THESIS

DISASTERS IN THE MEDIA: A CONTENT ANALYSIS OF THE MARCH 2011 JAPAN

EARTHQUAKE/TSUNAMI AND NUCLEAR DISASTERS

Submitted by

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ABSTRACT

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This cross-cultural study analyzed online newspaper stories about the March 2011 Japan earthquake/tsunami and nuclear disasters from two nationally representative newspapers: the NYTimes.com in the United States and the *Yomiuri Shimbun* in Japan. This study investigated stories published between March 11, 2011, and April 15, 2011. These online news stories were examined to determine their use of disaster myths, past disasters, media hype, and directly quoted sources.

Results show that few disaster myths were used overall; however, there was a difference in the number of panic flight myths used in the newspapers studied.

References to past disasters were also measured on whether or not they were in the story. It was more common that stories did not mention a past disaster when reporting about the March 2011 Japan earthquake/tsunami and nuclear disasters. The NYTimes.com used more past disasters in its stories than did the *Yomiuri Shimbun*; Chernobyl was the most frequently mentioned past disaster.

Results also show that there was no evidence of a nuclear crisis media hype in the newspapers during the time period analyzed. The study also investigated differences in the use of sources by the two newspapers. Counter to predictions, the *Yomiuri Shimbun* did not use more official sources than the NYTimes.com.

The results suggest that culture played a role in the two newspapers covered the disaster.

A closer investigation into each of the variables investigated in this study and the role of culture in reporting about disasters may be warranted in future research.

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INTRODUCTION

On March 11, 2011, a powerful and devastating earthquake struck off the east coast of Japan. The Great Tohuku earthquake registered at 9.0 on the Richter scale and caused a tsunami with waves as high as 33 feet in some areas. The tsunami hit minutes after the earthquake struck and thousands of people had little to no warning to evacuate. Places like Miyagi, Japan, were almost wiped out, with thousands dead and thousands more homeless. As of June 20, 2012, the reported death toll from the earthquake and tsunami was 15,863 and 2,949 were still missing (National Police Agency, 2012). In the wake of these events, three of Japan's nuclear reactors showed signs of failure, causing a nuclear crisis. As much as 30 percent of Japan's power comes from its 55 nuclear reactor plants spread throughout the island nation (World Nuclear Association), and a loss in nuclear power would result in rolling blackouts and evacuations for miles around the damaged nuclear plants.

The devastating earthquake and accompanying tsunami and nuclear crisis produced countless images, videos, and stories; Japan and its citizens were heavily covered world-wide in the news media in the days and weeks that followed. This study seeks to answer the overarching question "Does culture affect the framing of disaster news stories?" In particular, I am interested in explaining the effect that culture may have on the prevalence of disaster myths, media hype, and gatekeeping. This study also sets out to test Hofstede's five dimensions of culture and its ability to predict how newspapers from two cultures will cover a disaster.

During a crisis, people turn to the media (Elliott, 1989; Rozario, 2007; Wilkins, 1985). Audiences turn to the television or Internet looking for the most updated information about the death toll and destruction. Within the disaster areas, people want information on how to survive

and instructions on whether they should evacuate and how to get food and water. Those outside the disaster areas want to know whether their loved ones survived and the scope of the damage.

The way disasters are framed in the media can be a sign of how much the media understand disasters. Further, these frames may influence how the general public understands and responds to disasters and how disaster recovery unfolds. For example, studies have shown that news media often perpetuate disaster myths (e.g., Tierney, Bevc, & Kuligowski, 2006; Scanlon, 2007; Solnit, 2009) and generate wall-to-wall news coverage, also known as media hypes (e.g., Vasterman, 2005; Vasterman, Yzermans, & Dirkzwager, 2005; Wien & Elmelund-Praestekaer, 2009). Additionally, some studies have found that the gatekeeping aspect of news production is lacking during disasters, which contributes to conflicting and confusing news stories (Scanlon, Luukko, & Morten, 1978; Scanlon, 2007).

Large-scale disasters, such as the one striking Japan, provide opportunities to investigate the differing effects of culture on news media coverage because of the world-wide attention these large disasters receive. Shoemaker and Reese (1996) state: "media content is both that [content as a manifestation of culture] *and* a source of culture. That is, media content takes elements of culture, magnifies them, frames them, and feeds them back to an audience. Media impose their own logic in creating a symbolic environment" (p. 60). Similarly, Goffman (1981) states: "Frames are a central part of a culture and are institutionalized in various ways" (p. 63). Culture is institutionalized in the education systems, the government and the media. Language is also a huge cultural influence, especially in the case of the Japanese who believe their language is what makes them Japanese (Gottleib, 2011).

This study investigated online newspaper coverage of the March 2011 earthquake in Japan. This study determined the extent to which disaster myths, media hypes, gatekeeping, and

culture influenced story frames by analyzing and comparing online news coverage in *The New York Times* and in *The Yomiuri Shimbun*, Japan's largest circulation newspaper as well as highest visited daily online newspaper.

This study focused on online news coverage during the immediate aftermath of the earthquake, tsunami, and nuclear crisis; thus it looked at 36 days of coverage. The reason for my interest in the immediate aftermath coverage is that this is when other studies have found evidence of disaster myths and media hypes as well as a lack of gatekeeping in news stories (Scanlon, Luukko & Morten, 1978; Quarantelli & Dynes, 1972; Fischer, 1994; Vasterman, 2005, Wien & Elmelund-Praestekaer, 2009).

LITERATURE REVIEW

The term "disaster" can evoke a multitude of emotions and images, and it is used many different ways in society. Disaster researcher Quarantelli (1987) has argued that there is no basis in logic and little hope in practice that a single definition can be devised that is universally accepted. Thus there have been many definitions used over the years. Fritz, an early sociologist in disaster studies, stated in a 1961 paper that disaster is: "...an event, concentrated in time and space, in which a society, or a relatively self-sufficient subdivision of a society, undergoes severe danger and incurs such losses to its members and physical appurtenances that the social structure is disrupted and the fulfillment of all or some of the essential functions of the society is prevented" (p. 655).

McFarlane and Norris (2006), both of whom work in the field of mental health, define disaster as "a potentially traumatic event that is collectively experienced, has an acute onset, and is time-delineated; disasters may be attributed to natural, technological, or human causes" (p. 4). Anthropologists Oliver-Smith and Hoffman (2002) define disaster as "A process/event combining a potentially destructive agent/force from the natural, modified, or built environment and a population in a socially and economically produced condition of vulnerability, resulting in a perceived disruption of the customary relative satisfaction of individual and social needs for physical survival, social order, and meaning" (p. 4). Although not as much detail is given as in the Oliver-Smith and Hoffman definition of disaster, Vasterman, Yzermans and Dirkzewager (2005), researchers in media and culture and in health services, define disaster as "acute, collectively experienced traumatic events with a sudden onset, and they can be both natural and man-made" (p. 107), agreeing in part that disasters are sudden and cause a disruption of everyday life.

The Japanese have only recently begun studies on a sociological level. Previous studies involving disasters have been done by civil engineers, architects, and urban planning (L. Peek, personal communication, September, 9, 2011). Due to the lack of studies done by the Japanese regarding the sociological level of disasters, there is no specific way in which the Japanese define disaster.

For the purposes of this research, the definition that was used is a modified definition building off the work of Oliver-Smith and Hoffman (2002), Oliver-Smith (2009) and Button (2010). For this study, disaster was defined as an event that can be brought on by natural, modified, or built environments and that disrupts the lives of those affected to the point that they are unable to function normally in society. Disasters are not isolated events bound by time and space, but instead are set in motion by a set of preconditioned events that are followed by a series of cascading events, unfolding over time (Button, 2010).

Agenda Setting

Agenda setting, or media agenda setting (Dearing & Rogers, 1996), is the study of the importance of an issue on the mass media. Agenda setting is important to include in this study because it can help to explain the level of salience of an issue, for example, disasters. The media agenda is usually measured by the number of stories about a topic in a content analysis. Dearing and Rogers (1996) state: "Audience individuals presumably judge the relative importance of an issue on the basis of the number of media messages about the issue to which they are exposed" (p. 18).

Scheufele and Tewksbury (2007) and Tewksbury and Scheufele (2009) define agenda setting as the result of the emphasis that mass media place on certain issues and topics that

correlates strongly with the importance that is attributed to these issues and topics by the public. They also state that agenda setting is the process where audience exposure to news about an issue will increase the ability of the individual to recall related issues from the past. Entman (2007) links agenda setting and framing by asserting that agenda setting performs the first function of framing: it identifies problems that are worthy of the government's and the public's attention. Agenda setting is where the oft-mentioned phrase that the media don't tell people what to think, rather, what to think *about* comes from, whereas framing is the idea that the news media tell audiences *how* to think about events and issues.

In most discussions of the agenda-setting role of the mass media, the concept of second-level agenda setting is common. Also known as attribute agenda setting; this level says that each object on the agenda has more than one attribute, characteristic, or property that describes the object. The attributes of the object that journalists then choose to highlight can affect how audience members react when they think about that object (McCombs & Reynolds, 2009). McCombs and Reynolds (2009) discuss how the concept of framing and attribute agenda setting are linked, stating that "framing and attribute agenda setting call attention to the perspectives used by communicators and their audiences to picture topics in the daily news" (p. 7).

A consequence of agenda setting and framing is the resulting opinions from audience members based on the media attention to an object, issue, or event. For example, McCombs and Reynolds (2009) discuss how the media focus the public's attention on the major candidates during an election which results in people forming opinions about those candidates who are highlighted in the news media coverage.

Intermedia Agenda Setting

Reese and Danielian (1989) address the concept of intermedia agenda setting influence in their work on the drug issue of the 1980s. According to Reese and Danielian, news media coverage about an issue or event will converge when news media organizations follow the lead of how other news organizations cover the issue or event. What results is "observed manifest similarities in media coverage—in timing, emphasis, and source selection" (p. 30). Reese and Danielian's study analyzed U.S. news media coverage of the drug crisis in the late 1980s. They attributed the massive convergence of coverage to intermedia agenda setting on the part of *The New York Times*; New York's drug problem became a problem for the rest of the country due to the coverage received in *The New York Times*, which is considered a national newspaper; Reese and Danielian equate this to a follow-the-leader scenario.

In another study, Danielian and Reese (1989) went further in their discussion of the cocaine issue by taking a closer look at intermedia agenda setting. They found that *The New York Times* had the most content regarding cocaine during 1985, surpassing the *Wall Street Journal,* the *Washington Post* and *The Los Angeles Times* coverage, and that by 1986 most other news media outlets had fallen in line with the amount of coverage that the *New York Times* had.

The Framing of News

Framing theory can help explain people's reactions during and after catastrophes as well as their understanding of disasters. Framing theory's foundations are sociological and were laid by Goffman who believed that individuals perceive events in terms of primary frameworks; these would later become known as schema. Goffman (1974) describes a primary framework as "neatly presentable as a system of entities, postulates and rules" (p. 21) that allow the user to

locate, perceive, identify, and label an infinite number of concrete occurrences. For example, Goffman offers the example of a coroner who would employ a physiological framework if asked to identify a person's *cause* of death. That same coroner would use a social framework if asked to describe the person's *manner* of death. These primary frameworks can exist without the person being aware of them.

Entman (2007), building from Goffman's idea that physiological frameworks and social frameworks are human interpretations of events, defines framing as "the process of culling a few elements of perceived reality and assembling a narrative that highlights connections among them to promote a particular interpretation" (p. 164). Entman (2007) states: "If the media really are stunningly successful in telling people what to think about, they must also exert significant influence over what they think" (p. 165). Shoemaker (1989) states "The more media emphasize an issue, the more importance the public places on it" (p. 2).

Similarly, Scheufele and Tewksbury (2007) describe framing as being based on the assumption that how a topic or idea is characterized in the news story will influence how audience members understand it. Also, frames can raise the salience or importance of certain ideas that will then activate certain schemas or primary frameworks in people's minds.

Fully developed frames typically perform four functions: problem definition, causal analysis, moral judgment, and remedy promotion (Entman, 1993). Problem definitions practically determine the rest of the frame; they "determine what a causal agent is doing, with what costs and benefits, usually measured in terms of common cultural values" (p. 52). The causal analysis is where the forces creating the problem are identified—who or what organizations were behind it, what policies or laws helped create the problem. Moral judgment occurs when the effects of the causal agents are evaluated. These judgments are the thoughts and

beliefs that society puts forth in an effort to prescribe what should be done to fix the problem. And finally, remedy promotion is where treatments for the problem, justifications for those treatments, and the effects of the treatments are offered. In his 2004 book, Entman gives the example of the attacks of 9/11, stating that the problematic effect was the deaths of thousands of civilians from an act of war against the U.S.; the cause was the Taliban government, its leaders and Al-Qaeda; the moral judgment was the condemnation of those agents as evil; and the remedy promoted was to go to war against Afghanistan and Iraq.

Scheufele (1999) states that journalists' decisions about story framing may be influenced by several social-structural or media organization factors. These factors can, according to Shoemaker and Reese (1996), include at least five factors in a journalist's reporting: social norms and values, organizational pressures and constraints, pressures of interest groups, journalistic routines, and ideological or political orientations. Gamson and Modigliani (1987) argue that the frames journalists form can be explained by their norms and practices as well as the influence of other interest groups.

Gamson and Modigliani (1989) argue that media discourse can be viewed as a set of interpretive packages that give meaning to an issue or issues and these media packages have one main frame that can help provide meaning to the disaster or events as they unfold.

These packages can provide details about the problems or issues, which can also tell the possible costs associated with the issues and the issues' possible implications. The core of the package is the frame and the rest of the package uses different symbols that suggest the core frame and position by using one or more of five framing devices: metaphors, exemplars, catchphrases, depictions, and visual images.

According to Pan and Kosicki (1993) and Entman (2004), journalists often use rhetorical devices to invoke images that help increase the salience of the topic and the vividness of a report. These vivid words and images that make up a frame can be distinguished from the rest of the story because of their capacity to stimulate support or opposition of the issue. This capacity can be measured by cultural resonance and magnitude (Gamson & Modigliani, 1987; Entman, 2004). Culturally resonant frames have greater influence because the words and images used are more understandable, memorable, and emotionally charged for the reader. For example, stories that were reported in the days after Hurricane Katrina used the framing device of metaphor by reporting that the disaster scene looked like a war zone. A *New York Times* reporter wrote "A shotgun rested in the boat next to Mr. Lovett, who said shots had been fired near him on occasion during the past week. 'I don't feel like I'm in the U.S. I feel like I'm in a war. All the guns, the chaos" (Longman, 2005). This "war zone" metaphor was seen in numerous articles discussing the response of the people of New Orleans (Tierney et al., 2006). "War zone" and "chaos" are catchphrases that evoke mental images, making the story resonate with many people; the repeated use of this frame the magnified the idea that much of New Orleans was like a war zone after Hurricane Katrina.

Scheufele and Tewksbury (2007) state that framing is both a macrolevel and microlevel construct. Macroconstruct refers to how journalists present the information to their audiences in a way that will resonate with the audiences' existing schemas on the topic. "Frames, in other words, become invaluable tools for presenting relatively complex issues, such as stem cell research, efficiently and in a way that makes them accessible to lay audiences because they play to existing cognitive schemas" (p. 12). Microconstruct framing, on the other hand, has to do with

how the individual forms an impression of the issues or event based on the information in the news story and the presentation of that information.

Priming

Framing can shape or alter the audience's interpretations and preferences through priming. "Frames introduce or raise the salience or apparent importance of certain ideas, activating schemas that encourage target audiences to think, feel, and decide in a particular way" (Entman, 2007, p. 164); those schemas that are activated are part of the priming process. Roskos-Ewoldsen, Roskos-Ewoldsen, and Carpentier (2009) state that priming has the ability to change people's later behavior or judgments related to the content (newspaper articles, broadcast media) that was processed. Roskos-Ewoldsen et al. continue by stating that the effect of priming is time bound; they cite for example, studies demonstrating that the priming effect from coverage of violence fades quickly.

Scheufele and Tewksbury (2007) argue that priming has taken place when news content suggests to audiences that they should use specific issues as benchmarks, or as issues that resonate with them so they can effectively evaluate the performance of leaders and governments. This assertion is in line with Entman (2007) in that if the issues have resonated, then the reporter has reached his or her goal or intended effect.

Price and Tewksbury (1997) argue that priming and agenda setting are accessibility effects because they are founded on memory-based models of information processing.

According to Price and Tewksbury (1997), framing is an applicability effect; the outcome of a message or how the message is understood by audiences suggests a connection between two

or more concepts so that after exposure to a message, audiences will be more likely to accept that they are connected.

Framing Disaster Coverage

Framing theory is relevant to the analysis of media coverage of disasters because it can help explain people's reactions during and after catastrophes. For example, Berger (2009) explored the framing of crime after Hurricane Katrina struck in 2005. He reviewed newspaper articles from major publications, focusing on the *New Orleans Times-Picayune, The New York Times,* and the *Washington Post*, as well as CNN news broadcasts from the month after the storm. Berger argued that the media's heavy use of crime frames in the first month after Katrina legitimized punishment as disaster policy. In a related study of Hurricane Katrina coverage, Haider-Markel, Delehanty, and Beverlin (2007) investigated the effects of racial group framing on the public in the aftermath of Katrina by conducting a national poll of adults. They hypothesized that a dominant media frame of Black storm victims would lead African Americans to develop a stronger empathy with storm victims, and thus more negative views about the government's (all levels of government) overall response to the disaster. They found that African Americans were more likely than non-African Americans to indicate that President Bush was more to blame than local or state officials for the slow, inadequate, and ineffective response to Katrina's aftermath. They also found that African Americans were more likely to believe that Bush didn't care about them than were non-African Americans.

Other researchers have investigated the extent to which media coverage is linked to the type of support areas receive after a disaster. If media stories were to frame an affected area as normally well-to-do, that area may not get as much aid as it would if the media framed the

affected area as poverty stricken, much like Haiti had been portrayed after the 2010 earthquake. Further, areas affected by a disaster that do not receive media coverage or that are underreported in the media receive substantially less aid than those that are heavily reported. "Analyses of the distribution of this assistance have repeatedly shown that the level of news media coverage in the domestic press is the most consistent and most substantial influence upon the aid offered" (Potter & Van Belle, 2009, p. 297). Much of what causes a disaster to be underreported or ignored by the media is the magnitude of the disaster's impact on humans. If the disaster is framed as having high human impact, which would include a high death toll and massive damage to the affected area, more aid will result (Van Belle, Rioux, & Potter, 2004). For example, hours after the 2010 Haiti earthquake, reports hit Twitter, Facebook, and almost every major news publication. Within days after the quake, media personnel traveled to Haiti to write stories and capture images from the devastation. Social media's and the news media's response to the disaster resulted in prompt offers of foreign aid and faster fundraising (Hamilton, 2010).

Although there were many news media accounts that helped bring in foreign aid, they failed to mention exactly why Haiti was in need of so much aid, besides the earthquake. There were many news media accounts and scholarly articles that were published in the months after the disaster that criticized the fact that most of the coverage lacked historical context citing the lack of information on how the Haitian people ended up in the economic situation they found themselves in before the quake hit and what they were doing to make things better (Balaji, 2011; deMause, 2010; Herllinger, 2010; and Ulysse, 2010). Bellegarde-Smith (2011) stated that American journalists lacked historical sophistication in their reporting. It is crucial to understand that Haiti was in a very poor economic and social condition when the earthquake struck, something that was drastically overlooked in most news coverage of the quake. Also, in the

months after the earthquake, a common frame was found: poverty, poor and pity. Balaji (2011), deMause (2010), Herllinger (2010), and Ulysse (2010) all discuss this idea of how Haiti was portrayed (framed). Residents said because of this coverage no one would ever want to visit Haiti, leaving the country's economy in even worse shambles with no revenue from tourism. One native commented that instead of telling the readers how they (the readers) can help make Haitian's lives better, the news media only focused on the negative aspects of the country and the earthquake (deMause, 2010).

The coverage in Haiti and the coverage from Katrina are both examples of how reporters frame stories of disaster. They (the reporters) are the communication channels used to convey information about the disaster, what to do and often times how to understand what has happened. What's important to remember is that each reporter, no matter how hard he or she may try to be objective, still has his or her beliefs and knowledge about crisis situations and will interpret the (frame) unfolding disaster accordingly.

The Love/Hate Relationship between the Media and Emergency Agencies

Over the years as journalism has evolved, scholars have taken a closer look at the media's role in disaster reporting and the effects of disaster reporting. In the *Handbook of Disaster Research*, Scanlon (2007) discusses the media's potential roles, stating that the media may be a critical tool for effective warnings. The media act as a link between the public and officials, making them the most important source of information during crises. Further, Scanlon states that the media can provide an outlet, or a way to cope with and understand the disaster for those affected, and can bring society together through their coverage.

Scanlon (2007) and Elliott (1989) agree on the media's possible positive effects both during and after disasters. Elliott states: "News analysis both during and after a disaster can help people understand why the disaster happened" (p. 161). Elliott outlines three basic obligations of accurate reporting that the news media should meet when they explain the why or the how of a disaster: 1) news media should give people practical information associated with the disaster, such as areas in the disaster zone that are open and closed to travel, the extent to which businesses, and schools are open, information regarding government disaster relief operations/movements, and information that the public is entitled to such as corruption in the government's response to the disaster; 2) this information should be given without causing harm; and 3) the news media should make every effort to provide accurate, complete, balanced, and relevant information.

When the media are forced into a secondary role in times of crisis and disaster, the public could be affected. Wilkins (1985) stated that "studies focusing on actual media coverage of natural hazards have found that the accuracy and quantity of media warning messages varies directly with media contact with crucial government agencies, and that many community plans for disaster preparedness seem to place contact with the media in a somewhat secondary role" (p.52). Wilkins argued that research has shown that the media can educate the public about hazards and that limiting journalists access to information could lead to delayed evacuations and preparedness.

When the media are relegated to a secondary role, it can be detrimental to the public's disaster response and lead to tensions between the emergency management response organizations (i.e., police and fire, etc.) and the media. News media personnel are shut out from these organizations because many emergency personnel believe that news media personnel will

only convey inaccurate information and will be nothing more than a problem for emergency personnel responding to the disaster-stricken communities (Scanlon, Luukko, & Morten, 1978; Scanlon, 2007).

The news media tend to convey inaccurate information when they are forced to take this secondary role. It could be argued that because the news media workers are not getting the information they need to report on the disaster, they make assumptions about what is going on and must use less informed sources in their stories, which can lead to conflicting information being reported. Conflicting stories may arise and cause confusion and even interference with the disaster response (Elliott, 1989).

Gatekeeping

Scanlon et al. (1978) write that this reporting of conflicting stories happens because gatekeeping procedures are barely in existence after a disaster strikes. During disasters, the news media's gatekeeping practices may become more lax because the traditional places to obtain official information are often scrambling to deal with the disasters; thus, the media have a tendency to present information quickly rather than accurately, leading to confusing and disorganized stories (Scanlon et al., 1978; Dynes, 1970; Barton, 1962; Fritz & Mathewson, 1957).

For example, after the Loma Prieta earthquake in 1989, the first reported death toll was 272 and was published and broadcast throughout the U.S. (Fischer, 1994). Two weeks later the official final death toll was released, stating that 67 had died, not 272. These types of discrepancies happen because in all the chaos of a disaster it can be very difficult to get correct

numbers with many victims being counted two or more times and many sources being just as uninformed as are the reporters.

Sources

The news media's lack of gatekeeping can also lead to a skewed view of the disaster by the use of only certain sources. The use of sources in news stories is an important aspect of news reporting to take into consideration. A source is defined as a person or entity (e.g., a company or an organization) that provides information and opinions that are attributed to that person or entity. According to Brown, Bybee, Wearden and Straughn, (1987), sources should "meet standard definitions of reliability, trustworthiness, authoritativeness and articulateness" (p. 46). Reporters are expected to find reliable and legitimate sources that will help tell the story. Often times those reliable and legitimate sources are people who are in an elected or appointed position, or those who run the organizations, businesses, and events that the reporters are covering.

Quarantelli (1981) argued that disaster news tends to rely heavily on a few sources, and these sources are typically official sources, i.e., sources that have primary social control functions. Official sources include police and fire department officials, and emergency management government agencies such as the Federal Emergency Management Agency (FEMA) and the American Red Cross. He found that the heavy reliance upon these official sources resulted in a limited view of the crisis, referring to this view as the "command-post point of view" of disasters. Because of this limited view, other views of the disaster are ignored in news accounts; other views may include those of the victims, local non-social control organizations, such as relief or religious groups, and neighborhood or citizen action groups.

Button (2002) discussed source issues in his discussion about Jonathan Harr's book, *A Civil Action,* the story of the class action case about toxic groundwater in a Boston suburb that killed six children and one adult. Button stated that Harr, like many journalists, failed to record the victim's voices in his book, instead relying on government and corporate sources. According to Button, "The consequence is that some people's accounts are valorized, while other accounts are marginalized" (p. 153).

Past studies (Fishman, 1980, 1982) have found that reporters use sources to drive their stories. Journalists are more likely to follow the interpretive lead of respected sources (Dunwoody, 1993). Those respected sources are those who are authoritative or official, or are experts in their fields. Reporters seek out sources that will support their understanding of events, issues, and/or concerns, and, in the case of science, if the information being reported is new or seems as if the new information would be a stretch, they will find other scientists who will say that what the other scientist is claiming is not possible (Dunwoody, 1993).

When it comes to source impact, researchers have found that direct quotes in news reports have more of an impact on people's issue perception in stories (Gibson & Zillmann, 1993) than do sources that are not directly quoted. Direct quotes help to frame stories, wherein reporters will call on many different people to speak to the topic at hand. Gibson and Zillmann (1993) conducted an experiment to investigate the use of direct quotes in news stories finding that the notion of direct quotation was indeed a powerful journalistic tool that can be used to influence media consumers' perceptions of reality and judgments of issues. Gibson and Zillmann studied amusement park stories about safety with direct quotes and stories with indirect quotes or no quotes at all. "Respondents presented with print news reports about amusement park safety containing personal testimony from accident victims and witnesses reported a different

perception of the issue than those presented with indirect testimony or no testimony at all" (p. 799). Gibson and Zillmann also state that since direct quotation has been shown to greatly influence readers' perceptions of issues, the use of imbalanced quotations in testimony can be an effective way to sway readers' opinions to one side of an issue without the readers even realizing that the quotation they just read was one sided. Journalists have the power to choose which points of view they want to represent in their stories, and the use of direct quotations makes that representation that much stronger.

Framing: The Use of Disaster Myths

Disaster myths are based on the assumed behaviors humans display after catastrophic events. Disaster myths, as stated by Quarantelli and Dynes (1972) are the popular images of how people behave in disasters and are based on flawed assumptions about the frailty of the human personality and the social organization. Disaster myths have long been a focus of research; as early as 1920 (Prince, 1920), research showed that the human response to disaster is controlled and rational (Fritz, 1961; Quarantelli and Dynes, 1972; Fischer, 1994), not the assumed behavior that disaster myths suggest. Over the past few decades, researchers have compiled a number of myths believed to be perpetuated by the media: panic flight, looting, price gouging, contagion, martial law, psychological dependency, disaster shock, evacuation behavior, and shelter utilization (Wenger & Friedman, 1986; Goltz, 1984; Wenger, 1985; Fischer, 1994; Quarantelli & Dynes, 1972). However, this study will focus on only five: panic flight, looting, psychological dependency, disaster shock, and evacuation behavior. These five were chosen because research suggests they are the most commonly mentioned myths in disaster coverage (Wenger & Friedman, 1986; Goltz, 1984; Fischer, 1994; Quarantelli & Dynes, 1972).

Panic Flight

Panic flight is a myth about how the individuals act in a crisis (Fischer, 1994). Defined by Pastel (2001), panic is "an acute fear reaction marked by loss of self-control which is followed by nonsocial and nonrational flight" (p. 44). It is believed that when a disaster occurs victims will panic and engage in any behavior they deem necessary to escape. This panic flight is thought to be a natural instinct among people in times of crisis, similar to the fight or flight response. During panic flight it is assumed people will be running in every direction in an irrational manner. Belief in this myth can lead to delayed evacuations because officials want to wait until the evacuation is absolutely necessary to avoid this panic (Fischer, 1994). However, disaster research (Drabek, 1968; Quarantelli, 1981) has shown that people do not panic and try to flee regardless of whether there is a known escape route. Instead, people tend to wait for information about the situation before acting, and they will look to others for help when interpreting cues about potential threats (Sunseri, 2005). Further evidencing a lack of panic flight in crisis situations, Fahy, Proulx, and Aimen (2010) investigated the myth and its origins in detail, citing the news media and movies as being sources in how the public sees events, perpetuating such myths as panic flight. Fahy et al. studied 745 media accounts from 435 survivors from the September 11, 2001, terrorist attacks and found that the overall impression those survivors had of themselves and those around them was that people acted calm and orderly (57 percent) while media accounts suggested otherwise.

Citing a recent event, the 2009 emergency landing of flight 1549 in the Hudson River, Fahy, et al., demonstrated that panic is seldom a behavior of those in a crisis. Fahy et al., described a news interview with Wolf Blitzer of CNN where he asked a passenger if a sort of panic erupted, wherein the passenger replied, "I don't recall panic really at all" (p. 388). Further,

in Fahy et al.'s investigation of the news media coverage of the September 11, 2001, terrorist attacks, they found a BBC online news article headline "Panic on the Stairs." When investigated closely by Fahy et al., the quote to which the headline is referring is actually an account of a survivor describing the stairwells and elevators as being crowded; the survivor said nothing about panic. One survivor was quoted as saying that those in the stairwells "maintained their calm really well" and went on to say that "A couple of people started crying a little, but we said, 'We're going to get out of here, we just have to take it one step at a time.' It wasn't quiet, people were talking – in fact someone was laughing, it was pretty normal" (p. 396). Scanlon (2007) and Goltz (1984) both argue that panic is so rare in the aftermath of a disaster that it can be very difficult and almost impossible to study.

Looting

Looting is the most expected behavioral response to a disaster (Fischer, 1994), with both print and broadcast media reporting looting incidents. The term looting has military roots and implies that the invading army will take property by force, generally when the owner cannot protect it (Quarantelli & Dynes, 1972). Looting may be reported as people taking items that are not necessary for immediate survival and are instead used for personal gain, monetary or otherwise. The perpetuation of this myth has led to National Guard troops being called in to prevent crime and has led to countless more deaths due to people being unwilling to leave their properties during disaster because of fear they will lose their belongings.

As early as 1956, researchers Fritz and Mathewson concluded that the number of verified cases of looting in peacetime disasters, in both the United States and foreign countries, was very small. Quarantelli and Dynes (1972) also argued that it is very difficult to authenticate actual

instances of looting, citing a National Opinion Research Center (NORC) study that was

conducted after a tornado in Arkansas in 1952. A random sample of people affected was asked if

they had lost property due to looting. Only nine percent reported that they or someone in their

household had lost property to looters. Additionally, one-third of that nine percent was actually

uncertain whether the loss was due to looting or if the items simply blew away or became buried

in debris.

Quarantelli and Dynes reference other studies conducted outside the United States that

also confirm the rarity of looting. One such case was a study conducted after a flood in the

Netherlands in 1953. There were reports of looting; however, law enforcement agencies were

unable to find a single verified case of looting. In fact, it has been found that major crime rates

fall in the aftermath of a disaster (Quarantelli & Dynes, 1972).

Psychological Dependency

The scene after a disaster where victims are assumed to be "out of it," not knowing what

to do and are perceived to need some form of direction, is known as the psychological

dependency myth (Fischer, 1994). In this myth it is commonly believed that survivors are

incapable of functioning after their experience. This myth encourages people to think that

outsiders need to come in to organize search-and-rescue efforts, make damage assessments,

assist the injured, and begin the cleanup. Quarantelli and Dynes (1972) stated that it is believed

by the general population that people are devoid of any initiative and are reliant on others, when

in reality disaster victims will insist on taking care of themselves. Also, disaster victims are

active and will not wait for outsiders to help. Survivors often take care of themselves before

emergency management even arrives on the scene. Quarantelli and Dynes cited a study done in

1953 on the Flint-Beecher tornado. Survivors had almost no aid from organizations and within four hours were able to rescue and bring to the hospitals two-thirds to three-fourths of the 927 casualties. The study also found that less than 20 percent of the population affected by the disaster had any contact with disaster agencies during the early hours of the disaster.

An example of how believing this myth can affect a community can be seen in Erikson's (1976) story of the Buffalo Creek disaster. Erikson described how outsiders took over and did not allow community members to make their own decisions on how to rebuild and where, which greatly affected the very tight-knit community that was Buffalo Creek before the disaster struck.

Disaster Shock

Disaster shock, also known as "disaster syndrome" is a myth that goes hand in hand with the psychological dependency myth. Disaster shock is where survivors are perceived as being in shock after their experience with the disaster (Fischer, 1994). The media accounts illustrating this myth are often third-person reports that describe survivors walking around aimlessly not knowing what to do or where to go (Fischer, 1994). More often than not, survivors may appear to be in shock, when in reality they are actually just exhausted. For example, researchers (Perry, Lindell, & Greene, 1981; Fischer, 1988; Quarantelli & Dynes, 1972) have found that survivors are in fact not apathetic or lost in a trance. They are often the first to respond to their needs and needs of their neighbors. Also, they remain calm and do not panic.

Evacuation Behavior

The evacuation behavior myth refers to group level panic. It is the myth that if there is an evacuation, residents will flee in an unorganized and hysterical way, pushing and shoving each

other, driving each other off roads to escape the imminent danger of a disaster. This is another situation where deviant behavior is assumed to be the norm. Hollywood versions of disasters typically portray disasters as happening in mass chaos with pushing and shoving (Quarantelli, 1985). This idea has permeated all levels of American society wherein everyone from average citizens and media outlets to government officials and even many emergency management agencies believe it (Fischer, 1994); unfortunately, these beliefs can cause delayed evacuation orders (Fischer, 1994).

All of the above mentioned myths are constantly perpetuated in popular culture, reinforcing the misperception that they exist. Reporters may use these myths in their stories, especially when they have no evidence to contradict them. For example, one year after Hurricane Katrina, Tierney, Bevc, and Kuligowski (2006) investigated the consequences of the media frames after the hurricane struck. Through their analysis of both media reporting and official discourse of Hurricane Katrina, the researchers found that the media upheld the myth that disasters result in lawlessness and social breakdown. Tierney et al. (2006) point out that these disaster myths are harmful not only because they are false, but because of their potential for influencing organizational, governmental, and public response during disasters. These disaster myths may impede effective disaster response, for example, the misallocation of public safety resources may occur due to the use of these myths.

While news coverage suggests people act in accordance with these myths, evidence indicates that people in fact act quite differently; in some instances, the media do report on counter-myth behavior. For example, the concept of altruism is found to occur after a disaster.

Media coverage of the 1995 Kobe, Japan, earthquake that killed approximately 5,500 people and injured approximately 36,000 more displayed the concept of altruism. In a *Newsweek* article that ran the week after the earthquake, reporter Sharon Begely discussed the acts of altruism that took place after the earthquake as she reported that Japan's largest organized crime syndicate was very generous by dispensing food and water from its Kobe headquarters (Begley, 1995). An article in the May 1995 issue of *Look Japan* also discussed the idea of altruism by reporting about the large amount of altruism that was seen in the hours after the earthquake struck (Nishimura, 1995). Solnit (2009) also wrote about altruism in her book about the extraordinary communities that arise in times of disaster. She analyzed a few different disasters in her book including the San Francisco earthquake of 1906, the Halifax explosion in 1917, and Hurricane Katrina; in each of the affected communities she found that people displayed altruism. In San Francisco survivors who were able to cook and set up shelters did so for themselves and for those who could not help themselves. After the explosion in Halifax, it was common to hear of people helping each other, regardless of occupation, or any other kind of social status marker. After Hurricane Katrina, Solnit gives the account of a husband and wife going through their parish looking for survivors by boat, saving about a hundred people that first day.

The Phenomenon of Media Hype

The concept of media hype has only recently been studied. Vasterman (2005) has been at the forefront of this research. He defines media hype as:

> a media generated, wall-to-wall news wave, triggered by one specific event and enlarged by the self-reinforcing process within the news production of the media. During a media hype, the sharp rise in news stories is the result of making news, instead of reporting news events, and covering media-triggered social responses, instead of reporting developments that would have taken place without media interference. (p. 515)

According to Vasterman (2005) the media coverage during a media hype is the most intense a few days after the trigger event, then it slowly fades, possibly regaining momentum through follow-up stories. Wien and Elmelund-Praestekaer (2009) state that the rise and fall of coverage during a media hype happens approximately three times and that media hypes last about three weeks. The initial onset of a hype will eventually die because editors and reporters feel readers have lost interest so they move on to the next top story that will hold their readers' attention. The following two rises in coverage can come from a follow-up story that generates enough interest or new developments in the story (Vasterman, 2005; Wein & Elmelund-Praestekaer, 2009).

According to Vasterman (2005), media hypes are a form of agenda setting. Media hypes begin with trigger events, which are defined by their magnitude and intensity of coverage of a particular issue. The trigger event must be so newsworthy that it essentially blocks the agenda for other stories. Trigger events are unusual events in which the media will increase their attention on, and will enlarge the event with their non-stop coverage, evoking social responses that will eventually become news as well, and further stimulate the news wave (Vasterman, 2005). These waves become so popular that they can make some events seem as if there is a crisis. Vasterman (2005) stated "Due to media hype, a social problem can appear to reach crisis proportions, forcing social actors, especially the authorities, to take drastic and hasty action" (p. 526). For example, the high level of media coverage after Hurricane Katrina that reported on so-called looting resulted in the governor changing the mission of the National Guard troops from search-and-rescue to protect-and-serve (Solnit, 2009), when in fact looting was almost non-existent.

Vasterman (2005) wrote "Media hypes are created on the basis of one frame that guides the hunt for more news and presents all the facts and views from the same perspective" (p. 525).

During a media hype, the news media have the tendency to lower the news threshold because the themes are so impactful. Lowering the news threshold means that all statements, opinions, and sources related to the theme(s) are reported because they are in line with the current theme(s). Eventually, this lowering of the news threshold leads thematically related news conforming to the chosen frame being reported while other facts and opinions are neglected.

Wien and Elmelund-Praestekaer (2009) investigate media hypes within Danish newspapers. They investigated five Danish media hypes occurring between 2000 and 2005. Their study showed that not every event has the potential to trigger a media hype; the events must satisfy general news values but also contain some violation of norms that are suitable for public debate, and the media must be able to cover the event from many perspectives.

Vasterman, Yzermans, and Dirkwager (2005) studied the effect of the media hyping in the aftermath of disasters, particularly its effect on health perception and personal well-being. They investigated the impact of media hypes on town residents' health perceptions after the October 4, 1992, Bijlmermeer neighborhood plane crash in a densely populated part of Amsterdam that killed 39 residents and the four crew members of the El Al Boeing 747. According to the researchers, even though the cause of the crash was determined quickly (bad locking pins caused two engines to break away from the fuselage), the crash became a drawn-out event fueled by speculation, rumors, and conspiracy theories surrounding purported toxic substances on board the plane. There were rumors of involvement of secret intelligence agencies, and the government's contradictory actions in many instances throughout the investigation fueled the rumors and conspiracy theories. The researchers' analysis showed that media hypes developed each time new pieces of information arose that reinforced the frame that there was a cover up about an unknown toxic agent that seemed to prove a link between the bad health and

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the plane crash. These increases in media coverage were followed by increases in the number of townspeople complaining of health effects. Between 1992 and 1999, complaints rose from 2,000 to 6,430.

Culture's Influence on News

As discussed earlier, the news media tend to convey inaccurate information when forced into a secondary role or when on a tight deadline. Reporters will rely on their own knowledge and beliefs to make sense of the situation. The knowledge and beliefs reporters use reflect their own cultures and education.

Culture has many definitions; a study done in 1962 found that there were more than 160 definitions of culture (Ferraro & Andreatta, 2012). In broad terms, culture can be defined as the values, beliefs and practices of an observed society. Definitions from varying fields, such as sociology and psychology offer some rather detailed definitions. Erikson (1976), a sociologist who is well known for his work in the disaster field defined culture as follows:

> …it is used throughout the social sciences to refer to those modes of thinking and knowing and doing that a people learn to regard as natural, those beliefs and attitudes that help shape a people's way of looking at themselves and the rest of the universe, those ideas and symbols that a people employ to make sense of their own everyday experience as members of a society. (p. 79)

Hofstede (1984) a social psychologist most well-known for his work in the area of management and culture, provides another definition of culture. Hofstede (1984) defines culture as such:

> …the collective programming of the mind distinguishing the members of one group or society from those of another ….Culture is reflected in the meanings people attach to various aspects of life; their way of looking at the world and their role in it; in their values, that is, in what they consider as 'good' and as 'evil'; in their collective beliefs, what they consider as 'true' and as 'false'; in their artistic expressions, what they

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consider as 'beautiful' and as 'ugly'. Culture, although basically resident in people's minds, becomes crystallized in the institutions and tangible products of a society, which reinforce the mental programs in their turn. (p. 82)

In his definition, Hofstede stresses that culture is (a) a collective, not individual, attribute; (b) not directly visible but manifested in behaviors; and (c) common to some but not all people (Hofestede & McCrae, 2004). However, for the purposes of this study, it is important to find a definition from a field with more experience in defining culture since it is a key aspect to the differences in the news reporting of both Japan and the United States. This research will focus on an anthropological understanding of culture, allowing for a much broader view of culture to be taken. Tylor (1958), an early anthropologist defined culture as "that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society" (p.1). In 1971, Downs defined culture as being a mental map that guides us in our relations to our surroundings and to other people (Ferraro & Andreatta, 2012). Hatch (1985) defined culture simply as the way of life of a people. Lavenda and Schultz (2007) defined culture as the "sum total of all the customs and practices humans have ever produced" (p. 28). More recently, anthropologists Ferraro and Andreatta (2012) defined culture as "everything that people have, think, and do as members in a society" (p. 29). For this paper, the definition given by Ferraro and Andreatta will be used because what people *have, think,* and *do* correspond to the three major components of culture discussed earlier (values, beliefs, and practices). Everyone *has* material possessions, everything that people *think* refers to the ideas, values, and attitudes they carry around in their head; and everything people *do* refers their behavior patterns (Ferraro & Andreatta, 2012). No person and no locations are isolated from major flows of information and activity. In addition, cultures change over time,

which must be taken into account when analyzing the relationship between the media and culture.

Hofstede's Five Dimensions

Hofstede (1980) completed a study dealing with national cultural differences that used a multinational database collected from the IBM Corporation and its subsidiaries in 71 countries. This study included scores from 117,000 employee attitude surveys completed between 1967 and 1973. From Hofstede's data, he identified four dimensions of national culture: 1) power distance, 2) uncertainty avoidance, 3) individualism, and 4) masculinity. Later, a fifth dimension was added, long-term versus short-term orientation. Each dimension is measured on a 100-point scale. Hofstede (1984) stated that these dimensions "represent elements of common structure in the cultural systems of the countries" (p. 83). These dimensions will help in understanding some of the cultural differences between the United States and Japan.

Power Distance

Power distance, as defined by Hofstede and McCrae (2004), is the extent to which the less powerful members of organizations and institutions will expect that the power within those organizations and institutions is distributed unequally. Power distance suggests that the level of inequality in a society will be endorsed as much by the followers as it is by the leaders. Hofstede and McCrae argued that a society's power distance level originates in the families of a society, through the extent to which children are socialized either toward obedience or toward initiative. Hofstede (1984) stated that the fundamental issue being addressed by the power distance dimension is how a society handles inequalities among people.

Within the dimension of power distance, there are two categories that a society can fall into: small and large. Hofstede (1984) stated that people in a large power distance society will accept a hierarchical order wherein everybody has a place in that society that will not need a further justification. On the other hand, people in small power distance societies will strive for equalization of power, and they will demand justification of power inequalities.

Countries that are considered as large power distance societies are Malaysia (104) and Guatemala (95). Countries considered as having small power distances are Austria (11), Israel (13) and Denmark (18). The United States scored a 40 on this scale, ranking at number 38 of 50 countries and three regions. Japan scored a 54, ranking number 33 on the scale. Based on this scale, Hofstede concluded that the power distance dimension separates the more economically developed countries from the less developed countries. Smaller power distance societies are found in more developed countries and larger power distance societies are found in less developed countries.

Hofstede (2001) also stated that in societies with a small Power Distance Index (PDI), power is something that leaders are almost ashamed of, and they will try to downplay their power. On the other hand, in a society with a large power distance, inequality is seen as the basis for societal order. "Both low [small]- and high [large] PDI countries have hierarchies, but on the low- PDI side this is an arrangement of convenience. On the high- PDI side the hierarchy is existential: Superiors are seen as superior persons" (p. 97).

Uncertainty Avoidance

Uncertainty avoidance was the second dimension identified by Hofstede (1980; 2001) in his study of cultures across nationalities. Hofstede (2001) proposed a one-line definition of

uncertainty avoidance as a dimension of national culture as "The extent to which the members of a culture feel threatened by uncertain or unknown situations" (p. 161).Uncertainty avoidance is a society's level of tolerance for ambiguity. This dimension indicates the extent to which a culture can make its members feel comfortable in situations lacking structure. Unstructured situations are not planned and can even be surprising. Uncertainty-avoiding cultures will avoid these types of situations by applying strict laws and rules, and employing safety and security measures. Hofstede (2001) states that the Uncertainty Avoidance Index (UAI) norm represents a value system shared by the middle class. Hofstede (2001) further states "The UAI norm deals fundamentally with the level of anxiety about the future in a country and the consequent need to protect society through three kinds of measures: technology, rules, and rituals" (p. 159). In other words, the higher the anxiety, the higher the level of stress with a more hurried social life, which can also lead to a higher energy release that will result in an inner urge to be busy. The higher the UAI, the more people will show their emotions and will demonstrate a higher level of conservatism and desire for law and order. A higher UAI also indicates there is a higher fear of all things foreign, and those in societies with a high UAI feel powerless towards external forces. If the UAI is lower in a society, the anxiety is found to be released more passively and the emotions are more controlled. Those countries with a lower UAI are found to be more open to change and new ideas resulting in a more openness to diversity. Hofstede and McCrae (2004) describe people in societies with a higher UAI as being more emotional and motivated by inner nervous energy.

According to Hofstede (1984; 2001), examples of societies that have high uncertainty avoidances are Greece (112), Guatemala (101), and Belgium (94). These are societies that maintain a rigid code of conduct and are intolerant of deviance. Societies with weak uncertainty

avoidance are Singapore (8), Jamaica (13), and Denmark (23). The United States has a lower

uncertainty avoidance, ranking 43rd, scoring 46, than Japan which ranks 7th, scoring 92, meaning

Japan shows more acceptance towards a structured or rigid society than does the United States;

in other words, Japan tries to avoid situations that lack any kind of structure.

Individualism and Collectivism

The next dimension Hofstede (1984) identified was individualism. He described it as the

degree to which individuals are integrated into groups. Hofstede (1984) described the

fundamental issue addressed by this dimension as the degree of interdependence within a society

and related it to the concept of "I" versus "we." In societies considered to be individualistic, the

ties between individuals are fairly loose. In this type of society, it is expected that people look

after themselves and their immediate families. The opposite of individualism is collectivism. A

collectivistic society has a tightly knit social framework; people are integrated from birth onward

into cohesive in-groups. These in-groups are often extended families that offer protection with

unquestioning loyalty.

According to Hofstede (1980, 1998), people from individualistic societies are more

inclined to put their own interests and those of their immediate family ahead of social concerns.

Within individualistic societies, it is believed that people can do anything they want and achieve

all of their goals. In addition, individual achievement is considered more important than group

achievement. Those that scored the highest on Hofstede's scale in this dimension are Great

Britain (89), Australia (90) and the United States, which scored the highest on the scale, 91.

In a collectivistic society people are born into in-groups, expected to care for one another

and the group, and not just themselves. In collectivistic societies, the interests of the group take

priority over the individual's needs. Hofstede has categorized Eastern countries as collectivistic, such as Korea (18) and China (20). On Hofstede's scale, Panama (11), Equador (8), and Guatemala (6) ranked in the top three for collectivistic societies. Japan and Argentina both scored a 46 on the scale.

Masculinity and Femininity

The fourth dimension Hofstede (1984) identified was masculinity. Hofstede described masculinity as there being a preference in a society for achievement, heroism, assertiveness, and material success. Femininity, the opposite pole, is described as a preference for relationships, modesty, caring for the weak, and caring for the quality of life. Hofstede argued that the fundamental issue addressed by this dimension is the way that a society allocates social roles to the sexes. Hofstede and McCrae (2004) stated: "The IBM studies revealed that (a) women's values differ less among societies than men's values; and (b) men's values vary along a dimension from very assertive and competitive and maximally different from women's values on one side to modest and caring and similar to women's values on the other" (Hofstede & McCrae, 2004, p. 63). Values are defined as "a broad tendency to prefer certain states of affairs over others" (2001, p. 5). Hofstede (2001) further explained that "values are feelings with arrows to them: each has a plus minus pole" and deal with such things as evil versus good, dirty versus clean, ugly versus beautiful, etc. (p. 6).

Within the masculinity dimension, Hofstede (1984) discusses two differentiations: Maximum-social-differentiation and minimal-social-differentiation between the sexes. Maximum-social-differentiation societies will use an assertive mentality in their institutions. These societies become what Hofstede called "performance societies." Examples of these

societies, according to Hofstede's scale, are Venezuela (73), Austria (79), and Japan, where

Japan ranked first with a score of 95, making it the most masculine country on Hofstede's scale.

Minimal-social-differentiation societies are societies where women may take assertive

roles. Also, in these societies, men can take the relationship-oriented, modest, and caring roles.

These societies, Hofstede states, "will permeate their institutions with a caring, quality of life

mentality" (p. 84). Examples of these societies are the Netherlands (51), Norway (52), and

Sweden (53). The United States scored a 62 and ranked 36th on Hofstede's scale, putting it

somewhere in the middle.

Long- Versus Short-term Orientation

This dimension was the last to be added to Hofstede's dimensions in 1985 and was added

in an effort to distinguish Eastern thought from Western thought. Hofstede used an instrument

that was developed by Michael Harris Bond in Hong Kong. Bond used values suggested by

Chinese scholars, in an effort to remove the bias in Hofstede's initial survey; the initial survey

caused some confusion for non-Western respondents. The Chinese Value Survey that was

developed by Bond was later adopted by Hofstede and included 40 items of fundamental and

basic values for Chinese people (Hofstede, 2001).

Originally the survey was administered to only 23 countries, both Asian and non-Asian,

and not all that were originally included in the IBM study.

Values associated with a long-term orientation society are thrift and perseverance; values

associated with a short-term orientation society are respect for tradition, fulfilling social

obligations, and protecting one's "face" (reputation) (Hofstede & McCrae, 2004). Hofstede and

McCrae found that a long-term orientation seemed to be a part of the Asian countries that were

influenced by Confucian thought. These countries shared the values of persistence, thrift, having a sense of shame, and family hierarchy, i.e., elders hold more power and deserve to be respected. The results of the Chinese Value Survey also showed people in these cultures believed in treating others as they would want to be treated and living a patient, persevering, and hard-working life. Countries that show a long-term orientation are China (118), Hong Kong (96), and Taiwan (87). Japan scored an 80 on the scale, showing that this country's culture has a long-term orientation as well.

On the other side of this spectrum, the short-term orientation emphasizes individualism and finding fulfillment through creativity and self-actualization. Some of the more specific characteristics are personal stability, protecting your reputation, and the reciprocation of greetings, favors, and gifts. Examples of countries that have a short-term orientation are West Africa (16), the Czech Republic (13), and Pakistan, which scored a 0 on Hofstede's scale. The United States scored a 29, leaving it somewhere in the middle of those countries surveyed on this dimension.

Understanding the five cultural dimensions discussed by Hofstede (1984) and Hofstede and McCrae (2004) can help guide the understanding of how culture can affect the frames used in the news media. As Wilhelm and Sabine (2005) stated in their study about the framing of the Iraq war, "Although media occupy an independent role in the creation of agendas, they serve as cultural time capsules that offer a brief glimpse of mainly political symbols, myths and stories which are popular at a particular time and space" (p. 4). Cultures, even as learned as they may be, change over time. The media document what the cultural beliefs are at the particular point in time of coverage.

Goffman (1981) stated: "Frames are a central part of a culture and are institutionalized in various ways" (p. 63). Likewise, Shoemaker and Reese (1996) stated: "media content is both that [content as a manifestation of culture] *and* a source of culture. That is, media content takes elements of culture, magnifies them, frames them, and feeds them back to an audience. Media impose their own logic in creating a symbolic environment" (p. 60).

Hofstede's five dimensions are heavily cited in many different disciplines including the communication research field. However, his research has also been criticized. A brief critique of Hofstede's work follows.

A heavy reliance on Hofstede's research may lead to the perpetuation of stereotypes due to the broadness of the dimensions he found; they tend to generalize entire nations' cultures, often times ignoring important subcultures and the changes that occur within societies and cultures. McSweeney (2002) notes that, even though Hofstede has added to his model, he has never acknowledged any significant errors or weaknesses in his research. This is an issue because, as will be discussed, there are weaknesses that need to be addressed. First and foremost, Hofstede's data were extracted from a bank of pre-existing attitude surveys taken by employees at IBM and its subsidiaries around 1967-1969 and again around 1971-1973. There are three main criticisms that will be discussed: the data's generalizability is limited, the work is dated, and Hofstede's methods of measurement are problematic.

The generalizability of Hofstede's (1980) data is limited because of the sample used. Respondents were only from the marketing division within each IBM subsidiary. Ailon (2008) stated: "'National society' was reduced to middle class rather than the working class, which was reduced to IBM personnel from the marketing and service divisions" (p. 886).

In addition, McSweeney argues that Hofestede's sample, though large (approximately 117,000 participants) does not even accurately represent the marketing divisions of IBM subsidiaries within various countries. For example, in more than 15 countries surveyed there were less than 200 respondents. Pakistan only had 107 respondents, and Singapore only had 58 respondents.

The generalizability was further jeopardized because respondents knew what the survey was initially going to be used for (managers were expected to develop strategies for corrective actions that the survey showed to be necessary) which, may have influenced answers (McSweeney, 2002).

Further, Hofstede (1980) makes claims about the cultures of nations, stating that regardless of the divisions that may be found within each nation, every national population somehow shares a unique culture. McSweeny (2002) takes issues with this assertion and notes that even though Great Britain is composed of three nations (England, Scotland, and Wales) Hofstede treats them as one entity having a single "national" culture.

Researchers have also questioned whether Hofstede's conclusions are still valid because some of the data is more than 40 years old; this can lead to the conclusion that Hofstede's work is dated. McSweeney (2002) suggests that it is time to investigate other studies' abilities to investigate culture. A study that was done over 40 years ago is a long time ago, especially in terms of culture. Some countries have gone through vast changes over the years, potentially making Hofstede's findings no longer relevant.

Hofstede's method of measurement and conceptual idea of culture was also problematic in his study. Ailon (2008) investigated Hofstede's work finding that "Culture was reduced to 'values,' which were reduced to a limited set of questions on an IBM questionnaire" (p. 886).

Ailon (2008) noted that each cultural dimension that was found was found by using only two or three survey questions. For example, the dimension of power distance was formed from only three questions and these questions were specific to the workplace. The first question used a five-point scale to rate how frequently in their experience as employees were they afraid to express disagreement with their managers. The second and third questions defined four types of managers and asked respondents to state which type they preferred and which of those types they thought their bosses were.

These criticisms of Hofstede's work have created another aspect of my study, allowing me to investigate whether or not Hofstede's assertions of national cultures still hold true today. These criticisms affected how much Hofstede's work was actually relied upon in this study. Further research was done involving both American and Japanese cultures in an effort to support or disprove Hofstede's assertions.

American Culture and Media Coverage of Disasters

It was dreams of riches and religious freedom that America was built upon. The British Americans broke to form a new nation in the 1770s and in 1776 Thomas Jefferson wrote that a man's rights included life, liberty, and the pursuit of happiness. By 1832 the notion that "We are a nation of self-made men" was common (Meachum, 2012).

The idea of the American Dream was introduced by James Truslow Adams in his book *The Epic of America* (1931) but was understood as early as the 1880s, as is evident in Mark Twain's *The Adventures of Huckleberry Finn* (1885). The Dream is about liberty, prosperity, and stability, but also about escape and reinvention. The reinvention of the British Americans and the notion of setting out ahead of the rest in the west or new territory has been an enduring

impulse among Americans and an essential element in the American Dream (Meachum, 2012).

Meachum (2012) states: "The allure of the belief in the individual's capacity to make his way—

to cross oceans or mountains—only grew stronger as America grew older" (p. 33).

The United States Constitution and Bill of Rights came into effect as Constitutional

Amendments on December 15, 1791, giving Americans the freedom of press and speech. This

freedom of press plays a large role in the shaping of the American culture because it allows more

people a voice, the opportunity to make this country what they, the people, want. These beliefs,

values, and notions have defined what it means to be American; the American Dream is still a

strong notion in the minds of many.

According to Hofstede (1980; 1984; 1998; 2001), compared to the Japanese, the

Americans have a smaller power distance; meaning people in America strive for equalization of

power, and demand justification of power inequalities. Equality has been an issue throughout

American history. The American Society of Newspaper Editors (ASNE) has been making a push

to make newsrooms more diverse since 1978 with a long term goal of matching the percentage of

minorities in communities with the percentage of minorities working in newsrooms (Hardin &

Whiteside, 2006). The ASNE's continued push for diversity in the newsroom reflects a battle

within one industry in the United States that has not given up the fight for equality.

Though diversity isn't where many would like to see it, it is still much more common

than 30 years ago to see both men and women, ranging in ages, race, and ethnicity running

newsrooms, writing articles and reporting on every topic imaginable. This may not be the case in

every industry, but as demonstrated by Hofstede (1980; 1984; 1998; 2001), American society

demonstrates a higher tolerance and fight towards equality than many other countries. This small

power distance helps to explain why the United States is more uncertainty accepting and less masculine overall.

According to Hofstede (1980; 1984; 1998; 2001), the United States is more accepting of uncertainty. This may be because as soon as an event occurs, the news media are there to cover it, and there is almost always someone who will come out and say, "We have everything under control," or a statement about what is being done to help victims, or control the gas leak, wildfire, or gunman.

Americans are creative, individualistic, and at times impatient (they want change now) (Hofstede, 1980; 1984; 1998; 2001). This wanting of immediacy and self-actualization are what make the United States more short-term oriented than long-term where many Asian countries like Japan fall. It is more common for Americans to focus on making their own ways in life rather than focusing on going through life with their family. While family is important, children are not expected to stay at home and take care of their parents; children are expected to go out and make something of their own lives and support themselves. In the American media system this dimension is exhibited in reporting. Reporters are responsible for themselves, going out and finding the stories and the sources themselves.

The American Media Structure

The media in America consists of hundreds of daily and weekly newspapers, as well as numerous magazines and broadcast news shows. This smorgasbord of media provides seemingly unlimited choices.

The U.S. media is based on a market model (Croteau & Hoynes, 2006). The market model suggests a supply-and-demand dynamic regarding society's needs and treats the media

like all other goods and services (Croteau & Hoynes, 2006). The media are primarily made up of

commercial, profit-seeking companies; they issue stock, compete for larger shares, develop new

products, watch costs, look for opportunities to expand, just as any other business would.

American Media Coverage of Disasters

Historically, coverage of disasters allowed people a look at another world; it gave people

something to talk about. Disaster coverage was exciting and different. People wanted to know

what happened, and U.S. newspapers realized that these crises could help sell more newspapers.

So, when disaster struck, journalists were there to cover them. An aspect of the rising popularity

of disasters was the pictures that ran with the stories. Pictures of disasters had an enormous

impact on how viewers would come to see and experience floods, storms, fires, and the like

(Rozario, 2007). By 1955, mass communications in the wake of disasters was commonplace.

> "Spectacle was the ascendant. Americans were coming to demand and expect
> photographs or live footage with their 'news,' whether in newspapers, in enormously
> popular magazines such as *Life*, or on television, a new medium that was well on its way
> to becoming the nation's primary source of entertainment as well as of information about
> current events. And disasters were securely established at the center of the news-
> gathering enterprise." (Rozario, 2007, p. 136)

It was also during this time that Warner Brothers newsreels became popular and were

viewed as a heroic model of disaster reporting by showing footage of different disasters with

narration. In this heroic model of disaster reporting, producers were "Proud to present" their

footage of the most recent disaster, showcasing the technological and institutional advances of

the time, instilling in many that control over these disasters, such as natural disasters, was within

reach. For example, one 1955 newsreel showed President Dwight Eisenhower on an airplane

looking at a map of the northeast U.S. flooding caused by Hurricanes Diane and Connie while a

narrator described what was going on stated that the president leads a "shocked nation" in one of the worst disasters in American history. The video showed the floodwaters and then showed Eisenhower viewing the disaster through an airplane window. This newsreel, as well as many others, was produced for cinematic effect (Rozario, 2007). President Eisenhower hired a team of media consultants who were skilled in the areas of lighting, cosmetics, and studio direction; a celebrity actor was even hired to help Eisenhower project the trustworthiness and strength needed of a president in a time of tragedy.

From the newsreels and newspaper stories, disasters became popular movie themes including end-of-the-world themes (*Deep Impact, Armageddon,* and *Knowing)*, natural disaster themes (*Twister, Volcano,* and *The Day after tomorrow*), and technological disasters (*Titanic, The Towering Inferno,* and *Outbreak),* to name a few. Through framing, agenda setting, and priming the news media helped to strengthen the modern understanding and response to disasters. "Disasters would continue to be sites where the meaning of America was debated and contested, where modern American values and social arrangements were articulated and assembled" (Rozario, 2007, p. 142).

According to Rozario, after the 1906 San Francisco earthquake and fire, people were excited for the earthquake; they wanted more destruction, some even watched the burning of the city as if it were some kind of entertainment. Rozario believed that this response was due to people openly reacting against the Victorian personal prohibitions. The earthquake and fire were a welcome cultural interruption; opening the eyes of many to a world that was not so controlled.

This disaster and others had high public appeal, so high that amusement parks in Coney Island, New York, set up rides and entertainment based off of different disasters. One such show was "The Fall of Pompeii," a show that used explosions, fire, and smoke to simulate the ancient

volcanic eruption that killed 40,000 people. Some of the other entertainment was reproductions

of the Johnstown, Pennsylvania, flood of 1889, the Galveston Hurricane of 1900, and the

eruption of Mount Pele that killed 30,000 people on the island of Martinique in 1902. These

disasters and their reproductions were, as Theodore Waters observed in a 1904 *Harper's Weekly*,

an emotion that audiences were willing to pay for; customers wanted stimulation for not only the

eyes but for all of their senses, and reliving disasters was a good way to do this (Rozario, 2007).

These rides were a precursor to what modern American popular culture would involve, including

an entire genre of thrill, adventure and horror movies, and new thrilling amusement parks with

vertical roller coasters and other rides.

     This culture of being enthralled with disasters, reliving them through various forms of

entertainment, watching hours of live coverage on the television, reading the latest developments

of disasters online, has been the ways in which people came to cope and experience disasters.

Americans believe that the rebuild will be bigger and better, learning from the destruction what

works and what does not. This idea of creative destruction runs strong throughout American

culture through the government and through the people (Rozario, 2007). The destroyed city will

rise again, bigger and better. Disasters allow for the chance to make something better and to

allow people to rise from the devastation time and again.

Japanese Culture and Media Coverage of Disasters

     Understanding Japan's rich history is the key to understanding contemporary Japan. In

1868 the Meiji Restoration set Japan on the path towards modernization when the Tokugawa

shogunal government was replaced by a regime that centered on the emperor (Bestor, Bestor, &

Yamagata, 2011). The regime was determined to defend Japanese sovereignty and cultural

integrity but it also wanted to achieve an equal standing with the Western nations. Therefore, the regime focused on adopting Western technologies and institutions in an effort to achieve that level of standing. Japan's defeat in World War II was another crossroads for the nation, as many social institutions, practices, and public attitudes were changed or realigned in an effort to break from the prewar and wartime social norms of authoritarian militarism and rigid hierarchy in the service of imperialism.

During Japan's transition from a predominantly agrarian (1868) society to an industrial society (1912), the mass media played a large role. By the 1950s the Japanese nation was transformed, and 20 years after World War II, with the help of the media, Japan was considered one of the most powerful industrial countries in the world. The nation with foundations in a strong work ethic, cooperation, and conformity reemerged after the war. Urbanization occured rapidly, and by 1970, Japan was considered an "economic miracle"; Japan was now an economic superpower. However, by the 1990s, Japan's economic miracle was over; the bubble years, as the years referring to the time in Japan when the economy was on its way up and at its strongest were called, caused a collapse in the stock market and real estate market. The long recession that started then continues today.

The Japanese have freedom of speech guaranteed to them under Article 21 of the Japanese constitution, and, in 1999, the Freedom of Information Bill was passed (McCargo, 2003). However, the country's journalistic practices may not reflect the freedom of speech, as censorship still plays a large role in the current media system. Censorship comes mainly in the form of the popular press clubs that have run the media since approximately 1908, not to mention the role the overall media structure plays in the practice of censorship.

Japan has been known for its uniformity of information and the bland way in which the information is reported in newspapers (this uniformity could also be considered a form of censorship). Gamble and Watanabe (2004) believe that there are four main factors that contribute to this issue in Japan: "1) the high concentration of power in Japanese media, 2) the marketing strategies of the major papers, 3) editorial tradition, and 4) the government's enormous influence over the papers through a variety of institutions but particularly through the press club system" (p. 37).

Culturally, according to Hofstede (1980; 1984; 1998; 2001), the Japanese are a collectivistic society; they show more uncertainty avoidance, and are a highly masculine society that is more long-term oriented. According to Hofstede's scale (1980; 1984; 1998; 2001), Japan is the leading masculine country, which helps in understanding why there is less equality between men and women within the country, compared to men and women in the United States. This larger power distance, compared to the United States, can also help explain Japan's aversion to situations lacking structure (uncertainty avoidance). The fact that the Japanese are an Asian society that is highly collectivistic (they don't focus on the individual) helps to explain why they are more prone to being long-term oriented (demonstrating thrift and perseverance).

More recent research (2000-2012) indicates that Japanese society may no longer be as Hofstede first found it in 1980. This newer research indicates that there have been many changes over the years (especially since the 1960s when the first round of surveys was conducted) within Japan. For example, in the late 1980s, and early 1990s, the economic "bubble" burst, leading to a recession that has affected almost every aspect of Japanese society (Roberson & Suzuki, 2003). For example, the fact that the country is seeing more social structure change is a sign that the

Japanese are not as high in uncertainty avoidance as they once were (i.e., the changing family structure, the changing male/female dynamics, and the changing work/company structure).

Starting with the family structure, Nathan (2002) describes traditions that have come and gone, for example, the intense focus on entrance exams to get into college for Japanese youth; these traditions are still there but there is a decline in those who choose to go to school and stay in school, which can be attributed to the intense stress that comes along with preparing to take the entrance exams. Also, there is the family structure, still somewhat focused on the *ie*, or "stem family" household where the father/husband goes to work, is gone all day and the mother/wife stays home all day, taking care of the children and any parents who may live in the residence, a tradition that is slowly going to the wayside. Hendry (2003) states: "Today the majority of Japanese families live in urban areas, and for most there is no longer a physical *ie* which has been passed down from generation to generation" (p. 34). The most common families for whom this family structure still flourishes are families with their own land. After the economic boom in the 1980s, the number of these families had lessened because many families sold their land for small fortunes and moved into the growing cities (Nathan, 2002; Hendry, 2003).

However, Hendry (2003) found that it is still common for an elderly parent to go live with a son or daughter later, a part of the family structure of *ie*. The difference today, according to Hendry is that the adult children no longer stay at home to take care of their ageing parents; instead the parents are placed in adult day care, so the adult children can continue to work outside the house.

Marriage rates have decreased, and the divorce rate has increased, as well as women choosing not to have children (Nathan, 2002; Schnell, 2005; Roberson & Suzuki, 2003), indications that perhaps Japan is not a collectivistic as once thought. Hendry (2003) suggests that

the decline in the birth rate is related to the bursting of the economic bubble in the late 1980s, early 1990s. Women want to avoid the economic hardships they endured growing up.

Further, the idea that, overall, Japan is highly masculine may no longer be the case, as there is a growing feminist consciousness where women today tend to be less acquiescent about their husbands' preoccupation with work. The *ie* family structure and the "good wife/wise mother" model where the mother stays at home full time to take care of the children, often through high school, coddling them and making sure their focus and energy is on entrance exams is an idea that is becoming more and more rare every year (Nathan, 2002; Roberts, 2005).

Another indication that Japanese society may be becoming more individualistic and less "long-term oriented," as Hofstede had argued, may be found in its company practices. Where it once was common practice for men (known as "salary men") to get a job and stay with that company for life, companies have been moving towards a more Western philosophy by hiring outside the company and giving promotions to employees based on performance and not seniority. Nathan (2002) describes career transition services or, in the simplest terms, unemployment agencies. Nathan found that these types of agencies are becoming more common in Japan with the rise of workers being laid off due to a shift towards more American and Western company practices, brought on by the bursting of the economic bubble in the late 1980s, early 1990s.

Ronald and Alexy (2011) further argue that the gap formed by the erosion of regular or normal male employment has been filled with women moving into the realm of paid work. However, women's standing in the workplace still remains inferior to their male counterparts, even with the improved educational conditions for women in Japan. Most women are only employed part-time without benefits, even though many work the same number of hours as full-

time male workers (Ronald & Alexy, 2011; Hidaka, 2011). Further, Hidaka (2011) stated that the percent of female full-time workers has dropped from 68.1% in 1985 (of the total female workers in non-agricultural jobs) to 46.6% in 2007 (Gender Equality Bureau, 2008). This decline is due to what Hidaka calls a deliberate strategy of many companies to employ female part-timers because it saves the company money as well as protect the ideal of the male 'salary man,' protecting the privileges of full-time male workers and supporting the gendered division of labor in the household.

This division of labor is a common theme throughout Japan. An equal division of labor or lack thereof, is one reason cited by many females who are single as to why they aren't marrying and having children (Nakano, 2011). Many women have said they want to get married, but they have not found the ideal partner. That ideal partner is one who is willing to do more than simply go to work and come home. Females are looking for a companion who is willing to help with household chores and child rearing (Nakano, 2011). In the past, Japanese families have arranged marriages for their loved ones; this is no longer common and even seen as a measure of desperation. The focus is now on marrying someone for love, and many women who were surveyed were content waiting for the man of their dreams, even if it meant they might never have children, or could remain single for the rest of their lives. The willingness to wait is one reason why the average age of marriage has risen and one reason that many are choosing not to have children (Nakano, 2011).

This discussion of current Japanese cultural aspects is an indication that Hofstede may have over generalized and/or that his study is simply too dated to fit contemporary Japan.

Japan's Media Structure

The structure of today's Japanese news media can be traced back to the militaristic government of 1931-1945, which began with the China war, lasting through the end of World War II. During that time the leadership used the media as a thought control tool over the populace in an effort to focus all the nation's resources on military goals, a movement known as the National Spiritual Mobilization Movement (Gamble & Watanabe, 2004). Bestor et al. (2011) stated: "The contemporary Japanese culture and society have been shaped in response to a number of radical shocks or historical disjuncture's" (p. 2). For instance, after the war, the media chose to use different words in their broadcasts: instead of broadcasting "*haisen"* or Japan's defeat, they chose to use the word "*shusen*," the end of the war (Maeda, 2003) because they didn't want the people of Japan to think less or negative thoughts about their country.

During this time of war and shortly thereafter, government leaders instituted a form of drastic censorship, resource rationing as well as other policies that would later drive thousands of publishers out of business and would lead to a significantly consolidated media industry. These consolidations led to the emergence of five major dailies as well as local papers for the 51 prefectures (Gamble & Watanabe, 2004). Currently, Japan still has the five major national newspapers all with affiliations with the five major television stations in Japan, all of which are publically owned.

The Information Cartels

Japan's media has been given the nickname of information cartels. Freeman (2000) stated: "While the media have considerable potential power and a widely recognized influence over politics and society, they are also subject to a number of forces that limit their autonomy

and shape the ways their influence is utilized" (p. 13). From there Freeman outlined three

institutions that make up the cartel process: the *kisha* clubs, the newspaper *kyokai* (industry

association), and the media *keiretsu* (business groups). Each institution represents a level of

analysis. The *kisha* clubs focus on the relationships that exist between official news sources and

the reporters that cover them as well as the relationships that occur among journalists from

competing firms. At the *kyokai,* or news industry level, relationships are organized at the

industry level among news agencies themselves. The *keiretsu*, or business groups link print

media with other sources of news available to the public, such as broadcast media. Each one of

these institutions affects the content and flow of information in Japan. Refer to Figure 1 for an

outline of the media structure and key connections within Japan's media networks. The next

sections will address these institutions and discuss how the information cartels of Japan have

affected and impacted the media today.
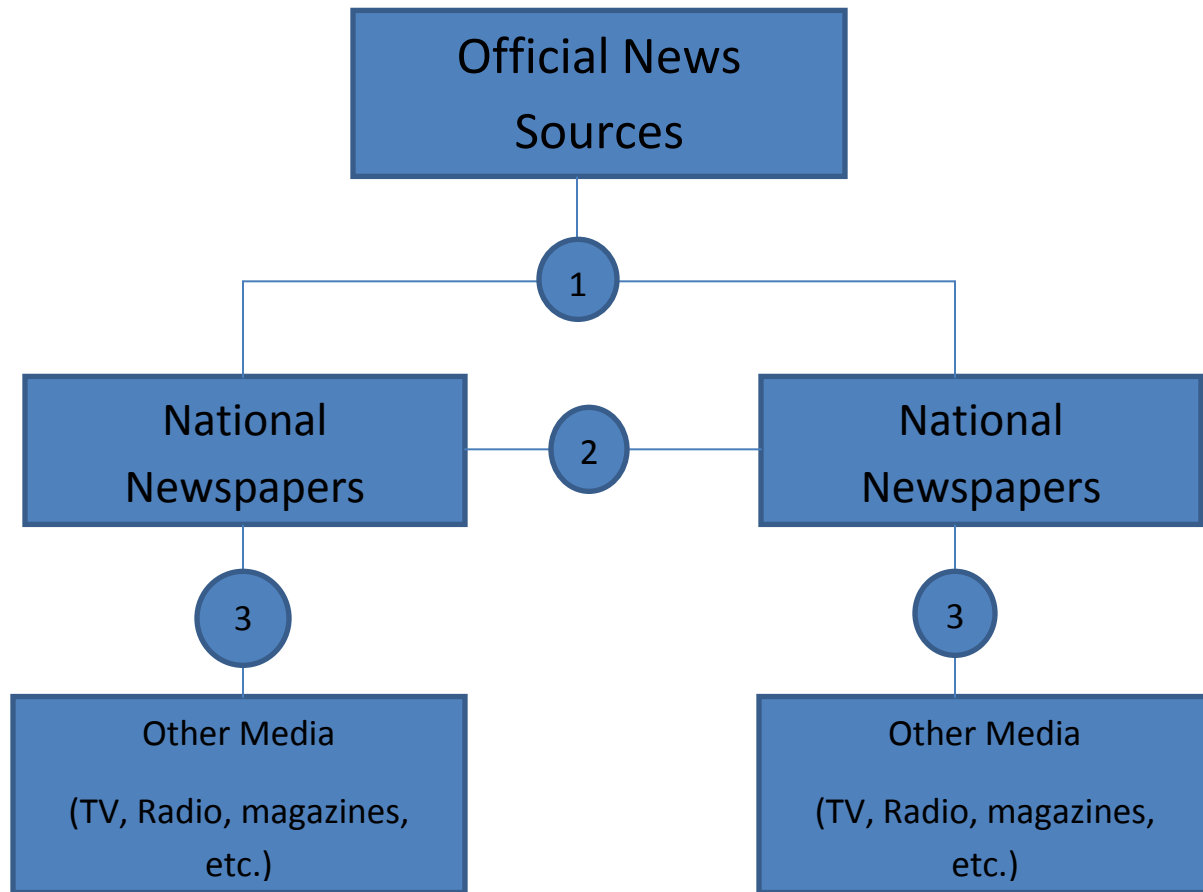
KEY
(1) = Kisha Clubs
(2) = Kyokai
(3) = Keiretsu

Figure 1.

Key Connections within Japan's Media Networks
Source: Freeman, 2000.

The (Kisha) Press Clubs of Japan

Of the three levels of relationships in Japan's media, many agree that the press clubs are

the main problem within the media structure of Japan, often acting as a barrier to information

dissemination in Japan (Nakamura, 2010). Some even argue that these clubs help to ensure that

the media system is run similar to a monopoly or cartel by only allowing club members access to government information. O'Dwyer (2005) states that:

> The Foreign Press Centre of Japan (1997) identifies key problems with Japanese press clubs as: favoring the dominant and established media outlets, a monopoly on political news by press club members; a perilously close relationship between news sources and journalists; and an unequal relationship between journalists and government by virtue of the provision by the news source of accommodation and facilities for journalists. (p. 2)

This club system is viewed as a corrupt and biased system because members essentially receive the same information via press releases, lectures, press conferences and the like, all of which is presented by the source in a calculated manner to make the source out in as flattering a way as possible (Gamble & Watanabe, 2004). Sources include the Prime Minister's official residence, government ministries, local authorities, the police, and corporate bodies.

Kisha clubs often make "blackboard" agreements that are essentially agreements as to how the press will handle the stories; they are called such because they are communicated via a blackboard in a press room. These agreements are made to avoid excessive competition during reporting.

Van Wolferen, a foreign news correspondent, stated in an interview with Gamble and Watanabe (2004) that "the variation of opinion among newspapers is smaller [in Japan] than anywhere in the world that I have seen. Only in countries where regimes have dictatorial power over the press can you find such unanimity" (p. 45).

Problems like those stated above, didn't happen overnight. The current system took time to become the problem it is today.

Japan's current media structure evolved over the course of many years, its rich history playing a large part in that evolution. Journalistic activity among the populace was forbidden in early Japan and any information that was disseminated from the rulers was limited to only

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official proclamations, or one-way media that conveyed the will of those above to those below until around 1868 when the Meiji Restoration started. The Restoration period is credited with the birth and growth of the newspapers and magazines, however, the one-way communication style didn't change. Taketoshi (1989) states:

> The new Meiji government actually promoted the birth and growth of newspapers, but certainly not as a medium to convey information upward. Rather it planned to make the newspapers as a medium with which to promote its prime agenda: Japan's Civilization and Enlightenment. (*bunmei kaika*) (p. 375)

In the 1870s the People's Rights Movement was established and most newspapers of the time shifted to anti-government stances (Taketoshi, 1989). These anti-government stances of the newspapers lead to strained relationships with the government; the government felt threatened and only those papers that followed what the government wanted were treated well. For example, if the newspaper was one that was anti-government, those outlets received warmed-over news. The police had suppressed and banned those papers with an anti-government stance, but the people's rights movement was so effective that even though the papers the people of Japan subscribed to were banned, they still sent in their subscription fees. However, the government saw that these newspapers were still going to report on the activities of the government and found that they could not turn these newspapers away just because they were from a people's rights paper.

Reporters would assemble at important government assemblies and wait for the information to be dispatched; it was here that the first form of press clubs were formed. The reporters were forced to wait in the waiting rooms of the governmental offices. By 1882, the People's Rights Movement was successful in its quest for a constitution and the formation of a parliament and with that came the building of a shed beside the gates of the Imperial Palace that

would be used as a waiting room for the press and all those who were entitled to receive public notifications and appointments. The following year, a similar waiting room was set up at the Tokyo Metropolitan Police Headquarters, and in 1884, an "official" in charge of issuing news manuscript was appointed. This man was to deal directly with the reporters, and the information given to him was what the government and police wanted the press to report. As more of these waiting rooms popped up around the country, a club-like atmosphere began to arise where men were able to gather and discuss information and opinions. Finally, in 1889, the Meiji Constitution was promulgated, and, in 1890, the National Diet took form and thus came a more liberal stance on newspapers (Taketoshi, 1989).

From here on, it became clear just how indispensable the Diet sessions would be, the people wanted news from the Diet after it was formed so newspaper reporters descended on the scene in full force, prompting the Diet to issue tickets to the sessions. These tickets would lead to the actual formation of the press clubs, growing out of attempts to equitably distribute the limited number of tickets that were allotted. From 1890 to 1910, press clubs popped up in public offices, the Diet, and party headquarters. In 1908, Prime Minister Katsura Taro found that the best way to manipulate the press was through these clubs, and it was during his tenure that the clubs went from waiting rooms to their own comfortably furnished staffed quarters. "The switch from exclusion of patronage of the press clubs, then, was the clever stratagem of a prime minister who had become wise in the ways of controlling men's minds" (Taketoshi, 1989, p. 382). Since then, the press clubs of Japan have dominated the way the media structure is run.

By 1945 there was one club for almost every ministry, and, membership in these clubs was exclusive. Becoming a member of a press club meant registering with the government and membership was limited to journalists from only the most powerful newspapers. After World

War II, the United States oversaw the implementation of the current constitution in Japan that gives the press the freedom of speech and expression; however that did not change the press club system and the way news was and still is reported. Reporters still needed to be from powerful newspapers and you could not gather news unless you belonged to a press club. Today, there has been some change in these processes, including a change to the ruling party of Japan in 2009. The landslide loss of the LDP to the DPJ has seen recent changes in the way press clubs are operated, for example, some government officials have opened their press conferences to everyone regardless of press clubs and some officials have started using the Internet for press conferences and announcements.

McCargo and Hyon-Suk (2010) also found that even though new media are being adopted in Japan, there is still the tendency to stick with the old, not only because there are laws and restrictions on using those modes of communication, but because many Japanese are content with broadcast news and print newspapers. Also, the new ruling party, the DPJ, came to power campaigning that it would make changes to the press club system, abolishing the clubs and opening press conferences to everyone who wanted to gather the news. However, their attempts to do so have had poor results. As of the time of the article's publication (2010) only four major ministries had opened up their press conferences. The reason for this lack of headway on the abolition of the press clubs is that the major news media outlets do not cover the press club wars; all the news being reported by these newspapers is from press clubs who do not want to see them go away.

A few Japanese journalists have spoken out against these clubs; Tatsuya Iwase commented on his view of the press club system in an interview with Gamble and Watanabe (2004):

Japanese press clubs are nothing more than transfer devices. They function and will continue to function as mouthpieces for those interests that hold power in this country, because all they [press club journalists] do is a rote transfer of the information they are provided by news sources. This is assured, because that is the way they are able to stay close to the powers they work with and from whom they are fed exclusive information. The newspapers, of course, find this to be a very low-cost option for filling their pages, and so from a market perspective, it's hard for editors and managers to resist. (p. 33)

More recently, in the aftermath of the March 2011 earthquake and tsunami, the *kisha* clubs have come under scrutiny. On April 25, 2011, a group of Japanese journalists launched a new organization called the Free Press Association of Japan (FPAJ) (Segawa, 2011). The organization was launched after many freelance journalists were not allowed access to information regarding the disaster, a practice that Segawa (2011) believed could have endangered the lives of many citizens.

In a further look into the flow of information from the government to the media, Nakamura (2010) studied how the regime shift in 2009 has affected the flow of political information in Japan. Nakamura did this through a qualitative look at the Japanese press club literature and by investigating newspaper coverage since the DPJ took over in September 2009 as well as a series of interviews with different news services. When the DPJ took over, it had the goal of becoming more politically transparent, and it began by instituting some new media policies, including the announcement that news conferences would be held in principle only by politicians during legislative sessions and by opening up press conferences to include non-press club members. Nakamura (2010) found that this opening-up did in fact affect the flow of information; in the past it only came through the mainstream media but now it comes through in all news organizations including magazines and online media. It seems that the DPJ is aware of the growing and aging population and by moving to allow the freer flow of information from more than just the mainstream press has made an effort to attract the younger, more technically savvy crowd.

However, the opening up of press conferences has not signaled the end of the press clubs. The relationships between the reporters and the agencies, ministries, and businesses they report on are comfortable and many times can come with perks. These reporters are essentially embedded in these organizations. They are, or become over time, good friends with those whom they report on. Many instances have arisen in the past in Japan where the reporters knew what was going on, but they practiced self-censorship and did not publish the known information. For example, in 1988, the media did not report that the Showa Emperor had cancer, even though it seemed to be common knowledge (Seward, 2005). Also, for example, reporters were well aware of the background to the 1974 Tanaka scandal, the 1976 Lockheed scandal, the 1988 recruit scandal, as well as every other postwar political scandal; however, no newspaper dared to reveal the information. Newspapers revealed the scandals only after outsiders from publications like the *Bungei Shunju*, a monthly magazine, brought them to light (Nester, 1989). These relationships are yet another way the media are controlled; essentially the reporters work for the organization in which they are embedded.

These changes in the media and the government likely affected the coverage of the March 2011 earthquake; however, studies have not yet been released regarding the media coverage of this disaster in Japan; if available, they would be valuable in plotting the future of these clubs and the Japanese media as a whole.

The Newspaper Kyokai (The newspaper industry: The Nihon Shimbun Kyokai)

For seven years after the war the Supreme Command for the Allied Powers (SCAP) was the U.S. led occupying force. When SCAP took control, it chose not to dismantle the wartime Japanese media and instead kept most aspects of the media from wartime; this was because

SCAP wanted to use the easily manipulated media structure to influence Japanese public opinion to SCAP's own ends. The problems with not reforming the media were ownership remained highly concentrated and censorship was rampant. Many of the traits and structure that make up the news media of Japan today can be traced to pre-wartime and wartime because of SCAP's decision not to reform the media.

In 1946 the NSK (The Nihon Shimbun Kyokai) was established. The NSK contributed to the democratization of the press in Japan, educating journalists on their obligations and responsibilities to society, publishing documents, and holding seminars about free speech. However, one of the greatest powers that the association took over was developing the rules and regulations for the distribution of scarce newsprint, which gave the association the power to limit entry into the newspaper market by new publications (Freeman, 2000). But perhaps even more importantly, the association was given the role of the definer, legitimator, adjudicator, and maintainer of the press club system, which in turn gave the association control of Japan's information cartels. To understand better the relationships between this association and the newspapers, the following section discusses the "big 5" newspapers and their direct affiliates.

The "Big 5"

Today, Japan is a world leader in newspaper circulation with five national daily newspapers. As of 2010, Japan ranked third in the world for paid-for dailies total average circulation with 50,353,000 subscribers (*World Press Trends,* 2010). However, many believe this number is inflated because each of Japan's national daily newspapers publishes a morning and an evening edition, whereas many nations no longer find it profitable to do so. Also, Japanese newspapers have a marketing strategy that is more long term focused where, instead of pursuing

short-term profits, the newspapers are known to fight for market share, focusing on subscribers, striving to be the newspaper with the most. Almost all of Japan's newspapers (all except the entertainment tabloids) have home delivery, and newspaper-sales campaigns are broadly targeted to all demographics and promoted through intense door-to-door subscription drives (Gamble & Watanabe, 2004). In order to gain subscribers, each national paper tries to offer articles on as many different topics as possible with the editorial policy that avoids offending any demographic group resulting in overemphasized facts, little opinion, and, in many cases, a boring take on the news.

Japan's main publications include the *Yomiuri,* with a circulation of 10,019,000 (*World Press Trends,* 2010), the *Asahi*, with a circulation of 8,019,000 (*World Press Trends,* 2010), the *Mainichi*, with a circulation of 3,738,000 (*World Press Trends,* 2010), the *Sankei* with a circulation of 2,160,000 (*Foreign Press Center of Japan,* 2010) *,* and the *Nihon Keizai* with a circulation of 4,630,000 (*Foreign Press Center of Japan,* 2010). Each of these five dailies also has affiliations with one of the nation's five national television stations. The *Yomiuri* is associated with Nippon TV, the *Asahi* with TV Asahi, the *Mainichi* with TBS (Tokyo Broadcasting Systems), *Nihon Keizai* with TV Tokyo, and the *Sankei* has associations with Fuji TV. All associations are subject to legal constraints to avoid excessive power concentrations; however, these newspapers and broadcasters still have a significant amount of influence over one another and with some recent loosening of rules, newspapers are now allowed to own a higher percentage of television stations, a sign that things are going towards a similar structure of the West with its paradigm of multi-outlet ownership (Gamble & Watanabe, 2004). Gamble and Watanabe (2004) compare Japan's consolidation to that of the U.S. media's and discuss

Bagdikian's (1983) concerns over the dangers of such a consolidated industry on democracy stating:

> If even a portion of Bagdikian's assertions are true—that the depth and breadth of discourse is constrained by high concentrations of media power and that such media industries are easily manipulated by power holders—this is even more the case in Japan, where the press media has suffered from such high ownership concentration for some seventy years. (Gamble & Watanabe, 2004, p. 41)

This high concentration in media ownership is a key factor in how and why the media structure is the way it is and why it isn't changing anytime soon. Another key factor in the highly homogenous media is that of the *kisha* or press clubs.

The Media Keiretsu (Business Groups) of Japan

This institution involves the ownership of the media and the relationships between the companies that own the outlets. Freeman (2000) described Japan's newspaper ownership as appearing to be joint-stock companies, whereas they are closer to employee-controlled organizations. The Japanese Commercial Code allows newspaper companies to impose restrictions on the sale or transfer of their shares. Most newspaper companies are not even listed on the stock exchange, and their shares are controlled by associations managed for the benefit of the workers with some residual shares being held by the founding families. This ownership exemption was passed in 1951 so these newspaper companies could have freedom from external control, but it also ended up being a protection from being taken over by a foreign firm. As the media have expanded ownership shares to include radio and television, this exemption has in turn protected the entire media industry from outside influence.

The *keiretsu* relations are the relationships or affiliations between the broadcasting stations, radio, and the newspapers. The newspapers have been affiliated with radio stations since

at least 1924, and from then on, newspapers have had the most control, owning as much as they

can of the broadcast stations as well as the local papers, as most local papers actually belong to

or are affiliated with a national broadcasting group. Freeman (2000) states:

> In most cases the parent newspaper owns shares in the station and in some cases so too
> does the newspaper's metropolitan broadcasting affiliate. Personnel and other capital
> connections from the national newspaper and the metropolitan broadcaster, as well as the
> local station's dependence on the nationals for news and programming, further
> consolidate their clear identity as a member of the group. (p. 155)

These relationships are what have extended the control of the newspapers to broadcasting

and other outlets in Japan and have preempted the rise of alternative media. These relationships

also ensure that the newspapers will continue to be Japan's main source of news information.

This arrangement is unlike what has occurred in the United States. Carey and Maynard (2005)

discussed briefly that newspapers in the U.S. have been barred from owning television stations in

their markets since at least the 1970s. This was because it is believed that these collaborations

limit the variety and diversity in the news. Japan has a definite lack of diversity in its news, and

this result is partly due to this collaboration between the newspapers and the broadcast stations

they own and control.

HYPOTHESES

The following overarching research question guided my study: Does culture affect the framing of disaster news stories? A review of the literature about media coverage of disasters, framing, and the influence of culture on news supports the following hypotheses.

The Effect of Culture on Disaster Coverage

Understanding the cultural differences between the two countries being studied can help to explain how and why their news coverage of the March 2011 Japan earthquake and tsunami may differ. Using the five cultural dimensions put forth by Hofstede (1984; 2001) we know that Americans have a smaller power distance, are more uncertainty-accepting, are highly individualistic, and are more minimal-social-differentiated with a short-term orientation. On the other hand, the Japanese have a larger power distance, show more uncertainty avoidance, are a collectivistic society, are highly masculine, and are known to have a higher long-term orientation. From these cultural differences it can be assumed that the Japanese newspaper will use fewer myths than the American newspaper.

The Japanese have a stronger Uncertainty Avoidance (46, ranking 7th), meaning they are a more structured or rigid society with the employment of more safety and security measures. Because the Japanese are this way, it is less likely that references to panic flight, psychological dependency, and disaster shock would be reported; Japanese reporters would know the safety precautions in place and that people would be less likely to panic because they know that the building codes are strict, emergency regulations are in place, and that help would be on the way. Also, the level of collectivism found in Japanese society suggests that panic flight, disaster

shock, and psychological dependency would not occur because of the amount of importance the Japanese place on taking care of each other.

Also, in the United States, panic flight, psychological dependency and disaster shock are commonly reported in news media and seen in movies (Fischer, 1994; Quarantelli, 1985), making it much more likely that they would be reported in the United States. Therefore the following hypotheses were posed about the coverage of the March 2011 Japan earthquake:

- **H1A1:** The NYTimes.com will use the panic flight myth more than will the *Yomiuri Shimbun* online coverage.

- **H1A2:** The NYTimes.com will use the psychological dependency myth more than will the *Yomiuri Shimbun* online coverage.

- **H1A3:** The NYTimes.com will use the disaster shock myth more than will the *Yomiuri Shimbun* online coverage.

Japanese society displays a long-term orientation (scoring 80 on the scale), wherein persistence, thrift, and having a sense of shame and family hierarchy, as well as believing in treating others as they would want to be treated are important. These ideas are held strongly in Japan, lessening the likelihood of looting. Japanese people are a patient people, unlike people from the United States who want things when they want them (the United States scored a 29 on the scale). Therefore the following hypothesis was posed about the coverage of the March 2011 Japan earthquake:

- **H1A4:** The NYTimes.com will use the looting myth more than will the *Yomiuri Shimbun* online coverage.

Long-term orientation can also be why the myth of evacuation behavior is not reported in the Japanese newspaper. The Japanese are known as patient people who obey the golden rule. Consequently, evacuating with no respect for other individuals would be unlikely. Japan's strong uncertainty avoidance would also explain why evacuation behavior would not happen nor be reported. Japan is a society that likes structure, with rules and regulations such as strict building codes because of past disaster experience; because of Japan's strict structure, it would be more likely to see this myth reported in the United States coverage than in the Japanese coverage. Therefore the following hypothesis was posed about the coverage of the March 2011 Japan earthquake:

- **H1A5:** The NYTimes.com will use the evacuation behavior myth more than will the *Yomiuri Shimbun* online coverage.

Timing, a part of long-term/short-term orientation, is a factor in reporting disaster myths. Reporters are on a deadline; however, the American people are demanding information about the disaster, they are farther away, making it harder to get information sometimes, so U.S. reporters may be more likely to make assumptions about the behaviors they see instead of taking time to fully investigate them. The number of myths should be higher in the U.S. coverage because the reporters are making assumptions about disaster behavior and the haste with which reporters are forced to report their stories.

It is also possible that time and culture may interact to explain the use of disaster myths in the two newspapers. Because the two countries vary greatly in the long-term/short-term orientation, (The U.S. wants immediate reaction and answers, whereas the Japanese are more likely to take their time to be able to report with more certainty) the amount of time after the

disaster struck coupled with this fact could interact to explain the use or non-use of disaster

myths. Thus, the following predictions were made:

- **H2A:** The NYTimes.com will use more myths during the first 5 days of coverage of
  the March 2011 Japan earthquake than it will during the next 30 days of coverage.

- **H2B:** Across the two online newspapers, time and culture will interact to predict the
  number of disaster myths in the coverage of the March 2011 Japan earthquake.

Disasters are not everyday occurrences; people often do not have experiences that will help

them understand the impact and damage of the disaster. One approach reporters could take to

convey to readers the circumstances surrounding the disaster would be to refer to past disasters

for comparisons. In the case of the NYTimes.com, having something to compare the Japan

earthquake to may be particularly important because its readers are not in Japan to see the

destruction firsthand. So NYTimes.com reporters may be more inclined to use references to past

disasters to help their readers understand what has happened. Thus, the following predictions

was made:

- **H3A:** Past disasters will be mentioned more in the NYTimes.com than in *The Yomiuri
  Shimbun* online coverage.

The Effect of Gatekeeping on Disaster Coverage

Gatekeeping is defined by Shoemaker (1996) as the "process by which countless

messages are reduced to the few we are offered in our daily newspapers and television news

programs" (p. 79). Gatekeeping is the antecedent to reporting; it influences the many decisions

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involved in the reporting process. Gatekeeping asks what will the stories be written about? What should be included or left out? And how should the story be shaped? Scanlon, Luukko, and Morten (1978) found, in times of disaster, the gatekeeping process is lacking because the demand for information is high and access to accurate information, such as death and injury tolls, and damage estimates, may be limited, leading to conflicting information being published. This is to be expected in U.S. coverage of the March 2011 earthquake because access was limited; reporters were not in Japan when the disaster struck, so they were unable to see the areas hit or to get immediate access to those with information regarding the death toll, injuries, and damage in the initial hours after the disaster struck. Since the earthquake took place in Japan, Japanese journalists had a better opportunity to reach sources who had more accurate death toll, injury, and damage estimates. Thus, the following hypothesis was posed:

- **H4A: T**he number of stories with conflicting information (i.e., death, injury, missing, and damage estimates) about the March 2011 earthquake will be greater in the NYtimes.com than in the *Yomiuri Shimbun* online coverage.

Sourcing can also prove to be an issue in stories published in the aftermath of disasters. For example, Quarantelli (1981) found that most stories included "official" sources, which provide what he calls the "command-post point of view" of disasters. Official sources are those that are elected or appointed; for example, the director of FEMA, or a state government official are official sources. This command-post point of view can present a skewed view of events. Considering Japan's heavy reliance on the press club system, the sources used by Japanese reporters are expected to be higher because most reporters are receiving the same press releases and other announcements that official sources, such as the Prime Minister's official residence

and government ministries are putting out. Reporters who do not belong to the press clubs, such as foreign reporters, will have less access to the types and number of sources than those who do belong to the press club. Also, since Japan was the country where the disaster took place, it is expected that Japanese reporters will have more access to a larger variety of sources than will the journalists from the United States. Thus, I made the following predictions:

- **H5A:** The *Yomiuri Shimbun* will use more sources in its earthquake coverage than will the NYTimes.com coverage.

- **H5B:** The *Yomiuri Shimbun* online coverage will use more "official" sources than will the NYTimes.com coverage.

- **H5C:** Across both papers, there will be more use of "official" sources than non-official sources.

Media Hype and Disaster Coverage

Disasters can be the trigger for a media hype (Vasterman, 2005; Vasterman, Yzermans & Dirkzwager, 2005; Wien & Elemelund-Praestekaer, 2009). Trigger events are unusual events that the news media will focus upon and enlarge with their non-stop coverage, evoking social responses that will eventually become news as well, thus further stimulating the news wave (Vasterman, 2005). The initial earthquake and tsunami were immediate disasters, something Japan is familiar with. The nuclear crisis took longer to unfold and has been laden with uncertainty about the outcome, making it more unusual than the earthquake and tsunami disasters. The debate over the safety of nuclear energy is world-wide and Japan is a country that depends heavily on nuclear power, making the nuclear issue more unusual than the other two disasters, it could affect more than just Japan in the long run. Journalists may have reported more

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on the nuclear crisis because of the uncertainty of its outcome and the potential for the nuclear

damage to last for years. There is also the fact that there are many possible health risks and other

factors that make nuclear energy dangerous; therefore it may be that journalists focused a great

deal of their energy on the nuclear crisis. Thus, I asked the following question:

- **Research Question 1:** For both the *New York Times* and the *Yomiuri Shimbun*, is

  there more nuclear crisis coverage than earthquake/tsunami coverage?

METHODOLOGY

This study employed a content analysis, defined as "the systematic, objective, quantitative analysis of message characteristics" (Neundorf, 2002, p. 1). Content analyses have been used to study the content of many types of media messages, including the analysis to newspaper coverage of disasters (i.e., Quarantelli et al., 1993; Tierneyet al., 2006; Goltz, 1984).

I performed a content analysis of online newspaper stories posted in two newspapers between March 11and April 15, 2011, that mentioned the March 2011 Japan earthquake, tsunami, or nuclear crisis. The reason for this time frame was twofold. First, in this study, two of the concepts I measured were media hype and disaster myths. In order to find the height of the nuclear crisis coverage it was important to start from the beginning of the coverage of the disaster, which was March 11, 2011. If I started 15 days out and sampled 35 days from there, I might have missed when the hype started.

As for disaster myths, they too have typically appeared in the hours and days after a disaster has struck and lessen over time (Quarantelli, 1985; Solnit, 2009). As a result, I needed to gather stories from the beginning of the disaster coverage. The second reason for this 36-day time frame is that I wanted to investigate changes in the use of sources in the immediate aftermath of the disaster.

Newspaper Outlet Selection

I analyzed the online editions of two national newspapers, *The New York Times* and *The Yomiuri Shimbun*. I selected *The New York Times* online version, NYTimes.com, because, according to *World Press Trends 2010*, NYTimes.com ranks number one in the category of daily

newspaper websites in the United States. *The New York Times* online audience as of March 2010 was 15,445,000 unique visitors per month, five million more than *The Washington Post's* monthly visitors of 10,062,000. The NYTimes.com not only publishes a significant number of stories from its print version but also adds many features like slide shows, charts, and videos. *The New York Times* is a prestigious and influential newspaper in the United States winning 106 Pulitzer Prize awards since it first began in 1851 (The New York Times Company). Further, Danielian and Reese's 1996 study of intermedia agenda setting found that the *New York Times* set the agenda for other news media outlets on the issue of the nation's cocaine problem in the late 1980s.

The second source I used was the *Yomiuri Shimbun's* online newspaper website. According to *World Press Trends 2010*, the *Yomiuri Shimbun* leads Japan in circulation and the *Yomiuri Shimbun* online ranks number one in Japan with roughly 13,000,000 unique visitors per month. The *Yomiuri Shimbun's* online site was launched in 1995, and it offers a wide array of news, photos, and videos. The *Yomiuri* online offers a website in Japanese and one in English; the site that I used was the English language website. With the help of a Japanese translator to navigate the website and gain membership, I was able to collect my sample.

My universe of content was articles from the NYTimes.com and the *Yomiuri Shimbun* website (yomiuri.co.jp*)*. I investigated the time frame of March 11 to April 15, 2011. I took a census sample of all articles relating to the March 2011 earthquake, tsunami, and nuclear crisis from both the NYTimes.com and yomiuri.co.jp.

For the search on the NYTimes.com, many search terms were examined to find the most comprehensive list of articles. The most comprehensive term was "Japan earthquake" which yielded 538 results. For the search on the *Yomiuri Shimbun* website, the search terms that yielded

the most exhaustive list was "East Japan major earthquake disaster." The reason for having different search terms between the two newspapers was the language difference. Ken Beecken, a Japanese translator, explained that in Japan people use a different word for "earthquake" which translates to "earthquake disaster" – "this term is more commonly used when an earthquake actually hits populated areas, i.e., an earthquake in the middle of the ocean is just an earthquake, whereas an earthquake that hits a populated area and causes damages is an 'earthquake disaster'" (K. Beecken, personal communication, October 13, 2011). The search from the *Yomiuri Shimbun* yielded 595 articles.

For each newspaper, after a search was run on the website's archives, all editorials, letters to the editor, and blogs were removed from the sample, leaving only the news and feature stories. Furthermore, because some items about the March 11 earthquake that ran in the *Yomiuri Shimbun* online were very short (e.g., there were articles that were nothing but a list of the dead and missing, there were also articles that were nothing more than saying that a shelter is located in a specific spot, or were short re-caps of sports games); I required that news articles from this paper had to be at least three paragraphs long. Intercoder reliability for the removal of newspaper items was a Cohen's Kappa of .86. . The final sample was as follows: 261 articles from NYTimes.com and 276 from the *Yomiuri Shimbun* online.

Variables

In this study I measured 11 variables within each newspaper article: date of publication; newspaper outlet; author/byline; sources used in news stories; estimates of death, injury, missing and damage; references to past disasters; disaster myths; and media hype. See the appendix for a copy of the coding scheme.

Date of Publication

Date of publication is the date that the story appears in the online newspaper. To test some of my hypotheses, this variable was further broken into two categories: early coverage (stories published between March 11 and March 15) and later coverage (stories published between March 16 and April 15).

Newspaper Outlet

Each story was coded into one of two newspaper outlet categories, based on where it was published.

Author/Byline

I wanted to measure how many stories were wire stories and how many stories originated with the chosen newspaper's reporters. As part of my descriptive analysis of the coverage, I wanted to describe the newspaper's reliance on wire services and other outside sources for stories.

Sources used in News Stories

I categorized the sources that reporters used in their stories. I also counted the total number of sources used in each story. A source was defined as a person, or entity (e.g., a company or an organization) that provided information and opinions that were attributed to that entity and that were directly quoted in the story.

For this study, sources were broken into seven categories, some of which were adopted from Quarantelli et al. (1993) cross cultural study of disasters and others were added for their

relevance to Japan. The source categories were: official, nongovernmental organizations, other media sources, victim sources, education/research/expert sources, business sources, and other.

Official sources were defined as those who are elected or appointed to their positions. They included all government sources. Government were defined as sources that were at the federal level in the United States or unitary level in Japan, as well as state and local levels for both countries. The federal level includes the Federal Emergency Management Agency (FEMA) in the United States and the Ministry of Internal Affairs and Communication's Fire and Disaster Management Agency (FDMA) in Japan. The state, regional or prefectural level included state leaders in the United States such as governors; in Japan this would be the governor of a prefecture. The local level of government was also included here; this included fire, police, and all city employees, including mayors.

Official sources also included city police and fire department officials, and emergency management government agencies such as FEMA, and FDMA in Japan. An official source could also be Japan's Self-Defense Force, or any source that states it is affiliated with the government.

Non-governmental organizations (NGOs) were any nonprofit, voluntary citizen group, organized on a local, national, or international level and included organizations like Save the Children. If it was not clear whether a source was an NGO, coders consulted Worldwide NGO Directory online as well as simply Googling organizations to determine whether the organizations in both Japan and the U.S. were an NGO or a government source.

Other media sources included local, national, and international journalists, newspapers, television news broadcasts. Sometimes journalists used other journalists as sources, for example, "CNN reported that the U.S. has donated millions of dollars to the relief effort in Haiti," or "Associate Press reported…"

Victim sources were those people identified as a survivor or victim of the earthquake/tsunami and nuclear disaster.

Educational/research/expert sources include educational sources such as professors who studied earthquakes or the Japan culture. They could also be members of agencies not associated with the government and that are not NGOs; an example of one such source would be the National Press Photographers Association. Associations and clubs fell under this category because reporters used the associations as experts or educational sources. Expert sources could be anyone from the U. S. Geological Survey (USGS) or anyone who may be an expert in anything earthquake, tsunami, or nuclear related; for example, a source that might be used is an engineer of earthquake and tsunami warning systems, or a scientist at the earthquake research institute in Japan. Another example of an educational/research/expert source is a professor of sociology or professor of geology at a university.

A business (spokesperson) source included any public information officer (PIO), public relations representative, director of communications or any person acting as a spokesperson for an organization. For example, any company affected by the disaster might have had its spokesperson speak with the media. A place this might have been seen was in coverage about the automotive industry. Another example would be as follows "Karen Cisco, spokesperson for Three Mile Island said…"

If it could not be determined what category the source fell into, coders used the "other" source category. These "other" sources included unnamed passersby, sources with only first names, and sources who wished to remain anonymous and were given no other attribution.

Other types of sources that may be listed under "other" are medical sources. Medical sources include doctors, nurses, staff members of a hospital, hospital directors and the like.

These members and the hospital do not speak on behalf of organizations like the Center for Disease Control or other large organizations affiliated with the government or NGOs. For example, if it said "Duane Lee, a doctor with the Iwate hospital, said, we have run out of medical supplies and have no power," that would be counted as "other."

Estimates of Death, Injury, Missing, and Damages

Mentions of the number of deaths from the disaster, the number of injured and the amount of damage were noted. These estimates were reported as numbers. Examples include the following: "At least 50 people have been killed, with that number expected to grow to more than 200." "The tsunami wiped out 90% of the town, killing approximately 30,000 people." For example, journalists may report that damages are expected to surpass the billion dollar mark, or, damages are estimated at $5 million.

Mentions of Past Disasters

For each story I noted whether the story mentioned the following disasters: Chernobyl, Three-Mile Island, the Japanese tsunami of 1896, the Indian Ocean tsunami of 2004, the 1960 Chile earthquake, the 1923 Great Kanto Earthquake, and the Kobe earthquake of 1995.

Disaster Myths

This study also investigated the use of five disaster myths: panic flight, looting, psychological dependency, disaster shock, and evacuation behavior. I measured the variety of myths that the newspapers used as well as the number of myths reported in the aftermath of the March 2011 Japan earthquake.

Disaster myths are based on the assumed behaviors humans display after catastrophic events. Disaster myths as stated by Quarantelli and Dynes (1972), are the popular images of how people behave in disasters and are based on flawed assumptions about the frailty of the human personality and social organization that are usually inaccurate or false.

Panic flight, the first myth, deals with the individual; it is the idea that when a disaster occurs victims will panic and engage in any behavior they deem necessary to escape (Fischer, 1994; Quarantelliet al., 1993, Quarantelli & Dynes, 1972). Operationally, panic flight was present in a story when journalists report that individuals panicked and ran to escape the danger from the earthquake and the tsunami. Examples of words that might be used in these references were these: "people scrambled to get away," "people were running everywhere as if they didn't know where to go," and "they had a look of panic on their face as they ran away from the building."

The term "looting" has military roots and implies that the invading army will take property by force, generally when the owner cannot protect it (Quarantelli & Dynes, 1972). Looting may be reported as people taking items that are not necessary for immediate survival and are instead used for personal gain, monetary or otherwise. Here is an example from *The New York Times* after Hurricane Katrina hit: "Chaos gripped New Orleans on Wednesday as looters ran wild….looters brazenly ripped open gates and ransacked stores for food, clothing, television sets, computers, jewelry and guns" (McFadden & Blumenthal, 2005). The New Orleans *Times-Picayune* reported, "In the midst of the rising water, two men 'were planning to head out to the levee to retrieve a stash of beer, champagne, and hard liquor they found washed out onto the levee" (MacCash & O'Byrne, 2005).

Psychological dependency, the third myth, was defined as victims and survivors being unable to function and take care of themselves after the disaster struck (Fisher, 1994). In the news articles, psychological dependency could have been reported as outsiders being called into help with the recovery and response because victims and survivors were "out of it" and unable to take care of those hurt, those who need rescuing, the setting up of shelters, and the gathering of food, water and necessary supplies.

Disaster shock, the fourth myth, is the stunned, incredulous reaction immediately after a disaster (Fisher, 1994). In stories, examples of disaster shock were reports of people wandering about as if lost, sitting alone staring into space, walking as if they had no purpose, or even looking as if they were in a zombie-like state.

Evacuation behavior, the fifth myth, refers to the group level of panic. This myth focuses on the behaviors that groups of people display when they are fleeing or evacuating. In this case, the myth says that if there is an evacuation, residents will flee in an unorganized and hysterical way, pushing and shoving each other, driving each other off roads to escape the imminent danger of a disaster (Fisher, 1994). This myth could be reported in stories as highways being riddled with accidents, and people driving erratically at high speeds to save themselves from the potential hazards with no regard for those around them.

Media Hype

For this study, a media hype was conceptually defined as "a media generated, wall-to-wall news wave, triggered by one specific event and enlarged by the self-reinforcing process within the news production of the media" (Vasterman, 2005, p. 515). Operationally, a media

hype was the number of news stories per day about the earthquake/tsunami of March 2011 or the resulting nuclear crisis.

Stories were coded into one of three categories: 1) the March 2011 earthquake/tsunami was central to the story and/or the central theme of the story was about earthquakes/tsunamis in general, and the story contained a reference to the March 2011 earthquake/tsunami, 2) the story was primarily about the nuclear crisis brought on by the tsunami and earthquake, or about nuclear power in general, with some sort of reference to the Japan nuclear crisis; 3) the March 2011 earthquake, tsunami, and the nuclear crisis were all central to the story. All aspects were treated with equal importance in the story. In order to accurately categorize each story, paragraph themes within each story were counted to see the predominant theme of each story.

Coding Scheme Development

To develop my coding scheme, I examined variables used in past studies of disaster coverage. More specifically, I drew upon a large study done by Quarantelli et al.,(1993). This was a cross-cultural study that investigated the reporting of news in disasters by comparing Japanese and American communities. I based my source categories on this study. Quarentelli et al., also investigated various disaster myths. They looked at seven myths found in the literature: panic, looting, martial law, mass evacuation, increased crime, disaster shock, and mass sheltering. From this list I took panic (flight), looting, mass evacuation (evacuation behavior), and disaster shock. The fifth one that I added was psychological dependency and that was based on research done by Fisher (1994).

After a thorough investigation of the literature, the idea of gatekeeping, or lack thereof, stood out regarding death, damage, missing and injury estimates reported in disaster stories.

Fisher (1994) mentioned gatekeeping briefly and it seemed as if investigating the fluctuation of estimates for those four estimation categories would be a worthwhile endeavor. To my knowledge, this has not been measured and was included in this study in an effort to see how often reporters rely on these past disaster experiences to relay the seriousness and scope of the current disaster to readers.

Media hype is a rather new phenomenon with only a few studies having been previously done. To code for a potential media hype I drew from Vasterman (2005) and Vasterman et al., (2005)'s work on media hypes.

Coder Training

At the beginning of coder training, I went through the scheme completely with my other coder to address any questions she had. Then, the other coder and I practiced coding 15 online newspaper stories from each of the *LA Times* and the *Japan Times*, about the March 2011 earthquake/tsunami and nuclear crisis. We then discussed our codes for each story, i.e., why each of us coded certain sources as we did and how we came to those conclusions. After this activity, I revised a few sections of the scheme to better reflect what was discussed, and we coded 15 more practice stories from the same newspapers and discussed the codes again. We repeated this procedure three times until our practice runs resulted in a high level of coding agreement. We then moved onto intercoder reliability.

Intercoder Reliability

In a quantitative content analysis, the reliability of the coding scheme must be established (Neuendorf, 2002). To assess intercoder reliability, my coder and I worked independently to

code 40% of the stories in the sample, i.e., 20% of the articles from the NYTimes.com and 20% from the sample of *The Yomiuri Shimbun*. This amounted to 31 stories from each newspaper (62 total for the whole sample) for each intercoder reliability attempt. In all, four rounds of intercoder reliability were performed; each time a different set of stories was randomly selected using a systematic random sampling method.

I calculated Cohen's Kappa, a chance-adjusted reliability statistics to test the categorical variables for intercoder reliability. My goal was to achieve intercoder reliability levels of .80 and above. Neundorf (2002) states "reliability coefficients of .90 or greater would be acceptable to all, .80 or greater would be acceptable in most situations" (p. 143). However, Hayes (2005) suggests that levels of acceptability can be as low as .70. Krippendorff (2004) suggests an even lower level of acceptability of .667 when research is more exploratory in nature. Table 1 provides information on final reliabilities for each variable.

Table 1

Variable	Round 1	Round 2	Round 3	Round 4
Classification of sources	.71	.77	.64	.86
Date	.97	1.0	.96	
Author	.69	.88	.97	
Area of Estimate	.50	.49	.74	
Chernobyl	.85	1.0	1.0	
Three Mile	.85	1.0	1.0	
Bhopal	No Mentions	No Mentions (removed and added 1896 tsunami in its place)	N/A	REMOVED
1896 Tsunami	N/A	N/A	1.0	
Indian Ocean Tsunami of 2004	.70	.00	No Mentions	
1960 Chile Quake	No Mentions	1.0	1.0	
Great Kanto Quake	1.0	No Mentions	No Mentions	1.0
Kobe 1995 Quake	.94	.85	1.0	
Panic Flight	.00	1.0		
Looting	No Mentions	No Mentions	.00	.64
Disaster Shock	.49	.00	.49	REMOVED
Psych Dep	No Mentions	No Mentions	No Mentions	REMOVED
Evac Behavior	.00	.00	No Mentions	REMOVED
Media Hype	.59	.50	.59	.86

Intercoder Reliability Data

As shown in Table 1, three variables were removed from the study because intercoder reliability could not be attained for them. Eleven variables had reliabilities of .86 or above, falling well within the intercoder reliability guidelines of Neundorf (2002), two variables had reliabilities between .70 and .74, falling within the guidelines set out by Hayes (2005), and one variable, looting, was just under Krippendorff's (2004) guildelines . However, it was determined that this was acceptable due to the low number of looting mentions in the sample, the latent content nature of disaster myths, and the fact that this research is more exploratory in nature.

Throughout all four intercoder reliability rounds it was found that there were a few variables that were rarely, if ever, mentioned, resulting in their removal. In the case of the Bhopal disaster, it was never mentioned, but I noticed that the 1896 tsunami in Japan was, so I made a replacement.

As for the disaster myths, disaster shock, psychological dependency, and evacuation behavior were removed from the coding scheme due to the difficulty crafting effective operational definitions for them.

This was a study of online newspaper articles from two newspapers: *The New York Times* and the *Yomiuri Shimbun*. The sample size was 537 articles, 261 from the *New York Times* and 276 were from the *Yomiuri Shimbun*. Of the 261 newspaper articles from the *New York Times,* 123 were staff written and 132 were written in collaboration or with contributions. Within the *Yomiuri Shimbun,* one was staff written and 267 had no mention of who wrote the stories. On average, a story used 3.87 sources to report information regarding the disaster. The NYTimes.com used an average of 4.57 sources per story and the *Yomiuri* Shimbun used an average of 3.20 sources per story. Stories were more likely to be about the March 2011 earthquake/tsunami or earthquakes/tsunamis in general (41.7%) than they were to be about the 2011 Japanese nuclear disaster or nuclear disasters/power in general (39.1%) or about earthquake/tsunamis and nuclear topics (19.2%) equally.

Hypotheses and Research Questions

Disaster Myths

General Information

Throughout the entire sample, disaster myths were only mentioned 19 times (3.5% of stories). Panic flight was mentioned 14 times (2.6%) and looting was mentioned five times (0.9% of stories).

H1A1: The NYTimes.com will use the panic flight myth more than will the *Yomiuri Shimbun* online coverage.

The newspapers used this myth sparingly; the NYTimes.com used it 12 times, and the *Yomiuri Shimbun* used it two times. To test H1A1, a chi-square test was used.

This hypothesis was supported; there were significantly more uses of the panic flight myth within the *New York Times* (4.6%) than the *Yomiuri Shimbun* (.7%), $\chi^2(1, N = 537) = 7.93$, $p \leq .05$. The effect size was .121 and was calculated using Cramer's V.

H1A2, H1A3, H1A5: The NYTimes.com will use the disaster shock, psychological dependency, and evacuation behavior myths more than will the *Yomiuri Shimbun* online coverage.

These three hypotheses were not tested due to the inability to reach intercoder reliability for the three disaster myths. These myths were either not mentioned at all, or the definitions were hard to agree on.

H1A4: The NYTimes.com will use the looting myth more than will the *Yomiuri Shimbun* online coverage.

The looting myth was used even more sparingly that was the panic flight myth; the NYTimes.com mentioned this myth three times (1.1% of stories) and the *Yomiuri* Shimbun mentioned looting two times (0.7% of stories). To test this hypothesis, a chi-square test was used.

This hypothesis was not supported; $\chi^2(1, N = 537) = .26, p = .61$.

H2A: The NYTimes.com will use more myths during the first 5 days of coverage of the March 2011 Japan earthquake than it will during the next 30 days of coverage.

To test this hypothesis, a Mann-Whitney U test was conducted because the dependent variable (number of myths per story) was not normally distributed (skewness was 5.04 and kurtosis was 23.53). The Mann-Whitney U test is the nonparmetric equivalent of the t-test. Additionally, because Hypotheses H2A and H2B have overlapping data, a Bonferroni correction was made to the p value, to avoid inflating the family-wise Type I error rate. As a result, the p value for H2A and H2B is $p \leq .025$.

To test this hypothesis, a new variable had to be made: date groups. Based on the date, an article either went in group 1 (first 5 days) or group 2 (last 30 days). Across the sample there were 64 articles (24.5%) published in group 1 and 197 (75.5%) that were published in group 2. This hypothesis was not supported: $z = -.199$, $p = .843$.

H2B: Across the two online newspapers, time and culture will interact to predict the number of disaster myths in the coverage of the March 2011 Japan earthquake.

To test this hypothesis, a new variable was created: total number of myths used per story. For the entire sample of 537 articles, disaster myths were only mentioned 19 times (3.5%).

This hypothesis was tested by running a univariate analysis of variance, or ANOVA. This hypothesis was not supported: $F(1, 32) = .74$, $p = .85$. Time and culture did not interact to predict the number of disaster myths.

Past Disasters

General Information

Nearly 70% of the time, no past disasters were mentioned in the articles and 22.5 % of the time at least one past disaster was mentioned.

The NYTimes.com used an average of .51 past disasters per story, whereas the *Yomiuri Shimbun* used an average of .26 past disasters in each story. Overall, Chernobyl was the most frequently mentioned past disaster (13.2% of stories mentioned Chernobyl) and the 1995 Kobe earthquake was the second most mentioned past disaster (12.1% of stories mentioned Kobe). On average, the NYTimes.com mentioned Chernobyl .25 times and the *Yomiuri Shimbun* mentioned it .025 times. The 1995 Kobe earthquake was mention an average of .08 times in the NYTimes.com coverage and .16 times in the *Yomiuri Shimbun*.

H3A: Past disasters will be mentioned more in the NYTimes.com than in the *Yomiuri Shimbun* online coverage.

To test this hypothesis, the number of past disasters mentioned in each story was calculated.

This hypothesis was tested by conducting a Mann-Whitney U test. This test was chosen over the t-test because the dependent variable was not normally distributed (skewness was 1.52 and was kurtosis 1.45). This hypothesis was supported: $z = -4.24$, $p < .05$. The NYTimes.com contained more mentions of past disasters (M=.51, SD = .72) than did the *Yomiuri Shimbun* online stories (M=.26, SD = .52).

Gatekeeping

H4A: The number of stories with conflicting information (i.e., death, injury, missing, and damage estimates) about the March 2011 earthquake will be greater in the NYTimes.com than in the *Yomiuri Shimbun* online coverage.

To investigate this question, graphs were made to depict the numbers reported for death estimates, damage estimates, and missing estimates (injury estimates will not be shown due to a very low frequency of estimates reported in the entire sample). Figures 2, 3, and 4 depict the differences in the coverage between the two newspapers. It is important to note that there were two different codes for area of estimate; the estimates in stories could either have been a national estimate or a local/specific town/prefecture/city estimate. The figures depict only the national estimates to allow for comparison between the two newspapers.

Death estimates were the most common estimate reported (43 mentions).As can be seen in Figure 2, death estimates fluctuated throughout the 36 days studied. This occurred between the two newspapers as well as within the newspapers themselves. It could have been assumed that the Japanese reports would be less conflicting because the National Police Agency releases an official death, injury, missing, and damage report, updated almost weekly. Interestingly that was not the case, although the fluctuations were not as erratic as the *New York Times*, nor were the reports as often.

Missing estimates (see Figure 3) were the second most common reported estimate (28 mentions). Similar to the death estimates, there was some fluctuation throughout the time period studied and the NYTimes.com reported far more missing estimates than did the *Yomiuri Shimbun.*
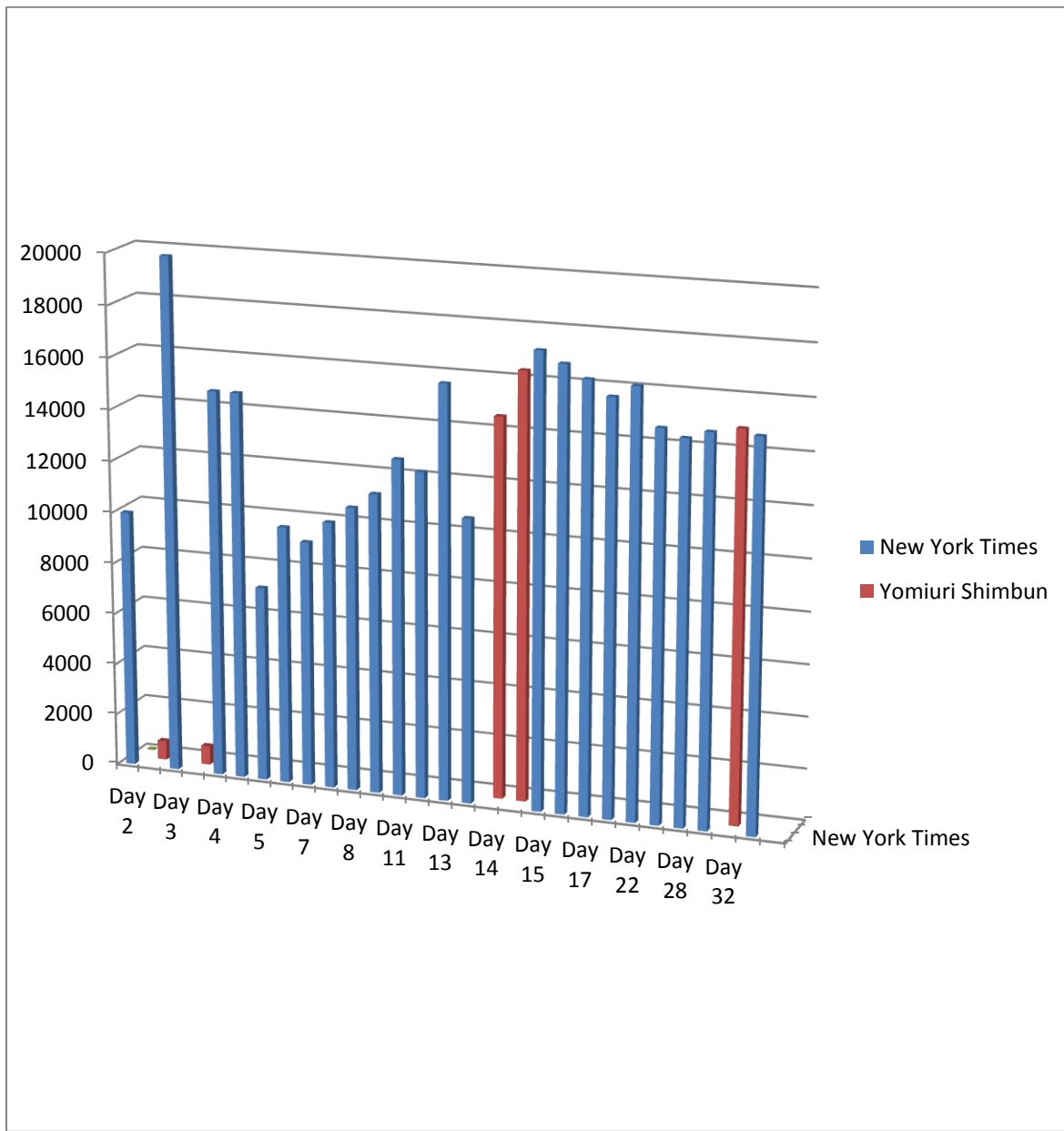
Damages were not as widely reported (10 mentions). Again, the NYTimes.com reported more damage estimates than the *Yomiuri Shimbun*, but interestingly the largest fluctuation came from the *Yomiur Shimbun* (see Figure 4).
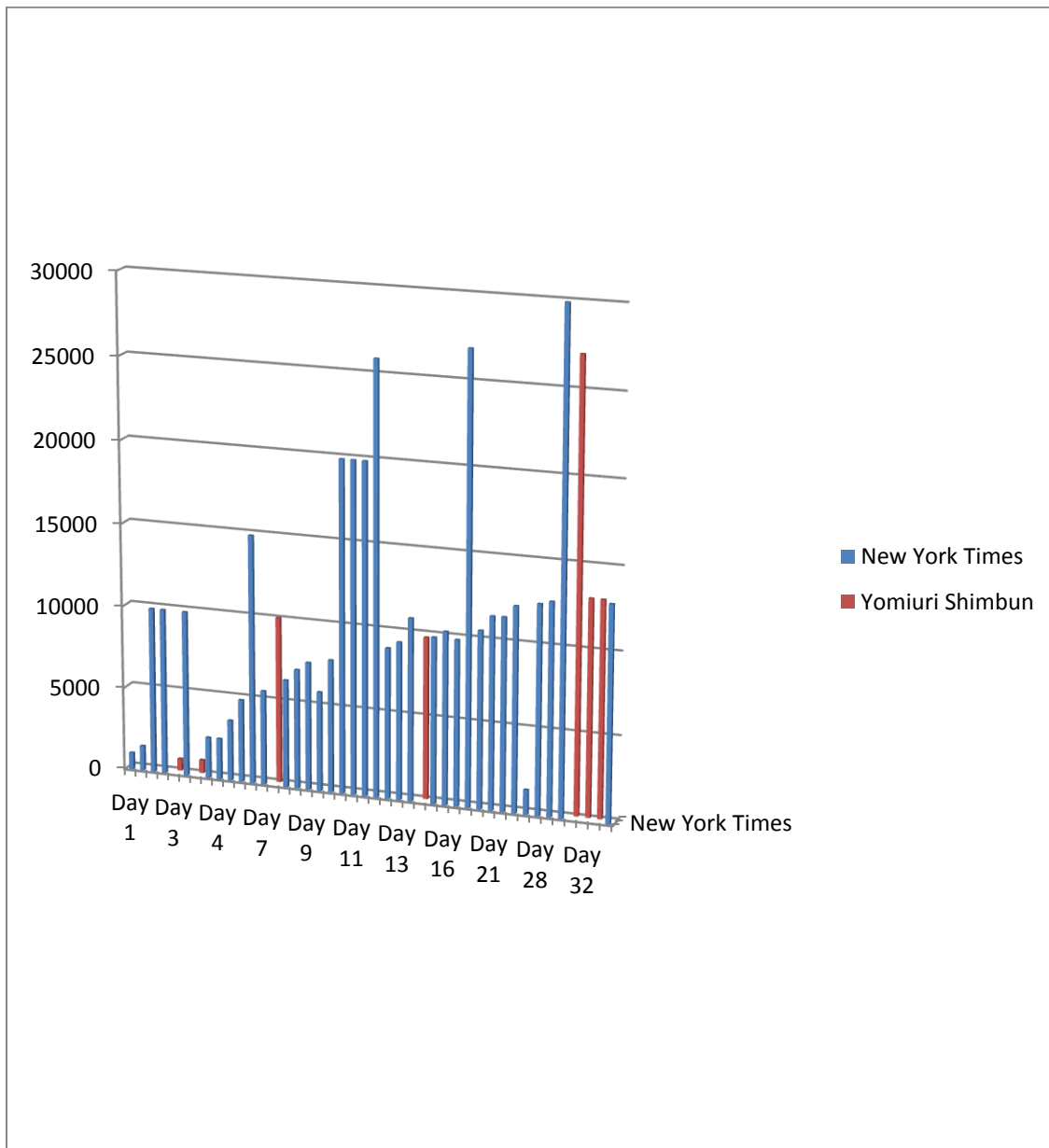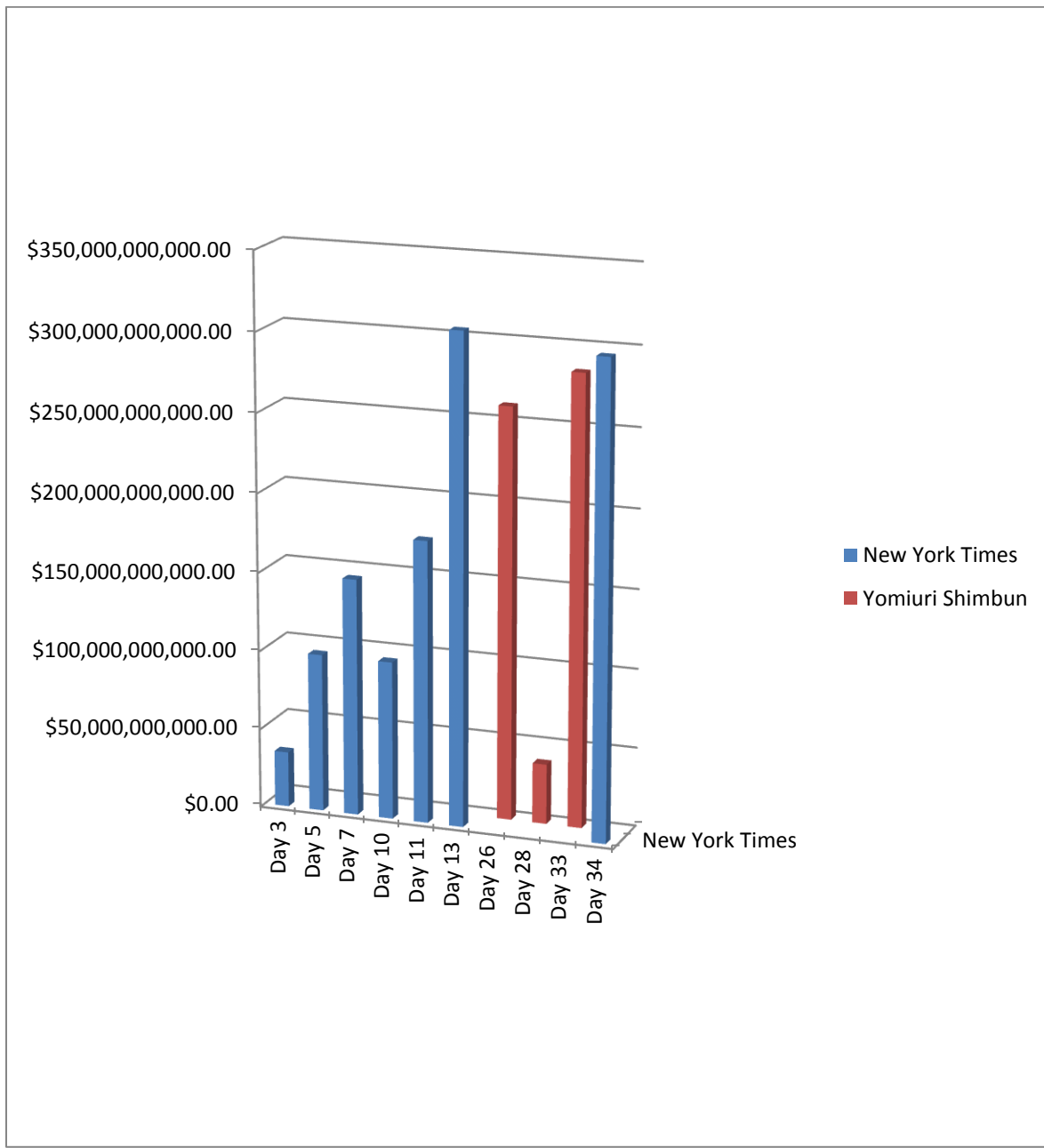
Figure 2

Death Estimates for the March 2011 Japan Earthquake/Tsunami as Reported in the NYTimes.com and *Yomiuri Shimbun* online.

Figure 3

Missing Estimates for the March 2011 Japan Earthquake/Tsunami as Reported in the NYTimes.com and *Yomiuri Shimbun* online.

Figure 4

Damage Estimates for the March 2011 Japan Earthquake/Tsunami as Reported in the NYTimes.com and *Yomiuri Shimbun* online.

Source Use

General Information

Within the sample 15.6% of stories used at least four sources and the most sources used in any one story was 18 sources. On average, across the sample, 3.87 sources were used per story. The NYTimes.com used an average of 4.58 sources for each story, and the *Yomiuri Shimbun* used an average of 3.20 sources per story. Overall, between both newspapers, "official" sources were the most commonly used source type; 20.7% all sources used were "official." The NYTimes.com used an average of 1.30 "official" sources per story and the *Yomiuri Shimbun* used an average of 0.92 sources per story.

"Educational/research/expert" sources were the second most used source type (17.7% of sources) and "other" sources came in third having 16.2% of sources categorized as such.

H5A: The *Yomiuri Shimbun* will use more sources in its earthquake coverage than will the NYTimes.com coverage.

This hypothesis was tested by conducting a Mann-Whitney U test because the dependent variable was not normally distributed (skewness was 1.55 and was kurtosis 4.02).

The hypothesis was not supported. In fact, the NYTimes.com used significantly more sources in its coverage (M=4.58, SD = 2.41) than did the *Yomiuri Shimbun* (M = 3.2, SD = 3.28), $z = -8.09$, $p < .025$.

H5B: The *Yomiuri Shimbun* online coverage will use more "official" sources than will the NYTimes.com coverage.

This hypothesis was tested using a Mann-Whitney U test due to a non-normally distributed dependent variable data (skewness was 2.61 and kurtosis was 11.27). It was not significant: z = -3.45, $p < .025$. The *Yomiuri Shimbun* (M=0.92, SD = 1.65) did not use more "official" sources than did the NYTimes.com (M=1.30, SD = 1.56) coverage.

H5C: Across both papers, there will be more use of "official" sources than non-official sources.

This hypothesis was tested by conducting a Wilcoxin Signed Ranks test due to non-normally distributed variables (skewness for "official" sources was 2.61 and kurtosis was 11.27, skewness for nonofficial sources was 1.46 and kurtosis was 3.14). This hypothesis was not supported. In fact, Nonofficial sources (M = 2.77, SD = 2.65) were used more than "official" sources (M = 1.11, SD = 1.62) in the coverage of the March 2011 earthquake/tsunami and nuclear disasters, z = -10.98, $p < .05$.

Media Hype and Disaster Coverage

General Information

In the study, stories were coded for one of three themes: earthquake/tsunami, nuclear, or the story could have been about both earthquake/tsunami and nuclear topics. The sample yielded 224 (44.1%) stories that were categorized as earthquake/tsunami stories, 210 (39.1%) that were categorized as nuclear, and 103 (19.2%) that covered them both equally.

Research Question 1: For both the NYTimes.com and the *Yomiuri Shimbun*, is there more nuclear crisis coverage than earthquake/tsunami coverage?

To investigate this research question, only stories about the March 2011earthquake/tsunami or earthquake/tsunamis and the nuclear crisis or nuclear power in general were used. Since all stories that were about both earthquake/tsunami and nuclear were excluded, 434 became the N. Within those parameters and across the sample, 51.6% of stories (224) were categorized as earthquake/tsunami and 48.4% (210) were categorized as nuclear.

A chi-square was run: the result was not significant: χ^2(1, N = 434) = .452, p = .502. There was no difference between the amount of nuclear crisis coverage and the amount of earthquake/tsunami coverage of the disaster.

DISCUSSION

This study investigated how two newspapers, one from the United States and one from Japan, reported the March 2011 earthquake/tsunami and nuclear crisis in Japan. In particular, the study analyzed the role of disaster myths, past disasters, conflicting information, sources, and media hype in the coverage of this disaster during the 36 days after it struck.

The theoretical foundations for this study were culture, agenda setting, and framing.

Disaster Myths

Some differences in the use of disaster myths were found. The NYTimes.com used the panic flight myth significantly more (4.6% of stories) than the Yomiuri Shimbun (0.7% of stories). The fact that the U. S. publication used this myth more supports the idea of the differing cultures affecting disaster news coverage, in the literature review. According to Hofstede (1981; 2001), the United States is more individualistic and short-term oriented which could explain why The New York Times reported people panicking more often than did the Yomiuri Shimbun.

However, for the looting myth, there were no differences between the two newspapers. Overall, looting was mentioned only five times. The NYTimes.com mentioned looting three times (1.1% of stories) and the *Yomiuri Shimbun* mentioned looting twice (0.7% of stories). The low frequency with which this myth was used by the NYTimes.com may be attributed to the journalists' perception of Japanese culture, mainly the idea that the Japanese are a long-term oriented (or patient) people (Hofstede, 1981; 2001). As a result the *New York Times* journalists might not have expected this type of behavior to be exhibited by the Japanese. Additionally, the low number of looting mentions in the Japanese newspaper could be because of its press club

system discussed earlier; Japanese journalists are practically embedded in government offices across the country. Many of the stories published in the *Yomiuri Shimbun* online came directly from press releases from the government and press conferences put on by the government. The government would not want to perpetuate this myth because it wants to have control over the disaster situation; by reporting looting as having occurred the government might signal that it does not have control.

The small number of looting and panic flight myths found in the two newspapers is counter to results from other studies (Fischer, 1994, 1998; Wenger & Friedman, 1986; Goltz, 1984; and Quarantelli & Dynes, 1972). This difference may be because previous studies are dated, most having been done in the 1980s and 1990s.

Originally, the study was going to assess the use of three additional myths: psychological dependency, disaster shock, and evacuation behavior. However, because of difficulty in attaining intercoder reliability for these three myths, they were dropped from the study. The inability to obtain intercoder reliability, after repeated attempts as outlined in the methods section, suggests the use of these myths may be quite subtle in news reporting, making them difficult to identify and attain intercoder reliability. Additionally, researchers do not agree upon the conceptual definitions for the three disaster myths. For example, the conceptual definitions of psychological dependency and disaster shock are quite similar, making them very hard to identify independently. Further, Quarantelli et al. (1993) found that, in their study of newspapers from the United States and Japan, it was very difficult to identify disaster myths.

It was predicted that the NYTimes.com would use more myths in the first five days of coverage versus the last 30 days included in this study. However, this hypothesis was not supported for the two myths that were measured (i.e., panic flight and looting). This result was

unexpected. I thought, based on the United States' being so far away from the disaster zone, that the NYTimes.com reporters would rely more on assumptions because it would difficult for them to reach Japanese sources in the immediate aftermath of the disaster. However, over time, I believed that the NYTimes.com would have time to locate credible Japanese sources.

It was also found that time and culture did not interact to predict the number of myths used in the stories. This result may be because of the small number of mentions of disaster myths (19 mentions total, 3.5% of stories contained one or both of the myths) in the sample.

Hofstede's (1981; 2001) work on culture was used as a basis for my predictions on the role culture plays in the use of disaster myths in news reporting as it is widely used as a basis for communication research about the effect of culture on communication. However, in light of the criticisms of his research, (i.e., it is dated, not generalizable, and his methods are questionable), his research is not as relevant to mine as thought. Further, it behooves other communication researchers to update our use of culture. The reliance on Hofstede's work needs to be re-examined because the current reliance on this dated study may be detrimental to future findings. As discussed in the literature review, Anthropologists argue that culture changes over time, therefore, an argument should be made on the discontinuance of the heavy use of Hofstede's work in the field of communication, or at the very least, Hofstede's work should be duplicated to see if/how national cultures have changed over time, an idea that could help many fields, not just communication and journalism.

Past Disaster Mentions

When it came to the use of past disasters, *The New York Times* (M = .51, SD = 0.72) used significantly more past disasters in its coverage of the March 2011 disaster than did the *Yomiuri*

Shimbun (M = 0.26, SD = 0.52)*.* Journalists may have mentioned past disasters as a way of priming readers of what to think of when they thought of the current disaster. NYTimes.com journalists may have used past disasters more because their readers were thousands of miles away from the events in Japan and they might have assumed that references to past disasters was a useful way to help U.S. readers understand the magnitude of the disaster in Japan.

Gatekeeping

In all the excitement of covering a disaster, the gatekeeping aspect of reporting may be more lax leading to a conveyance of conflicting information. Even though there were not many estimates reported, Figures 2, 3, and 4 on pages 83-85 suggest that conflicting information was reported during disaster coverage. Overall, Figures 2, 3, and 4 depict just how confusing the reporting of these estimates may have been in news articles; the numbers fluctuate sometimes from day to day. This fluctuation could be due to a number of things, one of which is that access to information could have been limited and reporters who were not in Japan when the disaster struck may have been unable to get immediate access to those with information regarding the death, missing, injury, or damage estimates.

Fischer (1994) reported that often times estimates like the death toll are inflated right after the disaster happens, (probably because reporters are "ball parking" numbers based on the intensity of the disaster and the size of the population affected by the disaster) and decrease, often significantly, over time. The number one reason these estimates decline so much is because victims can be counted twice and it takes time to obtain accurate estimates (Fischer, 1994).

The Japanese government may have also played a role in the fluctuation of the estimates reported. The media structure in Japan is different from that of the United States in that the

government is more involved in the dissemination of information via press clubs, leading to a more censored media. This could have had a trickle-down effect on international media in that most international reporters are not part of a press club, so information is restricted, forcing international reporters like those from the United States to guess or "ballpark" estimates. Overall, the NYTimes.com used more estimates (66 estimates total) than did the *Yomiuri Shimbun* (15 estimates total). The fluctuations in the NYTimes.com varied more than they did within the *Yomiuri Shimbun*, as is depicted in the figures on pages 83-85.

Source Use

The use of different sources can also be an indication of how a story has been framed. This study investigated directly quoted sources because researchers have found that direct quotes in news reports have more of an impact on people's issue perception (Gibson & Zillmann, 1993) than do sources that are not directly quoted. This study investigated seven categories of directly quoted sources: official, NGO, victim, other media sources, educational/research/experts, business, and other sources. On average, 3.87 sources were used per story.

Across all stories in the sample, 12.3% of stories used only one source, 15.1% used only two sources, and 15.6% used four sources; the most sources used in any single story was 18.

It was found that the *Yomiuri Shimbun* (M = 3.20) used fewer sources than did the NYTimes.com (M = 4.57) in its coverage of the March 2011 Japan disaster, which was counter to my prediction. What is interesting, based on what is known about the Japanese press clubs, and the fact that the Japanese journalists should have had access to a larger variety of sources, is that the *Yomiuri Shimbun* used fewer sources than did the NYTimes.com. These results indicate that finding sources from Japan regarding the disaster was not as difficult as believed. Also, the

growth of international media could explain why the NYTimes.com was able to access so many sources, even though the newspaper is thousands of miles away from where the disaster occurred. The Internet and wire services have made it easier to report on far away happenings.

When it came to the use of "official" sources, my prediction that the *Yomiuri Shimbun* would use more "official" sources than would the NYTimes.com was not supported; the *Yomiuri Shimbun* did not use more "official" sources (M = 0.92) than did the NYTimes.com (M = 1.30). I believe this was the case because in U.S. journalism there is a focus on source use; finding and using official sources, or simply the use of more sources in general, sometimes seems to be the way to make stories more credible.

This study also measured Quarantelli's command post point of view (H5C), the idea that reporters rely more on "official" sources when reporting on disasters, staying close to the designated command post to get information; this idea was not supported. Across both newspapers, "official" sources were not used more than non-official sources. This was surprising because it seems that throughout disaster reporting, journalists try to talk to those who know what is going on, assuming that those who do know what is going on are involved in the disaster response and recovery efforts.

The high use of "educational/research/expert" sources may be an indication that the definition of "official" sources needs to be expanded. A story that uses these sources may look to readers as though those experts quoted know what they are talking about, similar to the way "official" sources are viewed. The high use of "official" sources and "educational/research/expert" sources (17.7%) in this study makes sense in that readers want to think they are getting the most accurate and reliable information as possible. However, this

finding is beyond the scope of this study, further studies can look at how viewers view those sources.

The "other" category accounted for a large percentage of sources as well (16.2%), suggesting that there may have been additional categories in which to place sources that should have been used. It may have been more beneficial to use emergent coding for this section to be sure my categories were mutually exclusive.

Media Hype

It was thought that the March 2011 earthquake/tsunami and nuclear crisis might have been a trigger event for a nuclear crisis media hype; however, results revealed that this was not the case. More than half (51.6%) of the stories were categorized as earthquake/tsunami stories, and 48.4% were categorized as nuclear stories. One reason that a nuclear crisis media hype may not have been detected was that the sample may not have covered a sufficient time period. There could be a media hype involving the nuclear crisis after the earthquake/tsunami; however, it could have, for example, started in week three of the disaster; my study only covered the first 36 days after the earthquake struck. This short time span may not have allowed for a detection of the media hype, if it was in fact there.

Limitations and Future Research

This study was limited in that it only investigated online newspaper coverage, excluding all other forms of media such as broadcast news, radio, and social media networks like Twitter and Facebook. A future study could investigate other news media and social networks to see, for example, whether they use more disaster myths. Another idea for a future study would be to

analyze the extent to which the traditional news media relied on social media outlets like Facebook and Twitter to get sources, quotes, and information.

Another important limitation is that this investigation looked at a wide variety of variables, instead of focusing on a smaller number of variables. Some of the variables touched upon in this study would do well in their own, separate study. For example, disaster myths could be investigated in more detail on their own, which would allow researchers to determine whether myths are not currently in vogue or whether they are present in more subtle ways in media coverage.

Also, this study only looked at news stories and features. It excluded opinion pieces such as blogs, editorials, and letters to the editor. Perhaps a study done on these types of media content would find more use of disaster myths, damage and death estimates, and past disaster mentions. It is possible that writers of these opinion pieces may be more likely to perpetuate disaster myths and use past disasters more to understand current ones because they are also trying to understand what has happened; the only way they may know how to convey the information is by drawing upon images, words, and past experiences from past disasters. This is also where the United States' vast Hollywood collection of disaster related movies may influence the use of disaster myths.

In future research, I highly suggest investigating the use of price gouging (Fischer, 1994), a myth previously studied by other researchers that I decided to leave out believing that the five I chose would be easiest to understand and identify in stories. A future study involving this myth

should look into the extent to which price gouging is mentioned in stories and then compare it to whether price gouging really occurred.

Future research involving disaster myths could involve the use of images (e.g., photos, videos) as they may be sources of disaster myths.

A final limitation for the disaster myth portion of this study is that data on the extent to which people did loot, panic, etc., is not readily available. Thus, it is impossible to determine whether mentions of looting and panic flight were truly the perpetuation of myths or the reporting of actual events.

In the section of my study about estimates, I discussed that I only counted damage estimates that were not listed in terms of insurance. Future studies should decide how to deal with these insurance estimates, as that was a common way that damage estimates were reported in this study.

Another limitation in my coding was that I used *a priori* coding for both sources and past disaster mentions instead of emergent coding. The use of *a priori* coding, or having predetermined categories may have meant that I missed some other potential categories of past disasters and sources.

In my study of culture's influence on disaster coverage, only two cultures were investigated. Future studies could expand on the cultural aspects of disaster coverage by including a higher number of different cultures. Also, this study investigated culture as being a factor for the framing of the disaster news stories; however, the study did not take into account all aspects of culture that could influence reporting, such as the specific culture of the newspaper company studied and cultural differences in the way journalists are educated, among others. Also, within each of these two cultures, only one news outlet was investigated; cultural

differences may be more apparent when multiple news outlets from cultures are studied. Additionally, the fact that I used the English version of the *Yomiuri Shimbun* and not the Japanese edition is a potential limitation in that culturally significant differences in the way things are worded from language to language have been documented (Maeda, 2011; Hood, 2012).

One of the key aspects of this study, i.e., its comparison of media reporting between the country directly affected by a disaster and another country, could also be regarded as a springboard for future research. A future study could build on what was found in this study by analyzing news coverage from two different countries, neither of which is the disaster event country.

Media hype is another variable that could be investigated on its own and over a longer period of time. The data gathered from a longitudinal study could lead to a better understanding of media hypes and disasters. Media hypes are a form of agenda setting (Vasterman, 2005); they are "created on the basis of one frame that guides the hunt for more news and presents all the facts and views from the same perspective" (Vasterman, 2005, p. 525). Such a longitudinal study could be further strengthened by using more than one newspaper from each country. By using multiple newspapers from each country, media hypes could be more pronounced and easy to follow.

Also, this study does not take an in-depth look at how stories were worded. A closer investigation into the wording of stories could be another important aspect to include regarding cultural aspects of reporting. The way stories are worded could be potentially very different from

culture to culture. For example, the Japanese language can be interpreted differently, depending on the interpreter (Hood, 2012; Nathan, 2002). The Japanese have also been found to describe events like that of the bombing of Hiroshima and the end of World War II (Meada, 2003) differently. The Japanese would not report that it was defeated; instead, reporters wrote that the war was over with no mention of defeat (Maeda, 2003). Also, after the bombing of Hiroshima, newspapers downplayed the death toll and the destruction of the city; historically, Japan has tried to avoid describing things in a negative light (Maeda, 2003).

Another potential limitation within my study is that I did not interview the journalists who wrote the stories. A future investigation that includes interviews with reporters could help to explain why reporters did (or did not) mention disaster myths and past disasters and how they decided on source for the stories.

All of these limitations should be taken into consideration and should be used as stepping stones to build future studies on disaster reporting.

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Coding Scheme

Variable Name: Date
Variable Label: Date story was published
For date of publication find the top published date. Then record the date by which day of the sample it ran. For March 11, 2011, it would be day 1, the 12th is day 2 and so on. Record the number of the day as 1, 2, 3, 4, etc.

Variable Name: Outlet
Variable Label: Newspaper site the story ran on
This variable is what newspaper website this story is from. To find the outlet, read the masthead.

0 = Ran on NYTimes.com
1 = Ran on *Yomiuri Shimbun* Online website

Variable Name: Author
Variable Label: Who wrote the story
This variable is who actually wrote the story—was it a wire story or was the story written by a staff member at the newspaper websites being investigated. This includes contributions and collaborations. To find the story author, read the byline at the top of the story. Also, check the bottom of the story to determine whether the story had collaborators or contributors.

0 = Wire story (AP, Canadian Press, Federal News Service, Globe Newswire, Press Association of Britain, Reuters, United Press International and **Kyodo** World Service of Japan) To find a list of wire services go to ajr.org.
1 = Staff writer (listed as a staff member of the source newspaper)
2 = Collaborated/Contributions-Story was written by more than one reporter from the source or the story had contributions from a wire service or other news outlet in affected area, contributions were made to a story written by a staff reporter from the source newspaper. Could also be that the byline says AP or some other wire service, but at the conclusion of the story it says "staff writers contributed to this story."
3 = Author was a freelancer. It might say "Jackson James, for the Times," or even state that they are a freelance reporter.
4 = Story writer not clear, no mention of authors

For these variables, read the entire story to locate all the sources used.

PLEASE FOLLOW THE CODE SCHEME AND NOT PERSONAL OPINION. PLEASE CODE SOURCES AS THE REPORTER MEANT THEM TO BE USED IN THE STORY.

A source is defined as a person, or entity (e.g., a company or an organization) that provides information and opinions that is attributed to that entity. According to Brown, Bybee, Wearden and Straughn, (1987), sources should "meet standard definitions of reliability, trustworthiness, authoritativeness and articulateness" (p. 46). When looking for sources, only count full or partial direct quotes. The source has to have been directly quotes as having said something and quotation marks were used. Quotes can be partial but MUST have attribution to them. Be careful to not confuse partial quotes with those phrases or sentences that are placed in quotation marks for emphasis, this is why it is important to account for attribution. Ships loudspeaker direct quotes DO NOT count. Also, if the reporter directly quotes someone from a group of people but does not make it clear who they are referring to, DO NOT count this either (too confusing).

If there are any sources from organizations that you are unsure of GOOGLE it and figure out what the organization is. It is very important that if there are any organizations, associations, agencies, research institutes etc., that are unclear to you that you research it so that it gets categorized in the correct category.

READ CAREFULLY to fully figure out where the source goes.

Only count each source once, for example if the story quotes the same person three times, it only counts once. Each different source will be counted.

Variable Name: Official_sources
Variable Label: Story use of Official sources used
Officials are defined as those who are elected or appointed to their positions. They include all government sources. A government source is defined as those sources that are at the federal level in the United States or unitary level in Japan, as well as state and local levels for both countries. The federal level includes the Federal Emergency Management Agency (FEMA) in the United States and the Ministry of Internal Affairs and Communication's Fire and Disaster Management Agency (FDMA) in Japan. The state, regional or prefectural level would include state leaders in the United States like governors and in Japan this would be the governor of a prefecture. The local level of government is also included here; this includes fire, police, all city employees, including mayors, and local civil defense for both the United States and Japan.
 Also, sources that in general have primary social control functions. Official sources include city police and fire department officials, and emergency management government agencies such as the Federal Emergency Management Agency (FEMA), FDMA (Japan). An official source could also be Japan's Self-Defense Force, or any source that states it is affiliated with the government in any way. This includes the USGS as well or any organization that has a website that ends in

.gov. If there are any questions as to what kind of organization it may be, be sure to look it up on the internet.
Enter the number of official sources used (0 = no official sources, 1 = 1 was found and so on).

Variable Name: NGO_sources
Variable Label: NGO sources
Non-governmental organizations are any nonprofit, voluntary citizen group, organized on a local, national, or international level and would include organizations like the American Red Cross, the British Red Cross or Save the Children. If you cannot tell whether an organization is an NGO, you can do a computer search on the organization, there is a website called the Worldwide NGO Directory and it could be helpful in determining whether the organizations in Japan are an NGO or a government source
Enter the number of NGO sources used (0 = no NGO sources, 1 = 1 was found and so on).

Variable Name: Media_sources
Variable Label: Other media sources
Other media sources can include local, national, international journalists, newspapers, television news broadcasts and otherwise. Sometimes journalists use other journalists as sources, for example, "CNN reported that the U.S. has donated millions of dollars to the relief effort in Haiti," or "Associate Press reported…"
Enter the number of Media sources used (0 = no media sources, 1 = 1 was found and so on).

Variable Name: Victim_Sources
Variable Label: Sources that are survivors or victims of the disaster
Victim sources include citations of anyone who was a survivor or victim from the earthquake/tsunami and nuclear disaster. This can be anyone who discusses the disaster(s) and is quoted by the story author. These must be FEET ON THE GROUND victims/survivors that are discussing the earthquake and what they went through, how it's affecting them and so on. Any source classified as a victim must have been in Japan when the disaster occurred.
Enter the number of victim sources used (0 = no victim sources, 1 = 1 was found and so on).

Variable Name: Education_Research_expert_sources
Variable Label: Expert sources used not associated with the government
Educational/research/expert sources include educational sources such as professors that study for example, earthquakes or the Japan culture. They could also be members of agencies not associated with the government and that are not NGOs. An example of one such source would be the National Press Photographers Association. Some research may be needed here to determine where the organization fits. These are anyone who may be an expert in anything.

For example, a source that might be used is an engineer or someone from an organization or club that supports their field, like an association of geologists or seismologists and so on. Sources may also be part of the United Nations (UN), but have to have research institute in the

organization title. These organizations are not to be confused with NGOs, be sure to research any questionable organizations used.

Also included here would be any sources referred to as "former presidents or former anything associated with any organization, university and so on," do not count them as official sources if it says they were a FORMER member of an official organization. They count as experts because they are technically no longer affiliated with that organization.

Enter the number of educational/research/expert sources used (0 = no education sources, 1 = 1 was found and so on).

Variable Name: Business
Variable Label: Spokesperson from organization(s)/businesses
A spokesperson source includes any public information officer (PIO), public relations representative, director of communications or any person stating they are the spokesperson for such and such. For example, any company affected by the disaster may have their communications person speak with the media, someplace this might be seen is coverage about the automotive industry or any other company reported on affected by the disaster. Another example would be "Karen Cisco, spokesperson for Three Mile Island said…" This also includes businesses quoted in America regarding loss of money from imports from Japan (car dealerships (managers and what not) and so on for example).
Enter the number of Business sources used (0 = no business sources, 1 = 1 was found and so on).

Variable Name: Other_Source
Variable Label: Other sources used or unable to determine
If you cannot determine what category the source falls under, use the "other" sources variable. Or, if it is unclear as to who is speaking or who the source may be, use the "other" source variable. This can include unnamed passersby, sources with only first names and/or sources who wished to remain anonymous and were given no other attribution. For example, if an article states "According to reports, this is the worst disaster since 1900…" it would fall under "other" sources because it is not clear what reports or from where these reports originated.

Other types of sources that may be listed under here are medical sources. Medical sources include doctors, nurses, staff members of a hospital, hospital directors and the like. These members and the hospital do not speak on behalf of organizations like the Center for Disease Control or other large organizations affiliated with the government or NGOs. For example, if it says "Duane Lee, a doctor with the Asia Association of Medical laboratory Scientists (AAMLS) said…" is a source that would not count here; it would fall under NGO sources because AAMLS is an NGO.
Enter the number of other sources found (0 = no other sources, 1 = 1 was found and so on).

ESTIMATES OF DEATH, INJURY, MISSING, AND DAMAGES

These variables are to measure the fluctuation of death, injury, missing and damage estimates. To get the most accurate measure, read the entire story to determine if a specific estimate is given. **If yes, enter a 1, if no enter a 0 and move onto the next variable**.

If there was a specific death toll given, or injury, missing, or damage estimate given, we then need to know if a specific area was talked about.

Enter a 1 if the area discussed was a specific subset of an area affected by the disaster such as a city, prefecture(s), region, eastern, northern part of Japan.

Enter a 2 if it talked about Japan as a whole, in general (talks about the earthquake and tsunami as one big event) and the estimates given are not to any specific area in Japan.

For each estimate that is mentioned that follows the rules set forth below for each variable, record the number on the code sheet provided.

Variable Name: Death_estimates
Variable Label: Mention of deaths estimated
This variable will measure the fluctuation of death toll estimates found in the news stories. Record the death toll estimate number as it appears written in the story.

For example, it might say "an estimated 10,000 people are dead," write 10,000 down, or "The death toll is expected to reach 20,000," record 20,000.

Only record specific numbers; do not record anything if it says something like, "Thousands are expected dead," or hundreds of thousands, and the like.

If the story says something like "The death toll is expected to range from 10,000 to 12,000," take the middle, so it would be 11,000 deaths. If the story says the death toll is expected to exceed 20,000, record 20,000. If the story mentions the death toll more than once and the numbers differ, count them both, only if each number listed is from a different source. For example, if it says, "the Red Cross estimates the death toll at 15,000 and government officials list the death toll at 20,000," record both.

If the differing numbers do not have two different sources, take the average of the two numbers given.

If it does not have a death toll estimate, enter a 0.

Variable Name: Injury_estimates
Variable Label: Mention of injury estimates
This variable will measure the fluctuation of injury estimates found in the news stories. Record the injury estimate number as it appears written in the story. For example, it might say "100,000 are expected with injuries," or "An estimated 20,000 with injuries are expected, and so on.

If the story says something like "The injuries are expected to range from 10,000 to 12,000," take the middle, so it would be 11,000 injured. If the story says the number of those injured is expected to exceed 10,000, record that as 10,000.

If the story mentions the number of those injured more than once and the numbers differ, count them both, only if each number listed is from a different source. For example, if it says, "the Red Cross estimates the number injured at 15,000 and government officials list the number injured at 20,000," record both. If the differing numbers do not have two different sources, take the difference of the two numbers given.

Do not record hundreds or thousands as numbers, only those estimates with specific numbers are the ones you will record. If there are no injury estimates, enter a 0.

Variable Name: Missing_estimates
Variable Label: Estimates of those missing
This variable will measure the fluctuation of the missing people estimates found in the news stories. Record the missing people estimate number as it appears written in the story. For example, it might say "an estimated 10,000 people are missing," write 10,000 down, or "The numbers of those missing is expected to reach 30,000," record 30,000.

Only record specific numbers, do not record anything if it says something like, "Thousands are expected to be missing," or hundreds of thousands, and the like. If the story says something like "The number of those missing are expected to range from 10,000 to 12,000," take the middle, so it would be 11,000 missing. If the story says that the number of those missing is expected to exceed 10,000, record 10,000.

If the story mentions the death toll more than once and the numbers differ, count them both, only if each number listed is from a different source. For example, if it says, "the Red Cross estimates the number missing at 15,000 and government officials list the number missing at 20,000," record both. If the differing numbers do not have two different sources, take the average of the two numbers given.

If it does not have a missing people estimate, enter a 0.

Variable Name: Damage_estimates
Variable Label: Number of Damage estimates
This variable will measure the fluctuation of the estimates of the damage done found in the news stories. Record the damage estimates number as it appears written in the story. For example, it might say "an estimated one million dollars of damage is expected," write 1,000,000 down, or "damages are expected to reach $2 million," record 2,000,000.

Only record specific numbers, do not record anything if it says something like, "damage is expected to reach millions," or hundreds of thousands, and the like.

If the story says something like "The damage is expected to range from $1,000,000 to $5,000,000," take the middle, so it would be $3,000,000. If the story says that damage is expected to exceed $20 million, record it as $20,000,000.

If the story mentions the amount of damage expected more than once and the numbers differ, count them both, only if each number listed is from a different source. For example, if it says, "the Red Cross estimates the damage at $2 million and government officials estimate damage around $6 million," record both. If the differing numbers do not have two different sources, take the average of the two numbers given.

Insurance damages DO NOT count here. If the story is discussing damages in terms of insurance, DO NOT record it.

If it does not have a damage estimate, enter a 0.

Variable Name: Pastdisaster1
Variable Label: Story mentions Chernobyl
This variable will measure if the past disaster Chernobyl was mentioned in the news story. Enter a 0 if the nuclear disaster Chernobyl was not mentioned and a 1 if it was mentioned. Only count Chernobyl once per story.

Variable Name: Pastdisaster2
Variable Label: Story mentions Three Mile Island nuclear accident
This variable will measure if the past disaster of the Three Mile Island nuclear accident was mentioned in the news story. Enter a 0 if Three Miles Island was not mentioned and a 1 if Three Mile Island was mentioned. Only count Three Mile Island once per story.

Variable Name: Pastdisaster3
Variable Label: Story mentions 1896 Japanese Tsunami
This variable will measure if the past disaster of the 1896 Japanese Tsunami was mentioned in the news story. Enter a 0 if the 1896 Tsunami was not mentioned and a 1 if the 1896 Tsunami was mentioned. Only count the 1896 Tsunami once per story.

Variable Name: Pastdisaster4
Variable Label: Story mentions 2004 Sumatra Tsunami
This variable will measure if the past disaster of the 2004 Sumatra tsunami was mentioned in the news story. Enter a 0 if the tsunami was not mentioned and a 1 if the tsunami was mentioned. Only count the 2004 Sumatra tsunami once per story. **This disaster could be listed under the names of the December 2004 tsunami, Indian Ocean tsunami, or as the Sumatra tsunami. It is NOT the 2004 Niigata quake.**

Variable Name: Pastdisaster5
Variable label: Story mentions 1960 Chile Earthquake
This variable will measure if the past disaster of Chile Earthquake was mentioned in the news story. Enter a 0 if the 1960 Chile Earthquake was not mentioned and a 1 if the 1960 Chile Earthquake was mentioned. Only count the 1960 Chile Earthquake once per story.

Variable Name: Pastdisaster6
Variable Label: Story mentions 1923 Great Kanto Earthquake
This variable will measure if the past disaster of the 1923 Great Kanto earthquake was mentioned in the news story. Enter a 0 if the Great Kanto earthquake was not mentioned and a 1 if the Great Kanto earthquake was mentioned. Only count the Great Kanto earthquake once per story.

Variable Name: Pastdisaster7
Variable Label: Story mentions 1995 Great Hanshin earthquake
This variable will measure if the past disaster of the 1995 Great Hanshin earthquake was mentioned in the news story. Enter a 0 if the Great Hanshin earthquake was not mentioned and a 1 if the Great Hanshin earthquake was mentioned. Only count the Great Hanshin earthquake once per story.

Variable Name: Pastdisaster8
Variable Label: Story mentions other disaster
This variable will measure if past disasters other than those listed were mentioned in the news story. Record the past disaster mentioned in space provided.

Variable Name: Panic_Flight
Variable Label: Story mentions panic flight myth
For this variable, read through the entire story and determine whether the story mentions panic flight. Panic flight deals with the individual; it is the idea that when a disaster occurs victims will panic and engage in any behavior they deem necessary to escape. An example of panic flight is when a reporter says that individuals panicked and ran from where they were and what they were doing in an effort to escape the danger from the earthquake and the tsunami, e.g. words and

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phrases like scrambled to get away, people were running everywhere as if they didn't know where to go, they had a look of panic on their face as they ran away from the building are all phrases that might be seen. This myth only gets counted once, if mentioned, it's either there or it isn't.

0 = story does not contain the panic flight myth
1 = story contains the panic flight myth

Variable Name: Looting
Variable Label: Story mentions looting myth
For this variable, read through the entire story and determine whether the story mentions looting. Looting is the taking of or stealing of items from homes and businesses while an area of a city, town, village, neighborhood and the like are evacuated for hazardous reasons such as floods and hurricanes or riots and blackouts. Looting may be reported as people taking items that are not for survival purposes and are used for personal gain, monetary and otherwise. For example, "Chaos gripped New Orleans on Wednesday as looters ran wild….looters brazenly ripped open gates and ransacked stores for food, clothing, television sets, computers, jewelry and guns" (McFadden and Blumenthal, 2005), or, "In the midst of the rising water, two men 'were planning to head out to the levee to retrieve a stash of beer, champagne, and hard liquor they found washed out onto the levee," would all count as containing the looting myth. Only count the myth once. If the story contains two or more areas where it discusses looting, it still only gets counted once, the myth is there or it isn't.

0 = story does not contain the looting myth
1 = story contains the looting myth

Variable Name: Disaster Shock
Variable Label: Story mentions disaster shock
For this variable, read through the entire story and determine whether the story mentions disaster shock. Disaster shock is the immediate response that is reported as being seen in survivors after a disaster has occurred. Survivors are stunned and in disbelief of the destruction. The shock is a shorter time span than that of psychological dependency. Disaster shock may be reported as people wandering about as if lost, sitting alone staring into space, walking as if they have no purpose anymore, or even in a zombie-like state.

Fischer (1988) states: "'Friends of a friend' of a victim often report that the survivor was so incapacitated that he sat on the 'remains of his front porch for days, garden hose in hand, ready to wash the mud from the flood away, but was unable to move'" (Fisher, 1998, p. 16).

This myth is only counted once. It's either there or it isn't.

0 = story does not contain the disaster shock myth
1 = story contains the disaster shock myth

Variable Name: Psychological dependency
Variable Label: Story mentions psychological dependency myth
For this variable, read through the entire story and determine whether the story mentions psychological dependency. Psychological dependency is defined as victims and survivors being unable to function and take care of themselves after the disaster has struck. In the news articles it may be reported as outside help being called into help with the recovery and response because victims and survivors are "out of it" and unable to take care of those hurt, those that need rescuing, the setting up of shelters and the gathering of food, water and necessary supplies.

This myth is counted only once per story, it's either there or it isn't.

0 = story does not contain the psychological dependency myth
1 = story contains the psychological dependency myth

Variable Name: Evacuation Behavior
Variable Label: Story mentions evacuation behavior myth
For this variable, read through the entire story and determine whether the story mentions evacuation behavior. Evacuation behavior refers to the group level of panic. This myth focuses on the behavior people portray when they are fleeing or evacuating and is that if there is an evacuation, residents will flee in an unorganized and hysterical way, pushing and shoving each other, driving each other off roads to escape the imminent danger of a disaster. This may be reported as highways being jammed and crowded, riddled with accidents and people driving erratically in high speeds to save themselves from the potential hazards with no regard for those around them.

Deviant behavior is assumed in this myth. Fisher (1998) states: "Ask a potential evacuee if he is concerned about evacuating from a city when a forecast for a hurricane to impact the area and the likely response is:
> Yes, I am concerned, I don't want to join all those crazies as they flee, they'll crowd and push each other off the roads trying to escape the path of the storm. . .why, they might even pack a gun, and worst yet, use it! (p. 17).

This myth is counted only once per story, it's either there or it isn't.

0 = story does not contain the evacuation behavior myth
1 = story contains the evacuation behavior myth

Variable Name: Media Hype
Variable Label: Media hype of nuclear crisis
For this variable, read the headline, lead and the entire story to determine what the main point was.

What needs to be determined is the central theme of the story; is it focused on the earthquake and/or tsunami (March 2011 disaster), the nuclear crisis or is the theme about all three, the earthquake, tsunami and nuclear crisis, or is it about earthquakes/tsunamis and/or nuclear power

in general. For example, if the story was about the unclear reports and announcements about the level of nuclear damage and danger that would fall under here.

Stories that would also fall under a code of 1, 2, or 3, is if the disaster was central to the action of the story. For example, if the story is about trading in money that was damaged in ATMs from the tsunami flood waters, or if the story was about the jobless getting jobs because they lost their jobs from the disasters. The disaster was central to the action of the story because the money had to be traded in due to the disaster and those that were jobless were that way because the disaster may have closed their companies or lost too much money in the disaster to rehire them; the disaster caused the main action of what was being told in the story and therefore should be coded as a 1, 2, or 3.

For example, If the lead of a story read "Japan's nuclear disaster came at a time when nuclear power seemed poised for a new birth in the United States. Opinion polls have shown rising support for nuclear power over the past decade, after more than two decades of opposition. More significantly, environmentalists were slowly, tentatively abandoning their reflexive opposition to nuclear power because of the bigger problem of climate change. Japan's catastrophe hits the reset button on the whole issue. One irony is that the climate campaign is a big near-term loser, as carbon dioxide emissions in Japan and Germany (which switched off seven nuclear plants) will go up," enter a 2.

If a headline read "For many of the 10,000 displaced, the journey to shelter can be difficult," you will have to read on to find out the theme for this variable. If the lead says the following: "TOKYO - While trying to recall the events since she and her extended family fled their homes near Japan's damaged nuclear reactors, Kyoko Kobayashi studied her pocket-size calendar as if years had passed." This story was primarily about the journey this family took to find shelter after the earthquake and tsunami hit, followed by an evacuation because of nuclear danger. This story would be coded as a 3, since it mentions all three equally.

0 = Story was, by the above definition and explanation, not about the March 2011 earthquake/tsunami and nuclear crisis or earthquakes/tsunamis and nuclear power in general. The story should be thrown out due to irrelevance.

1 = The March 2011 earthquake/tsunami was central to the story and/or the central theme to the story was about earthquakes/tsunamis in general, with no mention (or not a large mention i.e., one mention) spurred by the March 2011 disaster in Japan

2 = The story was primarily about the nuclear crisis brought on by the tsunami and earthquake, or about nuclear power in general, with some sort of reference to the Japan nuclear crisis.

3 = The March 2011 earthquake, tsunami, and the nuclear crisis were all central to the story. (all aspects were treated with equal importance in the story. If you had to count the paragraphs and compare the focus of each, the number of paragraphs about the earthquake(s)/tsunami(s) and the nuclear crisis (or issues in general) would be equal).