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**Dark, cold and hungry, but full of mutual trust:
Manners among the 2011 Great East Japan
Earthquake victims**

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It was reported with praise by the worldwide media that victims of the 2011 Great East Japan Earthquake and tsunami disaster endured the aftermath in a civil manner. We analyzed official crime statistics and investigated data that were collected from residents in disaster-stricken areas. Official statistics showed that crime decreased during the disaster period. Collected data suggest that criminal and deviant behavior were extremely rare, and that the victims helped each other, apparently altruistically. Further research on actual behavior in post-disaster environments is necessary in order to sufficiently prepare for future disasters.

Keywords: emergent norm, crime, panic, looting, post-disaster utopia, tsunami

Preface

Soon after the 2011 Great East Japan Earthquake, a tsunami struck Japan's eastern shores, inflicting damage to the country, particularly in the northeastern region of *Tohoku*. All of the authors of this report were at the scene of the disaster and saw the victims endure the crisis in a civil manner and engage in mutual assistance despite the difficult circumstances: the disruption of all utilities and supply networks for days or weeks. The reaction by the people in the affected areas was impressive. Consequently, the authors immediately began a psychological study of the behavior and attitudes of victims of the 2011 Great East Japan Earthquake and resulting tsunami.

On August 9, 2013, the first author attended a round table meeting held by the Psychology Faculty of Lomonosov Moscow State University, where he had the opportunity to deliver a talk on the topic. This article summarizes the contents of that talk and presents additional studies.

1. General information about the 2011 Great East Japan Earthquake

The 2011 Great East Japan Earthquake had a magnitude of 9.0 Mw. It occurred under the Pacific Ocean about 130 km east of Sendai on March 11th, generating powerful tremors and huge tsunami waves. The disaster caused 15,555 deaths. Moreover, 5,344 people are still missing (Disaster Management, Cabinet Office, Government of Japan, July 12, 2011). Although the most severely affected area was the Tohoku region, even Tokyo and Chiba prefecture, which are about 350 km from the epicenter, were affected. People in Chiba prefecture were affected by soil liquefaction caused by the tremors. Similarly, approximately 94,000 people in Tokyo and the surrounding areas were unable to return home because of traffic congestion (Yomiuri Shimbun, March 12, 2011). Looking back at the greatest earthquakes in recent Japanese history, the predominant cause of death in the 1923 Great Kanto earthquake was fire. During the 1995 Great Hanshin-Awaji earthquake, building collapses accounted for most deaths. During the 2011 Great East Japan earthquake, the death toll was high because of the huge tsunami, which exceeded all expectations. According to the post-mortem examinations conducted one month after the disaster, 92% of all disaster-related fatalities (12,143 / 13,135) in the Tohoku region were the direct result of drowning (National Police Agency of Japan, *The White Paper on Police 2011*).

In addition, the nuclear accident at the Fukushima Dai-ichi Nuclear Power Plant worsened the situation in several ways. According to data recorded on November 16, 2011, 60,251 residents of Fukushima prefecture were evacuated to other prefectures; 47,995 people had still not returned to their home towns by as late as February 13, 2014 (Reconstruction Agency of Japan, Feb. 26, 2014).

Therefore, the eminent characteristics of the 2011 Great East Japan earthquake were the following: (1) the disaster-affected area was very broad, (2) the main cause of death was tsunami-related drowning, and (3) the occurrence of the consequent nuclear disaster worsened the situations and obstructed the recovery progress.

2. Evacuating lives in an orderly manner: Worldwide admiration

On March 14, 2011, only three days after the disaster's occurrence, a special Tokyo Broadcasting System television news program, and later many newspapers, reported that overseas media had praised the residents of disaster-affected areas for their patience and lack of confusion. For example, the *Kahoku Shimpo* (March 17, 2011), the dominant local newspaper of the Tohoku region, reported that the American media had published articles full of admiration for the orderly lines of people waiting for food without looting or engaging in illegal activity.

Presumably, people hold the conventional belief that chaotic conditions such as panic and looting are representative of conditions that follow a natural disaster. However, abundant sociological and psychological studies have highlighted the scarcity of deviant behavior such as panic and looting after disasters (Clarke, 2002;

Fahy & Proulx, 2009; Quarantelli & Dynes, 1970; Wenger, Dykes, Sebok, & Neff, 1975). The socially accepted idea of the aftermath is nothing but artificial imagery fostered by the mass media: so-called *panic myths* (Clarke, 2002; Keating, 1982) or *disaster myths* (Quarantelli, 1994; Tierney, Bevc, & Kuligowski, 2006).

Wallace (1956) pointed out that altruistic behavior predominates over egoistic behavior during the short periods after a disaster. People do put others' welfare on a higher level than their own in order to bring happiness to damaged communities. Wolfenstein (1957) named the states of altruism that occur soon after a disaster and remain for a short period a *post-disaster utopia*.

During the few days of a disaster's aftermath, a comprehensive image of disaster-affected areas reveals that actions taken for the sake of others are regarded as the norm. In contrast, civil disturbances are prohibited and occur very rarely. Although it is apparently rare, one cannot say that deviant behavior does not occur at all. Frailing (2007) reviewed reports of crimes after the 1906 San Francisco earthquake, the 1976 Tangshan earthquake in China, and Hurricane Agnes in 1972, and argued that sufficient evidence exists to prove that crime did occur after Hurricane Katrina in 2005.

We examined the question of the actual status of areas that were affected by the 2011 Great East Japan disaster, where the worldwide media praised residents for their gentle manner.

3. Actual state of crimes in the affected area: Analyzing police data

First, the official statistics from police in Japan were analyzed (See also Abe, 2013).

Referring to the data released on the website of the Miyagi Prefectural Police in June 2011, the number of reports to the police of penal code offenses in the city of Sendai from January through April 2011 was 8% lower than during the same period the previous year (the data included cases occurring before the disaster: January 1 – March 10, 2011). Intellectual offenses and moral offenses were 55% and 40% lower, respectively. Conceivably, even for potential criminals who lived in the disaster-affected area, opportunities to commit crimes were fewer, which could have led to a lower crime rate.

Furthermore, regarding the *Crime Statistics Document (a comparison of same period data for the current and previous year)* released by the National Police Agency of Japan (July 15, 2011), the *serious offenses index* (murder, robbery, arson, rape, abduction and human trafficking, and indecent assault) and *larceny offenses index* (burglary theft, motor vehicle theft, purse snatching, and pick-pocketing) in Japan were 6% less in January-June 2011 than in the first half of 2010. Notably, the most severely damaged areas of the Tohoku region (Iwate, Miyagi, and Fukushima prefecture) showed a 30% lower serious offenses index and larceny offenses index. Slightly damaged areas in the Tohoku region (Aomori, Akita, and Yamagata prefectures) showed 27% fewer offenses compared to the prior year. Regarding burglaries, the national crime rate was 10% lower, as it was in slightly damaged areas of the Tohoku region. Nonetheless, among severely damaged areas in Tohoku region, data showed 19% fewer burglary thefts in Iwate, and 3% fewer burglary thefts in Miyagi, but in contrast, 41% more burglary thefts were reported in Fukushima. It is reasonable to infer that burglars would have targeted homes that were left empty by the evacuation in Fukushima.

As Quarantelli and Dynes (1970) reported, crimes after a disaster are rarely committed by people in the affected areas (insiders). They tend to be caused by outsiders. Crimes committed in the 2011 Great East Japan disaster aftermath show convergent conclusions.

4. Actual images of lives during the disaster aftermath (1): Diaries and photographs

No matter how strongly the memory of the disaster had been imprinted in a person's mind, memories fade and change over time. Diaries and photographs taken in real time are invaluable. Consequently, this work examined the circumstances of the emergency period after the 2011 Great East Japan earthquake by gathering real-time records such as diaries and photographs from volunteers (See also Abe, 2012).

Methods

With support from *Kahoku Shimpo*, we placed an advertisement on May 5, 2011 calling for diaries, snapshots, and any real time documentation of the circumstances of the 2011 East Japan disaster from volunteers.

Results

In all, 91 locals volunteered to share their diaries, digital photographs, memos or blogs for the study. Of those people, six sent us diaries, 19 sent pictures, 21 sent memos, 31 sent blogs, six sent pictures and blogs, and eight sent memos and pictures.

Most of the photographs depicted disaster-affected scenes. However, one showed people charging batteries from electric generators at a subway construction site in Sendai (No. 27) or from a junction in a shopping area (No. 85). Another was a picture of a shuttered convenience store, apparently barricaded by trash cans in front of the door (No. 28) (Figures 1a–1c).

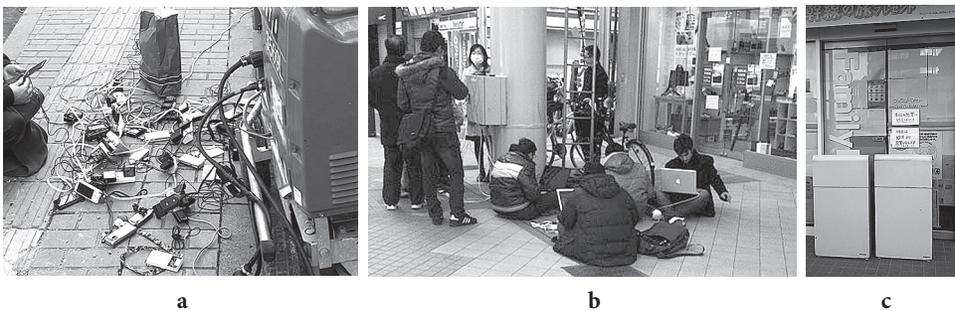


Figure 1. Odd scenes after the 2011 Great East Japan earthquake

- a: Photograph No. 27 — Batteries being charged from electric generators at a subway construction site (March 12, 2011 in Sendai)
- b: Photograph No. 85 — Batteries are charged from a junction in a shopping area (March 13, 2011 in Sendai)
- c: Photograph No. 28 — Shuttered convenience store with doors apparently barricaded by trash bins (April 3, 2011 in Sendai)

In addition, diaries, memos and blogs reflect people's lives during the disaster's aftermath. Some of the contents are the following (names withheld).

No. 1: Sunday March 13, got tanks of water, rice, tea, yogurt, dried plums, apples, and vegetable juice from a neighbor, N. Got salmon, oranges, apple, banana, miso soup, dried bread, and pickles, from neighbor, I. Tuesday 15 March, got information that supermarket X is open from N. Numerous people were lined up there. It is a 22-hour wait.... They're selling things at very low prices; I felt a great sense of gratitude to the seller.

No. 2: May 6, 10:30, I found a very long shopping queue in front of the supermarket, which made me wait for about 1–2 hours. Some shops have limited the number of items that may be purchased. One time, I saw an older person acting inappropriately. The person had let some friends and acquaintances cut into the line that I was waiting in (giving them the opportunity to get the items they wanted before people further back in the line). What's worse, the older person complained about how a staff member handled the incident.

No. 6: Sunday, March 13, 7 a.m. I was called out to by a woman (as I was walking). She gave me a lot of food and offered to drive me home. I thought I would reach home soon so I refused her. At 10 a.m. I reached home and checked to ensure that my family members were safe!!

No. 56: On Sunday, March 13, in the morning, I walked to the taxi pool at North Sendai station. Halfway there, I saw the police were trying to address some quarrels at the (gasoline) filling station. On March 14, I confirmed the scale of the disaster and left home to buy some food. At that time, product transportation was not fully functioning, and the shops had few products for sale. Despite all this, I saw that they were very polite and waited calmly in line. The situation was similar to what I had been told. My mother and grandmother recalled that people had acted in a similar, peaceful fashion during the aftermath of the 1978 earthquake (author's note: Miyagi earthquake in 1978, Mw. 7.4, death toll 28).

No. 72: On March 12, when I reached the spot to which the water truck would come (the distribution point), people who had come to get water had already made a line. I saw some helping disabled people and elderly people. I thought they were kind. On March 13th, I had a walk nearby. There were many buildings that had been damaged. I saw a car used by an electrician parked at a convenience store. The registration number showed the worker's car was from Niigata prefecture. The fact that they had come here from so far away made me feel glad and thankful, from my soul, my heart.

Discussion

Results show that every source of information described mutual aid in spite of the difficult and inconvenient conditions that characterized the aftermath of the tsunami. However, disorderly behavior was definitely not absent. Photographs from case No. 27 and No. 85 might show electricity being stolen. In addition, the arrangement of trash cans as barricades in front of the convenience store was intended to thwart trespassers and looters. In addition, case No. 2 is an eyewitness-

ness account of an elderly person who did not observe queues, and case No. 56 highlights quarrels.

Solnit (2009) argued that in the event of an emergency, taking others' belongings, which is ordinarily perceived as looting or theft, may be recognized as reasonable and appropriate *requisitioning* during an abnormal situation. Although residents of the Tohoku region cannot be regarded as angels who sometimes tend to commit deviant behavior in order to survive, the results emphasize that residents affected by the 2011 disaster revealed a strong sense of mutual aid and altruism, which their actions reflected, and that there was no pandemonium or infighting.

5. Actual images of lives in the disaster (2): Survey

Data obtained from diaries included real-time accounts and photographs, which kept those records fresh and lent them a high degree of reliability. Nevertheless, all those materials were given from certain newspaper readers. It is unreasonable to establish any quantitative discussion if it is based solely on the data. Therefore, before too much time had passed after the emergency, another survey was administered to collect information about what happened during that disaster and its aftermath.

Methods

During May–June, 2011, a questionnaire was administered to 161 participants, all of whom lived in areas affected by the 2011 East Japan disaster. They were college students in Fukushima prefecture (14 participants, aged 20–22 years), college students at a university in Sendai (39 participants, all women aged 19–22 years), college and graduate students at another university in Sendai (90 participants, aged 19–28 years), and participants in an open lecture given to local citizens at Marumori, about 50 km south of Sendai (18 participants, aged 18–84 years).

They were asked to describe odd scenes or atypical behavior in the aftermath of the event, and particularly what seemed to differ from usual, along with date, time and area information if possible.

Results

Each response was considered for inclusion in multiple categories and was duplicated and included in all relevant categories. Therefore, 514 items in all were analyzed. Each of the two authors categorized all of the items into groups separately. Then items in categories that had been assigned by both authors were counted. The results are presented in Table 1.

Those from the category 'Altruistic or orderly behavior' numbered 202 cases. There were 75 'Deviant behavior' cases. Results show that there were 2.7 times more 'Altruistic behavior or orderliness' reports than reports of 'deviant behavior'. For the 'Emotional change' aspect, 'Positive change' (16 items) outweighed 'Negative change' (6 items).

Table 1. Categories of odd scenes or behavior in the aftermath, as observed by participants (Numbers show frequencies of response)

Essential utilities	126	Electricity	22	Deviant behavior	75	Ill-mannered people	12
		Gas	4			On-street parking	1
		Water	7			Favoritism sale	4
		Fuel	35			Price gouging	2
		Telephone	3			Electricity theft	8
		Food and drinking water	41			Thefts	10
		Transportation	14			Prejudice	1
Social change	254	Appearance of people in the past	4	Altruistic or orderly behavior	202	Quarrels	7
		Clothing	10			Losses of self-control	1
		Landscape	50			Overreaction	6
		Ordinary scenes taking place despite the emergency	12			Cutting in line	5
		Awareness of nature problem	6			Buying up goods	18
		Concerns of looting	22			Calm attitude	36
		Rumors	9			Strengthening of communication	58
		On-street selling	5			Revival of Communication	9
		Change in media	23			Donations	5
		Supply shortage	20			Price reductions	15
		Queuing	82			Mutual aid	41
Nuclear plant	11	Sharing	27				
Change in perceptions	22	More blunted	8	Others	35	Self-control	11
		More sensitive	14			Others	35
Emotional change	22	Negative way	6				
		Positive way	16				
Bodily change	2	Pathology	2				

Translated from Abe (2013)

Discussion

The 'Deviant behavior' category included a subcategory related to the disruption of the peacefulness in refugee communities or crimes. Some examples are 'Ill-manners', 'Electricity theft', 'Thefts' and 'Quarrels'. However, 'Altruistic or orderly behavior' is described as a 'Calm attitude', 'Strengthening of communication', 'Mutual aid', 'Sharing', and other behavior that promoted the health and lives of those being evacuated and prevented crimes of any kind. Considering the fact that there were more examples of 'Altruistic or orderly behavior' than 'Deviant behavior', it can be inferred that the cognition kept in the memory of the disaster victims was an image of peaceful behavior and a cooperative mindset.

However, it had to be noticed that deviant behavior existed, although it was rare. Theft and electricity theft were regarded as crimes. Instances of "Theft" related to gasoline, vending machines, and convenience stores were reported. Eyewitness accounts of behavior included observations such as, "someone pumped gasoline from a car that had been flooded (by the tsunami)", "I found someone who got drinks by breaking into a vending machine", "My friend's sister had wanted to steal something from a convenience store but it had already been stolen before she got in", "Someone burned the school's chairs to boil water", etc. Even if they did it because it was necessary for survival, one cannot avoid the fact that such behavior threatened the peace in communities during the aftermath.

For the subcategory 'Quarrel', it was reported of some that "They fought because they mismanaged the line (the service staff and a customer at a filling station)", "There were people who were cutting in line for gasoline. People around there got angry very easily and their reactions were stronger than normal".

It must be emphasized that mutual aid occurred everywhere, even among complete strangers. However, some criminal and deviant behavior was also found in the disaster's aftermath, as people sought fundamental assistance for survival. Such behavior is unsuitable under normal conditions, but might be considered permissible during emergencies as proper behavior.

6. Conclusion

Even in the case of the 2011 Great East Japan Earthquake and the tsunami which resulted from it, several reports of deviant behavior have arisen. In terms of their criminal significance, they were minor and were conducted in an atmosphere of emergency by people sensing no alternative. Most images held in the victims' minds were those of active self-control, selfless behavior and cooperation, as would befit a description of a *post-disaster utopia*.

During a disaster's aftermath, the emergent norms differ from ordinary norms and are based on and formed by the emergent situation (Turner & Killian, 1972). The behavior of the Japanese admired by many after the 2011 Great East Japan disaster probably derived from the proper creation of emergent norms, which protected the community in the place of traditional norms. Future themes for study could include an examination of what factors make emergent norms suitable for safe living in the aftermath of a disaster, the construction of the emergent norm as a *disaster culture* (Moore, 1964), and the diffusion of such a culture throughout the world; these could be topics for psychological research on post-disaster living.

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