A Sense of Communal Belonging in Digital Space: The Case of the 3.11 Disaster

SONJA PETROVIC
The University of Melbourne

ABSTRACT

This article examines the role of social media in disaster communication and its potential to foster a sense of communal belonging through shared emotional connection, using the case study of the 3.11 disaster in Japan. The 2011 triple disaster had profound implications for new interactions among individuals, as the earthquake not only brought destruction to the surrounding environment, but also reconfigured many people's sense of place, security and communal belonging. I argue that, in a post-disaster context, social media had substantial implications for individuals' perceptions of belonging to local and regional communities, as it introduced new dimensions and forms of interaction among individuals, regardless of temporal and spatial barriers. Qualitatively approached, this study examines the evolving potential of social media to serve as a space where individuals can experience and express closeness in time of crisis, creating and maintaining new forms of affective communities in digital space. Based on in-depth interviews and social media data from Japan that relates to the 3.11 disaster, this article sheds light on how social media can enable users to experience a sense of belonging to local, regional and global communities through multi-level interaction with similar others.

KEYWORDS

3.11; affective communities; communal belonging; contemporary; digital space; disaster; multi-level interaction; social media

NEW VOICES IN JAPANESE STUDIES

JAPANFOUNDATION
BRINGING JAPAN TO YOU

To link to this article:
https://doi.org/10.21159/nvjs.11.04

ISSN 2205-3166

New Voices in Japanese Studies is an interdisciplinary, peer-reviewed journal showcasing the work of emerging scholars with ties to Australia or New Zealand and research interests in Japan.

All articles can be downloaded free at newvoices.org.au

New Voices in Japanese Studies, Vol. 11, 2019, pp. 74-98

INTRODUCTION

On March 11, 2011, at 14:46 JST, a magnitude 9.0 earthquake struck the northeast coast of Japan, marking the beginning of the triple disaster now known as 3.11. The Great East Japan Earthquake caused a succession of calamitous events, including a powerful tsunami of up to 40 meters in height and aftershocks that continued for more than a month. The tsunami devastated the coastal area of the northeastern Tohoku region and southern Hokkaido; it also caused damage to several nuclear reactors at the Fukushima Daiichi Nuclear Plant, resulting in the considerable emission of radioactive materials into the environment. The destruction of the nuclear plant was reported as the world's worst nuclear catastrophe since Chernobyl in 1986 (Okumura 2014), and required the immediate evacuation of citizens from surrounding areas. The earthquake and tsunami destroyed commercial and residential infrastructure, including roads, in many coastal municipalities, and over four million households lost access to electricity and water for several days.

The enormous scope of 3.11 meant that many individuals felt a disruption to the patterns of everyday life and their sense of security. This in turn triggered new interactions among individuals, reconfiguring their sense of social connection and communal belonging. Constant reporting on the disaster largely displaced the daily flow of regular broadcasts by major national and commercial mass media channels. Surrounded by images of the disaster and pessimistic news, many people turned to social media for support. Notably, a profound sense of distrust also developed amongst the public towards government and mainstream media institutions due to a lack of institutional guidance and credible information flow; communication gaps between local and central government, TEPCO and media institutions; and the release of contradictory reports (Funabashi and Kitazawa 2012; Hobson 2015). This led people to seek out alternative sources of information as the disaster was unfolding. In the context of the disaster—particularly regarding the nuclear meltdown and diffusion of radioactive material into the atmosphere—social media was perceived to be more credible and to offer more up-to-date information than the mass media was seen to provide.[1]

This article conceptualises 3.11 as three inter-related events: earthquake, tsunami and nuclear disaster, and differentiates between three main phases—during, immediately following the earthquake and tsunami, and immediately following the nuclear disaster—to explore how social media use generated new forms of affective communities.

The Social Media Landscape in Japan

One of the main characteristics of Japan's media landscape during 3.11 was the growing role of social media as an alternative platform for collecting and disseminating crucial information on the evolving disaster, mobilising help

1 For an in-depth discussion of how shifting perceptions of media trustworthiness intersect with the growing use of non-traditional online media sources (including social media) in Japan, please refer to my PhD thesis (*Belonging and Trust in the Inter-Media Society: The Case of the 3.11 Disaster*, forthcoming [2019], The University of Melbourne).

and encouraging community engagement and participation. Crucially, social media provided a space where individuals could connect with similarly affected others. Before the disaster, social media was predominantly used in Japan as a social networking tool for keeping in touch with family and friends, and keeping up with the flow of popular culture and relevant news (Kindstrand et al. 2016). Japan's first social media platform, Mixi, emerged in 2004.[2] It started as a social networking service which enabled users to express themselves on blogs and profile pages, add friends and join communities in which they could share personal problems, similar interests or feelings that they could not talk about directly (Takahashi 2010). Mixi offers private and closed communication between people who are friends in real life. Similarly, the Japanese social media app Line serves to support the direct, interpersonal exchange of email and phone calls between existing friends.[3] In contrast with these platforms, Twitter and Facebook facilitate content-sharing with a broader audience, thus making them more public than Line and Mixi.

Twitter was not widely used in Japan before 3.11, and the subscribers it did have tended to use it as a tool for social networking and sharing daily activities (Yoshitsugu 2011). Much of Twitter's success in Japan can be attributed to its relative anonymity, as it allows users to post daily thoughts or self-related messages and interact with other users without the need to reveal one's identity. Facebook arrived in Japan in 2008 but experienced slow user growth as it struggled to compete with homegrown social networks (and to some extent Twitter), which already dominated the social media landscape. Furthermore, the Facebook culture of using real names appeared to conflict with the cultural characteristics of social media users in Japan who tend to value personal privacy and avoid sharing too much background information on social media (Acar and Deguchi 2013). In yet another difference from Line and Mixi, Twitter and Facebook are perceived as media for storytelling which, through instant dissemination of content, invite individuals to engage with and experience events as they unfold, thus enabling users to imagine a sense of place and communal belonging (Papacharissi 2016).

A recent report shows that the most popular social media platform in Japan is YouTube, followed by Twitter, Line and Facebook (Newman et al. 2018). As a powerful content-based, online video-sharing social platform, YouTube is arguably aimed at developing new relationships and communities around similar interests and experiences by allowing individuals to subscribe to other users' channels and communicate through response videos, written comments and ratings of video content. The platform enables users to express themselves through rich combinations of audio and visual content, and tends to foster small communities where users cultivate close relationships with others (Rotman and Preece 2010).

In Japan, user motivations for engaging with social media changed significantly following the 3.11 disaster. Social media became a space to share anxieties and emotions, triggering volunteer recruitment and organisation

2 Mixi had a monopoly on the social media landscape in Japan until 2008, when it lost its influence due to the growing competitiveness of other social networks such as Line and Twitter (Wong 2016).
3 Line was launched in June 2011 as a project of the Japanese office of Naver, a Korean tech company (Wong 2016).

of anti-nuclear protests and movements (Slater et al. 2012a). Facebook's policy of using real names enabled people to locate friends and family and find information on the disaster as it was unfolding, and Twitter was "one of the few functioning communication tools immediately after the earthquake" (Acar and Muraki 2011, 393), breaking the first news 20 minutes before the mainstream media. Furthermore, social media was utilised as a platform for initiating community and relief-oriented actions, some examples of which are discussed below.

Theorising Affective Communities in a Disaster Context

In contrast with the traditional notion of community, which is based on spatial proximity and face-to-face communication, online community is defined as a group of people who are drawn together by a shared purpose or a common interest and use online platforms "to interact and create user-generated content that is accessible to all community members" (Rotman and Preece 2010, 320). The ever-growing popularity of social media platforms shows that, in addition to online presence, people seek a sense of community, which emerges from shared emotional connections and experiences—including those precipitated by natural disasters and crises.

In a sociological context, media has been found to provide emotional support, as well as a sense of companionship and community for individuals who are faced with a crisis (Perez-Lugo 2004). Similarly, an examination of the role of blogs in crisis communication during hurricane Katrina argues that social media can serve as a space for emotional and therapeutic support, as it allows users to discuss and share their emotions online with other individuals (Macias et al. 2009). Overall, the social media environment enables people who have lived through similar experiences of a traumatising or disruptive nature to share their emotions online, thus significantly facilitating the coping process (Döveling 2015, 2017). Further, storytelling in the interconnected online environment facilitates a process of cathartic sharing, which allows individuals to work through the experience of trauma or crisis and opens up new opportunities for community-building (Arthur 2009). This leads to the emergence of affective communities in the digital environment, also conceptualised as 'digital affect cultures' (Döveling et al. 2018). Communicating with each other in these spaces, affective communities respond emotionally and empathically to similar others, creating a sense of belonging even among geographically distant individuals (Döveling et al. 2018, 5; see also Hjorth and Kim 2011). My study builds on work in this area by offering an in-depth examination of how a sense of communal belonging manifests across different social media platforms, exploring the experiences of social media users of Japanese nationality.

The emergent use of social media in Japan in the wake of the 3.11 disaster has been extensively explored in several studies, with a focus on Twitter as a critical communication tool (Acar and Muraki 2011; Hashimoto and Ohama 2014; Kaigo 2012) and its psychological effects on users in the

disaster-affected areas (Matsumura et al. 2016; Umihara and Nishikitani 2013). These studies use similar methodological approaches: they either draw on surveys of users who resided in the disaster-stricken areas, or analyse their Twitter posts. While Slater et al. (2012a) have discussed how social media served as a space for the exchange of emotions and anxieties in the wake of the 3.11 disaster, their study is a chronological examination of social media use over different phases of the disaster which does not extensively explore how affective practices manifested at different levels of online communication. In contrast, my study combines analysis of social media use across multiple platforms with in-depth interviews, thereby contextualising user behaviour and providing a deeper understanding of social media's role in the context of disasters than can be gained from content analysis alone. Therefore, this study represents a significant addition to existing scholarship on the 3.11 disaster.

The study also contributes to knowledge in other areas. Since 2011, a considerable amount of research has emerged in the areas of disaster and emergency communication and digital media studies examining the role of Twitter in contexts of natural disaster, crisis and upheaval (e.g., Bruns et al. 2012; Bruns and Burgess 2011; Oh et al. 2015; Papacharissi 2016; Sadri et al. 2018; Stieglitz et al. 2018). My study builds on this body of research by broadening the line of inquiry to encompass a wider range of social media platforms, both homegrown (Mixi, Line) and imported (Facebook, Twitter, YouTube). It uses the case of 3.11 to explicate the sense of communal belonging which evolved in the wake of disaster through the communication of emotional alignment and discursively constructed emotions, and demonstrates how this was variously fostered in different social media environments.

While material reconstruction has significant importance in the aftermath of disasters, it is also important to understand the social aspects of disasters, including how different media forms can aid recovery by strengthening connections with self, family and society. Online expression can be therapeutically beneficial as it facilitates the process of coping with trauma or crisis, thereby opening up opportunities for community building (Arthur 2009). On this basis, understanding the dynamics of social media use across a range of platforms may allow us to predict how people will adopt and utilise new communication tools to cope with disasters. Critically, considering that these tools are being increasingly relied upon in times of disaster (see Tomer et al. 2015), knowledge of how social media platforms can evoke or intensify a sense of communal belonging may have implications for how these platforms evolve to better support crisis-stricken communities in future. Furthermore, the study looks at participants who are based outside the directly affected regions and yet exhibit affective connections to them. Insights from less-affected social media users may be useful in helping charity and relief organisations to more successfully engage volunteers and donors to assist with relief efforts, as well as in understanding how different online communities can motivate financial donations for affected regions.

RESEARCH METHODOLOGY

This study employs open-ended, in-depth interviews to learn about participants' personal experiences through the stories they tell (Seidman 2012), and to understand the relationship between media and society (Brennen 2012). Before and during the fieldwork period, which extended from August to November 2017, I recruited 38 Japanese nationals to participate in interviews of 30–60 minutes' duration, in Tokyo (in spaces where participants felt comfortable), with the aim of understanding how the participants perceived and experienced a sense of communal belonging in relation to their social media use in the context of the 3.11 disaster. Interviews were conducted in person and in the Japanese language, without the help of an interpreter or third-party assistance. Face-to-face interviews enabled me to easily follow participants' narratives and adapt questions to investigate underlying meanings, giving participants the chance to elaborate on certain issues and clarify their answers (Kvale 2007). The face-to-face nature of the interaction also provided the opportunity to see participants' non-verbal cues, which can reveal messages or communicate someone's mood or attitude and thereby aid in further questioning and understanding of verbal responses.

All participants were recruited through the snowball sampling method, utilising personal and professional networks to reach some of the first participants who then provided referrals for further interviews. Participants from age 25 to 59 were included to ensure that the sample represented a broad cross-section of social media users. Considering that small sample sizes in qualitative research allow for richness of data and a variety of participants (Moser and Korstjens 2018), I intentionally selected participants differing in age, with the aim of providing diverse perspectives on social media use. Disasters do not select for demographics. I approached this study with this in mind, and was therefore careful to avoid focusing solely on younger users.

The majority of the participants are residents of Tokyo. Tokyo was selected as it was the city with the leading rate of mobile phone subscription in Japan, as well as the highest rate of mobile internet penetration (63.3%) and second-highest rate of internet penetration (71.9%) around the time of the 3.11 disaster (Slater et al. 2012b, 98). Tokyo therefore fit well with this study's aim of reaching a segment of the Japanese population that is likely to have used social media and accessed news via mobile phones and the internet at the time of 3.11. In this way, I was also able to recruit participants who were comparatively less affected by the 3.11 disaster than people in the Tohoku region and southern Hokkaido, and who were less likely to have suffered personal losses and psychological trauma.[4] Even so, interviewed participants from Tokyo and surrounding areas still felt the effects of the disaster (continuing aftershocks, concerns about radiation, infrastructure disruptions and food shortages) and utilised social media to find and disseminate information and connect with fellow users.

4 The Tohoku region and southern Hokkaido were directly affected by the earthquake and tsunami, while the nuclear disaster occurred in Fukushima prefecture in the Tohoku region. This article uses the term "directly affected" to refer to people whose houses were destroyed and who required immediate shelter and assistance (e.g., food, water, medical treatment) for basic survival as a direct result of the disaster. In addition to physical injury, the term "directly affected" refers to individuals who suffered the loss of a close relation, family member or friend in the disaster, and who experienced psychological trauma or distress.

The table in the Appendix provides basic demographic information for all interviewed participants, including information on the media platforms that the participants used in the three main phases of the 3.11 disaster. The article relies on findings obtained through interviews conducted with 38 participants, discussing the most representative examples (highlighted in the Appendix) to illustrate how social media evoked and amplified a sense of communal belonging in the context of the 3.11 disaster. I also collected social media content such as Facebook posts and comments, Twitter posts and YouTube videos and comments from participants who actively used social media during 3.11. This helped me to enrich and confirm interview findings. A directed approach to qualitative content analysis was employed to identify themes and patterns and offer descriptive evidence that is supportive of existing scholarly theory (Hsieh and Shannon 2005).

Given the nature of the snowball sampling method used for this study, the sample is not considered representative. A broader pool of participants will be needed for future studies that aim to gain a representative understanding of motivations for using social media in the 3.11 context. Timing might also represent a limitation of the study, affecting the accuracy and completeness of memory as the interviews were conducted six years after the disaster, in the period from August to November 2017. Further, while this study focuses on the positive uses and benefits of social media in a disaster context, it is important to acknowledge that negative aspects do exist. Social media's convenience, open access and lack of gatekeeping mean that the diffusion of rumours can be more rapid than in traditional mass media. These can cause significant confusion, as was the case with Twitter posts that spread unfounded rumours about chemically contaminated rain in the week following the 3.11 earthquake (Takayasu et al. 2015; see also Umejima et al. 2011). While a thorough examination of these issues is beyond the scope of this paper, they are examined in the abovementioned publications in the context of the 3.11 disaster, and more broadly in Arthur's (2009) examination of trauma and social media usage.

This study is a small but significant contribution to the growing literature on social media and disaster communication in Japan. In the context of the growing visibility (and arguably growing frequency) of natural disasters (Pantti et al. 2012) and the rapidly changing media environment, the significance of this study lies in its contribution to the literature on post-disaster recovery and resilience-building for future disasters through contextual analysis of social media usage and the implications that different social media platforms can have for an individual's sense of communal belonging.

MULTI-LEVEL SOCIAL MEDIA USE DURING THE 3.11 DISASTER

Döveling et al. (2018) break down social media use into three intersecting levels: micro, meso and macro. The article adopts this categorisation as the main framework for analysing how individuals in Japan during and immediately following the 3.11 disaster affectively engaged in digital space.

The **micro level** is the most local and personal form of social media use, where emotional interaction occurs within the close circle of family and friends. In the case of 3.11, this refers to the exchange of messages related to safety confirmation immediately after the earthquake. **Meso-level** refers to less immediate emotional bonding among individuals within one community or a group over a specific theme or universal need, which in the case of 3.11 refers to the collective need for emotional support and shared feelings of togetherness on a regional level. **Macro-level** refers to collective dealing with emotions via online discourses—narratives, videos, hashtags, photos—thereby encompassing a more global level of communication where social media users who do not know each other personally come together over a common theme, disaster or sentiment.[5]

Drawing on this multi-level model of social media use, I demonstrate how social media fostered a sense of communal belonging through the social sharing of emotions and emotional alignment during and immediately after the 3.11 disaster. This article focuses on active social media users to explore how they coped with the disaster, contacted friends and family, or shared their thoughts and feelings in digital space. The findings of this study shed light on the differing modes of participants' digital and affective engagement, examined through three analytical levels—micro, meso and macro—and their overlaps.

Micro-Level: Safety Concerns and Local Actions

Participants' responses related to media use immediately after the earthquake reveal that their priority was to reach family members and close friends to check their safety, and seek any available information to understand the severity and scope of the disaster. Due to phone congestion and problems with electricity, participants had difficulties reaching their families, turning instead to email and social media platforms to establish first contact and exchange local information and messages of support.

Online communication at the micro level refers to the private and local exchange of messages between individuals who are intimately connected as family members or close friends. During the 3.11 disaster, such interpersonal communication was facilitated by homegrown social networks Mixi and Line. Meanwhile, many participants found Facebook and Twitter to be efficient in instantly informing friends of their well-being and spreading local information on train delays and the availability of food supplies in supermarkets, in addition to general information on the earthquake. Participants' patterns of social media use immediately after the earthquake indicate that a sense of belonging at the micro level is formed in two ways: firstly, through sharing emotions online where similar experiences of the disaster evoke comparable emotional reactions between friends or family members, and secondly, through circulating local information to help friends or other users nearby

5 Whether or not there might be a sense of communal belonging that is distinctive to Japanese users is an area worthy of consideration. However, a discussion of this is beyond the scope of this paper. For a comparative analysis of Japanese and US users' interactions in digital space and discussion of how culture influences the use of Twitter, see Acar and Deguchi (2013). For characteristics of Japanese Twitter users see Akioka et al. (2010). For analysis of social media use among Japanese youth, see Takahashi (2010; 2014).

make more informed decisions about their actions.

The micro level of social media interaction is illustrated in a brief message exchange on Facebook between Chieko, one of the interviewed participants, and her friend, just a few hours following the earthquake.[6] Unable to go back to Tokyo from Yokohama, and stranded in a hotel room, Chieko found Facebook particularly useful as the only way to contact family and friends. On March 11, 2011, Chieko received a message from her friend Keiko who posted on her Facebook timeline:

> The earthquake was scary, and I'm now stuck here with a client until trains begin to move. Are you okay?[7]
> (Chieko 2011)

Chieko briefly replied that she was in Yokohama and used an 'angry face' emoticon to express how she felt about the whole situation, after which her friend tried to console her by sharing local information and showing concern for Chieko's well-being:

> Trains are starting to move in the city, but JR and other lines are still not operating. Please do not catch a cold![8]
> (Chieko 2011)

Some participants found Twitter useful for establishing first contact and disseminating local information. Shortly after the initial earthquake, apart from direct message exchange and safety confirmation, Toshi, one of the participants, utilised his Twitter feed to post photos from local convenience stores and circulate information on water shortages to other Twitter users living in the same district. Although Toshi mentioned that he was not very active in posting information on social media before the 3.11 disaster, he decided to utilise Twitter as a space to circulate vital local information following the earthquake, with the aim of helping others understand the situation and reduce panic:

> For example, I went to a convenience store, and it was like, there was no water, so I took a photo which showed there was no water. It was not an everyday situation, so I posted it [on Twitter]. At that time, [bottled] water was out of stock […]. The water supply had stopped and no-one could buy water; people panicked; that photo circulated and there were tweets about it on Twitter...[9]
> (Toshi 2017)

Participants' media usage immediately after the earthquake also indicates that besides providing important information, different social media platforms served to fulfill participants' needs for belonging and social connection. The use of close-structured networks (Line and Mixi) facilitated the interpersonal exchange of safety-related information, indicating participants' need to

6 All names of participants and other social media users cited in this paper are pseudonyms.
7「地震怖かったですが、今　会社でお客様と電車動くまで缶詰になっとります。地震大丈夫でしたか。」
All translations are author's own except where noted.
8「都内はぼちぼち、復活し始めてますが、JRなどはまだですね。風邪ひかないようにしてください。」
9「例えば、コンビニに行って、水が全然ないみたいな…写真とって、「水ない」みたい。ちょっと、非日常なので、出したりとか。その時、品切れという…みんな、水がとまちゃって買えなくて、パニックになって、その写真が回ってきてTwitterでそれについてtweetとかありましたし…」

connect with close ties. On the other hand, Facebook and Twitter, as group-oriented social networks, proved to be useful for updates about friends' situations and the dissemination of fundamental local information.

Intersections of the Micro and Meso Levels

In some cases, among participants who actively used social media to establish contact with friends and family, communication transcended the local level, intersecting with references to the affected region and implying a crossover of micro- and meso-level social media use, which this section examines in more detail.

To best illustrate the linkage of the micro and meso levels, I use the example of Hana, a participant from Osaka, who used Facebook solely to inform others about the disaster and establish contact with her friends. In addition to Line and regular email, through which she contacted family, Hana used Facebook updates to inform her friends that she was safe, to which they replied with messages of relief. In a message posted on Hana's Facebook timeline on March 13, 2011, two days after the earthquake, a friend expressed both relief in knowing that Hana was safe and concern for the people in the disaster zone, sending prayers for those directly affected by the earthquake and tsunami. Soon after receiving the message, Hana replied with a similar reference to those in the affected region, wishing for their safety: *We are all safe. Hope everyone over there will overcome soon* (Hana 2011).[10] While this kind of online interaction happens on the interpersonal and familiar level between two friends who exchange messages to enquire about each other's safety, they both exhibit compassion for the affected region, which exceeds the micro level of online interaction. Through these Facebook posts, we see a shift from a local to a regional level of concern for affected communities, despite the users' geographical distance from them. This shift shows how a sense of communal belonging and feelings of connectivity emerge in digital space, blurring the boundaries between immediate and distant.

Another example of cross-level social media use is the case of Mei, who was based in Kobe at the time, and utilised Facebook to express concern and frustration about her inability to contact her father, as well as concern for people in the affected region. The extract below illustrates Mei's use of Facebook a day after the earthquake, on March 12, 2011.

Extract 1. Mei's Facebook thread

Mei: I'm really worried about my friend in Tokyo and people in the east part of Japan. Is everyone ok? I still can't contact my dad in Tokyo, aaaahhhh. I'm worried, and I can't sleep!!!!!!
東京のみんな～大丈夫？関西でもゆれたけど、ニュースで破滅的な影響をうけた東京を　心配している！！！　ああ、私もまだお父さんと連絡がとれなくて、心配で、眠れない！！！！

10 Original social media (Facebook) post is in English.

Friend 1: I'm in Tokyo, but I'm okay!! It seems that phone lines are not working... Hope your dad is okay…makes you worry, doesn't it…

Friend 2: Hope you can contact your dad soon.
(Mei 2011)[11]

In her first Facebook post after the earthquake, besides giving an update on her situation, Mei expresses equal concern for people from Tokyo, her local communities and "people in the east part of Japan" (i.e., people from the affected region). Mei's digital narrative indicates a shift in her sense of communal belonging from a personal, micro-level of concern for family and close friends to a meso-level of concern for the affected communities. Even though she is geographically far from the affected region, Mei shows a sense of connection, utilising her Facebook timeline as a space where she can convey her emotions across distance and feel like a part of a broader community. She thereby highlights the potential of social media to create affective connections and a sense of belonging even among geographically distant individuals (Döveling et al. 2018). At the same time, through sharing her feelings with friends on Facebook, Mei expresses the need to seek out similarly affected individuals who are also having problems contacting their families—in other words, others who are aligned with Mei's feelings and can provide compassion, solidarity and emotional support. In this way, Facebook serves not only as space for one-directional emotional communication where individuals vent personal feelings, but it also invites the affective attunement of other users who connect and align with a communicated event and express this through liking and commenting on a Facebook post, thereby creating affective publics (Papacharissi 2016). The concept of affective communities in digital space moves beyond the feelings of the individual to a broader consideration of the emotional flows and bonding between users online which generate digital affect cultures (Döveling et al. 2018).

The emotional bonding and empathic alignment within a familiar relationship, as illustrated in Hana's and Mei's case, makes it harder to separate the micro level from the meso level of belonging. They intersect and feed into each other, indicating that affective communities can be built on the intersections of shared feelings between friends and feelings of compassion toward distant yet similar others.

Meso-Level: Evoking Belonging through Digital Narratives

Digital narratives are essential for maintaining an individual's sense of community in the context of social media, where the individual imagines his/her membership in a broader community based on the reading or creating of narratives in digital space (Jones 2013). While many participants utilised social media to reach family and close friends immediately after the earthquake struck, others were strongly motivated to voice informational

11 Mei, the author of Facebook post, wrote in both English and Japanese. The response of Friend 1 (「私東京だけど大丈夫です！！今は電話の回線がうまくつながらないみたい…お父さん大丈夫かな…心配だね…」) was originally in Japanese and is translated by the author. Friend 2's response was originally written in English.

or emotional support through digital narratives within a community or a group, and use social media as a space for community engagement and participation.

Sana is one of the participants who actively used social media during the 3.11 disaster, mainly to share information with friends in Tokyo or to make more general updates in a Facebook group, informing people living outside Japan about the situation. She sees Facebook as space where she can find relief from anxiety through reading friends' supportive messages and comments (Sana 2017). In a message that she posted on Facebook on March 21, 2011, Sana invited her friends to join her in organising a local event:

> I am thinking about organising a charity event at the hula dance club. This is still just an idea, but I wonder if there's anything that we too can do.[12]
> (Sana 2011)

Some of her friends commented on the post, expressing their interest in joining the event. This meso-level of digital engagement is a significant shift from the immediate need to contact family and close friends to a broader need to find concrete ways of supporting affected communities, thereby fostering community engagement and participation through social media use.

More consistent usage of social media during the 3.11 disaster is seen in the case of Hiroshi, who actively utilised his Facebook timeline as a diary to document his experience of the disaster, share positive thoughts and motivational messages, and shift his mind from the anxiety caused by the constant exposure to news about the disaster. Hiroshi's narratives illuminate the distinct role of social media in comparison with mass media, with reference to their ability to provide access to local information, facilitate social interaction with similar others and offer relief from the depressing atmosphere which dominated television news (Hiroshi 2017). During and following the disaster, social media offered an alternative space for Hiroshi which contained hope and positive comments, as all users that commented on his posts across the platforms where he was active expressed the same or similar sentiments as he did. Hiroshi notes that one of the most significant changes in his social media use post-3.11 was the posting of encouraging messages on Facebook and Twitter, and videos on YouTube, prompted by an overwhelming need to help and engage in digital space:

> I stopped watching TV so there was only SNS, but I began to use it differently as I wasn't just collecting information but started posting it myself. That's probably because of the fact that everyone experienced that earthquake. I knew there were so many things that all of Japan wanted to say, so I wanted to help, and I had so many different feelings…[13]
> (Hiroshi 2017)

12「フラダンスサークルで、チャリティーイベントできないかなーなんて考えてる。まだアイデアベースでしかないけど、私たちにもなんかできるんじゃないかって。」
13「テレビは見なくなってSNSだけ残ってた。そのSNSはちょっと使い方変わってきて、情報集めるだけじゃなくて、発信するようになっていた。それはきっとあの震災をみんなが体験して、とても大事なポイントだったんだよね。日本中が言いたいことがいっぱいあったと分かったし、助けたいし、本当にいろんな気持ちがここにあって…」

In some of his first Facebook posts from March 11, besides some general updates about the earthquake and his situation, Hiroshi exhibits a sense of compassion for the affected region, wondering if people in Miyagi prefecture are safe and hoping that there are no casualties. In another post, he empathically aligns with the affected region: "I feel weak and depressed because it is cold. How are people in Miyagi spending the night?" (Hiroshi 2011).[14]

Furthermore, Hiroshi turned to Facebook and Twitter to encourage community engagement and participation by inviting his friends and followers to make small donations and support the people of Tohoku. Here we see Facebook and Twitter used as action-oriented social platforms, where individuals initiate help, seek donations and promote engagement in local actions. Hiroshi's digital narratives, enriched with flows of affect and emotional resonance with regional communities, show how everyday social media platforms such as Facebook can be utilised to experience a sense of belonging and social connectedness and generate affective communities through storytelling in digital space.

Hashtags: Intersections of the Regional and Global Level of Belonging

A hashtag always starts with the hash sign "#", followed by a word or a combination of two or three words. Hashtags serve to mark the topic of a social media post and function to consolidate messages on the same topics for easy searchability (Murzintcev and Cheng 2017). Hashtags can be used to alert others to an individual's emotions and experiences, and can evoke feelings of closeness and solidarity between users based on shared experience of an event, including natural disasters, national crises, terrorist incidents and protests. Adding hashtags to social media posts can indicate a user's sense of connection with an event, or the desire to be recognised as a part of a community of users who use the same hashtag (Summerville 2018).

In a disaster context, one of the most effective ways to disseminate information to the public and respond to urgent needs and requests is through standardised and unified hashtags that are introduced and used by government and aid organisations. During the 3.11 disaster, besides the mobilisation of help and relief operations through hashtags like #j_j_helpme or #anpi, the hashtag #prayforjapan also went viral, unifying compassionate messages, condolences and prayers sent by and to users in the disaster zone from across Japan and abroad.[15] Since its emergence with the 3.11 disaster, the "prayfor" hashtag has become a social media norm internationally as a universal, compassionate response to disasters, crises, terrorist attacks and so forth.

On a few occasions, Hiroshi attached the hashtag #prayforjapan to his Facebook narratives to express his gratitude for the encouraging messages coming from all over the world to Japan. Hiroshi's use of the hashtag indicates

14「かなり体力もなく、寒いので、落ち込んでる。宮城の方はどんな夜を過ごすんだろう。」
15 The hashtag #j_j_helpme was used for requests for rescue and other aid, while the hashtag #anpi (a transliteration of '安否', meaning 'safety confirmation') was used to list missing individuals.

the intersection of meso- and macro-level online communication, as the use of #prayforjapan signifies shared feelings of grief and emotional belonging on a more global level, helping users find 'similar others' beyond their circle of friends.

The case of Hiroshi is an excellent example of how everyday social media platforms such as Facebook can manifest affective communities, where the individual feels a sense of belonging to a community through writing a digital narrative for a close circle of friends or other intended audience. At the same time, through continuous use of the hashtag #prayforjapan, Hiroshi's use of social media extends beyond the interpersonal level of communication to the global level of emotional flows, connecting individuals across the world and thus showing how social media can facilitate the emergence of global affective communities in response to disaster. Moreover, the recurring use of the English-language hashtag #prayforjapan in the context of more recent Japanese natural disasters (such as the floods of July 2018 and the Hokkaido earthquake in September of the same year) indicates that Japanese users continue to embrace this trend as a way of spreading information about disasters to communities beyond Japan's borders.[16]

The following section uses the example of a YouTube community, formed in the immediate aftermath of the 3.11 disaster, as a case study, to show the potential of social media to enable individuals who are geographically dispersed and do not know each other in person to experience a sense of belonging to a global community. It is here that I explicate the significance of the final level of social media—the macro—in the 3.11 disaster context.

Case Study: A 3.11 YouTube Community

In addition to Facebook and Twitter, Hiroshi utilised his YouTube channel to post videos featuring his own piano music, which he composed regularly. He posted six videos of his own piano compositions on his YouTube channel over the period from March 12 to March 18, 2011, with an additional video posted on March 11, 2013 in commemoration of the second anniversary of the disaster. In the brief introduction below the first video, posted a day following the earthquake, Hiroshi dedicated the video to the people of the affected region and the whole of Japan in the hope that it would offer them some relief, as he explains:

> If I can help you find inner peace, just a little, I will be happy. Please do not push yourself and please rest well.[17]
> (Hiroshi 2011)

This comment also highlights that Hiroshi's digital engagement was to some extent driven by a desire to support affected communities and spread awareness of the 3.11 disaster through personalised social media use, which,

16 At the time of writing, the most recent use of the hashtag #prayforjapan was seen after the Kawasaki mass stabbing on 28 May 2019, showing that its usage has grown beyond the context of natural disasters to encompass crisis situations more generally. Posts using this hashtag can be viewed here: https://twitter.com/search?q=%23prayforjapan&src=typd&lang=en.

17「少しでも、心の平安にお役に立てれば幸いです。どうか無理をなさらず、ゆっくりとお休みになれますように。」

in his case, combines various social media platforms with self-generated video content and digital diarising.

Additionally, in his initial video, Hiroshi states that all advertising revenue from YouTube will go to charity to support the reconstruction in the Tohoku region. This shows that he also utilised YouTube as an action-oriented platform by seeking and collecting donations for affected communities. Hiroshi's videos received a high number of views and likes from Japanese and worldwide users alike, who subscribed to his YouTube channel and commented below his videos, voicing their compassion for the people of Japan and the affected region. In this way, YouTube, as a digital social media platform, facilitated online interaction and discussion, fostering feelings of togetherness and solidarity, and served as a platform for the public display of care, emotions and affective attunement.

Table 1 provides an overview of Hiroshi's videos, including their publication date and information about the general outreach of each video (dislikes, likes, number of views and comments).

Table 1: Overview of Hiroshi's YouTube Videos

Video	Publication Date	Dislikes	Likes	Number of Views	Total no. of Comments
Video 1	March 12, 2011	3	149	76,813	76
Video 2	March 13, 2011	3	57	17,498	12
Video 3	March 14, 2011	1	31	8,927	4
Video 4	March 15, 2011	0	75	17,993	15
Video 5	March 16, 2011	41	1,400	773,599	149
Video 6	March 18, 2011	0	42	4,010	25
Video 7	March 11, 2011	0	20	1,004	10

Macro Level of Belonging

To further explore how a sense of community was generated and sustained in this series of YouTube videos, I coded users' comments on six videos posted by Hiroshi in 2011. The coded data revealed repeated patterns in the way users reacted to the video and communicated with other users or Hiroshi. The data illustrates multi-directional online interaction, giving users the opportunity to feel a sense of belonging to a community of fellow users through watching the same video and sharing emotional support. Hiroshi's YouTube channel reflects the central idea of a shared purpose or common interest that fosters online communities (Rotman and Preece 2010), which in this case refers to posting user-generated videos, subscribing to the same channel or communicating through written comments.

The first pattern emerging from users' comments reveals that some users immediately shared Hiroshi's videos on other social media platforms or blogs with the aim of reaching a wider audience, like user H.T.:

> I'm late, but I wanted to share the video with as many people as possible, so I introduced it on my blog today. Thank you very much![18]
> (User H.T. 2011)

This comment suggests that other users utilised their social media accounts or blogs as action-oriented platforms for mobilising support, sharing Hiroshi's YouTube video to circulate awareness of the disaster and invite their friends, followers and other users to engage in collecting donations for the affected region. The digital engagement between Hiroshi as the content creator and other YouTube users, while generating only a small number of donations, indicates a significant shift from utilising YouTube as a space of everyday entertainment to using it as a platform for initiating action and practical support. This phenomenon may not be unique to YouTube, as Facebook and Twitter offer similar potential for mobilising support in a disaster context. However, the literature examined earlier in this paper suggests that the macro-level of online communication facilitated by YouTube may have allowed its users to reach a wider audience than Facebook and Twitter. Moreover, the combination of sentimental piano music and disaster images in Hiroshi's videos were arguably more compelling for some users than written text alone, thus motivating users to share the content and take action.

The second pattern which emerged from coding is the users' empathic alignment with the affected region, regardless of being geographically distant from it. Solnit (2009) argues that disaster, as a shared experience of loss, danger and uncertainty, often creates emotional solidarity and empathy among affected individuals. In doing so, it creates altruistic communities, where individuals respond with an enhanced need to help and engage in the community as members of the same society that is threatened by the disaster (Solnit 2009). In the case of the YouTube community in the context of the 3.11 disaster, users who commented on Hiroshi's videos and interacted with other users online were not necessarily affected by the earthquake, tsunami or nuclear disaster, but they emotionally identified with the experience of the disaster. This emotional alignment of users from all over the world and across Japan suggests the potential of social media to facilitate the emergence of affective communities on a global level, creating a sense of belonging among individuals despite their geographical distance from one another.

User M.B. commented on the first video which Hiroshi posted on March 13, 2011, expressing compassion for the affected region by saying that she cried after she heard about the disaster victims, even though she lives outside of Japan. Her contribution to the affected communities was through supportive and positive messages. As Döveling (2015) observes, emotional support communicated in digital space "may provide an alternative to traditional support channels [for individuals] confronting similar challenges" (106). In reply to User M.B., Hiroshi explains how emotional support from

18「遅くなりましたが、少しでも多くの方と共有したくて、今日ブログで紹介させていただきました。ありがとうございます。」

other users helped him to feel less lonely immediately after the earthquake, as he became aware that others were going through similar emotional struggles.

The third pattern which emerged from the analysis is users' sense of closeness with other members of the YouTube community. For example, on March 13, 2011, one of the users shared updates on earthquake intensity and aftershocks via comments on Hiroshi's YouTube channel, evoking feelings of collective belonging:

> *The Meteorological Agency has issued a probability of 70% that aftershocks with a magnitude of 6 will occur within three days from March 13. Everyone, please take care of each other!*[19]
> (User S. 2011)

In this way, User S. can be seen to perceive YouTube as a space where people unite as similarly affected members of the same community who need informational and emotional support. This case shows that, in addition to transmitting vital information for individuals who are geographically close to the affected region, social media can also serve to circulate emotional support for those experiencing the same disaster. Similarly, user K. expressed his affinity for one of Hiroshi's videos, and reminded other users that people in the disaster area were still suffering and should not be forgotten, thus indicating that he feels like a member of the affected communities that he 'invites' other users to empathically align with.

The fourth pattern is seen in the way that users communicate feelings of solidarity and compassion through prayers in digital space (see Extract 2). These served a similar purpose to the commemorative hashtag #prayforjapan, generating feelings of togetherness and signifying connection with the event. The prayers that users posted on YouTube imply the users' collective need and desire for companionship and support, showing how this social media platform became an outlet where users exhibited helpfulness through the public display of care.

Extract 2. Examples of User Prayers Posted under Hiroshi's YouTube Videos

User S.I.:	I'm praying for Japan.
User M.E:	I just lit a candle and prayed! Japan is not alone!
User K.A.:	I pray for peace in Japan. Everyone in Japan, please don't give up![20]

Expression of emotions, or affect, in the digital realm at a global level can be understood as anonymous emotional bonding, where communities of strangers are brought together around the bonds of sentiment and emotional attachment (Döveling et al. 2018; Papacharissi 2016). In the aftermath of 3.11, the digital, interactive environment of YouTube enabled individuals to interpret their most fundamental feelings of sadness, relief or anger and share them with similar others, thus creating a sense of togetherness and affective attunement with other users, and generating global affective communities.

19「13日から3日以内、震度6級の余震確立70% と解析>気象庁だそうです。お互い気をつけましょう。皆さんも！」
20 The first two examples were originally written in English. The final example was originally written in Japanese (「日本の平安を祈ります。日本の皆さん、頑張ってください！」) and is translated by the author.

DISCUSSION OF FINDINGS

This article examined the potential of social media to foster a sense of communal belonging and generate new forms of affective communities in digital space, using the case study of the 3.11 disaster. The findings suggest that social media use is linked to the individual's sense of community, with online communication moving across levels and platforms and specific features of social media. Research has shown that feelings of togetherness and solidarity manifested on social media are ephemeral, and can fade and transform over time (Thomas et al. 2018). In my study, participants' reflections on their social media use suggest that the short-term, ephemeral sense of communal belonging was intensified in the immediate aftermath of the 3.11 disaster, but without strong continuity in the following days. In the case of Hiroshi, the only participant who was already a regular social media user at the time of 3.11, we can see a more consistent use of social media throughout all three phases of the 3.11 disaster. While an examination of this phenomenon is beyond the scope of this paper, more research is necessary to provide in-depth understanding of how a sense of communal belonging is maintained in digital space, and how it changes or fades over time.

For private, interpersonal exchanges of safety-related information, participants used Mixi and Line, while Facebook and Twitter, as group-oriented social networks, proved to be useful for updates about friends' situations and the dissemination of local information. The findings indicate that a sense of belonging at the micro-level was formed through emotional online discourses within each user's circle of family and friends, where social media served as a relief from anxiety immediately after the earthquake. Participants exhibited both local and regional levels of belonging, as they empathically aligned with the affected region despite being geographically far from it, thereby indicating a shift in participants' sense of belonging from the personal to a regional level of concern for affected communities. Furthermore, in the aftermath of the 3.11 disaster, social media was utilised as a platform for initiating community and relief-oriented actions. In this way, to some extent social media can be said to have redesigned individuals' sense of place and belonging during the disaster and its aftermath, at the same time as people's material spaces and positions in communities were being reconfigured due to emergency evacuation.

My findings regarding the meso level of online communication in the wake of the 3.11 disaster highlight the potential of Facebook and Twitter to transcend spatial and temporal barriers, enabling emotional bonding between individuals through reading or sharing digital narratives. Due to its interactive nature and ability to cross spatial boundaries, social media facilitated the emergence of different emotional flows and amplified feelings of togetherness, leading to the emergence of affective communities. In the post-3.11 context of social media use, participants' narratives highlight the changing role of Facebook from an everyday social networking tool to an online emotional space of interaction, collectivity and transmission of emotions.

Participants' use of the hashtag #prayforjapan on Twitter and Facebook highlighted how social media use generated feelings of community, alluding to a collective need for companionship and mutual support, as hashtags helped users find similar others beyond their circle of friends. The use of the hashtag #prayforjapan not only facilitated flows of emotional and supportive messages, but it encouraged individuals to take action to provide relief for affected communities and spread awareness of the national struggle, as Hiroshi's case illustrates.

Hiroshi's case also shows how YouTube facilitated the global alignment and affective attunement of users, allowing him to build a community of users who were drawn together by shared experience of the disaster and a fundamental need for psychological comfort and social togetherness, regardless of geographical distance. Besides providing a platform for emotional support, YouTube also offered a way to initiate financial donations, as video advertisement revenues were turned into charitable donations for the affected region. This shows that YouTube can be utilised as an effective action-oriented platform, rather than just an outlet for public displays of affect. The macro level of online communication harnesses the power of social media to establish global affective communities. In this context, YouTube became an outlet for expressing solidarity and aligning emotions globally through supportive and emotional discourse, prayers, and symbols of solidarity such as hashtags.

CONCLUSION

This article has sought to examine how social media use generated new forms of affective communities in Japan in the context of the 3.11 disaster. I have shown how social media use fostered a sense of communal belonging in the immediate aftermath of the 3.11 disaster, even among geographically distant individuals. This sense of communal belonging was formed through a combination of user consumption and production of media content, and the potential of social media to enable users to meet similar others. The Japanese case study confirms existing findings in media literature regarding social media use during disasters and the manifestation of affective communities in digital space. These communities developed through emotive online discourses, empathic alignment with the affected region, and the activation of a sense of communal belonging in geographically dispersed individuals. Social media facilitated multi-level online communication and interaction, serving a kaleidoscope of needs for disaster communication, local action, psychological comfort and social togetherness.

Additionally, the Japanese case study sheds light on a new kind of online sociality among Japanese social media users, moving beyond the private, one-on-one communication supported by homegrown socia media platforms to the more open and group-oriented online communication fostered by Facebook, Twitter and YouTube. In the context of the 3.11 disaster, these social media platforms generated affective communities and supported free

articulation of emotions, thus helping individuals cope with the disaster, initiate collective action and build community consciousness. Future research should address the problem of the ephemerality of social media by examining commemorative practices and the ways in which individuals who remember 3.11 maintain or do not maintain their sense of community, and whether the emotional alignment and sense of solidarity gradually disappear in the re-establishment of everyday life.

APPENDIX: BASIC DEMOGRAPHIC INFORMATION ABOUT PARTICIPANTS IN THIS STUDY

Name (Pseudonym)	Gender	Age Group	City (Present-day)	City/Region (3.11)	Media Use (3.11)
Ayumi	Female	30–39	Tokyo	outside Japan	News websites; TVs
Ayako	Female	40–49	Tokyo	Tokyo	TV; news websites; Facebook
Chieko	Female	40–49	Tokyo	Tokyo	Facebook; TV
Atsushi	Male	40–49	Tokyo	Tokyo	TV; Facebook; Line
Daichi	Male	40–49	Tokyo	Tokyo	TV; Facebook; news websites
Eiji	Male	30–39	Tokyo	Tokyo	Facebook; TV; news websites
Fuji	Female	50–59	Tokyo	Kawasaki	TV; news websites
Hideki	Male	20–29	Tokyo	Fukushima	TV; Twitter; YouTube; 2channel*
Hiro	Male	30–39	Tokyo	Tokyo	Twitter; Facebook; Line; news websites
Hana	Female	40–49	Osaka	Osaka	News websites; Facebook; Line; TV
Kenjirō	Male	50–59	Tokyo	Gunma	Radio; TV; news websites
Kaori	Female	50–59	Tokyo	Tokyo	TV; news websites
Naoki	Male	40–49	Chiba	Yonezawa	TV; news websites
Toshi	Male	20–29	Tokyo	Tokyo	Twitter; news websites; TV
Yoshi	Male	30–39	Tokyo	Fukuoka	TV; news websites; Twitter
Naoko	Female	30–39	Tokyo	Tokyo	Line; TV; Facebook
Mei	Female	20–29	Tokyo	Kobe	Facebook; Twitter; Line
Kensuke	Male	40–49	Tokyo	Tokyo	TV; Mixi; news websites
Hiroshi	Male	30–39	Tokyo	Tokyo	TV; Facebook; Twitter; YouTube
Ryota	Male	50–59	Tokyo	Tokyo	TV; news websites
Kenta	Male	20–29	Tokyo	Tokyo	TV; Line; news websites
Mayumi	Female	30–39	Melbourne	Tokyo	TV; Line; Facebook
Miyuki	Female	20–29	Tokyo	Tochigi	Newspaper; TV; news websites
Masayuki	Male	40–49	Tokyo	Tokyo	News websites; Facebook; TV
Sana	Female	20–29	Tokyo	Tokyo	Facebook; Twitter; Line
Saki	Female	30–39	Tokyo	Tokyo	News websites; TV; Twitter; Facebook
Shinji	Male	30–39	Melbourne	Tokyo	TV; news websites; Twitter
Haruna	Female	50–59	Tokyo	Tokyo	TV
Takuya	Male	40–49	Tokyo	Saitama	TV; YouTube; Facebook
Kazuya	Male	40–49	Tokyo	Tokyo	TV; news websites
Takahiro	Male	50–59	Tokyo	Tokyo	TV
Takashi	Male	20–29	Tokyo	outside Japan	News websites; Facebook; Twitter; YouTube

Sonja Petrovic
New Voices in Japanese Studies,
Vol. 11, 2019, pp. 74-98

Momoko	Female	50–59	Tokyo	Tokyo	TV
Tomoki	Male	20–29	Tokyo	Nagano	TV; news websites; newspapers
Rika	Female	30–39	Kyoto	Kyoto	Radio; TV; Facebook; Mixi
Wataru	Male	30–39	Tokyo	Tokyo	TV; news websites
Yumi	Female	20–29	Tokyo	Nara	TV; Facebook
Michiko	Female	20–29	Tokyo	Kanagawa	TV; newspaper; news websites

Note: All user names are pseudonyms. Highlighting indicates participants who are discussed in this paper. In the 'Media Use' column, media sources are listed in the order of their importance to the individual user as an information source in the immediate aftermath of the 3.11 disaster.
* 2channel (2ちゃんねる) is an anonymous online Japanese textboard community that was established in 1999.

LIST OF INTERVIEWS CITED

Toshi. 2017. Interview by author. Digital recording in Japanese. September 23.

Sana. 2017. Interview by author. Digital recording in Japanese. October 6.

Hiroshi. 2017. Interview by author. Digital recording in Japanese. October 27.

LIST OF SOCIAL MEDIA CONTENT CITED

Chieko. 2011. Facebook thread ("*Jishin kowakatta desu ga…* [地震怖かったですが、今会社でお客…]"), 11 March. Accessed 10 November, 2017.

Hana. 2011. Facebook thread ("We are all safe…"), 13 March. Accessed 15 November, 2017.

Mei. 2011. Facebook thread ("I'm really worried about my friends in Tokyo..."), 12 March. Accessed 10 October, 2017.

Sana. 2011. Facebook post ("*Furadansu sākuru de, charitī ibento…* [フラダンスサークルで、チャリティーイベント…]"), 21 March. Accessed 15 October, 2017.

Hiroshi. 2011. Facebook post ("*Kanari tairyoku mo naku...* [かなり体力もなく…]"), 11 March. Accessed 15 November, 2017.

Hiroshi. 2011. YouTube post ("*Sukoshi de mo, kokoro no heian…* [少しでも、心の平安…]"), 12 March. Accessed 15 November, 2017.

User H.T. 2011. YouTube post ("*Osoku narimashita ga…* [遅くなりましたが…]"), 27 March. Accessed 16 November, 2017.

User S. 2011. YouTube post ("*13-nichi kara 3-nichi inai…* [13日から3日以内…]"), 13 March. Accessed 15 November, 2017.

REFERENCES

Acar, A. and A. Deguchi. 2013. "Culture and Social Media Usage: Analysis of Japanese Twitter Users." In *International Journal of Electronic Commerce Studies* 4 (1): 21–32. https://doi.org/10.7903/ijecs.989.

Acar, A. and Y. Muraki. 2011. "Twitter for Crisis Communication: Lessons Learned from Japan's Tsunami Disaster." In *International Journal of Web Based Communities*, 7 (3): 392–402. https://doi.org/10.1504/IJWBC.2011.041206.

Akioka, S., N. Kato, Y. Muraoka and H. Yamana. 2010. "Cross-Media Impact on Twitter in Japan." In *Proceedings of the 2nd International Workshop on Search and Mining User-Generated Contents*, 30 October, Toronto. 111–18. Accessed 10 May, 2018. https://dl.acm.org/citation.cfm?id=1871985&picked=prox.

Arthur, P. 2009. "Trauma Online: Public Exposure of Personal Grief and Suffering." *Traumatology*, 15 (4): 65–75. https://doi.org/10.1177/1534765609350781.

Brennen, B. S. 2012. *Qualitative Research Methods for Media Studies: An Introduction*. London: Taylor and Francis Group. https://doi.org/10.4324/9781315435978.

Bruns, A. and J. Burgess. 2011. "Local and Global Responses to Disaster: #eqnz and the Christchurch Earthquake." In *Disaster and Emergency Management Conference, Conference Proceedings*, edited by P. Sugg, 86–103. Accessed 20 February, 2017. https://eprints.qut.edu.au/50739/.

Bruns, A., J. Burgess, K. Crawford and F. Shaw. 2012. *#qldfloods and @QPSMedia: Crisis Communication on Twitter in the 2011 South East Queensland Floods*. ARC Centre of Excellence for Creative Industries and Innovation, Queensland University of Technology, Brisbane. Accessed 20 February, 2017. https://eprints.qut.edu.au/48241/.

Döveling, K. 2015. "Emotion Regulation in Bereavement: Searching for and Finding Emotional Support in Social Network Sites." *New Review of Hypermedia and Multimedia* 21 (1–2): 106–22. https://doi.org/10.1080/13614568.2014.983558.

———. 2017. "Online Emotion Regulation in Digitally Mediated Bereavement: Why Age and Kind of Loss Matter in Grieving Online." *Journal of Broadcasting and Electronic Media* 61 (1): 41–57. https://doi.org/10.1080/08838151.2016.1273926.

Döveling, K., A. Harju and D. Sommer. 2018. "From Mediatized Emotion to Digital Affect Cultures: New Technologies and Global Flows of Emotion." *Social Media + Society* 4 (1): 1–11. https://doi.org/10.1177/2056305117743141.

Funabashi, Y. and K. Kitazawa. 2012. "Fukushima in Review: A Complex Disaster, a Disastrous Response." *Bulletin of the Atomic Scientists* 68 (2): 9–21. https://doi.org/10.1177/0096340212440359.

Hashimoto, Y. and A. Ohama. 2014. "The Role of Social Media in Emergency Response: The Case of the Great East Japan Earthquake." *NIDS Journal of Defense and Security* 15: 99–126.

Hjorth, L. and K. Y. Kim. 2011. "The Mourning After: A Case Study of Social Media in the 3.11 Earthquake Disaster in Japan." *Television and New Media* 12 (6): 552–59. https://doi.org/10.1177/1527476411418351.

Hobson, C. 2015. "Rebuilding Trust after Fukushima." *Fukushima Global Communication Programme Working Paper Series* 4 (March): 1–7. United Nations University Institute for the Advanced Study of Sustainability.

Hsieh, H. F. and S. E. Shannon. 2005. "Three Approaches to Qualitative Content Analysis." *Qualitative Health Research* 15 (9): 1277–88. https://doi.org/10.1177/1049732305276687.

Jones, S. G. 2013. "The Internet and its Social Landscape." In *Virtual Culture: Identity and Communication in Cybersociety*, edited by S. G. Jones, 18–41. London: SAGE Publications.

Kaigo, M. 2012. "Social Media Usage During Disasters and Social Capital: Twitter and the Great East Japan Earthquake." *Keio Communication Review* 34 (1): 19–35.

Kindstrand, L., K. Nishimura and D. H. Slater. 2016. "Mobilizing Discontent: Social Media and Networked Activism Since the Great East Japan Earthquake." In *Routledge Handbook of New Media in Asia*, edited by L. Hjorth and O. Khoo, 53–65. New York: Routledge.

Kvale, S. 2007. *Doing Interviews*. London: Sage Publications. https://doi.org/10.4135/9781849208963.

Macias, W., K. Hilyard and V. Freimuth. 2009. "Blog Functions as Risk and Crisis Communication During Hurricane Katrina." *Journal of Computer-Mediated Communication*, 15: 1–31. https://doi.org/10.1111/j.1083-6101.2009.01490.x.

Matsumura, N., A. Miura, M. Komori and K. Hiraishi. 2016. "Media and Sentiments in the Great East Japan Earthquake Related Tweets—Social Media as Meta Media." In *2016 IEEE Tenth International Conference on Semantic Computing* (ICSC), 465–70. Accessed 25 May, 2019. https://doi.org/10.1109/ICSC.2016.84.

Moser, A. and I. Korstjens. 2018. "Series: Practical Guidance to Qualitative Research. Part 3: Sampling, Data Collection and Analysis." *European Journal of General Practice* 24 (1): 9–18. https://doi.org/10.1080/13814788.2017.1375091.

Murzintcev, N., and C. Cheng. 2017. "Disaster Hashtags in Social Media." *International Journal of Geo-Information* 6 (7): 1–17. https://doi.org/10.3390/ijgi6070204.

Newman, N., R. Fletcher, A. Kalogeropoulos, D. Levy and R. K. Nielsen. 2018. *Reuters Institute Digital News Report*. Reuters Institute for the Study of Journalism, University of Oxford. Accessed 15 January, 2019. http://media.digitalnewsreport.org/wp-content/uploads/2018/06/digital-news-report-2018.pdf.

Oh, O., C. Eom and H. R. Rao. 2015. "Research Note—Role of Social Media in Social Change: An Analysis of Collective Sense Making During the 2011 Egypt Revolution." *Information Systems Research* 26 (1): 210–23. https://doi.org/10.1287/isre.2015.0565.

Okumura, H. 2014. "The 3.11 Disaster and Data." *Journal of Information Processing* 22 (4): 566–73. https://doi.org/10.2197/ipsjjip.22.566.

Pantti, M., K. Wahl-Jorgensen and S. Cottle. 2012. *Disasters and the Media*. New York: Peter Lang.

Papacharissi, Z. 2016. "Affective Publics and Structures of Storytelling: Sentiment, Events and Mediality." *Information, Communication & Society* 3 (19): 307–24. https://doi.org/10.1080/1369118X.2015.1109697.

Perez-Lugo, M. 2004. "Media Uses in Disaster Situations: A New Focus on the Impact Phase." *Sociological Inquiry* 74 (2): 210–25. https://doi.org/10.1111/j.1475-682X.2004.00087.x.

Rotman, D. and J. Preece. 2010. "The 'WeTube' in YouTube—Creating an Online Community through Video Sharing." *International Journal of Web Based Communities* 6 (3): 317–33. https://doi.org/10.1504/IJWBC.2010.033755.

Sadri, A. M., S. Hasan, S. V. Ukkusuri and M. Cebrian. 2018. "Crisis Communication Patterns in Social Media During Hurricane Sandy." *Transportation Research Record* 2672 (1): 125–37. https://doi.org/10.1177/0361198118773896.

Seidman, I. 2012. *Interviewing as Qualitative Research: A Guide for Researchers in Education and the Social Sciences*, 4th edn. New York: Teachers College Press.

Slater, D. H., K. Nishimura and L. Kindstrand. 2012a. "Social Media, Information and Political Activism in Japan's 3.11 Crisis." *The Asia-Pacific Journal: Japan Focus*, 10 (24): 1–31.

Slater, D. H., K. Nishimura and L. Kindstrand. 2012b. "Social Media in Disaster Japan." In *Natural Disaster and Nuclear Crisis in Japan: Response and Recovery after Japan's 3/11*, edited by J. Kingston, 94–108. London and New York: Routledge.

Solnit, R. 2009. *A Paradise Built in Hell: The Extraordinary Communities That Arise in Disaster*. New York: Viking.

Stieglitz, S., D. Bunker, M. Mirbabaie and C. Ehnis. 2018. "Sense-Making in Social Media during Extreme Events." *Journal of Contingencies and Crisis Management* 26 (1): 4–15. https://doi.org/10.1111/1468-5973.12193.

Summerville, M. 2018. "#community: Hashtags Generate a Sense of Belonging." *Debating Communities and Social Networks 2018 OUA Conference*, April 23. Curtin University. Accessed 28 August, 2018. http://networkconference.netstudies.org/2018OUA/2018/04/23/community-hashtags-generate-a-sense-of-belonging/.

Takahashi, T. 2010. "MySpace or Mixi? Japanese Engagement with SNS (Social Networking Sites) in the Global Age." *New Media and Society* 12 (3): 453–75. https://doi.org/10.1177/1461444809343462.

Takahashi, T. 2014. "Youth, Social Media and Connectivity in Japan." In *The Language of Social Media: Identity and Community on the Internet*, edited by P. Seargeant and C. Tagg, 186–207. London: Palgrave Macmillan.

Takayasu, M., K. Sato, Y. Sano, K. Yamada, W. Miura and H. Takayasu. 2015. "Rumor Diffusion and Convergence During the 3.11 Earthquake: A Twitter Case Study." *PLoS one* 10 (4): e0121443. https://doi.org/10.1371/journal.pone.0121443.

Thomas, E., N. Cary, L. Smith, R. Spears and C. McGarty. 2018. "The Role of Social Media in Shaping Solidarity and Compassion Fade: How the Death of a Child Turned Apathy into Action but Distress Took It Away." *New Media & Society* 20 (10): 3778–98. https://doi.org/10.1177/1461444818760819.

Tomer, S., A. Goldberg and B. Adini. 2015. "Socializing in Emergencies—A Review of the Use of Social Media in Emergency Situations." *International Journal of Information Management* 35 (5): 609–19.

Umejima, A., M. Miyabe, E. Aramaki and A. Nadamoto. 2011. "Tendency of Rumor and Correction Re-tweet on the Twitter during Disasters." *Information Processing Society of Japan SIG Technical Reports* 4: 1–6. http://id.nii.ac.jp/1001/00075459/.

Umihara, J. and M. Nishikitani. 2013. "Emergent Use of Twitter in the 2011 Tohoku Earthquake." *Prehospital & Disaster Medicine* 28 (5): 434–40. https://doi.org/10.1017/S1049023X13008704.

Wong, K. 2016. "Japanese Trends: Japan's Social Media Landscape in 2016." *Btrax*, January 26. Accessed February 6, 2017. https://blog.btrax.com/japans-social-media-landscape-in-2016/.

Yoshitsugu, Y. [吉次　由美]. 2011. *Higashi-nihon daishinsai ni miru daisaigai-ji no sōsharu media no yakuwari* [東日本大震災に見る大災害時のソーシャルメディアの役割]. NHK Hōsō Bunka Kenkyūjo Media Kenkyū-bu [NHK放送文化研究所　メディア研究部]. Accessed 25 January, 2018. https://www.nhk.or.jp/bunken/summary/research/domestic/133.html.