Information Triage: Prioritization of The Social Media Society Following Major Disasters —Three months after the Kumamoto Earthquake

Fujishiro Hiroyuki, Journalist and Professor at Hosei University

Social media, which has drawn attention as an important information infrastructure at the time of natural disasters, may stop functioning properly. In the Great East Japan Earthquake, the information vacuum created problems, while in the Kumamoto Earthquake, an information explosion occurred, hindering the needed rescue and support work. Information from disaster areas was amplified by users in the Tokyo metropolitan area due to their concerns or goodwill, causing logistical problems and an embarrassing situation with celebrities who provided support. Let us consider the role of disaster reports in the age of an information explosion.

Fujishiro Hiroyuki, Journalist and Professor at Hosei University

Number of tweets increases by a factor of more than 20. From an information vacuum to an information explosion.

A significant paradigm shift is taking place, from an information vacuum to an information explosion. According to a report in the *Mainichi Shimbun*, tweets about the Kumamoto Earthquake totaled 26,100,000 one week later, more than 20 times the number (1,150,000) recorded one week after the Great East Japan Earthquake (Note 1).

One factor is the increased use of social media. According to a survey by the Ministry of Internal Affairs and Communications, use rose from 41.4% in 2012 to 62.3% in 2014, spreading to people who are middle aged and older. Twitter announced that the number of users in Japan has risen by more than five times, from 6,700,000 in 2011 to 35,000,000 in 2015. The choice of available social media services has also broadened – Facebook and Instagram users rose after the Great East Japan Earthquake and LINE launched.

Another factor is the remedial measures that have been strengthened by telecommunication companies. The strengthening of emergency power sources for mobile phone base stations and the increase in coverage areas facilitated early recovery, and in order to support users in the disaster-stricken areas, data communication speed restrictions were lifted and free Wi-Fi services were provided. Through these efforts an environment was created to access the Internet more easily.

The experience of users also contributed to these changes. During the Great East Japan Earthquake, phone lines remained congested due to many calls seeking to confirm safety. That said, we found social media to be useful as it helped people to confirm their safety or to find a temporary evacuation location. We also remember a miraculous rescue made by a helicopter that was dispatched after an

SOS was received by Inose Naoki, then-deputy governor of Tokyo, via London, from an isolated facility in Kesennuma, Miyagi Prefecture.

An information explosion may occur during natural disasters because we learned many lessons from the Great East Japan Earthquake.

Information was amplified in the Kanto area. Whether that information was sent from the disaster-stricken areas was unable to be determined.

People from which areas cause Twitter to explode? Using Social Insight, an analytical tool, I investigated who posted tweets containing the keywords "Kumamoto" and "earthquake," by region, from April 14 until April 17. Here are the interesting results.

The tweets posted from Kyushu and Okinawa, the disaster-stricken areas, accounted for only 11.4% of the tweets, while more than 50% were sent from the Kanto area, which indicates that the disaster information was amplified by people in Tokyo. When I accessed original tweets, I found that they were filled with speculative messages such as an earthquake may also occur in Tokyo. With these tweets marked by hashtags such as #kumamoto or #cheerupkumamoto, I could not distinguish which contained important information that originated from the disaster-stricken areas. More often than not, information spreads through retweeting. It can also be requoted from other social media services such as LINE and Facebook. A time lag is created between the information and the real-time local situations when the information is copied and reproduced repeatedly. Despite information that indicates a shortage of supplies in an affected area, such shortage will be solved when the relief supplies arrive, which creates an incongruous situation in which the delivered goods remain piled up.

As an example, people were soliciting support by tweeting "Mashiki Chuo Elementary School is isolated because it is not an evacuation center and no supplies are available." Tsuda Daisuke called the area to confirm this and posted the following tweet on April 21.

> I see people tweeting that no supplies are available at Mashiki Chuo Elementary School with a Please RT note. However, when I called the school and asked about the information, I was told that the information (that no supplies were available) was not true.

Despite the tweet posted by Tsuda, the tweets requesting for support continued to spread.

One characteristic of social media is that the information is not necessarily new, although the recipients feel that it was received in real time. Moreover, recipients do not check the source of the information or search for evaluation areas and location names to see if any part of the information should be corrected before spreading it. They click the retweet button to find solutions more quickly. Such a user interface causes people to spread information as a well-intended gesture to save people who are currently in trouble.

An information explosion that occurs due to concerns and goodwill. The spread of information through the social media is uncontrollable.

The traditional media requests that people refrain from circulating unnecessary and non-urgent

information. However, this is unrealistic. This writer contributed an article titled "Let's avoid the spread of urgency-oriented news through social media to ensure that essential information is received by disaster victims" to Yahoo personalized news on April 16, to see how people would react.

> Importantly, people in a disaster stricken area must receive information that will protect their lives, help them evacuate, and stay informed. We should refrain from spreading urgency-oriented news, such as the status of a disaster, safety and cause speculation, by sharing or retweeting information, among other acts. By doing so, essential news will be more accessible. (Note 3)

However, the article received very little reaction on social media, nor was it featured as Yahoo's top news. This was an expected result and shows that people are not ready to accept information control. The fact is that when people encounter unexpected events, such as disasters and accidents, they accept such an unbelievable reality by accessing reports from the traditional media or engaging in discussions. According to the rumor intensity formula (R = i x a) developed by Gordon Allport and Leo Postman, the extent to which a rumor is circulated is proportional to the value obtained by multiplying the degree of importance of the rumor with the ambiguity of the rumor. When a natural disaster occurs, rumors are more likely to spread due to the important matters of the safety of family and friends and a situation in which the total picture cannot be grasped. (Note 5)

Social media is nothing but the visualization of word of mouth communication among people. It is virtually impossible to prevent information from spreading as long as people have a desire to share it. Concern, such as the spread of communication as a result of people wondering whether things are okay with the inhabitants of Kumamoto and supplies are delivered out of goodwill, and social media services are characterized by the ease of transmission, regardless of time or place. The culmination of these factors results in an information explosion.

Information that increases exponentially. The need for triage.

From the perspective of filling the information vacuum, spreading information has been considered a way to solve problems. It was mobile phones, which had just gone into service, message boards and blogs, Twitter, and lastly LINE, respectively, that drew attention during the Great Hanshin-Awaji Earthquake in 1995, the Niigata Prefecture Chuetsu Earthquake in 2004, the Great East Japan Earthquake and the Kumamoto Earthquake. These facts show that people are curious about which form of media is most useful for sending information.

Twitter provides guidance on its website regarding how to call for rescue when a telephone is not operational. It requests that users (1) post a tweet with a concrete explanation on the situation (examples: location, names, number of persons, conditions, details of request, etc.), (2) add #rescue, if possible, additionally explaining that (3) information can be sent more accurately if location information is included, and requesting to remove tweets when the rescue is completed. The company further requests that users call emergency services, such as 119, instead of spreading information through unnecessary tweets if they find a request for help. (Note 6) Regrettably a variety of tweets are fed into the hashtag, which creates confusion.

Whether the information is real is also doubtful. When the Great East Japan Earthquake occurred,

an IT company's employee requested to be rescued, claiming that the employee was injured in the server room. It turned out to be untrue. During the Kumamoto Earthquake, the possibility was pointed out that the Amazon Wish List service had been abused. Verification using big data analysis is difficult because it is mixed with information with unknown authenticity. That said, it is feared that very important information which has not been spread remains unnoticed.

Some people may come up with a proposal to use other services such as SMS or Facebook, a service in which the identification of users is relatively easy. That said, social media services not ordinarily in use are not expected to be used in an emergency. Telecommunication companies are encouraging users to make the best of disaster message board services accessible through the Internet, with little success. As we know from a Please RT request from a LINE message reprinted on Twitter, such as "Please help," information spreads. It proliferates by a snowball effect while being transmitted from one form of media to another.

Looking ahead, if an expected earthquake occurs in the Kanto area, or off the Kii Peninsula or in Shikoku, there will be a more serious information explosion. In large cities where local community activities are not popular, concerns increase and there is a risk of information overflow. Information triage should be taken into consideration as a social scheme, based on a new concept.

Decision on information that may be a matter of life and death. Records and validation of processes are required.

Triage, which means choice, refers to the prioritization carried out to save as many lives as possible by utilizing a limited amount of medical resources in such cases as disasters. Based on the concept of adapting this to the information field, the Headquarters for Disaster Prevention, among other organizations, included the adoption of triage functionality in the final report of the Committee for Policy Planning on Disaster Management of the Central Disaster Management Council, which was established to work on the challenges that have arisen from the Great East Japan Earthquake. No specific steps have been taken so far. Even so, the functionality should be considered as soon as possible based on the assumption that social media will cause an information explosion.

Information triage is considered to be adaptable in two phases. The first phase is the life-threatening period 72 hours after the disaster occurs. The second phase is the period after. Until 72 hours have passed, a team formed by information experts, among other members, should make decisions on the urgency of matters on the spot and take measures that lead to rescue, in collaboration with firefighters. To do this, three factors need to work together: platform operators that manage social media services, cooperation with company groups that own big data such as telecommunication operators and automobile manufacturers, and physical information networks in which situations are confirmed by eye and ear.

Unlike triage in medical situations, what we deal with is information instead of patients. Even so, a discussion should be held in such a way that transcends the boundaries of the respective fields, such as information, ethical matters, institutional matters, psychological matters, and systems because any judgment may become a matter of life or death.

How would people assess the miracle rescue operation referenced earlier, if there were cases about more serious situations or lives that could have been saved, among information that did not reach the deputy governor? We should study such a case from a system-oriented approach, such as with the

analysis of big data and artificial intelligence. However, that alone is not enough. What should we do if there is important information beyond the choices proposed by a system? Who will administer the information triage is also a question. The implementation of triage by any particular person with power or an influential person in social media may lead to socially unequal behavior. We should also create a scheme in which we can record, validate, and improve processes to ensure that we make the correct choice.

Stopping a rumor through correct information. The visualization of news gathering processes is important.

After 72 hours, efforts are focused on support efforts, such as the delivery of supplies to evacuation centers, lives and health. These are areas in which the traditional media and the administration should play their own roles. In particular, expectations for the traditional media are high. The traditional media is becoming social media-friendly at an increasing speed. The *Asahi Shimbun* lifted the prohibition of their reporters using Twitter on an individual basis. The *Mainichi Shimbun* followed suit. However, much needs to be done to respond to the age of information explosion. "Is everybody ok? Calm down for now. If you are able to let us know about the situation, please report it to us. #earthquake #kumanichi" tweeted at 9:45 pm, or 19 minutes after the occurrence of the earthquake by the *Kumamoto Nichinichi Shimbun*, a local paper covering the areas hit by the Kumamoto Earthquake. At 11:21 pm, it posted a scene of its staff working on the next day's morning paper in the office. During the Great East Japan Earthquake, seven hours had passed since the occurrence of the disaster until the *Kahoku Shimpo*, a local paper, posted its first tweet. Making a direct comparison with the *Kahoku Shimpo*, whose building faced the risk of collapse, is not persuasive. Nevertheless, we can say that there was progress in such efforts.

The *Kumamoto Nichinishi* posted the Kumanichi Lifeline – Disaster Quick Report on Facebook to provide updates on damage and recovery of the water supply and railroads. The *Nishi-Nihon Shimbun* created a corner with the title "Support for the Kumamoto Earthquake, Situations of Evacuation Centers" on its news site. It provides updates on the situations at evacuation centers covered by *Nishi-Nihon* reporters, irrespective of deadlines. The *Asahi Shimbun* issued a request through Twitter for compiling information about evacuation centers on a map, which was achieved by a group that responded to the request and took over the job. These efforts reflect the lessons learned from the Great East Japan Earthquake.

Meanwhile, social media is full of criticisms against the *massgomi* (a word coined by putting the words mass and *gomi* [garbage] together). In regard to the accident in which a broadcasting van of a private TV station crashed into cars waiting in line for refueling, things became serious and the credibility of traditional media fell because it was uncovered that an employee of the TV station's affiliate company defended the TV station by denying the tweets of people in the vicinity. The way it relayed the conditions of evacuation centers drew a spate of criticism, showing its low level of awareness of being watched. It is still attributable to the station sending information from the reporter's point of view. The lessons learned have not been applied.

During the Great East Japan Earthquake, information spread though such means as email, Twitter, and Mixi that hazardous material would fall when Cosmo Oil caught fire. In conjunction with this, the *Asahi Shimbun* helped to deny rumors by publishing an article titled "Cosmo Oil Denies Chain

Reactions to Emails Claiming That Hazardous Materials Will Fall Due To A Fire." (Note 7)

I participated as a researcher in an initiative called the Great East Japan Earthquake Big Data Workshop for which Google and Twitter provided data, and conducted a survey on the effects that news from TV stations and newspaper companies have on stopping rumors. (Note. 8) Figure 2 shows a comparison between changes in the posting of tweets concerning the rumors about Cosmo Oil reported in the white paper on information and communications in Japan, in 2011, and the news by the traditional media.

NHK repeated news periodically that there was no possibility of toxic gas being generated due to the fire. Despite that, our group checked the Twitter data to find that few people had reacted to the NHK news. Therefore, the rumor was likely to proliferate again around noon on the 12th, the next day. However, due to articles in the *Asahi* and tweets posted by the PR department of Urayasu City, information that the rumor was false spread through the Internet rapidly and the proliferation of the rumor came to a stop. The difference between information provided by NHK and the *Asahi* and Urayasu City is whether it directly referred to the rumor or not.

Readers may wonder why there are more tweets that include the phrase "a false rumor" than just rumor. This is presumably due to the awareness resulting from the discussions described earlier. The false rumor was subdued by communication that the tweets about Cosmo Oil appeared to be false. This also shows that the information explosion cannot be stopped immediately. We allow people to communicate for a certain period of time and the media circulate the confirmed information at an appropriate time. By doing so, we can control rumors as concerns are solved and ambiguities are removed.

The article was published by the editorial department of Asahi Com, which is not responsible for covering articles on cases and accidents. It did not come from the Chiba main branch responsible for the relevant area or the city news department. The critically important factors for the traditional media in covering disasters are the place where the disaster occurred, the voices of the disaster victims, and the measures taken by the government and local governments. Reporters hear and confirm rumors in the course of the coverage. That said, they do not write articles about rumors unless they are exceptionally interesting. As a matter of fact, the traditional media adopts information triage by confirming what is a fact through its coverage and by reviewing whether to report on it or not. Even so, it reflects the scope of news that the traditional media consider to be reasonable.

Many types of traditional media use social media as a supplementary tool to obtain information for coverage. That is not enough. The important thing is to visualize the coverage, including its process, to examine if the information circulated through the Internet is true or false and if any steps should be taken or not. It is expected to play a new role, such as providing appropriate information to people. With word of a mouth visualized on social media, more reporters who conduct on-site coverage as well as editors should understand that there is a great need in the news to address concerns and unconfirmed information.

Changes in news sites that should not be ignored. The role of the traditional media should be discussed.

Ishido Satoshi, a reporter who moved from the *Mainichi Shimbun* to BuzzFeed Japan, moved forward with coverage to deal with topics circulating on the Internet. In conjunction with the issue of

unsolicited volunteers, he wrote an article based on what he had confirmed on site about the volunteer organization and what he found on the part of the authorities through coverage, after clarifying the main points of a comment that criticized the words and behavior of members as being unfavorable. (Note 9) "People came here to complain, but nobody came here to ask about the background in person." This mayor's comment explains everything. Ishido explained as follows, "The fact is that reporters usually do not cover issues pointed out online by visiting the place where it has occurred. We should go to the place and talk with the people concerned about the coverage in person. What is meaningful is that we should develop an article after hearing what the respective parties claim." Priority is given to disaster conditions and countermeasures in disaster reports by the traditional media. However, he says that even with disaster reports, reporters should cover what they are doubtful of before producing an article.

Such efforts are limited in the traditional media.

In contrast to when the Great East Japan Earthquake occurred, there were news sites that went to the disaster area to provide coverage in the Kumamoto Earthquake. However, some of them just posted Internet articles and footage of collapsed roads and houses that they had shot as well as the evacuation centers that they had covered, in a conventional manner. Internet media, which had been critical of the traditional media, ended up doing the same thing as traditional media.

What makes matters worse is viral media and news aggregation sites that spread content in response to social media. They create items one after another without confirming the information sent from the place of origin (or do not prevent users from summarizing information). Such content spreads through social media and causes an information explosion, thereby making really essential information undistinguishable from the rest.

Here are some examples of the titles of articles that were proliferated: "Yoshinoya drew applause for the warm and delicious Gyudon it provided to evacuees [Kumamoto Earthquake]" (*Huffington Post* followed by 20,000 to 60,000 "Good!" responses.), "Japan's great Self-Defense Forces are very active utilizing the most advanced equipment! Thanks to the members of Self-Defense Forces!" (Net Geek), among other titles. Such information gets mixed in with rescue and support information.

Viral media is also the source of embarrassment for celebrities who provided support as well as criticism of the media. The incident of the broadcasting van of a private TV station cutting in the line of waiting cars was also picked up by viral media and eventually reported by the media. Incidents of criticism against talent also become serious through similar channels. Traditional media also rely on middle media such as news aggregators for coverage. Some of them produce articles or broadcast information without confirming the facts, becoming the object of derision. (Note 10) The regrettable reality is that the literacy of the media, which is expected to promote information triage, is as doubtful as that of viral media.

News sites still do not have strong capabilities for news coverage and their mobility is not sufficient. Even so, if they can continue to adapt the initiatives used during the Kumamoto Earthquake, they will become information sources trusted by the people instead of newspapers. On the contrary, media that fail to respond to the needs of the Internet and social media satisfactorily will be unable to fulfill their social functions. The report that newspapers and TVs that were distributed or installed were useful is a topic that garnered attention online. Nevertheless, we should reconfirm the social role of providing news to disaster victims through every possible form of media, including print media and TV.

I conducted a survey of national newspapers and local newspaper in disaster-hit prefectures immediately after the Great East Japan Earthquake and studied how the press should respond in the age of social media. People who responded to the survey were willing to cooperate with the hope that problems would not be repeated. I compiled the research in a report titled "Great Disasters/Nuclear Power Development and Role of Media" (Note 11). I also made a presentation at an academic conference and submitted a paper. However, very few inquiries were received from the media. Much of what we had pointed out occurred again in Kumamoto. I could not meet the expectations of journalists who had kindly shared their experience in the unprecedented disaster. To my regret, I should have presented my research in a more understandable and aggressive fashion. We need ongoing discussions among the media, universities and Internet-related companies, among others, to study how information should be treated and what role the media should play if a disaster occurs in the age of information explosions.

(Notes)

1. The result of a survey conducted by Twitter Japan, a Japanese subsidiary of Twitter, Inc. of the United States on the number of tweets that include "earthquake," "evacuation," "rescue," and "nuclear power plant."
2. Tweet by Tsuda Daisuke. The tweet was posted on April 20, 2016.
3. Let us refrain from spreading urgency-oriented news through social media to ensure that necessary information reaches disaster victims.
4. Referred to "Psychology on the image of society – How our reality is created? New Edition" published by Saiensu-sha Co., in 2013.
5. Some researchers refer to concerns as reason for the proliferation of rumors. Referred to "Rumors run – Social mentality that proliferates rumors" written by Kawakami Yoshiro and published by Saiensu-sha Co., in 1997.
6. Request for rescue – Request rescue through Twitter if you cannot use the telephone (Help Center)
7. Denial of a false rumor that was shared. Significance of newspapers in the age of social media (Featured article for the 20th anniversary of the Asahi Shimbun Digital). Posted on September 7, 2015.
8. "Relationships between the proliferation and ending of rumors and traditional media reports," presentation material of a working group of mobile communication in the Japan Society for Information and Communications Research.
9. "Issue of unsolicited volunteer activities flooded with criticism. An on-site interview with concerned parties." Posted on April 22, 2016.
10. Referred to "An age in which anybody becomes a journalist – Roles played by the middle media and challenges" and "Journalism in the age of *ma-media,*" written by Fujishiro Hiroyuki and published by Tokyo Denki University Press in 2014, in conjunction with the relationship between the middle media and journalism.
11. Referred to "Possibility of collaboration between traditional media and social media that realized an accurate information flow in a large-scale earthquake and challenges" and "Great earthquakes/nuclear power plants and the role of media" written by Kawai Takayuki and Fujishiro Hiroyuki, published by Japan Press Research Institute in 2013.

Translated from "Sosharumedhia-shakai de motomerareru Saigaiji-no yusenjun-i 'Joho Troriaji' (Feature Article: Information Triage: Prioritization of The Social Media Society Following Major Disasters — Three months after the Kumamoto Earthquake)," Journalism, *July 2016, pp. 75-82. (Courtesy of Asahi Shimbun) [July 2016]*

FUJISHIRO Hiroyuki

Journalist and Professor at Hosei University.
Born in 1973, Fujishiro graduated from Hiroshima University and completed the first half of Graduate School at Rikkyo University. After joining Tokushima Newspaper Company, he worked on assignments in different departments, including those for local city news and cultural affairs. When he moved to NTT Resonant (goo), he was responsible for the news desk and the development of new services. In 2013, Fujishiro became an Associate Professor of the Department of Media and Communication Studies, Faculty of Social Science. He is a representative steering committee member of JCEI. He wrote *How to Develop Creative Power* (PHP Institute, Inc.) and compiled *A Theory of Social Media* (Seikyusha Co.), among other books.
