



## **LEARNING FROM EARTHQUAKE MEMORIALS: THE CASE OF THE GREAT EAST JAPAN DISASTER**

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### ***Abstract***

This paper is a study of the roles of disaster memorials with a particular focus on the Great East Japan Earthquake (GEJE). In order to deal with the collective experience of disasters such as earthquakes, societies develop various modes of remembering the event and their victims. One of these strategies consists in the erection of monuments where mourners, survivors, politicians, religious leaders and other visitors may express remember and/or learn about the tragic event. Memorials are often also conceived as material testimonies and symbols warning off the next generation of the potential dangers of earthquakes. Despite their popularity and a long tradition of memorials in Japan, critics have argued that stones did little to protect the lives of people during the GEJE. They argued that these stones may be eventually forgotten and ignored by future generation. In response to these critics, our findings show that the roles of depends not only on the monument itself but also on the other memorial practices such as storytelling, commemorative ceremonies, archiving and disaster education in the broad sense of it. We suggest that memorial monuments must be understood, not as an end in themselves, but as part of a culture of disaster culture.

*Keywords: disaster; memorial; social recovery; disaster risk reduction; Japan*

## 1.Introduction

Industrial societies respond to threats of earthquake and tsunami by drawing primarily from the lessons learned by engineering and natural sciences. These sciences most commonly study the physical evidence left by earthquakes and other related phenomena on human habitations and the environment. Earthquake engineers might investigate the response of buildings to various tremors to design earthquake resistance buildings and reform those existing structured considered too weak. Geologists study the movement of tectonic plates and sediments to evaluate the probability of the next earthquake or tsunami. In the same vein, tsunami engineers' expertise in fluid mechanics, coastal erosion and modelling became a means of designing seawalls and other tide-breaking technology to protect coastal communities. The rapid advancement of hard sciences and technological power encouraged industrial societies to increase their reliance on the resistance of buildings and infrastructures as a solution to increase their level of resilience and reduce disaster risk.

The rising complexity and cost of natural hazards have recently called for a more holistic approach giving more attention to collective behaviors and cultures in the context of disasters. Scientists devote a lot of their time and resources to study how people's knowledge and experience might influence a society's emergency responses. They may develop large programs for communal preparedness in schools, public offices and other institutions, in collaboration with governments, community associations and NPOs. They help organize and test evacuation drills, sheltering good practice and other necessary knowledge about the earthquake. Also, we notice an increase in the study of disaster cultures and indigenous knowledge. Social scientists, historians and other disaster specialists concentrate their effort in understanding how communities exposed to disasters might create, develop or adopt particular knowledge and emergency responses through generations. Together with hard defenses, this understanding of social responses and cultures of disasters are equally important and some of the most efficient ways of contributing to increasing a society resilience and DRR.

This paper proposes to strengthen our understanding of social responses to disaster by investigating the roles of disaster memorial monuments. Memorials are part of the broader process of disaster memorialization that contributes to the preservation of the memory of a tragedy and its victims through tangible or intangible acts of remembrance. Such acts may be private/public ceremonies, secular/religious memorial sites, storytelling and informal/formal education. Across the world, memorials of wars are probably the most common form of disaster memorialization. Remembering dead soldiers often constitutes a means of reminding new generations of the atrocities and dangers of wars. In a similar fashion, we see an increase in the building of memorials following the events of natural disaster. Some of the most recent examples are the memorials of Sumatra Indian Tsunami (2004), Hurricane Katrina (2005) and the Sichuan Earthquake (2008). If our knowledge of war memorialization is advanced, we have yet to understand the particular process of remembering catastrophes following natural hazards.

The memorialization of the GEJE presents a most fascinating case study. First of all, Japan is among the industrial nations with one of the disaster records when it comes to earthquake and tsunami. This particular status has not led this people to invest enormous research and times to disaster prevention. This disaster culture is matched by an equality a rich and deep culture of disaster remembrance has led many communities. Japanese society devotes a lot of time and resources to the remembrance of these disasters. This tradition is clearly reflected in the edifications of hundreds of GEJE memorials along the ravaged the coastline of Tohoku within the last 5 years. Despite their popularity, the need for disaster memorials seems to be contested. Some leaders of disaster risk reduction and community resilience have suggested that for instance stones of past tsunami did nothing to preserve the active memory of disasters and did not contributing to saving the lives of Japanese people. This argument was made by a Japanese advertising and public relations company during their campaign for a new evacuation program launched after the GEJE. Their promotion video begins by showing a memorial stone of the 1933 Sanriku Earthquake inscribed with the message 'do not build housing below this point'. Showing the devastated community below the stone, by the sea, a voice-over narration comments that the number of devastation and death in the area surrounding the stone suggests that such memorials were not worth building. Instead of stone, they prefer transmitting a new culture of evacuation drills to future generations. Those against stones memorials often argued that stones are often forgotten or else not deemed sufficient considering the number of death that occurred in their surrounding area. Those in favor of memorial stones often argue that they bear witness to the number of death that took place and also are the elements that will keep the memory alive once the environment rebuilt and whose who experienced the disaster have died. But, these parties rarely go beyond the consideration of

the stone in itself and their relationships to a particular event, here the GEJE.

To understand the comprehensive roles played by memorials during the aftermath of the GEJE, this study examines the activities surrounding three monuments in a post-GEJE community. This paper challenges the simple view of monuments as bare testimonies of the past and reveals their more active contribution to disaster education and a community's resilience. In this paper, we propose to examine and discuss these critics by asking: How can we evaluate the efficiency of memorial stones with regards to DDR and resilience? Is their being forgotten the right criteria to measure the efficacy of memorials? What roles have monuments taken during the aftermath of the Great East Japan Earthquake? Using examples from Japan, this paper is a first attempt to discern ways of evaluating the roles and the (in)efficacy of disaster stone memorials and understanding their implication for DRR.

## 2. Memorial Monuments of the GEJE

On the afternoon of March 11, 2011, the northeast region of Japan was hit by a magnitude 9.0 earthquake. The quake triggered waves reaching up to forty-meter high. The tsunami washed away entire coastal human settlements. Among those caught by the waves, 15,083 lost their lives and 3,971 went missing. The disaster also constitutes the second major nuclear accident in history and reportedly the costliest catastrophe ever recorded by representing an economic deficit of over 210 billion US dollars [1]. To these overwhelming figures, we must add the devastating impact that the events have had on the livelihood, social relationships and cultural assets of the affected communities and their survivors.

The level of destruction of the GEJE was matched by the intensive activities of commemorations. The Japanese government and local authorities, Buddhist temples, NGOs/NPOs, local associations have elaborated ceremonies and rituals, erected monuments and mourning facilities, planned memorial parks and museums. In the midst of the struggle for reconstruction planning, an intensive debate surrounded the preservation or destruction of disaster remains include buildings and objects, respectively called *ikou* and *ibutsu* in Japanese. One of the most renown cases involves the vessel of Kensenuma City and the disaster management office in Minamisanriku Town. Except for this particular debate, Japanese society devoted considerable resources and time to the process of memorialization of GEJE.

These acts of remembrance fill three primary functions. Firstly, they allow the survivors to grieve for the victims and the lost homeland. The bereaved and other visitors may pray the repose of the souls or pay their respect for the dead. It is important to note that ritual practices for the victims are also a means for the non-affected population to express their solidarity and their compassion for the tsunami-hit communities. Secondly, these acts of memorialization convey a desire to preserve the memory of the disasters and its aftermath. They combine memorial ceremonies, monuments, museums, archives, and recently the bursting of digital media. Outside digital media of which we lack long-term study, memorial monuments constitute the most popular mode of marking the land of the disaster in Tohoku indeed. At the time of this paper, we do not know of any GEJE community that does not have its memorial monument.

Japan has a deep-rooted culture of memorial stones commemoration of disasters and beyond. The first and most common group are known in Japanese as *kinenhi*. *Kinenhi* are commonly used to immortalize a person, an event or an institution. The second type comprises those monuments dedicated to the victims of an unnatural death. These stones may be referred to as *ireihi* (stones for the comfort of the dead) or *kuyouhi* (stones for the memorial service of the dead). *Ireihi* and *kuyouhi* constitute an object of ritual focus where bereaved families, survivors, religious leaders, government officials and visitors may pray or show their respect to the dead and also the wider disaster community. In practice, the two categories of *ireihi/kuyouhi* and *kinenhi* overlap and might be difficult to distinguish strictly [2]. As our study, *ireihi* do often play similar roles to *kinenhi* and vice-versa.

Japanese *ireihi* are traditionally the responsibility of religious institutions. Shinto shrines often contain and maintain the collective stones honoring the souls of dead soldiers. One of the first *ireihi* to be erected was the memorial monument of Ogawa Primary School, Ishinomaki City, Miyagi Prefecture. The memorial commemorates the death of 74 pupils and ten members of staff. Its design mirrors that of a grave. The central element is a column of black granite engraved with the dates, the names of the monument. It reads, "The Unnatural death of the The Great East Japan Earthquake" and "The memorial tablet of the ten teaching staff, 74 souls of the primary school children, the three souls of the junior high school, and the young men and women residents of the area". The other elements are an incense burner at the front and two blocks for flower offering, as well as Buddhist statues, stupas, and other memorial objects. Of a semi-permanent nature,

this elaborate structure translates the tragedy that took place on the sites of the school and the need to care for the soul of the 74 young lives drowned by the tsunami. As will be seen below, an innovation of the GEJE memorialization is the involvement of the local authorities in the construction of the erection of *ireihi*.

*Kinenhi* memorials are more commonly the initiative of governments, NPOs/NGOs and local groups. Memorials of the GEJE prove most diverse and innovative. One of the most striking edifices, however, can be found in Kamaishi City under the name “Telling and connecting with the giant tsunami of March 11, 2011”. The monument is composed of five columns built of black granite, each of which measures 2.6 meters in height. Each column with inscribed with messages from primary school children that may preserve the memory and the force of the tsunami. The messages are lessons which the children wish to pass on to the next generations. One of the titles reads “Let’s leave with the chest imprinted with ‘if a tsunami comes let’s run away’”. Another recalls the famous the popular saying that “if a tsunami comes, each person must protect one’s life”. The inscription concludes with the warning “each one must protect one’s own life. If there is an earthquake, go to high ground”. As the webpage of the company financing this project suggests [3], it is their hope that this monument will pass on the lessons of GEJE for a thousand year to come.

If the design and meaning of memorials remain important, they alone do not allow us to understand the roles of memorial's, let alone improve their efficacy. This point was clearly made by the promoters of a culture of evacuation mentioned earlier in the introduction. On the one hand, we agree with this view in that a monument alone, not matter how well designed it might, cannot change protect people from catastrophes. On the other, we feel compel to challenge the idea of evaluating the efficacy of memorials based on the outcome of a single event and a simple fact. Instead, we argue for an ethnographic and diachronic approach examining comprehensively the discourses and the activities surrounding disaster monuments. Such approach may also help us to improve the efficacy of memorialization in the long-term. Adopting this vision, the next section of this paper examines a particular set of disaster monuments, their relationships and their roles within a post-GEJE community.

### 3. Yuriage Memorial Monuments: A Case Study

Located on the immediate coastline of Miyagi Prefecture, the community of Yuriage in Natori City constitutes one of the most severely affected areas in Tohoku. The massive tsunami took the lives of 753 individuals plus 40 still missing, representing more than 10% of its population. Before GEJE, Yuriage was a mixed community of fishermen, commuting salarymen, incoming retirees as well as regular local tourists. Its population counted around 7,103 inhabitants distributed in 2551 households. Yuriage was renowned for its tourist attractions including a market, a harbor, a sandy beach, its cycling tracks and even its horse riding center. These facilities and almost all of the buildings were washed away by the sheer power of the ten-meter high waves that swooped across the flat land of Natori for several kilometers.

Yuriage remained a barren landscape for almost five years. After the tsunami, the local authorities initially expressed their determination to carry out prompt recovery and reconstruction. Yuriage was among the first areas to be cleared of their debris. Conflicts over the means and the ways put the reconstruction into a halt. Yuriage was the affected area with the lowest percentage of reconstruction in Miyagi prefecture in 2014 [4]. Its conditions did not change until the end of 2015 when the city office announced the beginning of the execution of its reconstruction plans starting with the construction of its embankments and levees. At the time when this paper is written, a thousand of trucks enter Yuriage each day to bring the earth necessary for the raising of the land. Yuriage's inability to reconstruct itself means that the memorial sites, together with the Sunday market, remained the only centers of activities at Yuriage for almost five years.

The only pre-GEJE feature of Yuriage is an artificial mound. Known as Hiyoriyama, it is originally the site of a small shrine dedicated to a local divinity (*kami*) benefactors of the fishermen. Since the GEJE,



Fig. 1 View from Mound Hiyoriyama with a temporary praying pole (front), Yuriage.

Hiyoriyama has been subject to intense memorialization from volunteers, visitors and some survivors. It is there that the first temporary memorials could be found on Mound Hiyoriyama (see Fig. 1). The main elements are two wooden poles or stupas dedicated to the souls of the victims. These poles belong to two Buddhist sects (Nichiren Sect and Rissho Kosei Kai). Several Buddhist statues, incense burners, cranes, and other artefacts complement the sites. The visitors of Yuriage systematically visit the Mount and pray for the victims and to the divinities. Despite their being part of disaster memorialization, these facilities are left outside our analysis due to temporary nature.

### 3.1 Junior High School Memorial (*Ireihi*)

The first memorial was the monument for the victims of the Junior High School (see figure 2). The head of the bereaved association explained that, on the morning of GEJE, the school of Yuriage was holding its graduation ceremony. When the earthquake struck at 2.46 pm, all children and parents had left the school and many gathered at the nearest evacuation area. Others went running to their home to check if their family members were safe and if their house suffered any damage. She remembers people's confusion as early warning of a tsunami over the radio appeared unreliable and, with the absence of the sirens, people could not imagine that a wave of 9.09 meter was on its way. She concludes that, by the time the wave reached Yuriage, her son and 13 children were left powerless and drowned. It is for these children that their bereaved parents came together to form an association and erected a memorial monument a year later.

The design of the Junior High School Memorial offers a particular approach to memorialization. Rather than a monumental stone, the association opted for a lower block of granite with the names of the 14 children engraved on the top of the slightly slanted surface. Information about the disaster (name, date and time) can be found at the front, and the name of the association and the day of the erection of the monument at the back. The head of the association explained that this simple design enables all visitors, especially school children to read



Fig. 2 Junior High School Memorial (right) at its new location near the Natori City Memorial, 2016.

and touch the names of the children that have passed away. The act of caressing the stone has become a ritual for the bereaved parents and anyone visiting the monument. In addition to mourning the dead, the bereaved parents leave the stone as a legacy, a '*sonzai no shoumeisho*' or proof of the past existence of their children.

Rather than a passive stone, the Junior High School Memorial stimulates many disaster-related activities. Firstly, it serves as an important site for the performance of an annual memorial service. Each year, this event gathers several hundreds of visitors, local and national media as well as researchers. The ceremony centres around the message delivered by the bereaved parents. It is orchestrated by the leader of the NGO that has been the leading supporter of the bereaved association since 2011. In addition to these memorials, the NGO built a small prefab to serve as the office of the association called, 'Memoire de Yuriage'. Today, the facility is used to give spiritual/psychological care to children and other survivors. The structure also holds a small exhibition hall and a projection room where visitors are invited to watch films and listen to a survivor or witness share his/her experience of GEJE. Finally, the center provides guided tours of which the monument and the school became the highlights. Having started as a place to remember the dead, the Junior High School Memorial became an important site where bereaved and survivors pass on their stories and lessons of the GEJE.

### 3.2 O-Jizo-San Memorial

The second memorial of Yuriage is a Buddhist monument called as 'O-Jizo-san' (see figure 3). Jizo is a Buddhist Bodhisattva that protects the souls of children, the travelers and the weak. He is also believed to watch over women who praying him during their pregnancy. Statues of Jizo also mark the place where a person died in an unnatural death and can be found everywhere around the country along the road and at crossroads.



Fig. 3 O-Jizo-San Memorial and Hiyoriyama Mound (background), Yuriage

The death of the individual is eventually forgotten over time but the Jizo remains part of the community. Jizo statues are often adorned with red bibs around their neck, hats and robes. People pay their respect, join their hands to make a prayer, or give offerings to Jizo. By providing care, the living is said to accrue the merit of the dead and ensure their passage into heaven. In order to use the power of Jizo to heal the heart of the survivors, a group of Buddhist priests decided to constitute a project ‘Sending Jizo to the Disaster Areas’. Their project aims at erecting 50 statues of Jizo all along the affected coastline community of Tohoku. The monument of Yuriage was erected on June 15, 2014, on the private land owned by the survivors of a household.

The ‘O-Jizo-san’ memorial are composed of three main elements of light grey granite. Standing on a lotus flower, a 2-metre high statue of Jizo characterized by its round features, semi-closed eyes and gentle smile occupies the center of the platform. Two small figures of a girl and a boy representing the victims of the tsunami stand on both sides. All three characters have been elevated onto a platform. At the back of the platform, a stone is inscribed with the name of the monument and the Buddhist sect funding its construction. At the back, a short text explains that the monument has been built to alleviate the suffering of the souls and the survivors as well as a prayer for the rapid reconstruction of the disaster area. The names of the 66 donors, leaders of the project and the date of its edification complete the inscription. Dedicated to all the victims of the disasters, O-Jizo-San is an important site in Yuriage.

Like the Junior High School Memorial, O-Jizo-San is a place where individuals, small groups of visitors and Buddhist monks come to pay their respect, pray and make offerings for the dead. Unlike the school memorial, they are no large gathering and annual ceremonies organized at the memorial. Before even the erection of the monument, a widow, her sister-in-law and her niece created an improvised tea room known as the ‘Ocha-nomiba’. Since 2011, they provide drinks, snacks and even lunch for the people gathering every weekend.



Fig. 4 Natori City Memorial, Yuriage

The primary objective was to provide a place where survivors talk, find company and soothe their hearts, remember Yuriage before the disaster and rebuild their ties. As time passed, many of the conversations concerned the reconstruction of the community and surrounding politics. Besides, Ocha-nomiba also came to serve a meeting point between local people and individual and small groups of travelers, students and volunteers. Although less formal and systematic, visitors learn about the disaster and receive advice about what step to take should they be caught in a similar event.

### 3.3 Natori City Memorial

The third monument was built and inaugurated on August 11, 2014 by the local authorities of Natori City. In Japan, public memorial commemorating the death of individuals (*ireihi*) in natural disasters are rare. Local authorities tend to build a neutral monument (*kinenhi*) or memorial parks. Even in the context of GEJE, the only city to have built a monument for the souls of its lost citizens happens to be Natori's neighboring city, Iwanuma. The government of Natori City did not initially intend to build such monument. It had planned the construction of such a memorial park and its *kinenhi* after the completion of the reconstruction of Yuriage. However, a growing demand for a memorial where survivors could mourn their dead prompted the municipality to revise its plans and build the present monument several years ahead of schedule. Still response to the bereaved demands, the city agreed to engrave the names of the 911 victims who lost their lives in Natori. As such, the memorial is a site where visitors honor, grieve and remember the dead.

The Natori City Memorial is located a few hundred meters from O-Jizo-San, near the Mound Hiyoriyama. Of a much greater scale, it is composed a man-made mound, a large black stone of granite representing 'the memorial of the seed' at the front and a tall 'memorial of the bud' sprouting out at its center. The engraved on the 'seed' suggests that the stone symbolizes to the citizens and the hometown lost in the disaster. The tall white sprout stands for the revival and resilience of the community. Its top indicates the level of the tsunami wave recorded at this particular point (8.4 meters). On each side of the mound, two large signboards provide the names of the 911 victims, information about the GEJE in Natori as well as an explanation about the memorial. The height of the monument and the endless names of the boards provides the visitors with a sense of the level of destruction that took place in Yuriage and develop public awareness

about the dangers of tsunamis.

Since its erection, the Natori City Memorial has been an important site for public and formal events. For instance, Prime Minister Shinzo Abe and current Deputy Prime Minister Taro Aso called on the memorial respectively on July 11 and September 28, 2015. Other official visits include those of foreign officials and researchers during international conferences such as the UN World Conference on Disaster Risk Reduction. Moreover, the guides of the Memoires de Yuriage regularly make school trips and tsunami study tours to the site. Together with the Yuriage Junior High School Memorial and the O-Jizo-San, the Natori City Memorial forms a matrix of memorialization where past and new generations have the opportunity to build a disaster culture and increase their resilience in preparation for future disasters.

#### 4. The Roles of Memorials during the aftermath of the GEJE

This last section draws from our descriptions of the GEJE memorials erected in Yuriage to highlight their general functions. Our aim is also to demonstrate the relationships between explicit and implicit functions. For instance, the first section discusses the relationship between grief, bonds and identity. Another example is the connection between the preservation of the memory of the dead and disaster education. Through this analysis, we hope to show that only a holistic approach to the ideas and practices surrounding memorial monuments would enable to understand their roles in the broad society through time.

##### 4.1 Grief and well-being

When it comes to memorialization, the omnipresent theme is the mourning of the dead and the lost community. Natural hazards only come to be called a disaster when humans become victims of the event. The common factors by which we measure the scale of a catastrophe is the number of casualties. Official speeches by leading politicians always begin with the expression of their sympathy towards the grieving parents and friends of the victims. It is therefore not surprising that all three memorials found at Yuriage are dedicated first and foremost to those individuals who have died during the tsunami. These monuments work as a device where the bereaved and other members of the community may deal with grief. Moreover, this study also reveals that the bereavement process must be carried out as and for a community. During conversations preceding the erection of the Jizo and Natori monuments, the leaders of Ocha-nomiba argued that the collective dimension of collective memorialization is essential. They contended that it is only through the process of praying together for the dead in front of a common cenotaph that the bereaved may overcome their suffering. Finally, this communal healing would not be complete without the contribution of visitors of devastated areas who honor the dead and thus express their solidarity with their survivors during their visit to *ireihi* and *kinenhi*.

The second role of GEJE memorials at Yuriage is their contribution to the restoration of the well-being of the victims. Among the survivors, people who have lost relatives and friends make the most vulnerable group within survivors of disasters [5]. These individuals do not only have to deal with their traumatic experience but also with the fact that their loved ones suffered a violent death. Such condition requires intensive spiritual care and psychological support of which memorial monuments are an essential dimension, part of which are memorials. In the case of Yuriage, we find that the leaders of both mourning groups, Yuriage Junior High School and Ocha-nomiba, are some of the most active participants in the social reconstruction of their community. In other words, there is room to argue that the recovery of the well-being of these bereaved families may be key to the rebuilding of the community.

##### 4.2 Social ties and homeland

Collective memorials may also serve the preservation of the bonds between the survivors and their land. Like often in post-disaster contexts, the community of Yuriage was fragmented, reduced and weakened. Its area of Yuriage rapidly cleared of all its debris adopted a lunar landscape for almost five years. People coming to Yuriage felt it difficult to imagine a future in Yuriage when the whole infrastructure and their homes had gone. They had nothing to come back to and do there. The original mount of Hiyoriyama where local divinities are enshrined became an important site of pilgrimage for survivors and visitors. However, its exposition to the wind and the absence of privacy refrained locals from using this space for social gatherings. The weekly market also resurfaced from its ashes comprising a new 'Maple Hall' donated by Canada Wood. Our research revealed that local inhabitants of Yuriage did not use to visit the market before the disaster and often felt estranged from this site. As a result, the many years have consequently proved to be a serious challenge to maintain a sense of community. Many survivors ended up rebuilding their lives outside Yuriage

to never return.

Considering that that Yuriage survivor had no places where they may return to and socialize, it might not be surprising that the facilities of 'Memory of Yuriage' and the 'Tea Room' became popular among those wishing to maintain a bond with their town and gather on weekends. Those people involved in the lives built on the memorial sites have enjoyed not only the company of fellow survivors and also had the opportunity to observe and accept the irreversible loss of their homeland as they once knew it. More recently, these small groups have also been able to bear witness to the dramatic changes that occurred through the rising of the land and the new layout of the new Yuriage. In other words, this case study revealed how collective memorialization does not only help the survivors to accept the past but also envisage a future.

#### 4.3 Preserving the Memory of the Disaster

Another role performed by the GEJE memorials is the preservation and transmission of the memory of the catastrophe. In Yuriage, this function is played by the Natori Memorial, which provides the most comprehensive summary of the tragedy. The monumental scale of the memorial and the 911 names of the victims constitute as a distinct reminder of the atrocities that the area suffered on that day. Albeit in a different scale, the Junior High School Memorial is also meant to touch the sensitivity of the visitors by reminding them of the loss of children to the tsunami. Moreover, the sites surrounding the memorials became important social spaces where people came to learn about the catastrophe. We have seen how the 'Memory of Yuriage' became a dynamic center where survivors and their supporting staff share GEJE videos, photographs and other documents. Most importantly, the center came to organize storytelling session (*kataribe*) on a weekly basis. During these storytelling sessions, the listeners learn about the experience of a particular survivor and the lessons learned by the whole community. Visitors are also given advice on evacuation, sheltering and so forth. For the survivors, *kataribe* is a means of allowing the survivors to deal with their trauma and share their personal experience. In an informal manner, the Ocha-nomiba became a microcosm where visitors may learn and share their knowledge of disasters.

#### 4.4 Tsunami Study Tours

Memorials monuments have become a landmark for disaster tourism and education in Yuriage. Again, the Memory of Yuriage took the leadership by providing official and professional guides for disaster tourism or tsunami study tours. The guide, often a survivor from Yuriage, is asked to hope on the bus and with the help of a microphone, recalls the events of GEJE as the tour progress through the deserted landscape. Their narrative also tells the livelihood of Yuriage before the tsunami holding laminated pictures or pointing out to glass panels about pre-GEJE Yuriage located in various locations. During these tours, the most significant landmarks are certainly the memorials where the visitors can sense the scale of the loss and the pain encountered by the victims. The guide makes a particular effort to explain the signification and short history of these memorials.

### 4. Conclusion

To conclude this paper, we would like to return to the critic suggesting that memorial stones do nothing to protect people from disasters. Although we understand that this critic was meant to be an academic argument and cannot be as such, we would like to demonstrate how our findings would allow moving away from the misconception of disaster memorials with the following four general principles:

A) Social Activities: our study shows that to understand the roles of memorial stones, scientists must look beyond their explicit characteristics (shape, text and symbolism) to analyze their social lives. Here we define social lives of memorial stones as the human activities associated the monuments. These activities may be mortuary rituals performed at the memorials for the victims of GEJE. They may also be disaster tours for school children or adult groups visit the site to learn about a catastrophe. Discussions have brought up the development of disaster or 'dark tourism' drawn around these memorial monuments. Although it is less known, memorial monuments are also a means of creating, recreating and maintaining relationships among survivors, visitors or between survivors and visitors. To these group activities, we must also note the importance of these monuments for individuals in mourning for the loss of a parent, a friend or the community as a whole. Indeed, monuments may become one of the only remains of the period of the aftermath and as such become a testimony of that time.

B) Memorial Matrix: In Japan, the edification of memorial monuments has long been an integral part

of dealing with disasters. The functions of these stones are extremely varied. Some monuments essentially commemorate and honor the dead. Other stones are meant to record a particular tragedy and share the necessary information about the event. Finally, we find memorial installations that not only provide information but also convey lessons for past catastrophes. One of their first functions has been the passing down knowledge of previous earthquake and disasters. In other words, each stone plays a role in relationship to wider matrix disaster memorials.

C) Memorials as a Mean, not an End: This paper reinforces the view that memorialization and disaster prevention should both be seen as processes or a state rather than an achievement or a goal in itself. Our study shows that we should not think of memorial monuments as remains of past disasters but observe and understand how their role evolve through time.

D) Disaster Culture and Social Resilience: Memorials, as we have seen in the Japanese case, are a central catalyst of disaster memory and education. The anthropologist Jesse Nathan (2016) argues for the recognition that resilience is something built over the long course of the life of a community. Referring to the concept “just resilience”, Nathan states that it is all process which goes beyond the sole experience of disaster. It also extends beyond the mere fact of residence, evacuation and safety. This argument resonates Takano's and Kamiyama's report article that suggests that a culture of disaster that needs to be founded on a broader culture of education [6].

This preliminary discussion leaves many questions unanswered: How and when do monuments stop playing their roles towards to disaster risk reduction? Also, how and why do the functions of memorials monuments changes through time, depending on the monuments' type, shape, design, and so on? When and why does the efficacy of each of their specific roles starts to wear off? The responses to such questions about the social lives of monuments would enable to come up with specific solutions/best practices to increase the efficacy as time passes. The answers to these questions could allow to maximize their efficiency and maintain their role as catalyzers of disaster education and knowledge.

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