

# Taiwanese Perceptions of Japan and the Use of Nuclear Power after the 2011 East Japan Earthquake and Tsunami Disaster : An Examination of the Role of Media and Heuristic Cues

著者	WIWATTANAPANTUWONG Juthatip, LEE Chia-jung, HONDA Akio, ABE Tsuneyuki
journal or publication title	Tohoku psychologica folia
volume	70
page range	44-55
year	2012-03-31
URL	<a href="http://hdl.handle.net/10097/55321">http://hdl.handle.net/10097/55321</a>

# Taiwanese Perceptions of Japan and the Use of Nuclear Power after the 2011 East Japan Earthquake and Tsunami Disaster: An Examination of the Role of Media and Heuristic Cues

JUTHATIP WIWATTANAPANTUWONG<sup>1</sup>, CHIA-JUNG LEE<sup>1</sup> (李佳容)  
AKIO HONDA<sup>2,3</sup> (本多明生) and TSUNEYUKI ABE<sup>1,3</sup> (阿部恒之)

The 2011 East Japan earthquake, disastrous tsunami and subsequent nuclear accident at the Fukushima nuclear power plant evoked a severe shock in countries around the world. The present study investigated the perceptions of Taiwanese people toward Japan after the 2011 Tohoku earthquake through semi-structured interviews conducted in Taipei and Chaoyi, Taiwan. In particular, the present study examined Taiwanese feelings about the impact of the disaster, the trustworthiness of sightseeing and export goods from Japan, the prospect for Japan's recovery process, the attitudes toward using nuclear power, and knowledge regarding the location of the disasters by implementing an identification system of the locations on various maps. The results revealed that more than half of the respondents reported feeling fear when they received information about the disasters in Japan. They also reported being aware of the radioactive contamination which led to a hesitation to visit some areas of Japan or purchase agricultural products from Japan. Additionally, they disclosed high levels of concern regarding radioactivity and the mental health of children who were victims of the disaster. Furthermore, our results demonstrated that respondents believed the recovery process in Japan will require an average of 7-8 years before normal functioning can be resumed. Moreover, participants mentioned greater fear for future nuclear accidents within their own country. Interestingly, our results also revealed that the Taiwanese could not correctly identify the locations of the earthquake epicenter and the Fukushima nuclear power plant accident. The role of the media as well as certain heuristic cues used by the Taiwanese toward the disaster is also discussed.

**Key words:** Taiwanese disaster perception, 2011 East Japan earthquake, semi-structured interview, media role, heuristic thinking

## Introduction

On March 11<sup>th</sup>, 2011, an earthquake in East Japan (2011 Tohoku earthquake) occurred at 14:46:18, with an epicenter 130 kilometers East-Southeast of the Oshika Peninsula. This earthquake was the strongest earthquake (magnitude 9.0) recorded in Japan's history and the fourth strongest in World history after the 1960 Valdivia earthquake in Chile, the 1964

- 
1. Department of Psychology, Graduate School of Arts and Letters, Tohoku University, 27-1 Kawauchi, Aoba-ku, Sendai 980-8576, Japan. (E-mail address: vjutatip@yahoo.com)
  2. Research Institute of Electrical Communication, Tohoku University
  3. The Research Group on Disaster Prevention and Management, Tohoku University

Alaska earthquake in the USA, and the 2004 Indian Ocean earthquake in Indonesia. The most severely affected areas were Miyagi, Fukushima, Ibaraki, and Tochigi prefectures, which experienced shaking at levels 6+ to 7 according to the scale established by the Japan Meteorological Agency (JMA). At the time, the impact of the earthquake was so severe that a tsunami surged up the eastern coast of Japan, and rose to nearly 10 m in height (Japan Science and Technology Agency, 2011). The tsunami destroyed the world's biggest water-break in Kamaishi bay, which had only recently been completed in 2009. The Sendai Airport, located near the coast in Miyagi prefecture, was also inundated by the tsunami. Most importantly, the earthquake and subsequent tsunami caused a nuclear accident at the Fukushima Daiichi nuclear power plant. This accident was the largest nuclear disaster on record since the 1986 Chernobyl disaster. Residents who lived within 20 km of the nuclear power plant had to evacuate as soon as possible, while residents living approximately 20-30 km from the plant were also told to evacuate on March 25, 2011.

After the news of the earthquake, tsunami, and nuclear power plant accident in Japan were broadcast, people around the world were shocked and devastated. Some experts estimated that this nuclear disaster was worse than the 1986 incident in Chernobyl. At that time, large amounts of radioactivity were released and hundreds of square kilometers of land were left uninhabitable (Fountain, 2011). Nuclear expert Joseph Cirincione from the Ploughshares Fund reported, "in the case of a complete meltdown, the radiation could spread across the Pacific and reach the United States" (Cirincione, J; cited in Bowman, 2011). Similarly, most media outlets used words or phrases such as "according to experts, in the worst case scenario..." followed by what seemed to be the most serious or severe of situations that may occur. Images of the tsunami wiping away the coastal community, or the explosion at the Fukushima Daiichi nuclear plant, gave the impression of a catastrophe which quickly agitated people. These shocking news reports from Japan had a strong effect on Japan's economy. Despite the fact that until the end of April, the Tokyo and Tohoku areas were still experiencing frequent aftershocks, public transportation in Tokyo was running as close to normal as possible and scheduled blackouts were terminated. Most other areas in Japan, such as the Western areas including Nagoya, Kyoto, and Osaka, were unaffected. The water supply and food in the markets were controlled, and had been tested for radioactivity. Even for the most cautious visitors, radioactive exposure in these areas was reported to be 0.083  $\mu\text{Sv/h}$  in Tokyo (Measured in April 10, 2011), which was significantly lower than what one would expect during an ordinary flight (Japanese Society of Developmental Biologist, 2011). However, the number of visitors to Japan was noticeably declining after March, 2011, when compared to similar seasons the previous year (2010). Thus, tourism and leisurely visits were at a 50% decline (Japan Tourism Agency, 2011). Hong Kong, Indonesia and other Asian countries also stopped importing water and agricultural products from Japan, especially those from Fukushima, Ibaraki, Tochigi, and Gunma Prefectures, due to fear and anxiety over radioactive contamination (Yomiuri, 2011a).

The decline of tourists in the area and the reduction in the export of goods were indicative

of how other countries perceived Japan. This negative perception of Japan from other countries may have been driven and influenced by the mass media's portrayal of the disaster within those countries. The media have the forum to educate people and play a key role in controlling people's perceptions and thoughts. Previous studies have demonstrated that people do not use their full cognitive abilities to process information when making decisions. The reason for this phenomenon is referred to as preconceived "heuristics", which are cognitive processes that people use to help classify incoming information. Thus, heuristic thinking helps people reduce their cognitive effort in order to process data for decision making. The individual's involvement of information also moderates the direction of reliance on heuristic thinking. Information that affirms what is already known or thought helps solidify (or facilitate a change in) opinions. Additionally, a low involvement with the incoming information is moderated by other peripheral factors such as the likability of the media source (Chaiken, 1980; Petty & Cacioppo, 1986).

An additional change expected to be a result of these events is the perception or attitude toward nuclear power. After the Chernobyl accident, attitudes about the use of nuclear power changed dramatically. For a country that had less of a visible impact, this would merely be a temporary setback. In contrast, most countries affected by the fallout displayed a negative attitude toward nuclear power, and exhibited over-exaggerated behaviors, such as purchasing portable radiation monitors and overstocking food and canned goods, which subsequently led to a shortage of products in stores. These behaviors all reflected persistent anxiety over radioactivity. Renn (1990) demonstrated that the diminished acceptance of the use of nuclear power after the Chernobyl accident may be a result of a change in the opinions of undecided responders. He referred to this theory as the 'inoculation effect of attitude formation and commitment' (McGuire, 1985; Renn, 1984; cited in Renn, 1990) and argued that this effect made individuals with a positive attitude immune to negative incidents, while an uncommitted person would easily use the incident as an incentive to take a side and follow a pattern of heuristic thinking. Thus, our cognitive processes try to avoid the intake of or exposure to information that would directly go against a previously formed attitude or perception (Cotton, 1985). Accordingly, selective exposure and the downplaying of counterevidence are two mechanisms for avoiding cognitive dissonance (Festinger, 1957).

Thus, the overall purpose of the present study was to qualitatively examine how people in other countries perceived Japan after the devastating earthquake and nuclear accident, by focusing on their perception toward Japan as a tourist destination and the use of Japanese goods and products. People's views on Japan's recovery and attitude toward nuclear power were also investigated. Moreover, we examined how people received and remembered information from the media by using a system of identification of the affected locations on the map. The present study selected Taiwanese citizens as a target country for the following reasons. Taiwanese people have also experienced frequent (and strong) earthquakes, and are reliant on nuclear power for electricity; Taiwanese people were also influenced by the Japanese life style, TV games, literature, and other factors. As a result of a good historical relationship,

the Taiwanese respect Japan and look to Japan as a role-model (Search China, 2011). Therefore, we conducted semi-structured interviews in Taiwan, and performed exploratory investigations on Taiwanese people's perceptions of Japan and nuclear power and whether these differed from perceptions before the events.

## Method

### *Participant*

In order to obtain a variety of opinions, we contacted representatives of companies, schools, and universities in Taipei and Chiayi. Taipei is the capital of Taiwan located in the northern part of Taiwan. Chiayi city is located in Chiayi County, an administrative area in southwest Taiwan. The representatives who were willing to participate in the study were also asked to invite others to take part in group interviews. Thus, in each group, members felt familiar with one another. The number of participants within each group varied from 2 to 5 depending on the participants' schedules. A total of 65 Taiwanese people (22 Taipei residents and 43 Chiayi residents) participated in this study. Sixteen of the Taiwanese participants were men and 49 were women. The average age of the participants was  $28.54 \pm 10.3$ , and ranged from 19 to 60 years. All participants in Taipei were company workers (mostly related to media and cosmetic companies). More than half of the participants in Chiayi were college students, and the rest were professionals (company employees).

### *Procedure*

We conducted interviews in Taipei and Chiayi from October 17<sup>th</sup> to 20<sup>th</sup>, 2011 (7 months after the 2011 Tohoku earthquake). The interview questions were semi-structured, and the topics included (1) the perception and actions in response to the earthquake/tsunami and Fukushima nuclear accident, (2) the perception of the recovery of Japan after the disaster, (3) the attitude toward nuclear power in Taiwan, (4) the anxiety of visiting Japan, and (5) how well participants could remember the exact locations of the incidents in Japan. The interview duration was approximately 15 minutes for each person. After the interview, the participants received 200 Taiwan Dollars or other souvenirs as compensation for their participation. The participants' responses were classified using keywords, categorized, and calculated as a percentage based on all participant responses.

## Results

Most participants obtained information about the earthquake from the following sources: internet websites such as Facebook (29%), television (28%), acquaintances (8%), and newspapers (2%). The remaining responses were coded as unidentified/cannot remember. Among the participants, fear was the most reported emotional reaction toward the news (66%). Additional responses included shock (34%), sadness (22%), and worry (15%), respectively ( $\chi^2(3) = 29.16, p < .001$ ). Some reports of the fear experienced by the participants included, "News

broadcasts showed the raging fires and scenes from the devastating tsunami, it was very scary” (from a 27-year old woman). Another example of such a report was “*I always watch the ‘Discovery’ Channel, and all it reported on during the day was the earthquake and subsequent tsunami. People were terrified. I am fearful of the earthquake, and tsunamis, as well*” (from a 29-year-old woman). To additionally summarize the impact of the disasters, 22% of the participants acknowledged reports of fear regarding the nuclear accident stating responses such as “*The radiation was long lasting*” (from a 30-year-old woman) and “*I am afraid of the air-flow of radiation to Taiwan, and illness from the radiation*” (from a 19-year-old woman). Regarding fear over the tsunami, 12% of the participants acknowledged feeling fearful and stated the following responses “*I really fear the earthquake, but more so I am scared of the tsunami*” (from a 23-year-old man), and 6% of the participants reported feeling fearful of the earthquake. Reports of fear among these three disasters were not significantly different ( $\chi^2(2) = 5.85, ns$ ). Additionally, participants also reported the feeling of shock when describing the disasters. For example, a participant said, “*At first, I was very shocked, it is hard to believe that this hardship would happen to Japan*” (from a 27-year-old woman) or “*I was shocked. When I heard the news, I better understood the fragility and importance of life*” (from a 20-year-old man). Additional feelings of worry were also reported by participants. A 29-year-old woman said, “*I was very afraid when I heard about the news, because my friend was living in Japan at the time. Is she safe? I was worried about her. When I heard that she was fine, I was a bit relieved*”. Furthermore, 12% of the participants reported that this event reminded them of a past earthquake in Taiwan, the Jiji earthquake (921 earthquake), “*I never experienced such horrible events like this before; however, this reminds me of the 921 earthquake in Taiwan*” said a 20-year old woman. As a result of these disasters, the behavioral responses of the participants showed that 35% of the Taiwanese people attempted to gather more information about the disasters while 31% of those tried to support Japan by contributing donations or volunteering for support activities. An additional 18% of the participants reported that they tried to contact family, friends and relatives living in Japan. No significant differences were observed among these 3 types of responses ( $\chi^2(2) = 3.53, ns$ ).

After the nuclear accident in Fukushima, 69% of the Taiwanese people stated that they were worried about the radioactivity, and the explosion at the nuclear power plant. The number of respondents who reported being worried about the nuclear accident was significantly higher than those who did not ( $\chi^2(1) = 9.62, p < .01$ ). Specifically, 20% of the respondents believed that the Japanese government withheld important details and information about the disasters, 18% reported being afraid of radioactive material and products such as fish and leafy vegetables, 17% stated they were fearful of future health and agricultural problems as a result of the radiation exposure. No significant differences were found among these categories of responses ( $\chi^2(2) = 0.17, ns$ ). With regard to purchasing Japanese made products, 42% of the Taiwanese people stated that they would not, 49% stated that they would still continue to purchase products from Japan, and 9% stated that they had not purchased Japanese products even before the events. Among the Japanese

products respondents reported no longer purchasing, included agriculture products (26%), fish and other seafood (6%), products from Ibaraki or Fukushima (5%), products which were launched and distributed after March 11 (2%), and all Japanese products (2%). This was due to concern and fear over contamination. In contrast, those who claimed they trusted the international radioactive inspection of traded goods (28%), were among the groups who continued purchasing Japanese products.

Regarding the recovery process for Japan, respondents' answers ranged from at least 1-2 years to about 20 years or more (with a mean of  $7.4 \pm 5.8$  years) depending on the severity of the problems. Those who indicated a short recovery process said, "*Considering the recovery progress until now, it has been very fast. I think, after 1-2 years, things will go back to normal as before*" (from a 20-year-old woman). In contrast, those who responded that the recovery would take a couple of decades said that it was predominantly due to subsequent mental health problems (e.g. "*It can be seen that the recovery progress is going better, but the mental health aspect of it is sort of... incurable, right? Such as PTSD, I think it still cannot be treated*" (from a 22-year-old woman)). Radioactive contamination was another concern (e.g. "*Even if the destruction from the tsunami or earthquake can be cleaned up quickly, the radioactivity will last forever*" (from a 20-year-old woman)). Thus, the reconstruction and revival of the economy were perceived to take little time in comparison to the management of debris and radioactive material, and mental health recovery of the victims and survivors. With regard to the duration or length of recovery time for Japan, the Taiwanese people made comparisons to their own disastrous earthquake. For instance, a 20-year-old man said, "*I think Japan will recover very fast. In the 921 earthquake in Taiwan, we needed 10 years to recover. The economic problems may take 4-5 years this time*", or "*For the Taiwan 921 earthquake, it was said that the recovery took 10 years, but I have not forgotten it until now*" (22 year-old woman). Another source of consideration for the recovery process came from a previous Japanese disaster (e.g. "*The previous earthquake in Osaka (Hanshin-Awaji Earthquake) seemed to take about 10 years, so, for the Tohoku area, I think it might take longer*" (from a 23-year-old woman).

With regard to the perception on nuclear power use, 52% of the participants believed that there was a risk for the occurrence of a nuclear accident, while 15% reported that it was safe. These results suggest that the number of participants who suspected of the danger in having a nuclear power plant was higher than those who believed in its safety ( $\chi^2(1) = 13.09, p < .001$ ). Respondents believed that Taiwan has a high risk of nuclear power plant accidents because their country is susceptible to frequent earthquakes. During their interview, a 20 year-old female participant stated, "*Taiwan also has nuclear power plants, and earthquakes often occur. I am worried that Taiwan will also experience a nuclear accident*". Furthermore, participants also mentioned fear over possible chaos that might occur among citizens after an accident. For instance, a 45-year-old woman said "*If an accident actually occurred in Taiwan, there would be chaos among people*". Additionally, 12% of the participants provided opinions regarding the continuation of nuclear energy and its use. Most of the respondents said that even if dangerous, nuclear energy is important for people (e.g. "*Nuclear power is very convenient for*

us, I think we cannot get rid of it. But nuclear power is a bit... dangerous, right? I think it should be built and constructed more safely” (from a 28-year-old woman)), and half of that (6% of the participants) mentioned the essentials of current nuclear power use (e.g. “When I watched the news of Japan’s nuclear accident, it reminded me of Taiwan’s nuclear plant. Because Taiwan is geography liked Japan, we may experience a similar accident here. But the government said that we have no need to stop using nuclear power. Chiayi, has often been shaken, I think I have to be cautious” (from a 20-year-old woman)). However, 6% of the participants reported a negative change in attitude towards the use of nuclear power due to this accident. For example, a 31-year-old woman stated “This makes me reconsider the use of nuclear power in Taiwan. I am rethinking ‘do we really need nuclear power?’ And I think Taiwan may experience a similar accident in the future, too”. Half of those participants who had a negative attitude toward nuclear power (3% of the total participants) stated their needs for an alternative form of clean energy.

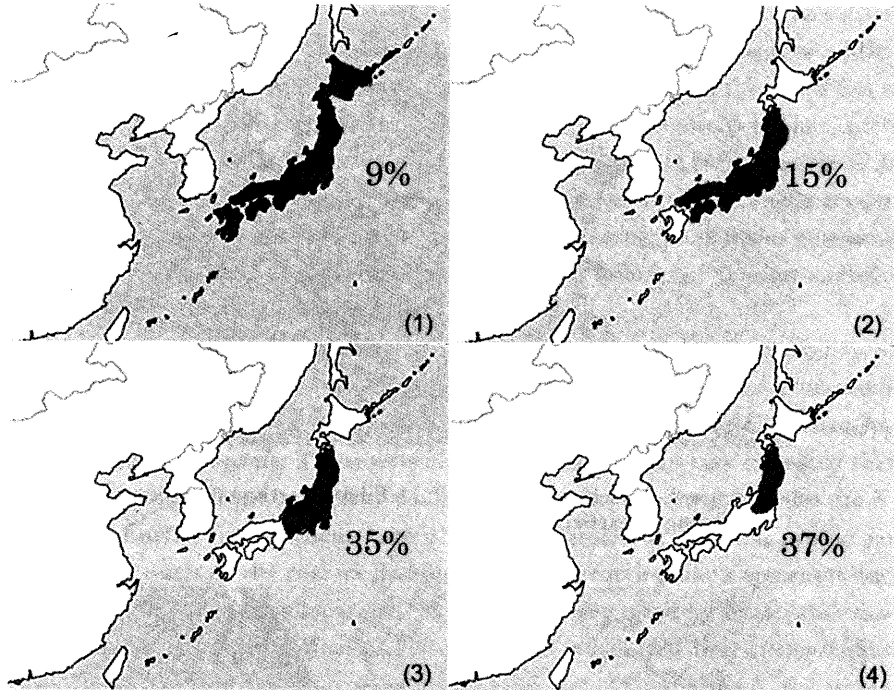
Additionally, participants were asked to draw on a map the areas in Japan that were still too dangerous to visit. We categorized participants’ responses into the following four patterns: (1) avoided traveling to all of Japan; (2) avoided traveling to the Honshu and Shikoku islands; (3) avoided traveling to the Chubu region as well as the aforementioned areas; and (4) avoided traveling to the Tohoku region. Interestingly, only a total of 4% of the participants reported that they felt safe enough to go anywhere in Japan. Pattern 4 displayed the highest frequency of responses with (37%) followed by pattern 3 (35%), while pattern 1 displayed the least frequent response with (9%) ( $\chi^2(3) = 15.79, p < .01$ ). These results indicated that the Taiwanese people considered all of the areas in Tohoku and Kanto regions to be too dangerous to visit (see Figure 1).

With regard to the recognition of the earthquake’s epicenter and the location of Fukushima nuclear plant (via a Chinese world map displaying the names of the prefectures in Japan excluding the Fukushima prefecture), more than half of the responders (51%), reported that Sendai was the epicenter of the earthquake. Correct responders included only 12% of the participants who marked that the north-east side of Oshika Peninsula was the epicenter of the earthquake. Additional responses included Fukushima (9%), areas in Tohoku region (8%), Tokyo (5%), Hokkaido (Sapporo 2% and southern Hokkaido 2%), the seaside near southeast Honshu (3%), Fukuoka (3%), and area in central of Honshu island (2%). 3% of responses declined to answer. Sendai was the most frequent response when compared to other responses ( $\chi^2(10) = 155.53, p < .001$ ) (see Figure 2). Thus, these results suggested that nearly half of the Taiwanese people misidentified Sendai as the epicenter of the 2011 Tohoku earthquake.

Additionally, when participants were asked to indicate the correct location of the Fukushima nuclear power plant, 17% of the participants still marked the site at Sendai, while 12% marked areas in Chubu region (Nüigata 5%, Shizuoka 3%, and 2% each for Nagano prefecture and Nagoya). Only 11% of the participants correctly identified Fukushima as the correct location, while 11% said Morioka, 8% said Fukuoka, 6% said Tokyo, 5% each said the areas in Hokkaido, and Tohoku region (excluding Sendai and Morioka), 3% each said Osaka,



and area in Chugoku region, 2% each said the earthquake epicenter and seaside near Kanto region, and 15% declined to answer ( $\chi^2(16) = 41.64, p < .001$ ) (see Figure 3).



(1) Avoided traveling to all of Japan (9%), (2) Avoided traveling to the Honshu and Shikoku islands (15%), (3) Avoided traveling to the Chubu and Tohoku regions (35%), (4) Avoided traveling to only Tohoku region (37%).

*Figure 1.* Four patterns describing areas which were dangerous for visiting.

## Discussion

The present study investigated the perception of the Taiwanese people toward Japan after the 2011 Tohoku earthquake by conducting a semi-structured interview on a sample of Taiwanese residents in Taipei and Chaiyi, Taiwan. Specifically, the present study examined how people in Taiwan perceived Japan after the earthquake and subsequent accident at the nuclear power plant. For example, we studied their perceptions and how they felt about the impact of the disaster. We also inquired about various events that they would recognize concerning the disasters and their overall thoughts on the use of nuclear power. The role of the media and heuristic thinking were also examined.

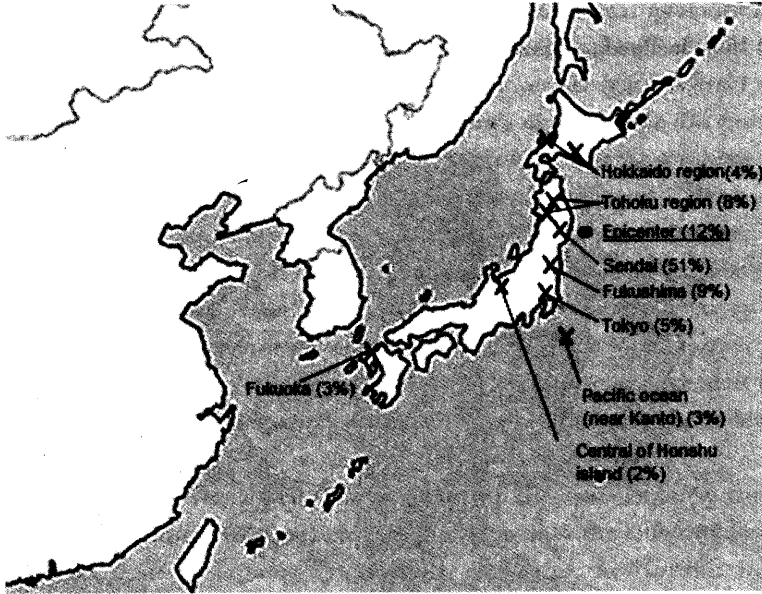


Figure 2. The location of the 2011 Tohoku earthquake epicenter according to participants.

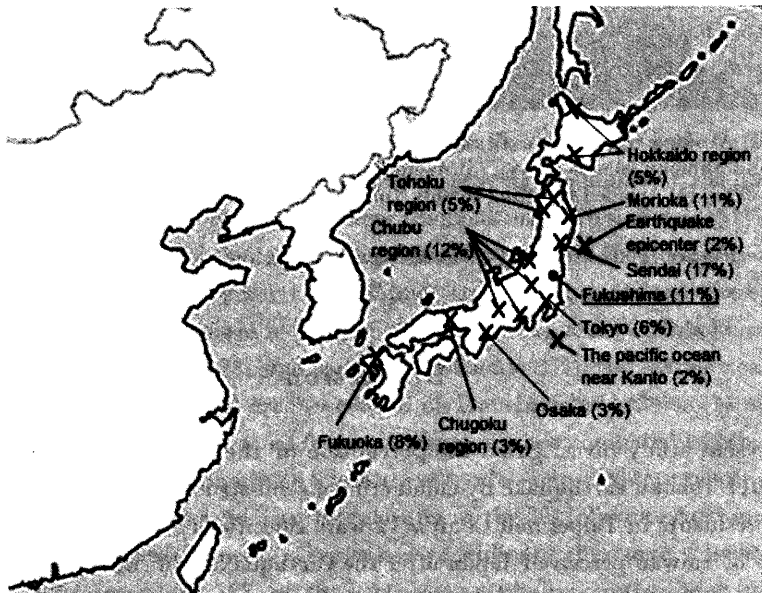


Figure 3. Participants' indication of the location of the Fukushima nuclear power plant.

In general, the media tended to focus on the negative and most emotional and shocking aspects of the disasters and repeatedly depicted the emotional scenes of the disaster. In fact, participants reported experiencing an overload of portraits and videos from the disaster and said that they were still haunted by the imagery. Additionally, more than half of the Taiwanese people reported fear when they obtained information regarding Japan's disasters. Furthermore, those who had acquaintances living in Japan reported feeling additional concern and fear over the safety of their loved ones. Citizens from around the world can easily exaggerate the effects of a disaster that they did not experience themselves. Thus, the facts may be completely different from their perceptions. In contrast, people living directly in Japan can experience both the reality as well as the information provided by the media concerning the affected and unaffected areas. We can see that people's trust in Japan was compromised and wavered. As a result, 40% of the participants reported feelings of fear associated with visiting Japan or purchasing Japanese products.

Heuristics persuade people to believe even when there is only little possibility in the worst case when there is high involvement in the matter (Chaiken, 1980). Thus, some of the Taiwanese people still believed that Japan was too dangerous to visit and that Japan's agricultural products were unsafe. The results obtained from the map task indicated that the Taiwanese people considered not only all of the Tohoku area as dangerous, but also the Kanto and Chubu areas. Furthermore, when there is low involvement in matters, people cannot manage details well; such as the correct designation of the earthquake's epicenter and the Fukushima nuclear power plant's location. Some people were lured by irrelevant cues and misunderstood the actual events. Most of the participants believed that the earthquake's epicenter and the nuclear power plant were in the same area. Furthermore, the terms and locations 'Miyagi' 'Sendai' and 'Tohoku' were terms that the participants heard from the news, and when the researchers introduced themselves; thus, participants may imprint the word Sendai, and associate it with the epicenter of the earthquake. Also, people may become confused because Tokyo is the most well-known city among the ones affected by the radiation leak, and because Fukuoka has a similar pronunciation and accent as 'Fuku' like Fukushima. These cues are easier for people to remember than unfamiliar ones. These common mistakes showed that people are easily affected by peripheral information. These results suggested that heuristic thinking was a culprit in the growing anxiety over the safety of Japan.

Regarding thoughts on the duration of the recovery process for Japan, participants' perceptions were influenced by Taiwan's past disasters and earthquakes. For example, Taiwan experienced strong earthquakes including the Jiji earthquake (referred to as the 921 earthquake) on September 21, 1999. Some participants said that Taiwan took nearly 10 years to recover from the damage. Thus, their knowledge and experience may have influenced and reflected their prospect for Japan's recovery process. Furthermore, in comparison to Taiwan, Japan's ability to recover was thought to be more efficient. Japan's image of calmness and carefulness (Abe, 2011; Abe, Honda, & Wiwattapantuwong, 2011), influenced people's perception of a full and efficient recovery. However, exceptions for an efficient recovery

included mental health problems, and future health problems due to exposure to radioactive materials.

Regarding the consideration of the use of nuclear power after the incidents, people reported that their opinions about the perceived importance of nuclear power changed after the disasters. Similar to an Inoculation effect of attitude formation and commitment (Renn, 1990), people who hold neutral attitudes toward nuclear work tended to become more negative with by the minor information. However, similar research conducted by Renn (1990) revealed that this change in attitude may return to normal (or nearly normal) with the passing of time (approximately 1 month later). Consistent with participant reports, respondents reported that they would likely forget about the catastrophic events with the passing of time.

In summary, the current study investigated the perception of the Taiwanese people toward Japan and the use of nuclear power after the incidents of the 2011 Tohoku earthquake and tsunami. Results revealed that more than half of the Taiwanese people felt fear when they obtained information about Japan's disasters. They also reported great concern over radioactive contamination and a hesitation to visit certain areas of Japan. They also reported being fearful of purchasing Japanese agriculture products. However, our results also demonstrated that our participants could not easily identify the correct locations of the disasters and affected areas from the earthquake or the nuclear power plant accident at Fukushima. Based on our findings, we also discussed the role of the media and heuristic cues, which may have further influenced the perceptions of the Taiwanese people toward the disaster. Since the present study is a qualitative study, it is limited in its ability to claim sample size and representativeness and generalizability of the findings. However, the present study is consistent with previous research conducted on the perceptions of nations and communities recovering from terrible disasters. Furthermore, the present study also highlights the role of the media and how heuristic thinking plays a critical role in forming people's perceptions toward events. Our findings help the further understanding of how Taiwanese people perceive Japan and the use of nuclear power 7 months after of the disaster and events. The road to Japan's recovery may be understandably difficult, but our study revealed that the Taiwanese people believed that Japan will be able to recover within 10 years.

### **Acknowledgements**

This research was supported by funds from the Tohoku University President's Discretionary Fund for the Research Group on Disaster Prevention and Management. The funding sources had no role in the design of the present study, data collection and analysis, decision to publish, or preparation of the manuscript.

## References

- Abe, T. (2011, April). Manner of the victim: Life and safety after disaster. In T. Inamura (Chair), *The urgent report meeting: 1 month after the events*. Symposium conducted at the meeting of Tohoku University Disaster Control Research Center, Sendai, Japan.
- Abe, T., Honda, A., & Wiwattanapantuwong, J. (2011, June). Manner of the victims (2): Chaos and helping in emergency. In T. Sato (Chair), *The urgent report meeting: 3 month after the events*. Symposium conducted at the meeting of Tohoku University Disaster Control Research Center, Sendai, Japan.
- Abe, T., Honda, A., & Wiwattanapantuwong, J. (2011, September). Manner of the victim (3): What did the victim could sense and feel? In S. Ono (Chair), *The urgent report meeting: 6 month after the events*. Symposium conducted at the meeting of Tohoku University Disaster Control Research Center, Sendai, Japan.
- Bowman, M. (2011, March 13). Expert: Nuclear radiation could spread far beyond Japan. *Voanews*. Retrieved from [www.voanews.com](http://www.voanews.com)
- Chaiken, S. (1980). Heuristic versus systematic information processing and the use of source versus message cues in persuasion. *Journal of Personality and Social Psychology*, 39, 752-766.
- Cotton, J. L. (1985). Cognitive dissonance in selective exposure. In D. Zillman & J. Bryan (Eds), *Selective Exposure to Communication* (pp. 11-33). Hillsdale, New Jersey: Erlbaum.
- Festinger, L. (1957). *A Theory of Cognitive Dissonance*. Stanford, California: Stanford University Press.
- Fountain, H (2011, March 15). Wind and rain steer radiation's reach. *New York Times*. Retrieved from [www.nytimes.com](http://www.nytimes.com)
- Japanese Society of Developmental Biologist. (2011). *Information of Radiation Safety in Japan, April 15, 2011*. Retrieved from <http://www.jsdb.jp/kaisai/jsdb2011/041511%20radioactivity%20message-1-1.pdf>
- Products from Japan, importation after the nuclear accident continually ceased: Hongkong beware of agriculture products from 5 prefectures. (2011a, March 24). *Yomiuri*, p. 7. (In Japanese: 日本産、輸入停止相次ぐ 原発事故受け 香港は5県の農産品)
- Japan Science and Technology Agency (2011). *The Great East Japan Earthquake Information from Official Websites*. Retrieved from [http://www.jst.go.jp/pr/pdf/great\\_east\\_japan\\_earthquake.pdf](http://www.jst.go.jp/pr/pdf/great_east_japan_earthquake.pdf)
- Japan Tourism Agency (2011). *The Survey of Consumer Behaviors among Foreign Visitors of Japan (April-June, 2011)*. Retrieved from <http://www.mlit.go.jp/common/000164786.pdf>
- McGuire, W. J. (1985). Attitude and attitude change. In G. Lindzey & E. Aronson (Eds), *Handbook of Social Psychology*, 3, 223-346. New York: Random House.
- Petty, R. E. & Cacioppo, E. (1986). The elaboration likelihood model of persuasion. *Advances in Experimental Social Psychology*, 19, 123-205.
- Renn, O. (1984). *Risikowahrnehmung der Kernenergie [Risk Perception of Nuclear Energy]*. Frankfurt and New York: Campus.
- Renn, O. (1990). Public response to Chernobyl accident. *Journal of Environmental Psychology*, 10, 151-167.
- Why Taiwanese people prefer Japanese? The differences of attitude toward Japanese between Taiwanese and Chinese people is. (2011, May 21). *Search China News*. Retrieved from <http://news.searchchina.ne.jp> (In Japanese: 台湾人はなぜ日本が好きか？ 中国と台湾の対日態度が違うのは)

(Received December 22, 2011)

(Accepted February 28, 2012)