16]. Taylor & Perry, (2005)

[17]. Perry et al., (1982)

[18] Fischhoff, (2002)

[19]. Blanchard-Boehm et al.,(1998)

[20]. Reynolds, (2002)

[21]. Peters et al., (1997)

[22]. Chess et al., (2006)

[23]. Fischhoff, (2005)

[24]. Coombs, (2007)

[25]. Heath & Palenchar, (2000)

[26]. Mileti & Beck, (1975), Ben Avraham, (2009)

[27]. Mileti, & Fitzpatrick, (1992)

[28]. Aguirre et al. (1991)

[29]. Reynolds & Seeger, (2005)

[30]. Seeger et al., (2009)

[31]. Urquhart & Heilmann, (1984)

[32]. Sorensen & Mileti, (1991)

[33]. Fischhoff, (2005)

[34]. Segal & Sharabi, (2009), Ben Avraham, (2009)

[35]. Taylor & Perry, (2005)

[36]. Taylor et al., (2005)

[37]. Murdock et al., (2003)

[38]. Hindman & Coyle, (1999); Seeger,(2009)

[39]. Scanlon, (2006)

[40]. Peters et al., (1997)

[41]. Egbert & Parrott, (2001)

42. Fischhoff, (2005)
43. Ulmer et al., (2007)
44. Allan, (2006)
45. Arpan, & Pompper, (2003)
46. Reynolds, (2002)
47. Sellnow et al., (2009)
48. Reynolds, (2002)
49. Reynolds & Seeger, (2005)
50. Reynolds, (2002)
51. Ben Avraham, (2009)
52. Coombs, (2007)
53. Reynolds, (2002)
54. Reynolds, (2002)
55. Mileti & Fitzpatrick, (1992)
56. Health Canada Crisis communication Unit, (2003)
57. OECD Guidance Document on Risk Communication for Chemical Risk Management (2002)
58. Seeger et al., (2005)
59. Ben Avraham, (2009)
60. Reynolds & Seeger, (2005)
61. Dawn & Murphy,(2008)
62. International Preparedness & Response to Emergencies & Disasters Conference, Tel Aviv, Israel, January 11, 2010
63. Ben Avraham, (2009)
64. Ulmer et al., (2007)
65. Tierney et al., (2006)
66. Kasperson & Kasperson, (2005)
67. Coleman, (1993)
68. Perry et al., (1982)
69. Aguirre et al. (1987)
70. Reich, (2009)
71. Leidner, (2000)
72. Bergmans, (2008)
73. Gutteling & Kuttschreuter, (2002)
74. Boin & Lagadec, (2000)
75. Reich, (2009)
76. Mitchell et al., (2000)
77. Quarantelli, (1987)
78. Quarantelli & Dynes, (1972)
79. Dynes, (1970)
80. Drabek, (1986)
81. Coombs, (2007)
82. Dreyfus & Dreyfus, (2005)
83. Reynolds & Crouse, (2008)
84. Fischhoff, (2005)
85. Pauchant et al., (1990)

APPENDIX 4

Defining target groups and message strategies during crises; some guidelines

Halliki Harro-Loit, Triin Vihalemm, and Valeria Jakobson

CONTENTS

1 INTRODUCTION

The guidelines in this report clarify points of attention when defining target groups and deciding on message strategies during crises. They are based on qualitative and quantitative research[1]. The scientific background leading to these guidelines and research methods used are explained elsewhere; this is a user friendly summary of the research results reported earlier[2].

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[1] The research project 'Developing a crisis scorecard' leading to these results, has received funding from the European Community's Seventh Framework Programme (FP7/2007-2013) under grant agreement n° 217889.

[2] See (section 4 in) Vos, M., Lund, R., Harro-Loit, H., and Reich, Z. (2011), Developing a crisis communication scorecard. Jyväskylä Studies in Humanities, University of Jyväskylä.

2 "THE GENERAL PUBLIC" IS NOT ENOUGH

It is deceptive to think that crisis communication can be planned for the "general public". A more realistic approach is to imagine target groups of different kinds. For rescue teams, target groups might be defined according to socio-demographic categories, such as language, age, living place etc. For crisis communication public organizations might find it advantageous to define sub-groups of the general public according to "zones of meaning" (many people across a society or organization share the same knowledge and interpretation of events) and communication habits. Mapping these zones of meaning and communication habits would help planning information delivery, focus the crisis message better and finally increase the size of the informed public.

Four general categories can be taken into consideration in defining target groups:

a) A socio-demographic map of possible crisis factors, such as languages and access to media channels (e.g. language minorities in the country; foreigners, blind and deaf people; possible verbal illliteracy; age that may restrain access to some media channels or makes comprehension of the message difficult)

b) The communication habits of different groups of civilians: use of media channels, information processing activity or ignorance, importance of network communication including mouth-to mouth communication (e.g. some people do not watch television at all, others are not used to process information by using Internet; network communication might be efficient in a village but depends on certain communication habits of the community, etc.)

c) Trust towards institutions and different sources of information (people usually trust public broadcasting channels, and e.g. experts they are familiar with or whose explanations are understandable for them)

d) Vulnerability of certain target groups (e.g. kindergartens, schools, hospitals, younger schoolchildren who are alone at home in the daytime, old people, people who do not follow media channels regularly, people with special needs, foreigners who do not know the language and understand local media).

3 FACTORS THAT INFLUENCE THE RECEPTION OF CRISIS COMMUNICATION MESSAGES

The reception of messages is a complex process that includes attention, understanding, interpretation and trust. The following characteristics of risk and crisis situations along with audience and message-specific factors should be considered in planning crisis communication and defining target groups:

a) **The type of crisis and the perceived threat to life and health**(for example, people that perceive nuclear pollution as a serious threat will observe messages about this topic more carefully than other warnings)

b) **The** time**, according to a weekly and daily cycle, or season**; so if it is a workday or holiday, during office hours or the night, peak hours when people are in transit, etc. (for example, when the crisis message is delivered during the workday and family members are separated, mobile communication would be much more overloaded than when it happens at night)

c) **The reaction time between the warning message and the time the danger** appears (for example fire evacuations should be followed up immediately, while storm warnings may leave some time for preparation)

d) Previous **immediate and mediated experience of different types of crisis** that shapes the reception process of crisis messages, often called "risk literacy" (we propose the label "discursive experience of crisis" to denote this factor, which is culture-sensitive and includes the collective memory of local risks, what people have learned from the mass media about earlier crises, knowledge gained in formal education, fire evacuation drills, etc.)

e) **How** information **is formatted in the message**, the genre, structure, language, and amount of information (for example news stories and warning messages should have an entirely different structure, language and information order).

We will further explain the concepts of "risk literacy" and "discursive experience". Risk literacy in the present context means the knowledge about various risks, awareness of the threats and ability to process information in case the risk is developing into crisis (e.g. the ability to "translate" the general knowledge about the weather into behavioural guidance in the case of a storm, and the ability to interpret the numbers that mark the speed of the wind).

Discursive experience in this context means that people have acquired their experience from various crisis-related discourses (e.g. mediated news, fiction and documentary films, pictures, books, but also family stories, evacuation trainings and instructions, formal education concerning risks and security). For example, a certain community might be acquainted with a very specific gas-pollution discourse, because the local factory once had a pollution incident that

is narrated among the community members and became part of the collective memory.

In the following we will discuss how communication habits can be taken into account in the communication in various phases of a crisis. Next, we will focus on communication with children, who are one of the vulnerable groups that need special attention. Finally we will discuss what a good message is.

4   COMMUNICATING WITH TARGET GROUPS ACCORDING TO COMMUNICATION HABITS

The processing of information, use of channels, information sources and finally the motivation of civilians to seek information depends on which the crisis is currently at. The preparation phase and the later warning and crisis response phases require somewhat different points of attention. This will be explained further.

4.1   Preparation

For any given type of crisis people will have different experience, i.e., immediate experience or mediated experience, and previous knowledge about the risk.

Therefore, in the preparation phase it is important to ask: what is the "risk literacy" of civilians and what are civilians' existing perceptions concerning specific types of threat? In some geographical areas certain types of crisis are more probable than others. Also, previous crises are always different from what might happen in the future.

Citizens may have acquired for example from media, mouth-to-mouth communication misleading **perceptions about the possible threat and means of safety. They may also lack the tacit knowledge that would help them better understand the threat.**

Focus-group interviews or surveys among different socio-demographic groups help in plotting out the possible disharmonies of a given risk literacy (e.g. people might be very well prepared to take action in the event of fire but not, say, in the event of air pollution). Hence it is important to improve risk literacy among the most threatened people and among those whose communication habits, preconceptions and attitudes do not support quick and sufficient information processing during a crisis. Public organizations can outsource such research in the preparedness phase and initiate risk communication before the possible crisis.

As a part of such preparatory research it is also important to follow the media coverage of previous crises. Was the information accurate and trustworthy? Media analyses of past crises could provide answers to the question of what lessons civilians learned from them.

4.2   Warning and crisis response

In the event of a real threat - radiation, storm, floods, bomb threat - there is also the question of what channels of information would be important and reliable

with respect to different target groups. This is related to the type of crisis (the seriousness of its implications for life and health) and the reaction time between warning and crisis onset.

It is important to know citizens' habits in using information channels and the sources they trust in the case of a crisis.

People get the first warning message either via the channels they regularly follow (e.g. television or radio) or via extraordinary channels (e.g. word-of-mouth communication, SMS, warning delivered via loudspeakers). If people understand that there is a serious threat they turn to their more trusted channels. The hierarchy of information channels is not mono-semantic. In times of crisis more attention is usually paid to the public broadcasting channels than commercial channels, but the hierarchy of information channels differs significantly by ethnicity, age and other variables.

It is important to know the media usage habits of citizens. Different groups turn to various channels. It is important not to overestimate the Internet or underestimate the traditional media channels.

Word-of-mouth communication with acquaintances and family members potentially also has an important role in a situation of threat. Some citizens, in hope of obtaining additional information, would call someone they know who has worked in the relevant institution or had an experience in the relevant field. Also, people generally want to warn their relatives and acquaintances. This could lead to overloading of the mobile network. In connection with word-of-mouth communication it should be borne in mind that telephone calls within personal networks seem to serve two functions: to warn others or discuss the situation and to search for additional information. It may not be viable to ask citizens to keep the telephone lines free and avoid personal calls[3].

Telephone networks might be overloaded in a crisis situation despite instructions to refrain from making telephone calls.

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[3]　The test warnings showed that respondents felt unconfident with the instruction to keep telephone lines free and avoid personal calls. They admitted that telephone calls would be made even if this was not recommended.

Crisis information should be delivered via various channels, and thus it is important to know which channels are not used or trusted by certain social groups. When designing warning messages one is advised[4] to address the following three response patterns[5].

1. Loyalty (following mass media for instructions). Socially well-integrated people who actively use a variety of media rely on information and instructions given via both the traditional and new mass media channels in times of crisis. We have labelled this pattern "Loyalty", because the crisis communicator can maintain contact with those people during all phases of the crisis providing contact is not interrupted owing to technical problems.[6]

2. Voice (active seek for information, word-of-mouth). There are people who are more likely to ask for and deliver information about threats via their personal communication networks: family members, friends, and acquaintances who are considered to be experts in the relevant field. They also obtain additional information directly from institutions – for example, by calling the rescue centre. [7]

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[4] This is based on qualitative research data and a nationally representative survey of the Estonian population.

[5] As these patterns are analogous to Hirchmanns' classic typology, we have named them accordingly.

[6] Our earlier research showed that the national public broadcasting channels (television and radio) were preferred, but in time of crisis various channels would be used simultaneously.

[7] Critical reflection on information and the wish to form one's own picture from various fragments of information are characteristic of this response pattern. People with this pattern follow media content critically. This distrust might be explained by poor earlier experiences in obtaining information from official channels or a vague, generalized distrust of information put out by the media.

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3. Exit (acting/not acting by relying on ones' own knowledge). There are also people who, having heard about a possible threat, do not consider seeking additional information from external sources. They may simply act (e.g. escape) or ignore a warning (e.g. go out to look at a storm), relying on their own discursive experience. This pattern is designated "Exit". [8]

The boundaries of these three response patterns are not limited to socio-demographic variables, but some peculiarities can be noted and considered in crisis communication planning.[9]

Different people use different information processing strategies and act in different ways. It is important to take this behavioural variety into consideration. This is even more important when the reaction time between warning and crisis onset is short.

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[8]   This pattern seems to have several subtypes. Some people who belong to this segment are usually active information seekers familiar with different information sources (Internet sites) and aware of the reasons why they would turn to one or another information channel. They do not always check rumours or wait for information, but rather act. In some cases the pattern of relying on one's own knowledge means non-action. For example, in the case of rumours that the river was polluted, someone explained that she did not take any action, because she thought that her body had adapted to it, as she had been using this water for a long time already. A small group of people, who do not take a threat seriously or are not able to interpret overly sophisticated or long messages, expect short and simple instructions and that others will help them. Another sub-group of this pattern would underestimate the threat and not follow instructions (they might not stay indoors during a storm because they wish to see the high waves etc.)

[9]   For example, in Estonia the "Voice" and "Exit" patterns are widespread among the largest ethnic minority of Estonian Russian-speakers, many of whom do not trust Estonian institutions. Thus achieving trust in the communicator should be the key issue in crisis communication targeted at this group.

5 INSTRUCTING CHILDREN OF 10-13 YEARS OLD

It should be taken into account that children can also form part of the audience. Some advice is given for the preparation phase, followed by suggestions for the later phases of warning and crisis response. This serves as an example of how to address vulnerable groups listed at the beginning of these guidelines.

5.1 Preparation

Kindergartens and schools, but also pupils who are home alone after school, are vulnerable target groups for whom special communication plans need to be made.

Recommended activities for schools are:

- Lectures for children, where they will be instructed in detail about potential crisis situations and possible dangers.
- Crisis training and lectures should also contain recommendations on how to search for information: the channels used to disseminate information, the use of crisis lines etc. This could be done in the form of role play, a training format especially effective with 8-15 years old children, where some of the children play the role of public authorities and others of survivors.
- Training could be carried out on how to listen and memorize information relating to a crisis situation. Alongside memory training, children must be taught to identify the main information and recommendations and react appropriately.
- Training on how to behave in various crisis situations, such as a natural disaster.
- Gaining acquaintance with simple means of protection.
- Instructions on how to use diverse communication means in a crisis situation.

Schools and kindergartens should have communication plans for various types of crisis in addition to fire drill.

5.2   Warning and crisis response

Not just for younger kids but even for 17- to 18-year-olds warning and instructions seem to be complicated and difficult to memorize[10]. Some recommendations concerning crisis announcements will follow below.

Children could be given the following advice:

1. Have pen and paper ready and write down the details of the announcement.
2. The announcement should be repeated at least twice.
3. Children should be told beforehand what means of communication they should use in order to get in contact with their parents if a crisis occurs.
4. To allow for the fact that children might panic and fear to be alone, it would be useful in situations where parents or rescue team are on their way to get them into safety, to give them the explicit advice to stay at home and wait for their parents or rescue team.
5. To take account of possible addictiveness to the telephone, children should also be advised not to spend long on the telephone, as it could happen that while they are informing all their friends and sharing their emotions, their parents or rescue services are simultaneously trying to reach them.

The single repetition of a long complicated crisis announcement is insufficient for the adequate understanding of children aged 10-13 years who might be alone when they hear the announcement. They might not know how to use the information they have heard. Clear advice must be given.

Various media channels could be used to bring information to the attention of children and youth audiences. The most popular TV entertainment channels, music radio channels and Internet sites should be used, in addition to official news sites. It would be useful to enter into preliminary negotiations with the owners of these media outlets concerning situations in which placement or insertion of urgent information would be possible.

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[10]   After listening to a warning message once the majority in this age group clearly remembered fewer details than the adults in the other focus groups. None of the children participating in the focus groups reported having even thought about writing down the information given to them in the simulated warning messages, although they all had pens and paper and there was no ban on writing down information.

6   CRITERIA FOR GOOD MESSAGE

A good message should be easy to remember. Based on our research the following advice can be given for warning messages.

- Instructions are remembered best when repeated several times in the message.[11]
- Concrete instructions such as: stay indoors, protect domestic animals, find your iodine tablets, close windows etc. are remembered best.[12]
- A crisis message that resembles a typical news story is not remembered well.
- Citizens are often confused about the time and place names mentioned in a warning message. When the message is about a nearby region it is easier to remember the place mentioned[13].
- References to further information are not remembered when given at different places in the message.[14]
- Information given in a negative form will not be remembered well.[15] It is not effective, for example, to urge people "not to be afraid".

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[11]   This was revealed in tests with simulated warning messages.

[12]   When a list of various threats was presented (e.g. a storm: falling trees, broken power lines, closed roads) many respondents remembered the possibility of a threat but only a few risk factors were remembered and often incorrectly.

[13]   When the time category was related both to the time of danger and the time when the news was broadcasted people could not remember both. When time categories were presented in a random order the respondents were not able to remember them. The time of the start of the threat, which was repeated twice, was the only time remembered by most of the respondents. <u>Place</u> indicated both the geographical area of the threat and the region where the people targeted by the message were living. This was complicated for some respondents. The reception test results indicated that if the original message contained too much information, part of which did not concern the listeners, the majority of the test subjects were not able to understand the information adequately. Although the possible <u>duration</u> of the threat was mentioned only once, more than half of the respondents remembered it correctly. This information was considered to be important.

[14]   In the test message, references to sources were given in more that one place. As a result the respondents remembered vaguely that "it is important to listen to the information sources" or that "one should listen to the radio" or "one should listen to the next news programme", This implies that people remembered only the suggestion that they should listen to the radio.

[15]   In the test negative messages went largely unnoticed (e.g. "radiation is not life-threatening/hazardous to health"; "radioactive pollution in Estonia is not life-threatening").

- How information is interpreted depends on the knowledge people have of the context.[16] It can be assumed that the nature of certain threats, and thus how to behave, as in the case of a radioactive pollution threat, will be unfamiliar ground for many people.

People may be familiar with situations similar to the current impending crisis (e.g. a storm or health risks) that, do not, however, contain a serious threat. In that case they often are unable to recognize the seriousness of an important warning message. Thus the threat should be clearly presented.

Warning messages should be given in a format that can be easily distinguished from the general flow of news stories. Also, the message should not too be overloaded with details. References to time and place should be kept in minimum and repeated. The likely duration of the threat can be mentioned.

Negative forms (e.g. instructions what <u>not</u> should be done or matters that one should <u>not</u> be afraid of) should be avoided. Some people may remember an alarming message better, but for most people a message that is too alarming creates panic. Tacit knowledge about various types of threat should be developed.

An example of a fairly good message is provided below. People could hardly remember the elements mentioned between brackets. Hence, these elements could be left out.

Announcement

A breakdown took place at the (Ignalina) Nuclear Power Station (resulting in the emission of a radioactive substance into the surrounding environment). The emission occurred at 7.45 AM. A radioactive cloud is moving in the direction of Estonia and will reach South Estonia at 1 PM at the earliest. (Until that time the level of radiation should remain normal.)

The inhabitants of the south-east of Estonia and Viljandi County are requested to remain tuned in to the radio. (In the next announcement that will be forwarded at 10.30 AM at the latest it will be specified the inhabitants of which rural municipalities are requested to stay indoors.)

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[16] The reception test showed that messages concerning a radiation threat, such as "radioactive cloud" and "emission" are translated by people in various ways: "the radiation is moving", "radioactive substances are spreading", or "nuclear accident".

The necessity to stay indoors will take effect at 1 PM at the earliest. People are requested to have iodine tablets at hand but not to take those in until instructed to do so. (The detailed instructions about how to take cover and to take iodine tablets will be announced on the radio and TV. There is no reason to abandon the area. Elsewhere in Estonia no precautionary measures are needed.)

The radiation threat will probably last approximately for two days. (The radiation will <u>not</u> reach the level causing urgent health threat.) Nevertheless, all persons are requested (not to expose themselves to radiation) and to stay indoors. Staying indoors is a sufficient measure for the time being.

Domestic animals, animal forage and drinking water must be protected from radiation. Refrain from using the phones to keep the lines open. (This is your input to maintaining the important official communication channels available.) Further information will be given on the radio and TV. The next announcement will be made at 10.30 AM (at the latest specifying the inhabitants of which rural municipalities are requested to stay indoors).

PROJECT AND AUTHORS

This book is an outcome of the project 'Developing a Crisis Communication Scorecard' (CrisComScore). The literature studies and empirical findings led to the development of an audit instrument and guides that help public authorities to be better prepared for communication in crisis situations. This book includes the research results as well as the scorecard and guides. For other materials, including software that supports use of the instrument, we refer to the project web site www.crisiscommunication.fi

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