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Transnational Assemblages in Disaster Response: Networked Communities, Technologies, and Coalitional Actions During Global Disasters

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Transnational assemblages in disaster response: Networked communities, technologies, and coalitional actions during global disasters

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ABSTRACT

In this article, I argue that local disasters are a global concern and that various transnational assemblages emerge during a disaster that support the suffering

communities and help in addressing the issues of social justice in post-disaster situations. The transnational assemblages that emerge on social media create innovative practices (via non-western and decolonial ways) of creating communities across the world via crisis communication and distributed work to address social injustices during the disaster.

Keywords: transnational assemblages; risk/crisis communication; technical communication; social justice.

INTRODUCTION

The Nepal earthquake in April 2015 and Puerto Rico's Hurricane Maria in 2017 rattled communities, geographies, and infrastructures; created humanitarian crises; and brought lives to a standstill in Nepal and Puerto Rico respectively. After a disaster strikes, pre-existing, established structures like those of the government; social infrastructures like the military or the police; families; and private and public organizations' actions change drastically to respond to the nature of the disaster and the needs of the community. However, such a disaster response in Nepal was complicated by the government and bureaucratic systems (Hall et al., 2017) while the disaster response in Puerto Rico was hindered by historical colonialism (Soto Vega, 2020). Established protocols, policies, and response mechanisms often fail during a disaster partly because each disaster creates a unique rhetorical situation. In contrast, the affordances provided by digital media allow various online and offline transnational communities to establish connections to organize disaster response (Ding, 2014; Frost, 2013; Papacharissi, 2015; Potts,

2014). Similar surges in networking via social media that helped in organizing disaster relief, including the sharing of data and information, were observed during and after both the Nepal earthquake and Hurricane Maria, thus creating knowledge (Potts, 2014). These transnational communities operated via non-Western and decolonial ways to launch a social justice-oriented disaster response to support those ignored by the government.

Recorded as one of the biggest disasters in nearly a century, the April 2015 Nepal earthquake created chaos in 14 districts by taking the lives of 8,979 people; injuring 26,000; and sparking a humanitarian crisis. The disaster added to the burden of existing social, political, and climate-related crises in Nepal. Nepal is still recovering from the ten-year-long civil war (1996-2006), the aftereffects of which are manifesting in the form of political instability at the time of this writing. Due to climate change, millions of Nepalis suffer with problems such as reductions in agricultural production, food insecurity, strained water resources, loss of forests and biodiversity, and a damaged infrastructure (Climate Risk Profile: Nepal, 2017), which impacts the rural, marginalized, and vulnerable people in Nepal. The earthquake put the more vulnerable Nepalis at risk, resulting in the rise of poverty, human trafficking, and debt (Chandran, 2016). Due to a lack of understanding of community needs, difficulty in communication and logistics, and a centralized approach to disaster response during the earthquake, many rural communities did not receive any support when needed (Hall et al., 2017) These discrepancies were challenged by grassroots activists and disaster responders who, using digital media, invited the global community to stand in solidarity and help the suffering Nepalis by sending unprecedented volumes of technical, financial, and humanitarian aid (PDNA, 2015, p.4).

Hurricane Maria devastated Puerto Rico along with several other Caribbean Islands, causing an estimated $90 billion in damages, making it the third costliest tropical cyclone in the United States since 1900 (Kishore et al., 2018, p. 163). Initially, the official death count in Puerto Rico was reported to be 64 people. However, a report by Kishore et al. (2018) claimed that the death toll exceeded 4,645 people, which is 70 times more than the official estimate. After a controversy surrounding the death toll, the governor of Puerto Rico commissioned Milken Institute School of Public Health at George Washington University to conduct an independent study. After this report, the death toll was revised and estimated to be 2,975 people (Milken Institute School of Public Health Report, 2016). The Institute found that physicians had a lack of awareness of appropriate death certification practices and that the governor's lack of communication about death certificates created the death count problem (Milken Institute School of Public Health Report, 2016). Much like the Nepal earthquake, Hurricane Maria exacerbated the vulnerability of the communities in Puerto Rico who have suffered through "an ongoing recession, insurmountable debt, and coloniality" (Soto Vega, 2020, para. 2). The lack of electric power and mobile phone networks after the hurricane caused a serious communication crisis which cut the island off from the rest of the world. Lloréns (2018) argues that the hurricane also brought endemic risks, vulnerabilities, and hidden crises into view, affecting people who are infirm and people who are disabled, those without access to transportation, those living in isolated areas, and those in extreme poverty with greater intensity (p. 159). The hurricane brought into light the ongoing sovereignty struggles and how colonialism, the severity of protocols, and negligence by the U.S. government impacted the most vulnerable. Many disaster responders and grassroots activists both on the island and the mainland (Puerto Rican diaspora)

launched a decentralized disaster response informed by decolonial practices (Lloréns, 2018; Ortiz Torres, 2020, Soto Vega, 2019).

This article presents cases of two catastrophic disasters where transnational communities worked together by setting the people and their local knowledge as the key stakeholders in the communication process that helped in deeply understanding contexts to challenge social injustices in a post-disaster situation. Due to the complex nature of digitally networked communications, during a disaster, such a system fails and escalates vulnerabilities with miscommunication and misinformation (Baniya & Potts, 2021). Such failures in Nepal and Puerto Rico created discrepancies in disaster response, for example resulting in a delay in aid distribution. And response management led towards failure in supporting vulnerable people and addressing inequalities brought on by these two disasters. Addressing these challenges, the transnational communities around the globe launched a social justice-oriented disaster response in both online and offline spaces by collaborating via various digital platforms and by establishing their crisis communication mechanisms to organize such efforts. These communities are supported by "the speed and spread of the Internet and the simultaneous comparative growth in travel, cross-cultural media, and global advertisement" (Appadurai, 2013, p. 26). These networked actions (Castells, 2010; Potts, 2014) have been made possible with the advances in information and communication technologies that use social networking to make information more accessible than in any other period in history (Toya & Skidmore, 2015).

By situating research in disaster-affected, digitally networked societies, this study presents a comparative analysis of networked communities and their uses of technologies to communicate during the disaster. This research is achieved through a mixed-methods approach

of narrative inquiry involving 28 participants who represent grassroots activists, community-based organizations, the private sector, and the government. Half of the participants were involved in disaster response for Hurricane Maria, and half were involved in response to the Nepal earthquake. A social network analysis (SNA) of approximately 50 million tweets also served in informing this research. In this article, I use the concept of networks to define connections between people mediated via online and offline media, and I use the concept of actors to define the members of these networks who have responded to disasters by undertaking social actions. I use the word "transnational" to describe disaster relief work organized across the national boundaries and the term "transcultural communities" to describe communities that encompass two or more cultures while responding to a local disaster (Ding, 2014). Based on this study, I claim that disaster motivates the formation of transnational assemblages via the diaspora and international, governmental, and non-governmental (including media) disaster response systems. My premise is that with their emergent digital, rhetorical, and coalitional actions, communities in Nepal and Puerto Rico formed their own stronger transnational networks with a combination of their own local (non-Western and decolonial) practices of knowledge-making. This article argues that there is an urgency in the field of technical and professional communication (TPC) to pay attention to how non-Western/decolonial rhetorical knowledge, traditions, and global TPC help to address social injustices as the world's most vulnerable populations continuously suffer through environmental and other crises (Ding, 2014; Gonzales, forthcoming). Additionally, this article contributes to the conversation in TPC that highlights the roles of technical communicators in performing civic responsibility and recognize, reveal, reject, and replace injustices, systems of oppressions with an intersectional, coalition led practices (Walton, Moore, & Jones, 2019).

In the following section of the article, I begin my discussion of the theoretical framework of transnational assemblages, then I will share my research methods, followed by a discussion of results, and I will conclude the article with implications.

THEORIZING TRANSNATIONAL ASSEMBLAGES

The concept of an assemblage in Western philosophy first appeared in the work of theorists Deleuze and Guattari (1987) in their book *A Thousand Plateaus*. In contrast, the concept of the universe as an always becoming, expanding, collapsing, re-evolving assemblage was articulated in Eastern philosophy thousands of years ago by Lord Krishna in the ancient Hindu scripture of *Bhagavad Geeta* (Swami, 1968). According to Deleuze and Guattari (1987), an assemblage establishes connections among multiplicities and is always in the process of becoming. An assemblage has no beginning nor end (like Lord Krishna's argument regarding the characteristics of the universe) and is in the process of becoming when it establishes its existence by interacting with other beings—both human and non-human. Though these scholars do not acknowledge the concept of assemblage being this old, the theoretical grounding of this theory is very similar to what was articulated in ancient Hindu text. The argument of Deleuze and Guattari additionally does not talk about how this process of becoming spans multiple spaces, countries, cultures, and human and non-human actors across the globe. DeLanda (2016) defines an assemblage as, "a multiplicity, which is made up of heterogenous terms and which establishes liaisons, relations between them, across ages, sexes and reigns – different natures" (p. 1). This definition of an assemblage invites rethinking the idea of heterogeneity from the cultural and contextual backgrounds where the assemblages are formed. In the case of disasters, multiple communities

perform actions via digital platforms and that help in establishing the assemblage's identity as being transnational. In the current technological context, these assemblages can either be physical or digital. An assemblage is therefore a becoming and is like the universe that brings various human and non-human elements together from multiple geographical, social, cultural spaces (Slack & Wise, 2005).

To explore the formation of the coalitions that conducted transnational disaster response, I am extending the theoretical framework of the assemblage theory because the Western theoretical framework wouldn't be applicable to understand transnational contexts. Bringing in the non-Western and decolonial perspective will extend the theory to take analytical approaches which are contextual to Nepal and/or Puerto Rico and will allow for an examination of inequality, discrimination, exploitation, and global colonial domination with self-reflexivity and without othering the experiences of the people of these spaces (Agboka, 2014; Haas, 2012; Itchuaqiyaq & Matheson, 2021; Quijano, 2007; Wang, 2013). Hence, I define transnational assemblages in the context of disaster as collectives of people, organizations, or entities, who are connected transnationally via online and offline media and who gather to respond to a certain situation of natural or political crisis by challenging the dominant narratives and practices. Transnational assemblages challenge the dominant narrative by questioning the governmental facts and information regarding disaster response, and by creating their own disaster response mechanisms and practices without waiting for the government to support the communities in need. These transnational assemblages are complex because, within these assemblages, transcultural and transdisciplinary interactions occur to address the various social inequities and injustices brought by a disaster. Furthermore, transnational assemblages are transcultural in their

embodiment. The increasing number of communities of flexible citizens create multiple contact zones and embody hybrid cultures in both online and offline spaces to form transcultural communities by moving beyond national, geographical, cultural, or social boundaries (Ding, 2014; Wang, 2020).

In bringing various elements together, transnational assemblages create a variety of points like a rhizome (Deleuze & Guttarai, 1987) that help in creating networks to perform "transnational collective action which is coordinated by international campaigns on the part of networks of activists against international actors, other states, or international institutions" (Schell, 2013, p. 599). Transnational assemblages therefore bring transnational communities together to coordinate relief, rescue, and community-based campaigns during a disaster by thriving in online spaces, such as on Facebook or Twitter, creating a territory, a term called "territorialization." Territorialization refers

> not only to the determination of spatial boundaries of a whole—as in the territory of the community, city, or nation-state—but also to the degree to which an assemblage's parts are drawn from a homogenous repertoire or the degree to which an assemblage homogenizes its own component. (DeLanda, 2016, p. 22)

As a transnational assemblage emerges and evolves, some of its links may break or even shatter at a given spot. Within those broken spaces, the rhizome will mend by rebuilding one of its old lines, or it will form new lines by returning to the state that existed before the creation of that part of the assemblage (DeLanda, 2016; Deleuze & Guattari, 1987). This process is called deterritorialization, which may signal the end of networked partnerships or geographical

dispersion, or it may signal the elimination of some rituals, which further invites the invention of newer forms of communal participation (DeLanda, 2016).

Transnational assemblages are motivated by affect and the cultural, social, and global contexts mediating the way communities interact with one another and how people outside of these communities support each other. The 17th-century philosopher Spinoza defines affect as "states of mind and body that include, but also extend beyond, just emotions and feelings to describe driving forces that are suggestive of tendencies to act in a variety of ways, or to not act at all" (Papacharissi, 2015, p. 12). Affect helps human beings act, react, or not act in certain situations. Massumi (2002) characterizes affect by recognizing the importance of intensity. Events and incidents, as well as disasters, create spontaneous moments where situations are intense and draw global attention. In transnational assemblages, affect helps bodies react or act to form new ties or relationships across the globe or new habits and rituals via intercultural understanding and communications, disrupting the established norms and thus leading towards territorialization. Affect, as an element of transnational assemblages, could be the perception of a situation that leads to a modification of the body, which then triggers the emotion of consciousness of the mind (Deleuze & Guattarai, 1987 as cited in Papacharissi, 2015). For example, in the context of this study various participants mentioned that the physical experience of disaster manifested into emotional reactions such as a) sharing of the photos, videos, and writings online and b) creating motivation and desire to support the communities in need. Thus, the conceptual framing of transnational assemblages helps in understanding how transcultural communities from transnational spaces participate in responding to catastrophic disasters.

RESEARCH DESIGN AND METHODOLOGY:

To understand the making of these complex transnational assemblages and their knowledge-making practices, I used a mixed-methods research approach of narrative inquiry and SNA. The combination of these qualitative and quantitative approaches helped me develop a deeper and more thoughtful investigation of two complex situations and answer the following research questions:

- How did transnational assemblages emerge during the April 2015 Nepal earthquake and Hurricane Maria in Puerto Rico to advocate for and help those who were oppressed and marginalized?
- What are the non-Western and decolonial practices of knowledge-making and communication that can contribute towards social justice in implementing crisis communications during a disaster?

This mixed-methods approach catered to my major aim of gaining an in-depth understanding of human experiences by studying both narratives and the larger networks of human interaction within social media. SNA showcases the attention these two disasters earned from around the globe. How much this attention helped in action cannot be ascertained, which is where narrative inquiry helps. Through narrative inquiry, I gathered the stories of participants who brought attention to Nepal and Puerto Rico on social media and translated that attention into organizing disaster response. In this section, I elaborate on the data collection and analysis process for both the narrative inquiry as well as the SNA.

Narrative Inquiry

To conduct my qualitative research (IRB #1811021345), I followed the narrative inquiry approach. I chose this method as my research questions demanded the in-depth stories and the lived experiences of the participants. I recruited participants who have direct embodied experiences managing the two disasters; hence, narrative inquiry became a way for me to study and honor the participants' lives and experiences as a source of important knowledge and understanding (Clandinin, 2013). By gathering the experiences of ordinary people who have been actively involved in relief and rescue during these two catastrophic events, I aimed at not only highlighting individual experiences, but also at exploring the social, cultural, and familial narratives within which individuals' experiences are constituted, shaped, expressed, and enacted (Jones, 2017). Additionally, the participants are involved in the meaning-making process of data analysis (Jones, 2017). Using a narrative inquiry approach allowed my participants and myself to create a safe space to have conversations about our lived experiences.

I interviewed a total of 28 participants; 14 of which were engaged in responding to the Nepal Earthquake and the other 14 were engaged in responding to Hurricane Maria. The participants (14 male and 14 female) represented various communities, organizations, and agencies. Participants included activists, journalists, non-governmental organization (NGO) workers, government representatives, students, teachers, members of a diaspora, and online activists. The interviews were conducted in Nepal and Puerto Rico and online via Skype. Though I had a list of questions [Link to Supplementary File 1 here], the interview was more conversational. The interviews lasted between 45-90 minutes and were conducted in Nepali, English, and Spanish. The interviews were analyzed using NVivo, a qualitative data analysis

application that allows for scientific coding of interview-based research by providing a space to organize, store, and retrieve the qualitative data. I conducted multiple levels of coding with a grounded approach. Following this grounded approach, the coding for interviews from Nepal and Puerto Rico during the first two levels of coding was conducted separately. During the third level of coding, the emergent codes were combined under four different categories defined as:

- Motivations of affective response: an immediate spontaneous action of gearing up to save the lives of people by expressing motivation and urgency without waiting for any formal entities
- Crisis communications and actions disrupting the established norms: communications during a crisis using data, information, and assessment by an individual or an organization that disrupts the established norms and protocols and that transnationally distribute work
- Formation of transnational assemblages: a group of people, organizations, or entities who are transnationally connected via various digital platforms and who are motivated to respond to a certain situation of political or natural crisis and address social inequalities by organizing a collaborative work effort
- The role of technology: technologies used to respond to disaster, especially social media platforms such as Twitter, Facebook, Instagram, WhatsApp, and GoFundMe, or technologies created to address disaster response

These emerged categories help to answer my research questions that are looking at the role of transnational assemblages, the role of technology in helping the formation of these assemblages, and crisis communication for social justice.

Social Network Analysis

For quantitative research, I used SNA to study the formation and mobilization of networks among users from various countries on Twitter during the two disasters. SNA uses graphs and visualizations of networks to understand and analyze the social phenomena (Borgatti & Everett, 1997; Wasserman & Faust, 1994). SNA typically determines the presence and degree of connectedness among actors in terms of a variety of relationships such as information, resource sharing, and emotional support (Goswami et al., 2018, p. 5). As Frith (2014) argues, SNA can help in conceptualizing the social networks in which technical communicators operate and help researchers understand multiple audiences, their connections, and the opportunities such connections yield to. SNA in TPC can help in theorizing how information flows within a network, who the principal actors in the network are, and how the network could be mobilized in the dissemination of information. SNA allowed me to demonstrate transnational networks, visualize the networks of global users and countries, compare and contrast the strengths of such networks during both disasters, and, finally, understand how the patterns of relations have affected disaster response in both contexts. Additionally, this quantitative analysis of the networks will help in understanding the transnational discourse around how a disaster amplifies the social justice goals of the activists and disaster responders on the ground.

Twitter provided representative public discourse data during these two events from around the world in the form of geo-location tags and provided a corpus of data in the form of tweets. To conduct the analysis, I purchased the Twitter data by choosing Historical Power Track purchase because it would generate a dataset containing tweets that were tweeted within 10-minute intervals (refer to Moffit, 2017). From this method, one can limit their dataset to the specific things they are looking for according to dates, geographical spaces, hashtags, and keywords. Table 1 displays the choices I have made when purchasing the data. The start date for each dataset was the day that the event happened, and the end date was the 8th day after the event. The total number of tweets purchased was 36 million tweets from Nepal and 20 million tweets from Puerto Rico. The corpus (in JavaScript Object Notation) of the data consisted of a user's identification, screen name, location, protection (if their tweets are protected), verification (whether an account of public interest is authentic), followers, friends, listed (whether users are listed in certain groups), favorites, status, reply, retweet (a re-posting of a tweet), favorite (which functions as a like button), language, and timestamp of when a tweet was posted.

[Insert Table 1 here]

For this analysis, out of the 50 million purchased tweets, users who were not geo-tagged (geographic location/coordinates of a mobile device) were removed from my consideration. Hence, for my analysis, I used 2,636,216 tweets from Nepal and 2,089,701 tweets from Puerto Rico. Within this corpus, there were 1,074,007 total users for the Nepal earthquake, and 889,670 users for Hurricane Maria. I regarded the actors' locations as a node and the actors' replies and retweets as their connections. I have analyzed only the tweets, replies, and retweets in the corpus of data, though I have not separated the replies and retweets in my data because I considered

both to be actions that describe a connection. To simplify this concept, all of the actors whose geo-location signaled Nepal were a "node" for Nepal; these nodes are connected to other nodes via replies and retweets.

Combining the qualitative and quantitative research methods helped me gain different perspectives about how transnational assemblages function on a people-to-people level and how they function on societal, cultural, and global levels. In this article, I am focusing on two major results: a) the formation of transnational assemblages and their distributed work and crisis communication for social justice and b) how affective reactions and motivations help these transnational assemblages to pursue social justice.

SOCIAL JUSTICE ACTIONS BY TRANSNATIONAL ASSEMBLAGES VIA CRISIS COMMUNICATION AND DISTRIBUTED WORK

Various transnational assemblages formed during both disasters supported the vulnerable communities ignored by the government with innovative crisis communication practices and transnationally distributed work. Formation of these transnational assemblages across the geographical boundaries was supported by varied digital platforms that helped in the creation of networks. The transnational assemblages that operated via non-Western and decolonial ways defined their boundaries based on social justice and maintained them throughout the disaster response. Collectively, the participants stated that they a) reached out to their family, friends, and friends of friends locally and globally; b) developed professional networks via the organizations that they work for; c) established stronger networks through social media platforms like Facebook or Twitter; d) reached out to their respective diaspora networks; and e) expanded

networks by joining or leaving the various disaster relief groups. Networked interactions motivated by social justice goals and flexible, adaptive, unofficial protocols helped in innovative ways in which transnational assemblages functioned. As Arola and Arola (2017) put it, a good assemblage is responsive in addressing the social justice needs of a people by enacting new functions and articulations that arise. During both disasters, the transnational assemblages that emerged across the globe responded to the newer form of injustices that exacerbated the vulnerability of the marginalized populations by creating social justice-oriented actions. These actions were grounded in non-Western and decolonial ways of communications and transnationally distributed work. Spinuzzi (2007) regards distributed work as "the coordinative work that enables sociotechnical networks to hold together and form dense interconnections among and across activities that have traditionally been separated by temporal, spatial, or disciplinary boundaries" (p. 268). Such transnationally distributed work during these disasters implemented social justice actions that included supporting the rural communities ignored by the government and formal disaster responders, collecting accurate data without relying on the government, and conducting disaster response with or without partnering with formal entities.

Social justice actions grounded in non-Western and decolonial philosophies included uplifting communities, helping people in need, and creating alternative spaces for people to voice themselves by forming coalitions. These actions were important aspects of disaster management and crisis communication during these two disasters. Walton, Moore, and Jones (2019) argue, "fundamentally, it is multiply marginalized groups that have demonstrated the need for coalitional action, and their voices and priorities should centrally inform those actions" (p. 134). During the Nepal earthquake and Hurricane Maria, the transnational coalitions challenged the

traditional bureaucratic disaster management and crisis communication. These transnational assemblages move beyond official mechanisms and become a major stakeholder by organizing distributed work transnationally by forming coalitions to conduct disaster response. These assemblages not only helped in communication, information gathering, and dissemination but also supported the work of formal entities like governmental or humanitarian organizations. Moreover, these assemblages also challenged the established systems with their transparency for informational justice to people who were suffering. These assemblages are non-hierarchical and welcoming to anyone who wants to be a part of such a territorialized space (DeLanda, 2016; Marcus & Saka, 2006). They are powerful because the assemblages can challenge the authorities or governments and work towards the larger good of the community. One participant from Puerto Rico shared:

> We're not going to manipulate the information…or make it look better or worse, so somebody gets the money. We are completely transparent…for the people, by the people. We have no agenda. Our only agenda is to give voice to those people that don't have a voice. That's different. I didn't know this, but humanitarian relief is very profitable, extremely profitable.

The participant explained that information gets manipulated when serving one community and ignoring the others. Such manipulation might benefit people who are in power and not people who suffer injustices. Rather than focusing on "I," the participant focuses on "we" and how their work might benefit the larger population by providing informational justice to people by not manipulating information, but by tackling misinformation, and without adhering to any agenda of personal benefit (Arola & Arola, 2017).

The non-Western and decolonial ways of managing crisis and crisis communication were modeled to challenge the governmental norms and regulations and create an alternative plan of action to support the communities which were localized and internationalized (Agboka, 2013). The crisis communication systems created by transnational assemblages embody the context of political uncertainty, corruption in Nepal (Whelpton, 2005), and years of colonial history in Puerto Rico (Ayala César & Bernabe, 2007), and responded to the atrocities of each government by forming various networks and communications. The participants articulated that they had an active role in conducting an alternative crisis communication to curate, share, and validate the information which was influenced by non-Western and decolonial ways (Agboka, 2014; Potts, 2014; Soto Vega, 2020). These active roles allowed the actors to take on positions of prominence, either by initiating, leading, or becoming part of the transnational assemblages. It can be said that "the decentralized communications structure in most social media means that these platforms provide different communicative affordances during disasters" (Murthy & Gross, 2017, p. 357). For example, Nepalis and Puerto Rican people claimed social media space to conduct crisis communications, to bring attention to the ignored spaces and people, and to decentralize the aid by creating an alternative process of disaster aid delivery (Baniya, 2021; Soto Vega, 2019). The public became not only passive receivers of the crisis communication but also active responders, interpreters, and transmitters of information (Coombs & Holladay, 2014). These affordances could consist of interpretations of messages, individual expressions, and criticisms of official organizations, empowering people to perform communications (Ding, 2014; Frost, 2013) and to conduct decolonial activism (Soto Vega, 2019).

These unique, non-Western and decolonial ways of communicating considered the community's needs. Some of the common themes of the non-Western and decolonial ways of communication shared by Nepali and Puerto Rican participants were a) contextualizing the information based on the audience of the messages, b) involving the community and their local knowledge of responding to disasters and curating that information on social media, c) reusing the information created by the official channels and simplifying it by visualizing the data and information, and d) demanding that authorities provide accurate information. Despite their differences, both non-Western and decolonial ways of communications had one purpose: social justice for the marginalized populations who were suffering and ignored in the process of disaster relief. These communication practices helped in organizing distributed work transnationally in both online and offline spaces, across communities, geographies, and time zones. Technology allowed actors to create a networked space to connect, interact, and receive and disseminate information—practices which can be regarded as distributed work (Pigg, 2014; Spinuzzi, 2007). The participants articulated that they worked through multiple systems by collaborating with several actors via communication channels on digital spaces. Pigg (2014) regards this kind of distributed work as "symbolic-analytic work" that often develops over multiple times and spaces that require varied expertise and communication to make the work happen (p. 75). Such expertise includes networking; accessing information; and managing volunteers, relief, and donations. Puerto Rican participants involved in developing mobile-based applications shared how the app helped in collecting data during Hurricane Maria: We developed these apps to collect the information. When a person that is collecting information via app is in an area with internet, like Burger King or whatever, it goes into our cloud and it gets categorized in a database, and we can make it public through maps through Excel tables.

Likewise, a Nepali participant shared:

> We created a website: on one side we posted people's need and on the other we posted supply (volunteers, relief materials) such that we could match demand and supply. Also, we shared the website via social media so that people could post the needs of people. Later, we also added our phone numbers.

These narratives provide two different technological interventions developed for people to crowdsource information and distribute the work that helped in data collection that matched demand and supply during the disasters. These platforms helped in management and distribution of the disaster relief via the networks of disaster response. Due to a lack of proper disaster management by the governments in both cases (Hall et al., 2017; Lloréns, 2018; Soto Vega, 2020), there was a gap in quick response. Hence, this gap in disaster management was fulfilled by the transnational assemblages. Participants shared that they were collaborating via Google Docs with people globally, they developed applications, and open-sourced maps for updating data and information, they fundraised via global platforms like GoFundMe, and they created their own accountability mechanism for validating data and information by collaborating with volunteers, activists, and grassroots-based organizations. These activities meant that the actors were often successful because of their quick collaborations via various platforms and their clear communications during chaotic situations. The participants in such assemblages, as Potts (2014) describes, "now work across multiple systems, balancing activities on multiple technologies, connecting to various applications and websites, and accessing spaces through a plethora of devices" (p. 20). These transnational assemblages thrive on coordinated or distributed work, as such work during a disaster enables a variety of interconnections among and across activities that

have been separated by temporal, spatial, or disciplinary boundaries (Pigg, 2014; Spinuzzi, 2007). The formation of transnational assemblages helped in dissolving or lessening the pre-existing boundaries by creating coalitions across the globe respond to the disaster by organizing distributed disaster response to ensure social justice (Walton et al., 2019).

AFFECTIVE REACTIONS AND MOTIVATIONS IN ENSURING SOCIAL JUSTICE IN DISASTER RESPONSE

"I was like, I have to do something."—participant from Puerto Rico.

Both disasters experienced an upsurge of *swa-byabasthapan* and *autogestión*—loosely translated as self-management in Nepali and Spanish respectively. The affective reactions motivated by non-Western and decolonial rhetorical traditions that aimed at helping communities supported the formation of transnational assemblages. For amplifying non-Western and decolonial rhetoric during disaster, the social media spaces served as "emotional incubators" that allow affective reactions, feelings, and representations to circulate, corroborated and unchallenged, and gain valence among members before they permeate through various networks locally and internationally (Yam, 2016, p. 417). During disasters, social media platforms like Twitter helped in forming various affective networks transnationally where the local and global participation intersected with formal and informal disaster response. Papacharissi (2015) suggests that people respond affectively during a crisis as it becomes a common experience for many people who share stories in both online and offline environments, forming stronger personal bonds and connections to their community. These communities formed via affective emotions, motivations, and reactions against the formal centralized disaster response, and these communities worked

with the goal of conducting disaster relief activities by forming coalitions and addressing social injustices. Soto Vega (2019) argues that Puerto Rican people and people in the diaspora responded to the needs of fellow Puerto Rican people through *autogestión*, a Puerto Rican concept defined as a coalitional counter-praxis of survival. This coalitional counter-praxis helped in supporting communities without waiting for the government or following the official protocol of disaster response, which is often delayed due to bureaucratic paperwork. In Nepal, *swa-byabasthapan* is a similar concept through which various Nepalis people in Nepal and abroad responded to the disaster by forming their own coalitions and performing disaster response. Both survival praxes are prime examples of non-Western and decolonial ways of disaster response that motivated affective reactions globally and motivated in forming the transcultural coalitions of Nepali and Puerto Rican diaspora and those who care about these communities.

The non-Western and decolonial ways reflect in contributing and serving the community by performing spontaneous actions of saving lives by launching disaster response targeting the most needy, marginalized, and vulnerable people. The participants consistently stated that they a) felt like they had to do something urgently for curating information and communicating it to the people, b) felt responsible towards the community, c) felt an urge to seek help both locally and globally, and d) felt motivated to do coalitional activism both online and offline. The participants also expressed that they felt a variety of emotions such as love and empathy towards their community, as well as anger towards their governments' lack of support, which prompted them to form or be part of transnational assemblages to respond to the disasters. Within the participants' narratives, the distrust of the government was a common sentiment that helped people to self-manage and form transnational assemblages to organize and perform coalitional

actions for disaster management. The self-management of working together to mitigate challenges of disasters was motivated by local non-Western and decolonial values and beliefs. For example, a Puerto Rican participant recounted:

> We told everybody, "Okay, let's go back to our homes, let's sleep through the night, cool it down …we're going to start cleaning the road, because we can't wait for the government." It was so devastating that if we would have waited for the government party, we wouldn't be leaving our homes.

Similarly, a Nepali participant recounted:

> If a man is trapped in the nearby, people did not wait for the government, they immediately went there and pulled him out to save his life whether they were experts or not.

The above narratives recognize a parallel that people are self-organizing and performing collaborative actions to support the community and providing immediate relief to save lives, thus showcasing affective emotions. As many participants recounted, coming together for the community is part of their local culture, the roots of which are grounded in non-Western and decolonial values of empathy, care, and togetherness. During a disaster, they emerged as transnational assemblages. Exterior to these emerging transnational assemblages were governments, NGOs, humanitarian organizations, and the media having pre-determined protocols. The limitations of those protocols meant their responses to crises were delayed. In contrast, newer transnational assemblages like relief or volunteer groups did not have official protocols, thus were more flexible in organizing and evolving as the crisis unfolded. These actions were motivated by sentiments of *swa-byabasthapan* and *autogestión,* which "reside in

fluidity presented by the convergence of actual and virtual, as it is aided by the confluent weave of reality and fantasy presented as technology, suggests what is and what could be made possible" (Papacharissi, 2015, p. 15). In the chaos of a disaster, actors employ social web tools to communicate and validate information, using the available tools in new ways to make connections (Potts, 2014).

During both disasters, the actors used social media in ways that reflected the Eastern philosophical traditions of supporting the needy as well as decolonial methods of disrupting the colonial practices. While transnational assemblages claim space on various online and offline spaces, they also expand upon these spaces. In this process of expansion, some interactions (or a lack of interaction) occasionally took attention away from one subject of the conversation to focus attention elsewhere, leading the assemblage to destabilize (DeLanda, 2016). Some participants shared that they joined a relief group to volunteer; however, they soon saw that they could do similar work by focusing on communities that had not yet received relief. Hence, they formed their own smaller transnational assemblages by reaching out to the community beyond borders and organized relief for these missed communities. In this way, the participants left the existing assemblage to expand their disaster relief work or to be part of something similar. As DeLanda (2016) argues, assemblages are autonomous, which means they can be "detached from one whole and plugged into another one, entering into new interactions" (p. 20). These detachments lead to a deterritorializing within the larger assemblage, allowing the newly formed assemblage to join another assemblage. In disaster relief work, the processes of territorializing and deterritorializing continue as people move from one assemblage to others or create their

workspaces as determined by the needs of their communities and the requirements of the moment.

The response to these disasters by various transnational assemblages was non-traditional and has often been described as something that neither Nepal nor Puerto Rico had ever experienced before. The affective reactions and motivations showcase the rhetorical agencies displayed by the participants (Baniya, 2020; Jones, 2017). This rhetorical agency included not waiting for the government before people began helping each other, joining or forming groups to self-organize rescue and relief work, motivating themselves to save lives and support people in need, and creating opportunities for outsiders to donate by using various technologies. A participant from Puerto Rico shared:

> Well, you're not going to believe this, but at the beginning tarps, the first tarps arrived from Australia. I have a Serbian friend who lives in Australia, and she was the first person to react and send tarps. So, we received tarps from everywhere, from the U.S., and Mexico, from Spain, from the nearby islands.

Similarly, a participant from Nepal shared:

> We realized in less than one day that the issue was not money at that time because the Nepali people from abroad and foreigners who loved Nepal were raising funds within two or three days.

These two narratives demonstrate that the responders of these disasters were not just in Nepal or Puerto Rico; they were from all around the world. The actors' responses sometimes reflected an indirect involvement, such as a retweet, or a direct involvement, such as organizing

relief and rescue operations. Such transnational assemblages are formed with spontaneous affective actions motivating people to act during a disaster while developing a sense of commitment toward the community and the people who are suffering. These spontaneous, immediate, or affective motivations, as well as the sense of commitment motivated by non-Western and decolonial philosophy, led all the interviewed participants to create their volunteer and relief networks, join already established assemblages, or work in the online or digital space by forging relationships among numerous other online participants.

Meanwhile, the quantitative data also showcase that the transnational assemblages that formed during these disasters were supported by social media in the form of information, pictures, hashtags, or the formation of online communities. The interactions of people on Twitter during the two disasters transformed the Twittersphere into an information-providing platform that allowed easy access not only to people, but also to governments, volunteers, different aid agencies, and organizations. The results from SNA also suggest there was global discourse surrounding these two disasters by the location people tweeted from, retweeted using various hashtags. Figures 1 and 2 show a visualization among the users in various countries who engaged in replying to tweets or retweeting regarding the disasters. The SNA of the Nepal earthquake in Figure 1 represents the network formation and demonstrates that there were three prominent networks: Europe-Asia-North America, North America-Asia-Oceania, and Oceania-Europe-Asia. The strongest of these three networks was Europe-Asia-North America. This pattern means that there was a higher frequency of replies and retweets among this network. Likewise, the other two major networks (North America-Asia-Oceania and Oceania-Europe-Asia) revealed stronger relationships based on replies and retweets. Other ties were weaker among various African and

Latin American countries. This strong network of Europe-Asia-North America was likely the result of three influences: a) the investment of European, Australian, and U.S. governments as well as NGOs in Nepal; b) the presence of Nepali populations in these continents; and c) various trade and economic relationships within the countries and multinational companies.

[Insert: Figure 1 Here]

[Insert Figure 2 Here]

Figure 2 demonstrates that in Puerto Rico the networks among the continents were weaker and received less attention from around the globe. The strongest network was between Europe and the U.S., and we can also recognize a network between the U.S. and South America. There is a weaker network among fewer countries in Asia and the U.S. Nevertheless, the U.S. seemed to be the prominent actor during Hurricane Maria. Medium-strength networks developed between the U.S. and Europe; smaller networks developed between the U.S. and Asia, the U.S. and Africa, and the U.S. and Australia. The U.S. was central to the crisis response network. The presence of the Puerto Rican diaspora in the U.S. could be the reason for the higher number of users and tweets coming from the U.S. Another reason that may account for why there was comparatively less worldwide response to Hurricane Maria on Twitter may include the fact that Puerto Rico is a U.S. territory, which may have caused a lack of attention from international media. Other possibilities include the presence of international humanitarian organizations in Puerto Rico, the U.S. protocol that restricted various non-U.S. agencies from providing support to Puerto Rican communities, and the lack of access to the Internet and electricity in the days following Hurricane Maria.

Comparing the visualizations created from millions of tweets, it is clear that the Nepal earthquake received more visibility and attention on Twitter than Hurricane Maria did. Even though there is less visibility, there is some discourse and interaction that was going on around the globe about these two disasters to locate or validate data, gather, and disseminate information, and create or share knowledge. Potts (2014) describes data, information, and knowledge as, "data [that] can appear in networks as words, phrases, images, symbols, and so on; information is validated data, and knowledge is the final stage of content. Knowledge is information that is shared within the network" (p. 24). In sharing this knowledge within the network on Twitter, the participants in my study, as well as people on Twitter, emerged as seekers as well as providers of knowledge, and Twitter assisted people around the world in responding to these two disasters. Twitter also helped in the formation of transnational assemblages where people could come together, share their empathy, and organize relief-oriented actions.

IMPLICATIONS: SOCIAL JUSTICE IN DISASTER MANAGEMENT

Catastrophic events establish a rhetorical situation which is contextual to that place, time, and people. People respond to such situations affectively by sharing their lived experiences of newer situations by using varied modes of communication. Often, disasters create newer forms of socially unjust situations. For example, one community getting more relief because of their "visibility" while others getting ignored because of their "invisibility" constitutes an unjust situation (Cedillo, 2020, p. 203). To tackle these kinds of situations, transnational assemblages during the two analyzed disasters emerged as a powerful force that challenged the established

systems, norms, and policies and moved beyond geographies to support the most vulnerable populations. By grounding in non-Western and decolonial values, the participants, motivated via affective reactions, helped in recognizing the injustices, revealing those injustices on social media platforms, and calling people to take action to reject such injustices. The participants also collaborated transnationally to form coalitions to tackle such injustices (Walton et al., 2019). In both the Nepal earthquake and Hurricane Maria, the communications and distributed work within various transnational assemblages during the crisis helped in forming alliances or coalitions that became a larger assemblage (e.g., a social justice movement) that created social justice goals for disaster response (DeLanda, 2016). These goals were achieved by implementing a disaster response informed via a) non-Western and decolonial practices and b) affective dimensions of the experiences of marginalized and vulnerable populations living through social injustices. These practices of affectively helping communities spontaneously allowed the participants to create transnational connections that further helped communities in need. Hence, by understanding the work of the transnational assemblages' crisis communication and distributed work practices, scholars, practitioners, policy makers, and TPC teachers can work towards developing stronger mechanisms of understanding people's vulnerabilities during a disaster. Moreover, how communication during crisis has shaped affective dimensions of human's lived experiences during crisis will help in mitigating the challenges of the disaster via social justice-oriented crisis communication as well as distributed work.

TPC researchers can further explore the ways of strengthening crisis communication mechanisms for a successful disaster response in non-Western and decolonial contexts: ones that foreground the role of the community and disaster responders, and ones that support social

justice by voicing marginalized and vulnerable communities. As mentioned at the beginning of this article, there is an urgency in the field of TPC to expand research to understand global rhetorical traditions and communication practices, especially from non-Western/decolonial points of view. The global community is currently being challenged by multiple disasters (including a global pandemic) and like Ding (2014) says, TPC researchers and practitioners have a civic responsibility to support communities.

Moreover, this research helps practitioners and disaster responders who work in crisis to work towards strengthening crisis communication in a way that attempts to end social injustices during a crisis and adapts to the cultural context of a particular space. TPC practitioners are powerful mediators of information and communication during any kind of crisis. My research shows that disaster researchers and crisis communicators can work together to collectively design a social-justice oriented disaster response by understanding the values of the transnational assemblages. Various transnational assemblages perform crisis communication via distributed work to ensure social justice, which helps contextualize information based on the local context. Additionally, the affective responses of the local community during disasters should be highly considered while communicating crisis and while researching crisis, the shared lived experiences, values, and accounts of suffering should be considered. Spaces like social media platforms play a prominent role for disaster response, a role that should be enhanced with the lessons from past disasters. Hence, practitioners and researchers can work together to develop a mechanism to work with multiple transnational assemblages to tackle the consequences of a disaster.

Furthermore, various actors within the disaster emerge organically from within their societies; hence, our own students sitting in our TPC classes may become key actors who respond to future disasters. As disaster concerns everyone and could affect anyone, preparing students to communicate ethically, transparently, and quickly during a disaster can also contribute to the disaster response. An aspect of crisis or risk communication could be incorporated into service courses, such as business communication or technical and professional writing, that serve various departments in universities. In these courses, instructors who teach assignments like research reports or white papers could incorporate researching a specific disaster and the communication during that crisis. This research would allow students to think of the varieties of communication practices and technologies that were used to address the disaster.

Finally, the major findings suggest that the formation of transnational assemblages during a disaster is inevitable, and those assemblages help in disaster recovery. Lastly, I conclude that a) the work of actors who emerge during a disaster is dynamic and powerful. Identifying those actors and their assemblages might help in faster disaster recovery, and b) catastrophic local disasters become global concerns as various transnational assemblages emerge around the globe to address the local disaster.

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Appendix 1: INTERVIEW QUESTIONS

1. Where were you during the earthquake/hurricane?
2. Can you tell me what technology you used to contact your family or friends after the earthquake/hurricane?
3. After the earthquake/hurricane, who (organizations, government, volunteers, family members abroad, etc.) came to support you, and how long did it take you to get any help?
4. Have you been involved in working voluntarily in your community to do relief and rescue works on your own, or via any organization or network during or after earthquake/hurricane?
5. If you were involved, could you tell me what you did exactly during the disaster to work, communicate, and support your community?
6. What methods of communication did you use to create connection in the community that you were serving?
7. Immediately after the earthquake/hurricane, how did you try to connect with other government officials, community members, media, health workers, or any other organizations?
8. How do you feel about the help you received and the support you provided to the community? Was it appropriate and effective?
9. In the long term, what groups or organizations have stayed connected with you, and which ones have fallen away?
10. Did you participate in any interpersonal networks during and after the disaster? For example: Facebook, Twitter, or any networks within or outside your community.

Variations for the Officials:

- How did your organization network with other organizations?
- How did the affected people and their families communicate with you?
- How did you reach out to the community/people who were affected?
- Is your organization still part of the reconstruction efforts in these communities? What are the specific programs that you are launching?

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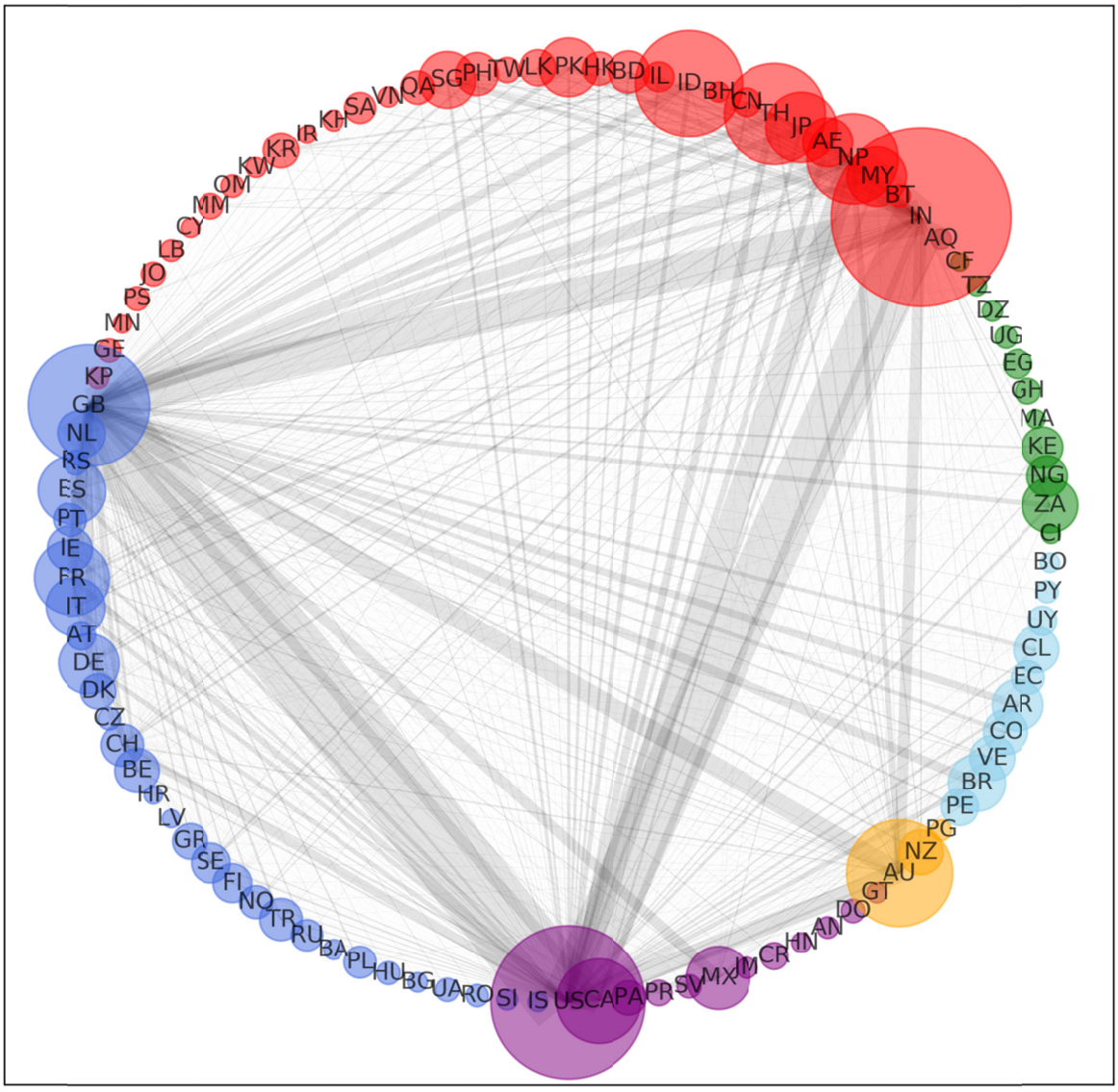
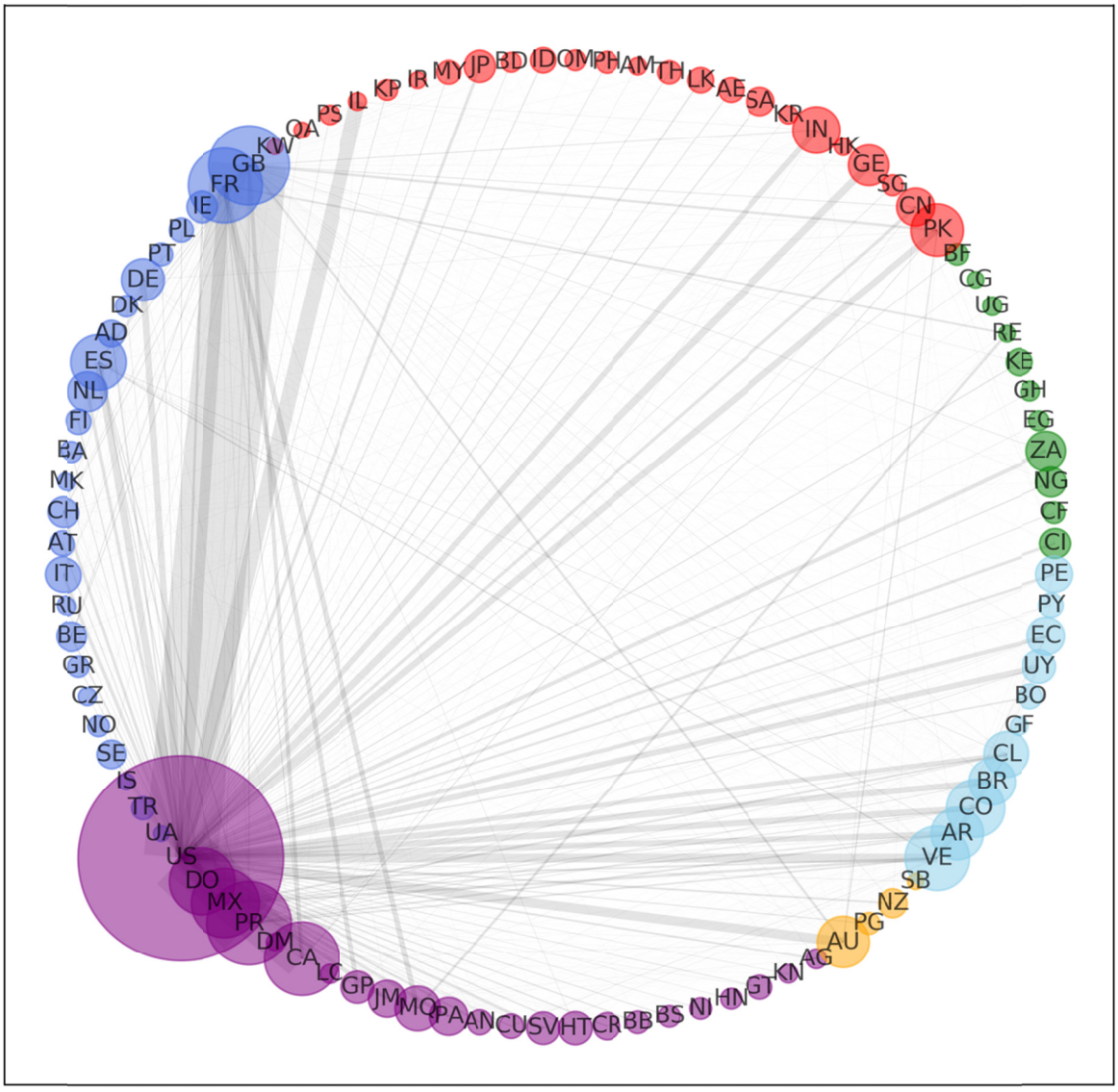
Table 1. Twitter Data Purchase

Location	Hashtags	Time frame	Regions
Nepal	#NepalEarthquake #earthquake #QuakeNepal #quakeNepal #earthquakenepal #EarthquakeNepal #NepalEarthquakeRelief #NepalQuakeRelief #Pray4Nepal #prayfornepal #NepalQuake #NepalRelief #NepalRises	4/24/15-5/1/15	Nepal, Asia, Europe, US, Latin America, Australia
Puerto Rico	#Hurricane #HurricaneMaria #Relief #PuertoRico #Boricua #Relief #StayStrong #ReliefEfforts #Help #PuertoRicoStrong #PuertoRicoRelief #ClimateChange #BastaYa!, #UnitedForPuertoRico #PuertoRicoWillRise YoNoMeQuito, #EchaPa'Lante, #SePuede, #Pa'Arriba, #VamosPa'Encima, #Maria #PuertoRicoLoHaceMejor, #HuracanMaria, #UnidosPorPuertoRico, #PuertoRicoStrong #Comfort4PuertoRico #LatinaInfluencersCoalition	Sept 17, 2017 – Sep 24, 2017	Puerto Rico, USA

This table describes how I purchased the Twitter Data based on what kinds of hastags as well as time frame and regions.


SG PH TW LK PK HK BD IL ID BH CN TH JP AE NP MY BT IN AQ CF TZ DZ UG EG GH MA KE NG ZA CI BO PY UY CL EC AR CO VE BR PE PG NZ AU GT DO AN HN CR JM MX SV PR PA US CA IS SI RO UA BG HU PL BA RU TR NO FI SE GR LV HR BE CH CZ DK DE AT IT FR IE PT ES RS NL GB KP GE MN PS JO LB CY MM OM KW KR IR KH SA VN QA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