UNIVERSITY OF GOTHENBURG

Communication challenges in transboundary crisis situations

An exploration of Chernobyl and Indian Ocean Tsunami events

Author: Philip Svensson

Master of Communication Thesis

Report No. 2012:036
ISSN: 1651-4769

University of Gothenburg
Department of Applied Information Technology
Gothenburg, Sweden, May 2012

Abstract

In recent years, the world has seen a series of catastrophes such as the Chernobyl disaster in 1986, the September 11 attacks in 2001, the 2004 Indian Ocean Tsunami, the earthquake disaster in Haiti in 2010, and most recently the 2011 Tohoku earthquake and tsunami. Common to all of these events is that they present numerous challenges for crisis management actors in terms of coordinating and communicating across geographical, cultural and political borders. In particular, the increasingly transboundary nature of disasters and crises put additional pressure on the communication. The purpose of the thesis is to explore the communication challenges in transboundary crisis communication. Currently there is limited knowledge on this topic and this research aims to provide with some initial insights into communication issues by looking into two different crises events. These include the 1986 Chernobyl disaster and 2004 Indian Ocean Tsunami event.

A desk-based qualitative study of previous literature related to two the two crises events is carried out. The analysis revealed two interrelated themes of challenges, namely *Sharing of Information* and *Shared Understanding*, which in turn are sub-divided into a number of aspects. The main contribution of the study is to provide some initial insights into the role of communication in crisis management, and the problems associated with obtaining pure information, and meaning, across cultural, geographical and political borders. Another important contribution is to encourage further studies into transboundary crisis communication especially with a focus on information sharing and the ability to establish shared understanding.

Keywords: crisis, crisis communication, crisis management, communication, disaster, multicultural crisis, transboundary crisis.

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1 Introduction

1.1 Background

Over the past decades the world has experienced several large-scale catastrophes, both natural and man-made. Events such as the Chernobyl disaster in 1986, the sinking of MS Estonia in 1994, the September 11 attacks in 2001, the 2004 tsunami in Thailand, the earthquake disaster in Haiti in 2010, and most recently the 2011 earthquake and tsunami in Japan are all well-known examples of this, and all of these events have had a tremendous impact on people's lives all over the world.

The transboundary nature of these disasters has grown in recent years, which has required many different nations and cultures to 1) coordinate their actions of crisis response and 2) communicate across borders in order to to help rebuild (Ansell, Boin and Keller, 2010). Transboundary crises are not only about geographical boundaries, but also cultural, political, and organisational boundaries, and can easily cut across boundaries (ibid.). Epidemics, energy blackouts, financial crises and oil spills all have the same characteristics in common: they affect multiple jurisdictions, undermine the functioning of different sectors, and escalate and morph rapidly (ibid.). When this happens, more people are involved, people who tend to be dispersed, have differing agendas, and that are less aquainted with each other. In many crises today, the issues of context can be seen, and therefore a good understanding of this is important, and will lead to better possibilities for successful communication (Falkheimer and Heide, 2006).

Sweden has experienced four major disaster events in the last few decades: the Chernobyl Disaster in 1986, the Estonia Ferry disaster in 1994, the terror attacks on the World Trade Centre in the United States in 2001, and the Indian Ocean Tsunami in 2004 (Larsson, 2008). While these events did not unfold on Swedish soil, they did have consequences that reached back to everyday life in Sweden.

1.2 Problem definition

All crisis events present a new set of difficulties that require swift responses to be taken by a multitude of organisations and governmental institutions, all from different nations and cultures, and all with different world views and ways of describing the world around them (Ansell, Boin and Keller, 2010).

Larsson (2008) states that it is important to look at and learn from past successes and failures in managing crises, and that a big part of crisis management is the exchange of information and communication. Hale, Dulek and Hale (2005) writes that the role of communication in effective crisis management has long been understood in the academic world. Larsson (2008) also emphasises that analysing and investigating crisis communication of authorities, how media reports on crisis events, and the public's trust for the people in charge, is very important.

According to Falkheimer and Heide (2006. pp. 180), "We live in a society that is ethnically diverse and increasingly multicultural". They also state, with crises becoming more transboundary, competence in communication accros geographical and cultural borders will become increasingly important (Lustig and Koester, 2009).

Transboundary communication presents an array of different challenges, which all contribute to the influence the sharing of meaning between people from different cultures. For example. a competent communicator must 1) have an understanding of the context in which he/she communicates, 2) know what is appropriate and effective when it comes to his/her behaviour (to achieve the desired outcome by not insulting or offending), 3) have the appropriate knowledge about who he/she is communicating with, 4) have the proper motivations, feelings, and intentions, 5) know how to put it all into actions that are, in themselves, appropriate and effective (Lustig and Koester, 2009).

Thus far the literature review for this thesis has revealed little knowledge on the subject of communication challenges in transboundary crises. Articles address topics such as the importance of cultural experience when planning crisis communication, and about multicultural crisis communication, just to mention a few. These are all from a different field of research in origin, and have no pure communication focus.

1.3 Purpose and research question

According to Falkheimer and Heide (2006), a crisis is characterised by a shortage of time to make decisions, think, and plan. There is usually great uncertainty in the initial stage about what has happened, and what can be done, as well as the effects of the crisis and of response actions (Larsson, 2008). Communication and information flows from all participating actors, which often leads to an information and communication overload (ibid.). On top of this is a need to quickly respond in order to limit the impact of the crisis, e.g. loss of resources, money, buildings, and most important of all, lives (Sundelius 2001).

In multicultural communication there are numerous ways for communication to break down or fail, for example, different values, different beliefs, and different underlying meanings and attitudes (Lustig and Koester, 2009). All of these lead to different interpretations, different meanings, and different ways of describing the world around us, e.g. using different languages(ibid.).

Harro-Loit, Vihalemm and Ugur (2012) state that the way individuals define and identify crises is dependent on the cultural context. The go on by stating that this is said to be one of the reasons why so many people stayed in New Orleans during Hurricane Katrina. The public did not see the same threat in the hurricane as the experts did, because of a kind of cultural difference (ibid.).

The purpose of the study is to investigate the challenges in communication that arise in transboundary crisis. A crisis is transboundary when it starts to spread across geographical, cultural, functional, political, and time boundaries. When considering the two fields together, it can be clearly seen that the combined amount of problems leads to numerous communication difficulties. Falkheimer and Heide (2006) point out that crisis often results from poor communication between organisations, and the general public. With poor communication already being a risk factor, the addition of a transboundary context intensifies problems in communication.

Despite the awareness of some of the problems and difficulties associated with crisis communication in transboundary crises, e.g. the difficulty of getting the right information to the right people, there is very little research currently that is focused on this area of study. There is clearly a growing interest to build a better understanding of the particular challenges relating to improving crisis response and management in transboundary crisis (Ansell, Boin and Keller, 2010). With this backdrop the present study will address the following research question: **What are the nature of the communication challenges in transboundary crisis situations?** Specifically, the study will use the Chernobyl Disaster in 1986, and the Indian Ocean Tsunami in 2004 to explore and provide a deeper understanding of the most recurrent communication challenges in large-scale crisis events.

1.4 Scope of the study

According to Falkheimer and Heide (2006) the Chernobyl disaster gave rise to much new research, not only in the field of crisis management, but in international politics and intercultural communication as well. They state that the area of research today known as crisis communication did not exist before the Chernobyl disaster. This disaster also lead to the first international standard for radioactive content allowed in groceries, at least among the European countries (Sundelius, Stern and Bynander, 2001). It is also one of the worst nuclear accidents in history, as only the Fukushima Daiichi nuclear disaster in 2011 shares the same level of severity on the International Nuclear and Radiological Event Scale (INES) (Mairs and IAEA, n.d.).

The reason for analysing the Indian Ocean Tsunami disaster is that it is a completely different type of crisis from Chernobyl, and happened years later. The tsunami was a natural disaster, in contrast to a man made disaster like Chernobyl. The tsunami disaster was also dealt with more internally by the Swedish government and its departments, while still encountering transboundary challenges, in contrast to the Chernobyl disaster which generated international communication.

Finding any similar themes of communication challenges in these two completely different transboundary disasters, could indicate the presence of these challenges in other crises as well.

This thesis is written from a Swedish perspective. Nohrstedt (2008) mentions that Sweden was particularly hard hit by the Chernobyl disaster, apart from the Soviet Union itself. As for the Indian Ocean Tsunami disaster, it was seen by the Swedish media as a mainly Swedish crisis on foreign soil (Hellman and Riegert, 2005). Furthermore, there are more obvious reasons, such as the study being carried out in a Swedish university, and mainly finding Swedish sources for description of events.

1.5 Overview

This chapter introduces the reader to the purpose and research question of the thesis, and provides an overview of the scope of the study. Chapter two the related theoretical background is introduced. Chapter three explains the research approach, the method of analysis, and the limitations of the study. In chapter four, a selective description of the two cases that is the focus of the study is presented, and is followed by chapter five, which accounts for the analysis and the results obtained. Chapter six is a discussion of the results, and chapter seven gives some reflection on the study, as well as some suggestions for future research. Chapter eight concludes this thesis.

2 Related theory

This chapter introduces the theoretical background of this study. First, it presents definitions of *communication*. Then it goes on to define *crisis*, *crisis communication* and *transboundary crisis*.

2.1 Communication

The topic of communication is complex. Throughout history there have been many ways of studying communication, and there are as many attempts at defining communication as there have been fields of research studying it. Robert T. Craig (1999), in his article "Communication Theory as a Field," attempted to unify the different points of views of studying communication among academics, and tried to point to the similarities and differences among these different "traditions" of studying communication, because he believes that communication theory does not exist as a single field itself.

Craig (1999, p. 141) further states in his article that the "modern communication theory originated with the cybernetic tradition and the work of such mid-20th-century thinkers as Shannon, Wiener von Neumann, and Turing". Claude Shannon, and his co-author Warren Weaver, have given their names to one of the first and more well known models, within communication studies, of how communication works: the Shannon-Weaver Model of communication (Shannon and Weaver, 1949). A message is transmitted on a channel, from a sender to a receiver, and on the way the message is affected by noise that may distort it. (See fig. 1)

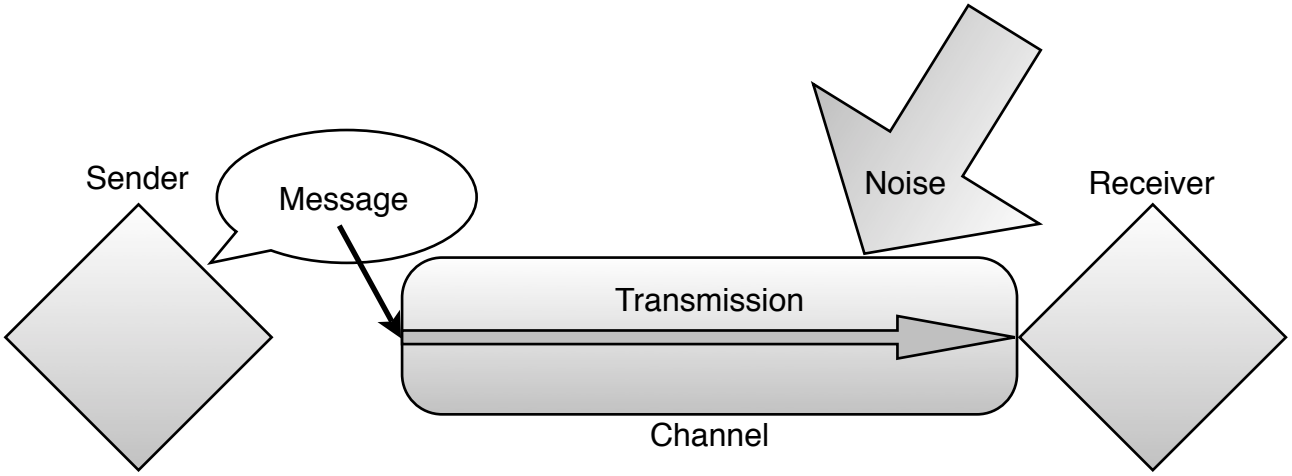

Fig. 1. Shannon-Weaver Model of Communication (1949)

Later, definitions have tried to include more complex descriptions of how communication is carried out, such as the Systems Theory in Cybernetic Tradition of communication studies (see Fig. 2), which claims that we are co-communicators that share messages with each other, and regulate the system of communication through feedback and flexible redundancy (Craig, 1999).

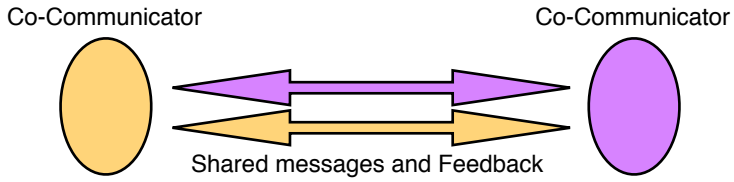

Fig. 2. Systems Model of Communication from the Cybernetic Tradition

A similar attempt at describing communication in a single definition was made by Jens Allwood, in the following way:

> "Communication is the sharing of content X from a sender Y to a recipient Z using an expression W and a medium Q in an environment E with a purpose/function F"
> (Allwood, 2002, p. 2)

In this definition we can see clear traces of the Shannon-Weaver model, with the sender, receiver and the medium. However, Allwood also adds the "sharing of content" as seen in the Systems Theory model, and also takes into account how the content is presented (expression), in what context it is said/stated (environment), and to what end the communication is made (purpose/function).

Another definition is presented by Lustig and Koester (2009, p. 13) in their book "Intercultural Competence: Interpersonal Communication across Cultures":

> "Communication is a symbolic, interpretive, transactional, contextual process in which people create shared meanings"

where "symbolic" means that symbols represent shared meanings that one wishes to communicate, and they are central in the act of communication; "interpretive" means that people can make sense of a message, even if the message is not intentionally or consciously created with a certain meaning; "transactional" implies that the meaning of the message is created and sustained by all the participants; "contextual" refers to the setting or situation where the communication takes place, such as the place, the social purpose of being together and the relationship between communicators.

2.2 Crisis, crisis communication, and transboundary crisis

2.2.1 Crisis

According to "Cambridge Advanced Learner's Dictionary" (Cambridge University Press, n.d.), the definition of crisis is:

> "A situation that has reached an extremely difficult or dangerous point; A time of great disagreement, uncertainty or suffering."

The literature on crisis management offers different definitions on the word crisis. For example, the big names in crisis research in Sweden, Sundelius, Stern and Bynander (2001, p. 13), defines "national crisis" as

> "When central actors in the crisis experience the situation as
> 1. Important values are at risk (threatened)
> 2. The amount of time at hand is limited
> 3. Circumstances are characterised by uncertainty."

This definition seems to have formed the basis for other researchers and authors in the field of crisis research. For example Falkheimer and Heide, have a definition of a "societal crisis" and "organisational crisis", based on work made by Sundelius, Stern and Bynander:

> "A societal crisis is based upon a situation where the central operators experience that significant values are threatened, with only limited time at hand and circumstances which are very unpredictable. An organisational crisis is defined by similar characteristics: significant threats, unpredictability and urgency"
> (Falkheimer and Heide, 2006, p. 181)

Larsson (2008, p. 38) cites a definition of crisis made by Rosenthal, Charles and 't Hart (1989) and it describes a crisis as a serious threat to the structure, values and norms of a system, on a basic level, and as time grows scarce and circumstances become uncertain, demands critical decisions to be made.

Almost all of the definitions have a few things in common: scarcity of time, high level of uncertainty, and threats to values. What separates the definitions is their focus: everyday usage, national level, societal level, and an attempt to general definition.

Larsson (2008) also states that a traditional classification of crisis divides them into two categories: the ones made by nature, and the ones made by man. He goes on by saying that in modern times scientists argue that crises are more of a combination of the two.

According to Hale, Dulek and Hale (2005) crisis management is often divided into 3 phases: Crisis Prevention, Crisis Response, and finally Recovery from Crisis (See Fig. 6). These phases are also called Pre-Crisis, Crisis, and Post-Crisis (ibid.). As the names of the phases may reveal, the first phase is the actions taken before a crisis happens, and here routines and plans for not having a crisis is implemented (ibid.). In Crisis Response/Crisis you implement plans for quickly dealing with the crisis. These plans are formulated and developed during the Crisis Prevention/Pre-Crisis stage (ibid.). And finally, in the last stage, you analyse how the plans for prevention failed, and whether the response plans worked or not to solve the crisis swiftly (ibid.). The evaluation in this stage help reform and develop the plans further in the Crisis Prevention/Pre-Crisis phase (ibid.).

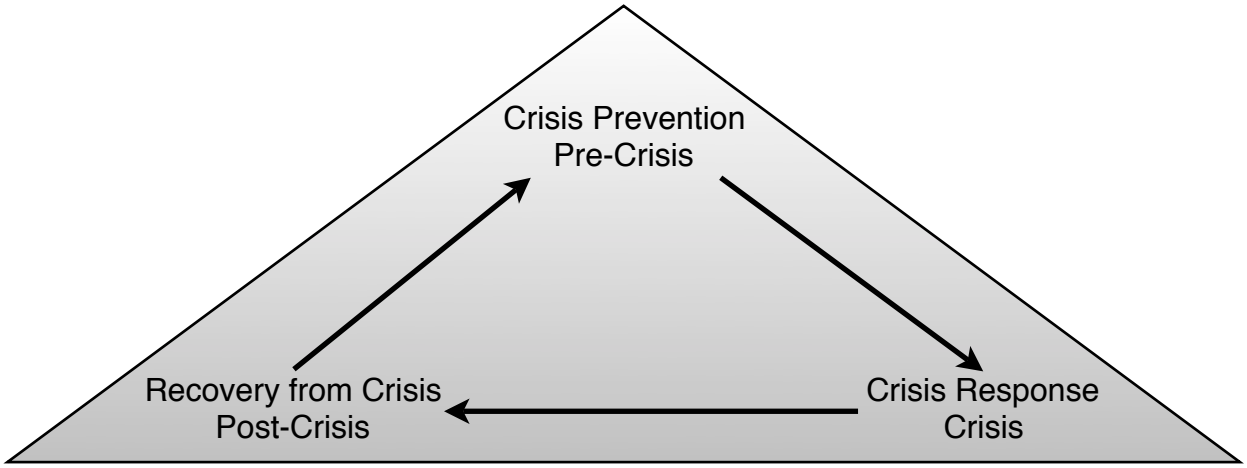

Fig. 6. Model representing the three phases of crisis and their cycle

2.2.2 Crisis communication

Falkheimer and Heide (2006) states that crisis communication can be understood as a sense-making process "where reality is negotiated and constructed in cultural contexts and situations" (ibid., p. 180). In other words: our view of reality is heavily affected by cultural contexts and customs. They also state that before the Chernobyl disaster, crisis communication did not exist as an independent area of research.

Further, Falkheimer and Heide (2006) suggests that crisis communication research has traditionally been divided into two main directions: (1) to find strategies to improve an organisation's image after crisis and, (2) study issue management and risk communication after a crisis has happened.

Hale, Dulek and Hale (2005) states that, crisis communication involves everything from communicating the events of a current crisis to stakeholders, make sure information about decisions made is spread throughout the crisis management team, and to decide whether to share any information to the public, and if that is the case, how much to share.

According to Larsson (2008) communication in a crisis situation is characterised by extensive communicative issues for the organisations in charge towards media, citizens, and the affected people. The available channels for information are quickly overloaded by the higher demand on information and communication (ibid.). Indeed, the important role of communication in crisis situations, and in crisis management, have been recognised for a long time in the academic world (Hale, Dulek and Hale, 2005). According to Larsson (2008), the increased significance of communication in crises is due to the fact that effective and close communication is crucial for successful crisis response, and the need and demand for information grows during a crisis.

2.2.3 Transboundary crisis

In recent years it has been more research on the topic of transboundary crises, which has been a great inspiration for this thesis. Ansell, Boin and Keller (2010) state in their article that the transboundary nature of crises has increased in the last few years, and these transboundary crises present a set of specific challenges to the governments of the world. They further state that usually a rapid response is necessary in disasters and crises, and this response generally happens under conditions of collective stress and uncertainty. It is the belief of Ansell. Boin and Keller (2010) that these challenges are even more difficult to manage in a transboundary crisis, because as the disaster spreads across physical and political borders more participants are involved. With an increase of participants from different geological and political cultures follows an increase in divergent ideas, and less understanding and knowledge of each other (ibid.). Ansell, Boin and Keller (2010) claim that in the near future crises will not only become more frequent or generate larger impact, but that crises will be more and more transboundary.

In their article, Ansell, Boin and Keller (2010) define transboundary crises with the use of three dimensions: political, functional, and time. The higher a crisis score on each dimension, the more transboundary it is.

The first dimension that Ansell, Boin and Keller (2010) present, is *political boundaries*. Although many crises fall within a geographically bounded political jurisdiction, for example a town, or a state, some crises cross these territorial boundaries, and become a threat to more than one town, multiple states, or a number of countries (Ansell, Boin and Keller, 2010; Boin, 2009). Good examples of this kind of disaster is a nuclear radiation leak, or a pandemic. This dimension is in turn divided into two new dimensions: vertical, and horizontal. A vertical political crisis demands the actions of higher levels of government, as the lower levels become overwhelmed (Boin, 2009). A horizontal political crisis is when a crisis spread across two political jurisdiction, on the same level of government, for example two cities, or two counties (Ansell, Boin and Keller, 2010). It is also expected that crisis management become more difficult if both vertical and horizontal coordination is required (Ansell, Boin and Keller, 2010; Boin, 2009).

Ansell, Boin and Keller's (2010) second dimension is *functional boundaries*. Many crises travel across functional borders, and affect life-sustaining systems or infrastructure (ibid.). For instance, a crisis can cross from financial systems to industrial systems (like a "credit crunch"), from private to public (an oil spill), or from one sector to another. Cross-functional crises are hard to manage, as they often involve systems with different logistics and operating factors (ibid.). Due to the common nature of systems being loosely connected, or even constructed to work independently, a cross-functional crisis is often a big surprise for the actors involved (Ansell, Boin and Keller, 2010; Boin, 2009).

The third dimension in Ansell, Boin and Keller's (2010) model is *boundaries in time*. Some crises have a distinct beginning and ending, however, many crises cut across such time barriers: they have roots that run deep, and their effects can still be felt after several years (ibid.). Often this is owing to the fact that they are not single events, or that the crisis has several effects appearing on different time scales (Boin, 2009). An oil spill, for example, has instant effect on wildlife, but also long term effects on marine life that won't become apparent until later. Cross-temporal crisis are difficult to manage as they create uncertainty about how long initial responders should maintain the response, and of when it is all right to stand down (Ansell, Boin and Keller, 2010). They can also lead to crisis response becoming fragmented, as different capabilities have to be called in at different times (Ansell, Boin and Keller, 2010; Boin, 2009).

3 Method

In order to address the research question a qualitative desk-based approach has been chosen. The benefit of using this approach is that it allows for an investigation of the material already written, as to anything that point towards communication challenges in transboundary crises, even if the material is not specifically written with such challenges in mind.

3.1 Sources

The type of literature examined was mainly secondary sources, such as journal articles from scholarly and trade journals, text books, research reports, and research papers. The primary sources include investigation reports, and performance evaluations.

The sources that have been used are relevant to the field of crisis management and communication, and have been selected on the basis of their relevance to the two crises chosen. Below is a list of keywords used when searching among sources. These keywords were combined with each other in different ways, and were written in English and in Swedish, in order to find more sources. When possible the words were inflected, such as “crisis” - “crises”, or “emergency” - “emergencies”

- Crisis
- Communication
- Chernobyl
- 2004 tsunami
- Indian ocean tsunami
- Transboundary
- Disaster
- Emergency

The journals that were searched included, but were not limited to: *Journal of Contingencies and Emergencies,* and *International Journal of Emergency Management*. These are the main scholarly journals in the area of crisis and emergency management. The same keywords as mentioned before was used when searching among the articles, and mainly articles written after 2000 were chosen. Well-known, and regularly cited researchers and authors in the field of crisis management and crisis communication were chosen before lesser known researchers and authors when choosing.

The search for sources yielded mostly journal articles, from a wide range of research fields. The main book source was “Krishantering på Svenska” (“crisis management in Swedish”), by the Swedish authors Bengt Sundelius, Eric Stern, and Fredrik Bynander (2001). This book is the first one to give a comprehensive view of how crises are managed among Swedish authorities, and have been very influential among researchers in the field of crisis management.

3.2 Analysis

The use of secondary analysis method has grown in recent years (Bryman, 2005). A secondary analysis allows for additional scrutiny of data already found, but from a different perspective or for a different purpose that originally intended. Since the data gathered consisted of various documentation it was therefore considered as the most appropriate means of analysis. The analytical steps of the analysis included reading, and re-reading the various texts, and distilling themes and patterns (ibid.). A series of questions were used to guide the analysis:

When reading through the source material, a series of stages were used to focus the analysis in order to answer the purpose of this study (*what are the communication challenges in transboundary crisis situations?*):

I) Familiarising oneself with the data.
II) Generating codes (from the text materials). Question: What is happening here?
III) Searching for themes in the codes. Question: What is this an indication of?
IV) Reviewing themes and relate them to the focus of the study.

These stages are based on the Grounded Theory way of analysing data (see e.g. Glaser and Strauss, 1967), and was deemed useful to code the data, and group it into categories. The final step consisted of revising the labels to ensure that they reflected the correct themes.

3.3 Limitations in method

The limitations when carrying out a desk-based research is that the main source of data is secondary rather than empirical. A critical mind towards the literature is therefore necessary, as the information is often presented in a way that reflects the perspective of the original author. Further, the analyst often lacks an insider's understanding of the events and context behind the produced data (Bryman, 2005). As the analysis is based primarily on secondary data, it could disregard this limitation.

The description of each crisis is based on mainly two sources because of the limitations in time, scope, and resources, while still trying to satisfy the intent of viewing the events from more than one perspective. The most useful and detailed description of events during the Chernobyl disaster was found in Sundelius, Stern and Bynanader's bok (2001). For the Indian Ocean Tsunami disaster the most useful and detailed description was found in a governmental evaluation report by Hansén (2005).

4 Results

Description of the two crises

This chapter describes the Chernobyl disaster in 1986, and the Indian Ocean Tsunami crisis in 2004. The two descriptions focus mainly on events during the crises that relate to (crisis) communication, and to the transboundary nature of the disasters, and that can point to and help elucidate the communicative challenges. However, some information have been included in order to give a feel for the context in which the events take place. The descriptions are chronological.

4.1 Chernobyl disaster, 1986

4.1.1 The accident and initial clues

On Saturday 26 April, 1986, a test was carried out at Chernobyl's fourth reactor around 11 p.m., despite some previous hesitations. In the following hours, a series of decisions based on previous test results lead to a loss of control over the fission process in the reactor, and two major explosions occurred (Sundelius, Stern and Bynander, 2001). These explosions lead to the graphite moderators igniting, and with plumes of graphite smoke rising from the reactor, major radioactive fallout was carried along over big parts of western Soviet Union and eastern Europe during the night and the following day (Sundelius, Stern and Bynander, 2001; Nohrstedt, 2008).

On Sunday, a military surveillance station in Kaajani in Finland detects high levels of background radiation around 9 p.m (Sundelius, Stern and Bynander, 2001). These findings were reported to the Civil Institute of Radiation Protection, however Finish authorities chose to wait for confirmation of the findings, and for a clarification of the situation, before contacting the other Nordic countries (ibid.). In Sweden, routine samples are taken during the night, which are analysed the day after, clearly reveal higher radiation levels than usual (ibid.).

4.1.2 Sweden finds out the hard way

On Monday, 28 April, the radiation alarm at Forsmark nuclear power plant was triggered when an employee was detected to have unusually high levels of radiation on his shoes (Sundelius, Stern and Bynander, 2001). This lead to the first hypothesis among the Swedish authorities that there was a radioactive leak at Forsmark (Sundelius, Stern and Bynander, 2001; Nohrstedt, 2008). An investigation was launched; measurements were taken, and preparations for closing down roads to the power plant was made (Sundelius, Stern and Bynander, 2001). The Swedish Radiation Protection Institute, SSI ("Statens Strålskyddsinstitut"), was informed, and around 10.30 a.m. a decision to issue high alert was made, although the source of the radioactive contamination had not yet been found (ibid.). A crisis response team gathered at Forsmark, and at the same time another crisis response team was put together by SSI to evaluate the situation and act within the plans for domestic nuclear accidents (ibid.). The Swedish Nuclear Inspection Agency, SKI ("Statens Kärnkraftsinspektion"), were also informed causing them to put together their own crisis response team (ibid). The plant management at Forsmark decided to evacuate all non-essential personnel, who were brought to a sports field, where they were decontaminated before being allowed to go home (ibid.). The local radio station was informed about the higher radiation levels, and SKI was preparing an order to close down the reactors at Forsmark (ibid.). At this point reports from Studsvik's research reactor told of similar abnormal radiation levels, however these reports were discredited as errors of measurement (ibid.).

More and more departments and organisations were involved in the analysis and crisis management in Sweden, attempting to find out the source of the high radiation levels (Sundelius, Stern and Bynander, 2001). Swedish Defence Research Department analysed the air samples taken on the previous Sunday, and through cooperation with the Swedish Meteorological Survey they managed to track the flow of air, and the particles were found to originate in Soviet Union or eastern Europe, and later SKI reached the same conclusion through their own research and calculations (ibid.). The picture became clear, and the emergency at Forsmark was declared over. However, now there was a new problem: radioactive leakage somewhere in eastern Europe. The Department of Foreign affairs was told to contact the Soviet Union, Poland, DDR, and Finland to find out if any of these countries had any nuclear-related incidents (Sundelius, Stern and Bynander, 2001. Nohrstedt, 2008).

4.1.3 International communication

The attempts to communicate internationally did not stop there, however. The Director-General of the International Atomic Energy Agency (IAEA), Hans Blix, was contacted and asked to pass on the request for information to the member-states in IAEA (Sundelius, Stern and Bynander, 2001). Mr. Blix was former Minister for Foreign Affairs in Sweden, and he readily helped the Swedish authorities with this request (ibid.). The attempts to find any information through the official diplomatic channels proved to yield little to no results (ibid.). Although, in the evening around 7 p.m. the Soviet Union released a press statement through TASS (Telegraph Agency of the Soviet Union), saying there had been an accident at the nuclear power plant in Chernobyl in the part of the Soviet Union that is now known as Ukraine (ibid.). When this information was released Swedish experts compiled a list of questions regarding the status of the emergency and the details of the accident, and this list was passed on to Soviet authorities through the official channels (ibid.). The Soviet Union was being heavily criticised for staying silent for so long by the European countries (ibid.).

On the following day, Tuesday 29 April, Sweden's attempts to acquire additional information from the Soviet Union regarding the nuclear accident proved fruitless yet again (Sundelius, Stern and Bynander, 2001). However, through other, non-official channels, the Soviet Union was asking for technical assistance from SSI, SKI and from the Royal Academy of Science in Sweden (ibid.). Swedish authorities were now attempting to calm the Swedish public through press-releases and media, saying that the amount of radiation was not worse than if you were living in a house with radon in (Nohrstedt, 2008). Also, experts believed that the radiation levels would fall rapidly, provided that the fire in the Chernobyl reactor had been put out (Sundelius, Stern and Bynander, 2001). Milk-cows and grocery production sites were being tested for radiation levels, and SSI was appointed to manage information and coordinate it with other actors in Sweden (ibid.).

4.1.4 “Everything is under control”

The Soviet Union received more heavy critique from the Nordic countries on their management of the crisis, however, Finland was not so active in criticising the Soviet Union (Sundelius, Stern and Bynander, 2001). When West Germany asked for more information on the accident, a representative of the Soviet Union told them that the situation was “under control” (ibid.). Poland started to hand out iodine pills[1] to their citizens, and put restrictions on milk sales (ibid.). Contacts between the IAEA and the Soviet atomic energy agency lead to cooperation in regards to information and expertise (ibid.). A number of European countries, among them Sweden, started to “spontaneously” send radiation data to the IAEA, and thereby giving IAEA the responsibility of coordinating information on an international level (ibid.).

On Wednesday, the ambassador of the Soviet Union in Sweden, Boris Pankin, met the head of the political department of Swedish Ministry of Foreign Affairs, Jan Eliasson (Sundelius, Stern and Bynander, 2001). Pankin informed that the three undamaged reactors at Chernobyl were all turned off and that “the risk for continued fallout hence had been reduced” (ibid.). He also added that the initial silence from the Soviet Union was due to an underestimation of the gravity of the situation, and he promised that all new, and for Sweden relevant, information would henceforth be shared (ibid.). It was clear that this meeting, as well as the one with West Germany the day before, was an attempt from the Soviet Union to exercise diplomatic “damage control” (ibid.).

Supplies of water that did not circulate were recommended not to be used in Sweden, and a ban on import of goods from countries affected by radioactive fallout was issued (Sundelius, Stern and Bynander, 2001). During a government meeting, routines for emergency exchange of information between governmental departments, other departments and organisations, and the IAEA were decided (ibid.).

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[1] Potassium iodide protect thyroid glands from radioactive iodine. In an accident on a nuclear power plant, or in nuclear bomb fallout, volatile fission product may be released. These can be particularly dangerous to the thyroid gland because it may lead to thyroid cancer. By saturating the body with a source of stable iodide prior to exposure, inhaled or ingested products tend to be excreted, which prevents radioiodine uptake by the thyroid.

On Thursday, the 1st of May, a council of Soviet ministers and an official from the political section of the Ministry of Foreign Affairs of Sweden met at the Ministry (Sundelius, Stern and Bynander, 2001). This meeting was an initiative of the Soviet ministers, and an overview of the situation was handed over to the Swedish representative, together with assurances that the situation could be solved by the Soviet Union itself (ibid.). The Swedish diplomat explained that the report he had received was not enough to satisfy the request for information previously issued by Swedish Government (ibid.). Meanwhile, in his 1st-of-may-speech, Swedish Prime Minister Ingvar Carlsson asked for better exchange of information between countries with nuclear power, and he criticised the Soviet Union for not living up to the standard one could ask of a country with nuclear power (ibid.).

4.1.5 IAEA is invited to the site

On the following Sunday, May 4, the Soviet ambassador in IAEA invited Mr. Blix, along with one or two colleagues, to the Soviet Union for crisis deliberations, and to investigate the extent and situation of the accident (Sundelius, Stern and Bynander, 2001).

On Monday May 5th, Director-General Blix and two colleagues arrived to Moscow for consultations with Soviet radiation experts. COREPER (the constant representatives in the EG Council) had a meeting where they told the EG Commission to work out a plan to monitor the trade of groceries across Europe (Sundelius, Stern and Bynander, 2001). They also accepted a Dutch proposition for common instructions and guidelines regarding the amount of radiation that was deemed safe or not in groceries. (ibid.)

Wednesday, May 7, the Swedish government requested international measures in regard to nuclear security, and the Swedish representatives in IAEA were told to work for the establishment of such measures (Sundelius, Stern and Bynander, 2001). SKI received French satellite images from the scene of the accident, and these images generated concerns among experts that the fourth reactor was still burning, and might ignite the third reactor as well (ibid.). Polish authorities claimed that the ban on import against them was unjustified, as Swedish groceries contained the same amounts of radiation, and were not banned (ibid.). They also claimed that the import ban was founded on political agendas. IAEA's representatives in Moscow had meetings with Deputy Prime Minister Shcherbina, and the Soviet Minister of Energy (ibid.). On the following day they went to Kiev, and then from there in helicopter, to visit the scene of accident in Chernobyl (ibid.).

On Friday May 9, radiation protection experts from the OECD countries were deliberating in Paris regarding the possible expansion of the Chernobyl disaster to the third reactor (Sundelius, Stern and Bynander, 2001). The government of the Soviet Union issued a statement indicating that the claims of groceries from the Soviet Union being contaminated were “fabrications”, and that the import bans issued by the western countries went against the principles of fair trade (ibid.). On top of this, Soviet authorities sought help with tunnel constructions from Austrian experts, which implicated that a meltdown had occurred (ibid.). The delegation from IAEA reports however that the situation at Chernobyl power plant seems to be under control (ibid.).

Media played a large role in making the dissent among the scientific community larger, and aided in part to speculations about the effects on health (Renn, 1990). European countries' governments all suffered from a variety of issues to deal with, such as overlapping responsibilities, contradicting advice, and general chaos (ibid.). “Media coverage was merely a reflection on what actually happened in most countries”. (ibid., p. 160)

4.2 Indian Ocean Tsunami, 2004

4.2.1 The Boxing Day Tsunami

On Sunday, December 26, 2004, just before 8 a.m. local time, an earthquake occurred of the coast of Sumatra, Indonesia. The epicentre of the earthquake was about 250 km south of the Indonesian city of Banda Aceh. The quake would lead to a giant wave, now known as a tsunami[2], that devastated coastal areas chiefly in Sri Lanka, India, Indonesia and the Maldives (Hansén, 2005; Larsson, 2008). However, the coastal areas of Thailand, Malaysia, Burma, Madagascar and Somalia were also affected (Hansén, 2005). About 2 hours after the initial quake, the western coast of Thailand was hit by the tsunami (Hansén, 2005; Larsson, 2008).

At 08.10 a.m. local time Bangkok was hit by the earthquake. (Hansén, 2005; Larsson, 2008) Second in command at the Swedish embassy, Kaarlo Laakso, decided to evacuate his family from the 15 storey building they were living in (Hansén, 2005). Around 2 hours after this event, the Swedish embassy received a telephone call from Phuket, saying something was "very wrong" (ibid.). Water levels were high, cars were floating around, and many of the beaches were flooded. Something was instantly recognised to be amiss, and suspicions that it could have connections to the earthquake earlier in the morning were raised (ibid.). Attempts were made to contact the Swedish Ambassador, but he had just boarded a plane to Phuket for a weeks vacation, and could not be contacted, and the Embassy then contacted Stockholm (ibid.).

4.2.2 Swedish authorities are informed

At 10.40 a.m. (Bangkok time) Mr. Laakso called to Kerstin Melén, On-Duty Consular Official at the Swedish Ministry of Foreign Affairs ("Utrikesdepartementet", UD for short) (Hansén, 2005). She was in her home when she received the call, and were informed by Mr. Laakso about the earthquake and the reports coming in from the coast of Phuket, and that the situation seemed to be serious. When Mrs. Melén asked how many Swedes there were in the area, she was told that 10 000 - 20 000, maybe even as many as 30 000 Swedes were in Thailand (ibid.). Mrs. Melén knew that people were going to call the embassy and that they had to be prepared for the large number of calls that a disaster of this magnitude could generate (ibid.).

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[2] From Japanese 津波 ("tsunami"), literary meaning "harbour wave", or "port wave".

Mrs. Melén contacted the On-Duty Press Officer at UD, and informed him about what she knew, and that it was involving up to 30 times as many people as the MS Estonia disaster in 1994 (Hansén, 2005). She also informed her superior On-Duty Officer that this emergency could not be handled with the current routines and guidelines (ibid.). It was important to get information out through media (Hellman and Riegert, 2005). Mrs. Melén kept conferring with her superiors and co-workers, and soon reached the conclusion that it was important to know more (Hansén, 2005). She tried to contact a seismologist at Uppsala University, and she also tried to get in contact with a Rescue Services representative (ibid.).

The scale of the disaster quickly made it into world wide news, and information was quickly spread through radio and Internet, more or less in real-time (Hellman and Riegert, 2005). The first Swedish news of the earthquake came through the news agency TT, at 03.35 (Swedish time), an hour and fifteen minutes after the earthquake, saying there had been a big earthquake in Sumatra (ibid.). 05.42 (Swedish time) the first news about the tsunami was reported (Hansén, 2005; Larsson, 2008). BBC, CNN and SkyNews were reporting about the disaster from the start (Hansén, 2005; Hellman and Riegert, 2005). Never before has a catastrophe given rise to such a thorough news coverage (Hellman and Riegert, 2005), and we will be touched upon this in more detail later.

Swedes in the affected areas of the tsunami and earthquake started early on to contact the Embassy, as well as UD's offices in Sweden, the national police authority, and the local police in the counties and boroughs they were from (Hansén, 2005). SOS Alarm, the central emergency response company in charge of the main emergency number in Sweden[3], also received a lot of calls, that they in turn redirected to the emergency services, or governmental departments (ibid.). The calls were from vacationing Swedes in Thailand as well as relatives at home in Sweden. The amount of calls to UD were soon deemed too much for the few receptionists that were working at the time, and more personnel were called in to work (ibid.).

At 07.28, the Swedish Rescue Services receives an alarm and a request from UNDAC (United Nation Disaster Assessment and Coordination) regarding available resources and whether any help could be sent from Sweden to Sri Lanka (Hansén, 2005). Approximately 30 minutes later the Rescue Services replied that they had resources and personnel to send, and with very short notice if needed (ibid.). The director-general for the Swedish Rescue Services was in the western parts of Sweden for christmas holidays, but was informed about the situation and the request from UNDAC around 08.00 (ibid.).

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[3] The emergency number in Sweden is 112.

4.2.3 Disaster in Thailand, Sunday in Sweden

In Sweden it was a Sunday morning, Boxing Day, and nothing was showing any signs that Sweden was in a state of disaster. In Thailand on the other hand, crisis management was in full swing! The airplane to Phuket that the Swedish Ambassador should have taken never took of, due to not having landing permission in Phuket as the airport was flooded (Hansén, 2005). As soon as the Ambassador got of the plane, he called the Honorary Consul in Phuket and received a situation report: beaches and buildings were destroyed (ibid.). The Ambassador told the Honorary Consul that he will try to get to Phuket as soon as possible, and the Ambassador then called the Embassy and ordered a state of emergency: extra personnel was called in according to the Embassy's response guidelines (ibid.). He did this from a taxi as he tried to gets to the embassy. Upon arrival to the Embassy he informed the staff that he would try to get to Phuket with a priest and a local consular official, to establish a local crisis response centre (ibid.). Plans were to go there by car, and it was estimated that it would take 8-10 hours (ibid.). More people was called in to the Embassy in preparation for the large number of calls that were expected (ibid.). Among the locally employed staff were both Thai speakers and Swedish speakers that could answer the phones (ibid.). However a major problem was that a large part of the staff was away for the holidays, and a schedule to make sure that the Embassy had staffing 24 hours of the day were made for a few days ahead (ibid.). A Press Relation Official from the Swedish Embassy in Paris happened to be in Thailand for vacation, and volunteered with helping out with working on updating information on the Embassy's webpage (ibid.).

In the Swedish Embassy in Bangkok, there was no confusion or uncertainty about what had happened, and what needed to be done (Hansén, 2005). But in the Ministry of Foreign Affairs (UD), matters were different. After the initial telephone calls from Thailand to Sweden, informing about the situation in Phuket and other costal areas, things were very confused (ibid.). The first fax from the Embassy in Bangkok arrived to UD at 08.00 a.m., confirming earlier information given over the phone, but also stating that there were injured and casualties, that a lot of rumours circulated, confirmed information was scarce, and Thailand's government had initiated their disaster relief work (ibid.). But due to the chaotic situation at UD at the time, the fax wasn't discovered until 1,5-2 hours later (ibid.). Moreover, the fax wasn't addressed to any of the higher Ministers, and were therefore not handed over to them at all, delaying their involvement until much later (ibid.).

Among the authorities in Sweden, the matter was initially seen as a consular problem, and nothing to bother the Prime Minister, or the Minister of Foreign Affairs with (Hansén, 2005). Not until a meeting on the following day, Monday, did most of the higher Ministers and officials in charge realise the magnitude of the disaster, and especially what it meant for Sweden (ibid.). During the meeting the higher ministers had direct contact over phone with the Swedish Ambassador, who then was in Khao Lak, and could hear his report of the situation and the extent of the devastation (ibid). The whole crisis organisation in Swedish Government was characterised by having no structure or organisation before this meeting (ibid.). However, even after the meeting, there were no clear organisational structure of how things should be done, although most knew what needed to be done. (Hansén, 2005)

The tsunami disaster of 2004 was then one of the worst tragedies in modern history, and approximately 226 00 - 300 000 people are believed to have died (Hansén, 2005; Tolentino, 2007; Larsson, 2008.). Even Sweden was affected by the disaster, as Thailand is a very popular vacation spot for winter-tired Swedes (Hansén, 2005; Larsson, 2008). At the time of the tsunami, as many as 30 000 Swedes were believed to have been in disaster-related areas (Hansén, 2005).

4.2.4 Media coverage

Never before has a catastrophe given rise to a so thorough news coverage all over the world (Hellman and Riegert, 2005) That's why we will take a deeper look at how media covered this event. The tsunami disaster in the Indian Ocean was a very unusual event of it's kind, as it came completely out of nowhere (ibid.). It also had large consequences for many people around the world (ibid.). The way the event was reported in media, as well as how it was perceived among the public audience, was very dependent on culture (ibid.). CNN reported mainly from different locations and how the situation on these locations change from hour to hour, as well as putting a lot of weight on trying to give a sense of "nowness", that everything was unfolding as the reporter was speaking (ibid.).

For Swedish TV4, the disaster was a Swedish crisis, and they report from places in Thailand where Swedish tragedies have happened (Hellman and Riegert, 2005). They also focused a lot on conveying the experience of the disaster to the home audience in Sweden, and make the audience identify with the victims (ibid.). It's not something that happened over there, it is something that has happened to Sweden. Most of the interviewed and portrayed persons in the news were Swedish, to portray that the tsunami caused Swedish people to suffer (ibid.). When reporting on the state of the local government or populace, a more factual approach centred around numbers and statistics were used. (ibid.)

5 Analysis/Findings

This chapter presents the main themes of communication challenges found in the Chernobyl, and the Indian Ocean Tsunami crises. Each theme is described, and then illustrated with examples from the case descriptions.

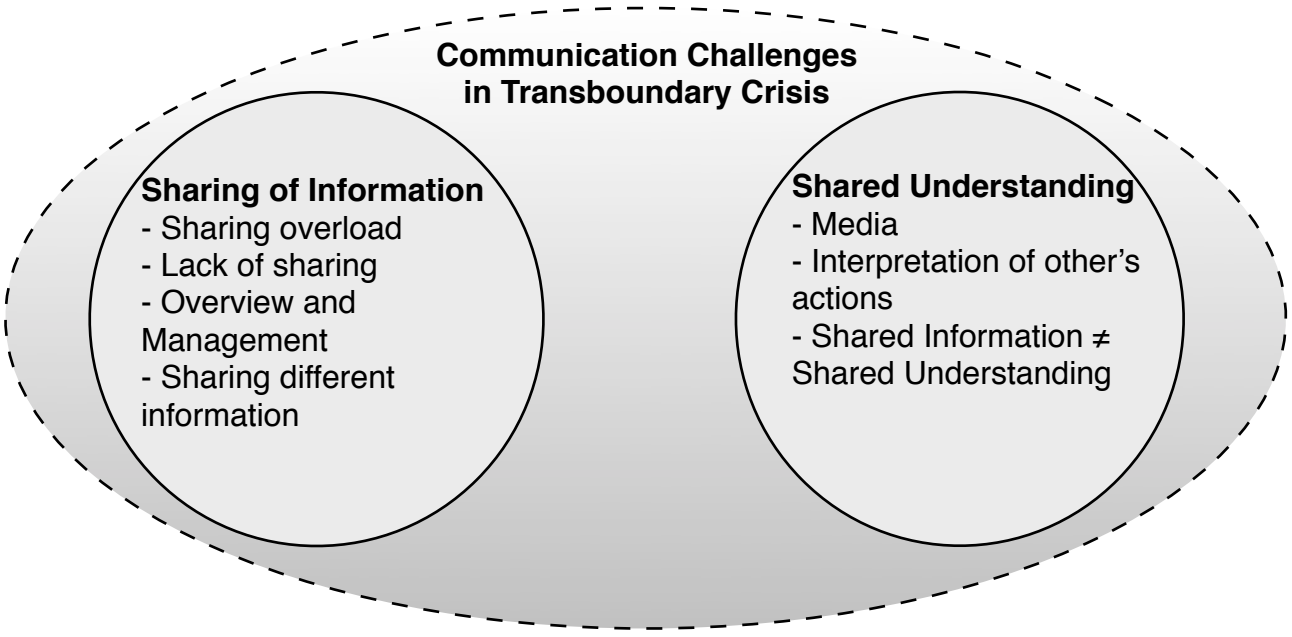

Fig. 7. Two themes of Communication Challenges in Transboundary Crises and their subcomponent/aspects

5.1 Theme 1 - Sharing of information

Communication with others involves several different dimensions: language, body language, context, cultural background, interpretation of meaning, etc.. On top of this crisis adds the dimensions of time pressure, high levels of uncertainty, and information overload. This combination leads to that the sharing of information becomes even more problematic. Larsson (2008), and Hale, Dulek and Hale (2005) state that there is a high demand for information in crisis situations, and that the sharing of information plays one of the most important parts in crisis response.

There are four aspects of sharing information that have been found to present communicative challenges in the two cases. These are *lack of sharing*, *sharing different information*, *sharing overload*, and *overview and management of shared information*.

5.1.1 Lack of sharing

As mentioned in the beginning of this chapter, there is a high demand for information in crisis situations. (Larsson, 2008; Hale, Dulek and Hale, 2005). If there is no information to base decisions on, or to describe what has happened, crisis actor often find themselves fumbling in the dark.

In the Chernobyl case Sundelius, Stern and Bynander (2001) mentions that the Soviet Union did not inform their neighbours about the accident at the Chernobyl Power Plant. He further mention that when the accident happened, and radiation started to leak, they stayed silent, nor did they respond to initial inquiry whether they have had any nuclear technical accidents. This led to the Swedish government initially believing they had an accident at the Forsmark power plant, and set in motion the response plan for domestic nuclear disaster (ibid.).

5.1.2 Sharing different information

Even when information is shared, it can sometimes lead to confusion and misinterpretations when receiving differing information. Even more so when the differing information comes from the same source.

When the Soviet Union started to communicate to the world, and admitted that there had been an accident at the Chernobyl nuclear power plant, their official stance were that it was something that could be taken care of within the Soviet Union (Sundelius, Stern and Bynander, 2001). However, through unofficial channels Soviet asked for help and guidance with scientific knowledge and different forms of constructions. (ibid.)

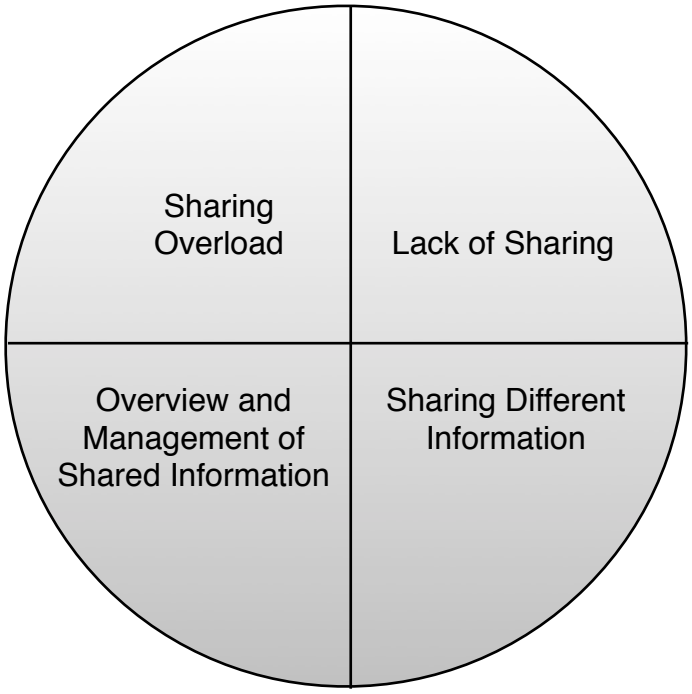

Fig. 8. Aspects (subcomponents) of Information Sharing

5.1.3 Sharing overload

Sharing overload is when too much information flows, and starts to turn into noise, and it becomes harder to process all the information and act upon it (Falkheimer and Heide, 2006; Larsson, 2008).

During the 2004 tsunami, the Swedish Ministry of Foreign Affairs received a multitude of calls from affected Swedes in Thailand, from their relatives in Sweden, from police departments across Sweden, and from SOS ALARM (Hansen, 2005). The Ministry was understaffed, and the chaotic situation lead to a fax from the Embassy in Bangkok being overlooked for a few hours, a fax outlining what had happened in Thailand, and what actions were taken and planned by the Embassy. (ibid.)

5.1.4 Overview and management of shared information

With a larger flow of information, and numerous actors involved in a crisis, it is not easy to share information properly, as seen above. The fourth aspect of Sharing Information is management and overview of information. Sometimes these are considered by crisis management, sometimes they are not.

During the Chernobyl crisis, the International Atomic Energy Agency (IAEA) received the responsibility of coordinating and managing information from all the affected European countries, solely because the countries started to send their measurement data of radiation and other related information to IAEA regularly (Sundelius, Stern and Bynander, 2001). In Sweden, the Swedish Radiation Protection Institute (SSI) was appointed by the government to handle the coordination and management of the information between Swedish departments and actors. (ibid.)

However, in the 2004 tsunami case, there was no such organisation to be found in the communication between departments and actors. Hansén (2005) mentions that people called to police departments, SOS ALARM, and the Ministry of Foreign Affairs, and each of these organisations did not believe it was their area of responsibility, and simply passed on the information to other institutions.

It is necessary to have a clear picture of what has happened, and areas of responsibility for different actors, in order to establish an understanding of the crisis. Therefore this fourth aspect is closely connected to our second theme: Shared Understanding.

5.2 Theme 2 - Shared understanding

According to Lustig and Koester (2009), each culture has it's own view of the world. This affects what people see as meaningful, how they interpret what is said and what happens around them, their judgement towards other cultures, and their sense of safety. Communication can be seen as the process of exchanging information in order to establish a shared understanding (ibid., p. 25)

There are three aspects of sharing understanding that have been found to present communicative challenges in the two cases. These are *shared information ≠ shared understanding*, *interpretation of other's actions*, and *media*.

5.2.1 Shared information ≠ shared understanding

The first theme presented above was about sharing information, and brought up some instances of either lack of shared information, or too much shared information. However, what if the shared information is ignored or not considered properly. Shared information need not be the same as shared understanding, which makes up the first aspect of this theme.

For instance, the Swedish Embassy in Bangkok quickly got a good picture of what had happened in the 2004 tsunami, and started the crisis response work in Thailand immediately (Hansén, 2005). However, despite the fact that they shared all their information to the Ministry of Foreign Affairs in Stockholm, the Ministry and the Swedish Government did not react properly at the initial stage of the crisis, and proper crisis response from Sweden was delayed a few days (ibid.). The seriousness of the event did not, somehow, transmit along with the factual information about the crisis in Thailand.

5.2.2 Interpretation of other's actions

No matter what the situation, people will create meanings, and these meanings will be different between receiver and sender (Falkheimer and Heide, 2006). Everything done in the public space is interpreted by everyone who sees the action or event. Even more so for the actions of governments, and how other countries interpret these actions, which is another aspect of this theme.

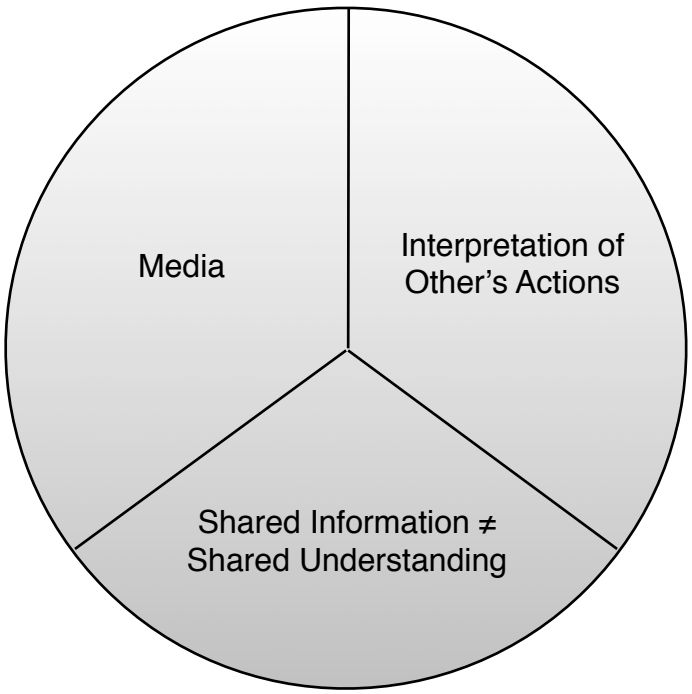

Fig. 9. Aspects (subcomponents) of Shared Understanding

Sundelius, Stern and Bynander (2001) states that during the Chernobyl crisis, there were no common guidelines for how to deal with the radiation leakage, and what was considered dangerous or not. He also emphasises that Swedish government said that the leaked radiation was not worse than the radiation in some houses. However, when Poland started to issue iodine pills and put restrictions on milk sales, doubts spread among the Swedish population whether their government took the situation serious or not (ibid.).

Sundelius, Stern and Bynander (2001) also states that many of the countries in western Europe had issued bans on import of groceries from countries in eastern Europe, which had been deemed to have received too much radiation. However, both Russia and Poland disputed these import bans because they did not have higher radioactive contamination in their groceries than Sweden, for example, and saw these bans as a political statement made by the western European countries (ibid.).

5.2.3 Media

Media plays a large role in crisis, as mentioned before. However, media does not only help the sharing of information, it can also affect the way the crisis is understood and interpreted. This makes media the third aspect of this theme.

The increasing importance of communication in crisis is due to many factors. Among these factors, one is that a working crisis management needs a close contact to its environment, and the different actors within the crisis (Falkheimer and Heide, 2006). However, the demand, and the need, for information from the environment grow as well (Hellman and Riegert, 2005). Media plays an increasing role in propagating information about what has happened (ibid.). 20 years ago it was mainly radio and TV (Renn, 1990), but in recent years Social Media and Internet have been given a more important role due to its nature of being more instant than radio or TV (Starbird and Palen, 2012).

In the two cases studied, we can see that media played a role in both of them. Renn (1990) presents the argument that during the Chernobyl disaster, TV and radio helped to spread dissent among the scientific community, and to speculate on the health effects of the radioactive fallout. The situation among many of the European countries was chaotic and confused, as there were no international standard of contamination, and no plans of action for radioactive accidents such as Chernobyl (ibid.). Media tended to only mirror the speculation and confusion that existed in the international community at the time. (ibid.)

Media played a larger role in the 2004 tsunami. Hellman and Riegert (2005) evaluate CNN to have been very keen on reporting from most of the affected sites during the tsunami, and to build a feeling of "nowness" for the audience. They further state that CNN also mainly presented factual information about the events, and wanted to act as a source of information for the public and the authorities alike. In contrast to this, Swedish TV4 reported mainly from Sri Lanka and Thailand, and their angle was that it had been a disaster for Swedish people, and that Swedish authorities didn't act fast enough (ibid.). The different ways these two news companies described the same event is a good example of how the same event can be interpreted and presented in different ways.

6 Discussion

This chapter presents a discussion of the findings in the analysis. The themes and aspects will be discussed in turn.

6.1 Aspects of Shared Information

6.1.1 Lack of sharing

Chernobyl came as a surprise to many European nations. The magnitude and transnational character of the Chernobyl disaster lead to risk management institutions in most countries being unprepared (Renn, 1990). Most risk management institutions among the European countries had "no emergency plans for coping with accidents that occurred outside of their territory". (ibid., p. 152)

The Chernobyl disaster started out as a "possible Forsmark disaster" in Sweden. However, as more and more readings and evidence pointed away from Forsmark towards eastern Europe, the crisis turned from a Swedish matter to an international one. Swedish authorities suddenly had to deal with an array of new crisis decision problems; like identifying the source of the radioactive contamination, determine how serious the situation was, and make sure how the chain of command looked like (Nohrstedt, 2008).

This example illustrates the importance of information when making decisions. With little or no information at hand, decision makers are left to assuming what has happened, and that is always a precarious thing to do. Hence, lack of information sharing presents a clear challenge in crisis management, when a good picture of the events is necessary, and already hard to achieve due to all the other challenges in a crisis situation.

6.1.2 Sharing different information

It is apparent that the Soviet Union were not ready to communicate as openly or directly as the western European countries may have wanted. Demands for information and answers through official channels were ignored or met with "everything is under control" (Sundelius, Stern and Bynander, 2001). However, at the same time, the Soviet Union was contacting other countries for technical assistance and expertise and help via unofficial channels (ibid.). A difference in crisis management culture, and a difference in attitude towards communication in the international room, can be argued to be the reason for this. This also lead to some confusion among the other countries, as they received two completely different messages from the Soviet Union, and they did not understand why. If they wanted help, why did they say that everything was under control?

From this can be learned that the sharing of information is not always easy, and in international contexts information can be multifaceted. The Soviet Union might have had various reasons for not sharing information with the western European countries: lack of time, lack of functions such as having parts of the infrastructure knocked out, or political reasons. These are all factors that characterise transboundary crises, and will cause communicative challenges for the sender.

On the receivers end, it is difficult to discern what the sender is trying to say, as messages on different channels give conflicting information. With knowledge of the sender's intentions and goals, it can help crisis communicators to sort between the many messages, and pick out the information that is relevant.

However, the multitude of messages sent, with conflicting information, take up more space in the communication channels, which leads to the next aspect.

6.1.3 Sharing overload

More and more organisations and services for dealing with crises of different kinds have been established in recent years. However, this in itself can lead to problematise crisis response. As more organisations and services have to communicate with each other, and with governmental departments and ministries, the media, and the public, the issue of information and communication overload becomes more problematic. As Falkheimer and Heide (2006) states, communication becomes more complex, which could lead to poor communication in one or many channels, and is one cause to the rise of crisis. To much information can turn into noise, and make it harder to understand any of it.

6.1.4 Overview and management of shared information

Sundelius, Stern and Bynander (2001) and Nohrstedt (2008) both mention that IAEA stepped in as a coordinator of information and expertise. This helped very much as one single organisation got an overview of the crisis and could see what needed to be done. Also, it might have been the case that the international organisation had more authority behind it when talking to individual countries, compared to country-to-country communication. The Soviet Union seemed more comfortable with releasing information to IAEA than to an individual country (i.e. Sweden). Sundelius, Stern and Bynander (2001) also states that the Soviet Union invited IAEA to investigate and cooperate to solve the crisis. This might have been a political move, to calm the Western countries' authorities, however (ibid.).

SSI was appointed the coordinative role in Sweden, and the actions and responsibilities SSI got mirrors very much the roles and responsibilities of IAEA, but on a national level (Sundelius, Stern and Bynander, 2001). It seems that a form of hierarchical structure automatically arose in the crisis, but a hierarchical structure made ad hoc, as none of this was prepared pre-crisis. This structure was recognised and accepted by other crisis actors, and lead to easier flow of communication and information, as it was clear where information should be directed.

Another interesting thing is the proactive actions taken by the Minister of Energy in Sweden, who told the Ministry of Foreign Affairs, and IAEA, to start investigating which country had had a nuclear accident. It could be argued that it was not her responsibility to do this, but the quick initiative and actions helped speed up the crisis response. A similar motif is seen in the Tsunami case, as the Embassy acted very proactively, informing the Ministry of Foreign affairs early on about what had happened, and what actions had been taken so far. This is also seen in Mrs. Melén's actions in Stockholm, as she wanted to go to the ministry and start the preemptive planning straight away. However, the positive gain from her quick response were cancelled out but constraints from her superiors, who told her to stay at home.

It appears to be the case that the surprising nature of a crisis also call for a spontaneous hierarchical structure of information flow, and for voluntary individuals to take unconstrained actions, in order to quickly react and establish a good overview of the information sharing, and of the state of the crisis. This aspect is also closely related, and in fact essential to the second theme, Shared Understanding.

6.2 Aspects of shared understanding

6.2.1 Shared information ≠ shared understanding

Despite the good sharing of information done by the Embassy in Thailand, the Swedish government officials seemed very unwilling to react to the Tsunami disaster, as compared to the Chernobyl disaster (Hansén, 2005). This could be due to the fact that many of the officials were on christmas vacation at the time of the Tsunami. But even the ones still on duty, and in charge, seemed to take the situation very lightly.

This shows that even if one manages to overcome the obstacles for sharing information, for example no or little information, different messages, information overload, different languages, and management of the large information flow, it is all for nothing if the information is not understood or taken to heart on the other end.

Interestingly, Tolentino (2007) mentions that around a year before the Indian Ocean Tsunami, there was a conference held about early warning systems. He also mentions that at this conference it was discussed how issuing early warnings could reduce the effects of natural disasters. However, at the time of the Indian Ocean Tsunami, emergency plans that functioned were scarce among the affected countries. Even when warnings were issued the plans and drills did not matter, as they had not been practiced (ibid.).

The way the public interprets a warning message from experts or officials is affected by previous experienced crises, according to Harro-Loit, Vihalemm and Ugur (2012). They also state that the socio-demographic background of a certain group of people, and the way this group usually deal with information, plays a large role for the cultural experience of crises, and how the group define and identify crises. Therefore past crises and disasters influence the perception of messages in future or ongoing crises (ibid.).

Falkheimer and Heide (2006) states that multicultural nuances will be more important to consider for public relations practitioners in the future (ibid.). It is necessary to focus on how meaning and context is created and valued in a culture in order to understand it. Edward T. Hall (1976) states that the context of a message includes much information that is not a part of the message itself, but consists of information that might be more important. Different cultures uses context to create meaning in different ways (ibid.). No matter what the situation, people will create meanings, and these meanings will be different between receiver and sender (Falkheimer and Heide, 2006).

“Communities which have more than once been hit by certain types of disasters often develop so-called ‘disaster subcultures’, in which the exchange of knowledge, exercises, and other preparations are of central importance” (Helsloot and Ruitenberg, 2004, p. 101, cited in: Harro-Loit, Vihalemm and Ugur, 2012, p. 28). When such a subculture exists, it is easier to create understanding from less amount of information, as certain tell-tale signs and clues are searched for. However, a crisis might not always develop in the same direction, or be caused by the same phenomenon every time, and being too reliant on early signs could be disastrous (Harro-Loit, Vihalemm and Ugur, 2012).

6.2.2 Interpretation of other’s actions

Edward T. Hall (1976), one of the initiators of the field of intercultural communication in the 1950’s, emphasises the *context* of a message. According to Hall (1976), the context embraces information that is not included in the message itself, and oftentimes this information is more important than the message. The significance and usage of context to produce meaning varies between languages and cultures (Falkheimer and Heide, 2006).

As stated by Sundelius, Stern and Bynander (2001), in the Chernobyl case, Poland gave their people iodine pills to counter the effects of radiation, and Austrian parents were recommended to keep their children inside and not let them play in sandboxes. At the same time Swedish officials said that there was no cause to be worried or to take any preventive actions (ibid.). This can be seen as a type of international communication, as different cultures deals with the same problem in different ways, and their actions are interpreted in different ways by other cultures. "Why are they doing it, but we aren't?" This can create anxiety and fear among the population of a culture (Hale, Dulek and Hale, 2005).

This can, of course, turn into an issue of information sharing, with different information from one's government and from the interpretation of other's actions.

The ban on imported goods from some countries, like Poland and the Soviet Union, that were deemed to be too heavily radiated, is a further look at how international actions can be a form of communication. Many of the "banned" countries complained that the banning was purely political and discriminating in nature, not based on fact. An argument was that there were no ban on Swedish goods, and we had received the same levels, if not more, of radiation than many of the banned countries (Sundelius, Stern and Bynander, 2001). This again shows that any government's action can be interpreted by other governments.

6.2.3 Media

The difference in coverage of the same event by media is another manifestation on how cultural differences affects how we communicate and how we describe the world around us. CNN's factual and informational reports painted a very different picture from Swedish TV4's reports, which were heavily angled towards the Swedish audience. How media chooses to report on a crisis will play a large role for the public's understanding of that event.

However, Larsson (2008) states that a clear experience in crisis management and communication is to continuously issue press releases, and let media work close to the management of the crisis. The information that is propagated must be quick, complete, open, continuous and reliable (ibid.) Hale, Dulek and Hale (2010) states that communication with the public is critically important in crisis situations, and public relations is an important part of all the communicative activities needed during crises.

It is as important for the crisis actors to communicate what they are doing to the public via different media, as it is for the actors to receive information via different media, in order to keep the public calm, retain the trust, and to keep the crisis from spreading across functional or geographical boundaries.

6.3 General Discussion

6.3.1 Chernobyl

Nohrstedt (2008, p. 257) states that "in response to history's most devastating nuclear accident, several European governments decided to restrict the use of nuclear energy", However, this was not a new idea inspired by the disaster. Plans on restricting, slowing down or cancelling the use of nuclear power had already been made in these countries before the disaster, and they only gained more motivation afterwards (ibid.).

Among some of the advices for future improvement in emergency response, Renn (1990, pp. 162) writes "within the European Community or other international bodies, standards for radiation levels that require protective actions should be determined and promulgated." As mentioned in the case description, the EG Commission approved of a Dutch proposition of common guidelines in regards to levels of radiation in groceries. Before Chernobyl there was no common standards or guidelines (Sundelius, Stern and Bynander, 2001).

In the aftermath of the Chernobyl disaster, the concept of safety culture rose. It is the norms and rules in a given organisation that make up the core of a safety culture. These norms and rules will act as a guideline for how members of the organisation may behave, and which actions are deemed as being of risk or not. (Pidgeon, 1991) Hence this is the Crisis Avoidance phase of a crisis, where you implement routines and plans for avoiding crises. However, when it comes to a safety culture, it is taken a step further than only routines and plans, and whole set of beliefs, values and meanings are taught to the members of the safety culture, to invoke a behaviour of caution and thinking actions through before acting to rash.

6.3.2 Indian Ocean Tsunami

The Indian Ocean Disaster 2004 made for an extraordinary event in Swedish history: to begin with, it seemed to be more than the Swedish governmental departments could handle (Hirdman et al, 2005). But it's not only in Sweden that the disaster stands out. No other natural disaster has affected so many people's lives in recent times, as somewhere between 226 000 - 300 000 people were killed (Hansén, 2005; Tolentino, 2007; Larsson, 2008). This disaster has inspired many people in the international community to find new and more effective ways of preventing similar catastrophes, and in the future avoid the high loss of lives if a similar disaster ever occurs again (Tolentino, 2007).

However, the Indian Ocean Tsunami has served somewhat as a wake-up call: after the tsunami, experts saw opportunities, even in areas not affected, for improvement in disaster prevention. One example is the "creation of regional and international emergency response networks" (Tolentino, 2007, p. 148). There were standards and norms that internationally address worldwide trade, human rights, to stop the spread of nuclear weapons, etc., but there were nothing to address dealing with and preventing disasters (ibid.). Through the crisis management and the aftermath of the disaster, it has been seen that there is a need to find a new management system for the countries that are prone to disasters, and that are underdeveloped (ibid.). Tolentino (2007) also writes that these new systems should include the development of institutions and warning systems that encourage action, and lead to better prevention of loss of human lives, involve the local people and organisations, and they should build on an principle of voluntarism.

Very little international contact during the 2004 tsunami relief work could be found, as compared to Chernobyl for example. In their report of how the disaster management at the Ministry for Foreign Affairs worked, Hirdman et al. (2005) concluded with some advice for the future. One that popped out when reading through these was "When a disaster happens, all contacts, national and international, should already be worked out" (ibid., pp 363). Why did it take one of the worst catastrophes in Swedish modern history to realise this? One would think that in 2004, we should already have enough international guidelines, response plans, and contacts worked out to quickly resolve a disaster situation.

Hirdman et al. (2005) also mention a bit regarding transboundary communication, that some of the more practical aspects of managing a crisis is to know the area well, have personal contacts, and to know the language. These are mentioned as practical aspects, but I would rather say that these three are crucial when dealing with any form of crisis communication.

7 Reflections and future studies

This dissertation set out to investigate the challenges that communication presents in transboundary crises, and to present the major themes resulting from the analysis. In this chapter, reflections upon the study is given, as well as suggestions for future research.

7.1 Reflections

The choice of doing a desk-based research study may at a first glance seem as an easy option for doing a study. This is not the case however, as a desk-based approach could in fact be more complex and challenging than, for example, a quantitative study. One needs to find high-quality research articles, reports, and other official data, and judge their appropriateness, as well as trying to understand the perspectives from which the sources are written. A desk-based research can also be time-consuming.

During the course of writing this thesis, the work done by Falkheimer and Heide (2006), as well as the work done by Ansell, Boin and Keller (2010), have been of great inspiration and influence. They have highlighted the issues of multicultural crisis communication, and transboundary crises, and it is partly on their research this thesis stands.

This study began with an interest to do a comparison of the intercultural challenges in crisis communication between the Indian Ocean Tsunami 2004 and the 2011 Tohoku Earthquake in Japan. As it was similar kinds of disaster, relatively close to each other in history, and both happening in the Asian part of the world. However, the 2004 and 2011 tsunamis also had a number of differences, such as developing vs. developed countries, essential tourism industry vs. non-essential tourism industry, and differences in crisis response plans. It would have been interesting to see if these similarities and differences showed in the intercultural communication during crisis response. However, given the time-constraints the focus of the thesis became the communication challenges in transboundary crisis.

7.2 Suggestions for future studies

The field of crisis communication is a relatively new one and more research is needed to further the knowledge in the area. It is evident that there is a scientific interest in the field of communication in crisis context, but it would be satisfying to see even more resources and attention put in the field. Studying communication under extreme conditions is a very good way to see how people actually communicate, and can always help to simplify or ease the everyday communication as well. If given more time, or a chance for continued research, it would be very interesting to look deeper into the communication challenges of in a larger number of transboundary crises. It would be very interesting to see how the themes found in this thesis are manifested on a larger scale, and in more of the disasters that has happened.

As transboundary crises crosses geographical and cultural borders, an investigation of the intercultural aspects of transboundary crises would also be of great interest. This study has shown how the sharing of information can be troublesome in these types of crises, as well as creating a shared understanding for the events. Culture is a set of shared interpretations about beliefs, values, norms, which affect the behaviours of a group of people (Lustig and Koester, 2009), could conceivably contribute with an additional set of challenges, or even be able to explain why certain challenges arises, and how to avoid them. As mentioned in 6.2.1, Edward T. Hall (1976) states that different cultures uses context to create meaning in different ways.

Tolentino (2007) writes that the 2004 tsunami disaster has inspired many people in the international community to find new and more effective ways of preventing similar catastrophes, and in the future avoid the high loss of lives if a similar disaster ever occurs again. A comparison of the Haiti Earthquake and the 2011 Tohoku Earthquake in Japan, to see if any lessons were learned, or if the same intercultural challenges keep appearing would be rewarding for future research to investigate.

8 Conclusion

This thesis has explored the challenges of communication in transboundary crisis situations. Following a literature-based analysis of two crisis events, Chernobyl in 1986 and Indian Ocean Tsunami in 2004, two major themes has been discerned: *Sharing of Information* and *Shared Understanding*. Not only does a multicultural crisis present challenges in sharing information between crisis actors across organisational, geographical, political, and time boundaries, but also present challenges when creating shared understanding of the information that is shared. The main contribution of the study has been to highlight the role of communication in crisis management and response, and the problems associated with actually getting both pure information and meaning across cultural, geographical and political borders.

Based on the findings in this thesis, future research should further explore how crisis actors share information and arrive at a shared understanding in transboundary disasters and crises. This is important to successfully develop both theoretical and practice-based knowledge on how to improve communication challenges in the field of crisis and emergency management.

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