

# Disaster Symbols and Cultural Responses

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**Abstract.** Symbols carry meanings which are unique to certain cultures. Often, people in disaster situations and others affected by disasters experience them with symbols in order to cope with their situations. This study examines the meanings of symbols that emerged in social media after a disaster event. This study will explore the usefulness of understanding symbols and the underlying culture and history of the region and the characteristics of people for design of future disaster-related systems. I address that social media can be a valuable medium for collecting data which arises immediately after disaster events when fieldwork has not yet be started due to on-going rescue and clean-up operations. Furthermore, understanding the culture and history of the region and the characteristics of people is crucial for the design of future systems since one of the unique aspects of disaster research is that it is based on a culture's very specific circumstances.

## Introduction

The Great East Japan Earthquake or the 2011 Tōhoku Earthquake (magnitude 9.0) that occurred on March 11, 2011 caused unprecedented structural damage and casualties (15,891 deaths, 3,929 missing, 5,940 injured [6]). A disaster may stem from nature or human-made errant technology. The Great East Japan Earthquake not only destroyed people's lives by the earthquake and the subsequent massive tsunami, but also threatened them from damage to the Fukushima Daiichi Nuclear Plant. People who lived far away from the disaster areas, such as the Tokyo metropolitan area, were also affected since they

needed to conserve energy due to the inoperable nuclear plant. Because of the intensity of the earthquake and tsunami and the significant damage and casualties, people throughout Japan were emotionally shaken and economically, socially and politically impacted.

This paper describes the early phase of studying symbols that emerged in a variety of social media immediately after the Great East Japan Earthquake and people's responses to these symbols. Symbols which appear in social media provide researchers significant insight: prior research on disasters [11, 13, 15, 18] present that social media can be useful for information dissemination and community building. Yet, the role of social media during and after disaster events is not limited to these aspects. Symbols that emerge in social media provide emotional support and identity formation and affirmation to people in crisis and to others who are impacted by disasters. People often seek emotional and spiritual support online [10]. Emotional and spiritual support is important as well as information since people feel most uncertain and vulnerable immediately after the impact of disasters. Second, symbols and underlying culture and history provide insight for designing systems that can support people in certain cultures to rebuild their lives and to prepare for future disasters.

Geertz [2] describes culture as “an historically transmitted pattern of meanings embodied in symbols, a system of inherited conceptions expressed in symbolic forms by means of which men communicate, persuade, and develop their knowledge about and their attitudes toward life.” Symbols draw upon the surplus of meaning which can be grasped with conjunction of metaphor and metonymy (Ricoeur cited by [3]). Symbols carry a particular meaning which can be recognized only by those who share a culture [4]. Symbols and their meanings are often passed from generation to generation.

Disaster research is unique because of its context or circumstances. Therefore, researchers need to have two types of training—research methods in general and understating how the circumstances surrounding disasters impact research [14]. Thus, understanding culture and history of the disaster area and the characteristics of the people is crucial for disaster research. Symbols in social media can be one of the tools for researchers to understand the specific culture, history and the people of disaster areas.

## Disaster Symbolism

This study was inspired by Hoffman's [5] study of the Oakland-Berkeley Firestorm of 1991 and the symbols that emerged after the disaster. In her study, Hoffman explicates how people in crisis experience disasters with symbols in

order to cope with their situation. They need to have a direction of how to deal with the disaster in order to survive. Symbols make abstract concepts, emotions and beliefs more describable and easier to embrace. Symbols which arise during or after disaster events reveal people's cultural responses to disasters.

Symbols which emerge in response to disasters may appear in a variety of forms—words, images, gestures, natural objects, songs and so on. A variety of symbols emerged after the Great East Japan Earthquake. One particular symbol that often emerged on the Web was the red disc as shown in the Japanese flag (see Figure 1). The red disc connotes the Land of Rising Sun or revival. The Miracle Lone Pine—a 260 year old single pine tree which escaped being swept away by the massive tsunami while the other 70,000 pine trees along the coastline of Rikuzen Takata City disappeared—became a symbol of revival, hope and tenacity. The word “rebuild” or “revival” connotes special meaning to Japanese who learn their long history of struggles against countless natural disasters from their elders and their educational system. Another word often emerged after the disaster was “ganbarou” (loosely translated in English as “let's hang in together” or “let's do our best”). “Ganbarou Tōhoku” or “ganbarou Japan” became a slogan and a variety of stickers and banners appeared in numerous places. These words and phrases often imply unity and endurance



Figure 1 – The Red Disk and the phrase “Ganbarou”

These symbols teach us the history, culture and characteristics of Japan. Throughout its history, Japanese learned how to cope with disasters and how to rebuild their lives after each disaster. One significant reconstruction in their recent history was the era after World War II [1]. Although endurance and unity may be considered as virtuous characteristics of the Japanese, the ability to adapt to changes is not known as a Japanese characteristic [1]. Since the Meiji Restoration of 1868 which ended the feudal Tokugawa Shogunate and fostered industrialization in Japan, the Japanese have continuously accepted and adapted to enormous social, economic and political changes.

## Data description and methods

A variety of public-initiated information was entered into social media immediately after the Great East Japan Earthquake. Some examples are YouTube

videos of the large-scale tsunami washing away a small town and tweets that were hashtagged as #prayforjapan. Without a doubt, social media provided public massive information immediately after the disaster. At the same time, the disaster helped increase the use of social media significantly. For instance, while the average tweets per day was 18 million before the March 11th earthquake, on March 11th, the number of tweets increased to 33 million in Japan and the average number of tweets per day since then were 22 million in March and April [17]. Overall, 177 million tweets were sent out on March 11th. Some organizations, such as Google, Twitter and Softbank, started their own support sites to aid people in crisis and also to promote their activities. For instance, on March 19th, the Japan Ground Self-Defense, the main organization for rescue and clean-up operations for the disaster, opened its own Twitter account (@JGSDF\_pr) which immediately gained more than 100,000 followers.

During the initial exploratory stage, several YouTube videos that were posted within a few weeks after the disaster and comments that were posted within six months were collected and analyzed. Compared to other social media, YouTube has the attribute of persistence. This attribute allowed people to revisit the YouTube sites many times as they needed and to post comments even several months after the disaster. Because the collected data is relatively small, I adopted qualitative research methods, primarily document reviews. Qualitative research methods have gained popularity in various disciplines, including disaster research in recent years [12]. Using ATLAS.ti qualitative software, comments were open-coded and then categorized into several groups. Since I am fluent in Japanese, I skipped translating these comments into English. I directly placed English codes to the comments in Japanese on ATLAS.ti.

## You Tube video – Let's rebuild together

In this section, I present an analysis of one of the YouTube videos that were uploaded immediately after the earthquake and comments posted at this site during the following six months. These comments reveal symbols and people's responses to these symbols. The comments also show how people tried to seek spiritual and emotional comfort and to reconstruct their cultural values and identities. This YouTube video demonstrates that social media can be used for purposes other than information dissemination and warning and response activities. Researchers can learn from these symbols in social media about the culture, history and the people in disaster areas and the nation.

This YouTube video is a one minute news video clip from a Japanese network television. Three seniors—one man and two women—had survived the tsunami by escaping to the third floor of a building. When they were rescued three days later

by the Japan Ground Self-Defense rescue team, a news reporter asked the old man if they were alright. This man responded with a big smile, "Yes, we are... We've lived through a tsunami from that Chile earthquake [ in the 1960]... so, we're alright... Well, let's rebuild all again!" This news clip was posted on YouTube on March 12. This particular video site received over 2.3 million viewers and more than 3,100 comments. About 32 similar YouTube videos or videos which contain this phrase "Let's rebuild together" were also remixed [9] and posted.

Among the comments posted to this YouTube site, higher occurrences of codes were identified as follows: 136 occurrences of the word or phrase "rebuild", "let's rebuild," and "revival"; 127 occurrences of "Japan," "Japanese," "Japanese spirit," and "proud to be Japanese"; 67 occurrences of "ganbarou"; 54 occurrences of "the word" or "one word" both of them imply "let's rebuild"; 44 occurrences of "thanking to this old man" and 37 occurrences of "the old man's smile."

The majority of the comments were posted by Japanese who were not in the disaster areas. Yet, they were clearly shaken by the earthquake and tsunami because of the magnitude of this disaster. Some of them had either friends or family members in the disaster areas whom they could not get in touch with. These comments often show they were influenced by other people's attitudes, words and actions which were strongly associated with their cultural value system. It could be the old man's smile and the words "let's rebuild together" that affected them. These attitudes, actions and words needed to be shared with other Japanese who could comprehend the meanings of these symbols.

These comments were grouped into several categories, as described in the tables above. The comments posted at this YouTube video site were short and a number of categories and codes were relatively small. The majority of the people who commented at this site were encouraged by this old man's phrase of "let's rebuild" and his smile. The emotions identified in these comments are "moved," "encouraged," "proud to be Japanese," "cried," "tearful" and "ashamed for being depressed or not taking action." Some of the people who commented at this site connected the reconstruction era of Japan after WWII to this old man because of his age. Others posted that the younger generation would rebuild Japan after this disaster just like their older generation did. The phrase "let's rebuild" is the most meaningful symbol at this video site.

One must caution that the majority of people who commented at this site were not people who were directly hit by the earthquake and tsunami. They were strongly impacted by the disaster due to its magnitude; therefore, they needed emotional and spiritual support. Nevertheless, these people will not need to endure months or possibly years to rebuild their everyday lives. People often tend to beautify

disasters [5]. Some Japanese even declared that the earthquake helped them to reflect on their troubled past decades and restart anew [8]. Researchers need to be aware that data collected from a variety of social media at different times may reveal different perspectives of the disaster, based on the degree of impact on human subjects caused by the disaster.

Categories – Example of Posts
Let's Rebuild – “Let's rebuild together! Wonderful word. I was encouraged.”
Japan and Japanese - “I am proud of be Japanese, just like this wonderful person [the old man]”
Taking actions – “I was tearful when I saw his [the old man] smile. Since I do not live in the disaster area and live comfortably, I should be the one who encourage the people like him. Instead, I was encouraged by him... since I live overseas, I can not conserve energy or participate in blood donation, so, I donated money. I will regularly donate until the destroyed towns will be reconstructed...”
Old, experienced generation rebuilt Japan – “These people [like this old man] supported Japan after WWII. I like to believe this kind of spirit still exists in Japanese identity.”
Young generation will rebuild future Japan – “Thank you, Granpa! Please live long until we rebuild Japan!”
Criticism to politicians – “The prime minister Kan could not capture the heart of Japanese despite he practiced his speech numerous times. But, this person [the old man] captured people' heart with one word. Speech without the spirit can not penetrate people's minds.”

Table 1 – Comment Categories<sup>1</sup>

## Symbols, culture, history and social media

One unique aspect of Japan is that abundant cultural symbols that exist because of its long history and the extensive use of social media.

First, I address the usefulness of collecting data in social media for disaster research. Researchers generally encounter difficulties in conducting fieldwork immediately after disaster events for several reasons. Their fieldwork may interrupt rescue and clean-up operations. Disaster survivors are not emotionally ready to talk to outsiders or do not even have time. Therefore, later in the emergency phase or early in the recovery phase is considered a better time to talk with survivors of disasters [14]. Because of the impromptu nature of social

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<sup>1</sup> These comments are in Japanese and translated into English by the author

media, they can capture useful and unique data generated immediately after the impact of disasters.

Second, I point out the significance of analyzing symbols that arise after disasters. Symbols carry specific meanings which may be passed from generation after generation in certain cultures; thus, symbols give insight to researchers to better understand certain national and regional cultures, the people and their history. One must carefully observe which symbols emerged and increased the number of appearances after disasters to find out its implications of these symbols.

Third, I address the importance of understanding national and regional culture and the history and characteristics of people who are affected by disasters. These factors should be well considered for design of future systems which are used in various stages of disasters, ranging from rescue and clean-up phases to disaster-preparedness and long-term recovery planning. Otherwise, these systems will not effectively support people of disaster regions. For instance, Japanese corporations and municipal governments have been considering to use a concept of smart city to rebuild the destroyed towns [16]. The concept of smart city may be relatively easily acceptable to the people in Japan and its various levels of governments even in rural areas since they are accustomed to rapid technological and social changes.

## Conclusion and future research

In this paper, I presented symbols that emerged in one YouTube video site. The phrases “let’s rebuild” and “ganbarou” connote special meanings to Japanese culture and history. Symbols that arise immediately after disaster events provide insight in understanding the culture and history of the nation and region.

My future research will explore additional data in a variety of social media, ranging from YouTube videos, blogs and Twitter. In order to supplement the data from social media, I also plan to conduct interviews of people who experienced the impact of this disaster, after the one year anniversary of the disaster.

## References

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