

ABSTRACT

Title of Dissertation: BUILDING ONLINE COMMUNITIES AFTER CRISES:
TWO CASE STUDIES

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Building community in a crisis situation offers individuals a chance to not just survive, but potentially thrive through a disaster. Communities offer a unique benefit in a crisis by expanding beyond the geographic to include virtual spaces, particularly when other media are not available for survivors. This project applies theoretical frameworks from both complexity theory and the community of practice model to explore how individuals form online communities after crises, how those communities impact crisis recovery, and how the model can be used to understand communities' crisis communication.

This project used a qualitative case study method, including content analysis of two communities that formed online after two crises, and interviews with nine members, including the founder, of one of the communities. The first case is the Jersey Shore Hurricane News Facebook page, formed during Hurricane Sandy in October 2012. The second case looks at a hashtag-based (#batman and #shooting) community on Twitter after the shooting at a Colorado movie theater in July 2012.

The results show that instead of a typical one-to-many communication model and organizational focus, utilizing a community of practice allows for both a one-to-one model and a consequent focus on affected individuals. The community of practice model accommodates findings which suggest that location is important in building community, a need for adapting information needs to the community, and the acceptance of multiple relationship types. A new, alternate final dimension of communities of practice, continuation, is suggested and exemplified.

This project argues for developing these online communities prior to a crisis. There are also specific suggestions for tools within technology that would be most useful to crisis-based communities of practice, and both benefits and drawbacks to the platforms studied. Practically, social media platform designers need to spend time thinking through how people connect during a crisis, and to make it easier for them to get the information they need quickly. In showcasing how to integrate social media, crisis communication, and a community-based model, this dissertation offers theoretical and practical suggestions for altering and improving current understandings of the best way to aid individual crisis response and recovery.

BUILDING ONLINE COMMUNITIES AFTER CRISES:
TWO CASE STUDIES

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Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
2014

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Acknowledgements

This dissertation represents a lot of time and effort on my part, but there is no way I could have accomplished this much without the help and support of a lot of people. First, thank you to my dissertation committee, those individuals who took significant time and effort to help me mold this project into something fabulous. Dr. Leah Waks helped me think through every sentence, and supported the owning of my choices. Dr. Linda Aldoory continually opened my mind to new ways to think about my participants, the impact I would have on them, and the impact they would have on me. Dr. Erich Sommerfeldt walked into my prospectus defense with multiple pages of typed and highlighted notes on things I should be thinking about; his thoroughness and dedication to my growth as a scholar was a little scary at the time, but morphed into an inspiration and a comfort. Dr. Elizabeth Toth is a great role model for how to be an excellent scholar, boundless advocate for what you believe in, and really nice human being, all at the same time, and I learned an immense amount from watching her work.

Thank you to Dr. Brooke Liu, who, as my advisor and committee chair, has guided me through every step of the graduate school process with clarity and support and email subject lines that broadcast how she felt about my work so I would not have to hold my breath while reading her edits. Every time I had a question or something to discuss over the last four years (which was often), she was there with an answer, or a suggestion, or another way to think about a problem so it did not seem like so much of a problem anymore. Her guidance and support have made me a much better scholar than I ever imagined.

Thank you to the people who shared the halls of Skinner with me over the last four years. My cohort was small but mighty, and there's no other group I'd rather have started this adventure with than Tom Campbell, Steve Cohen, Davey Connor, Kelly Madden Daily, and Abby Seiler, even if they did all leave before I was ready. To the great group of graduate students who helped me learn how to navigate this strange new world, who told me jokes in the computer lab, who high-fived me in the hallway, and who brought a broader variety of experiences and ideas to our discussions both in class and out than I ever could have imagined, thanks for pushing me to really understand how to best mix smarts and stamina without losing my sense of self. Abbey Levenshus and Beth Sundstrom modeled excellent scholarship and excellent friendship, and I'll continue to look up to them for the rest of my career. Rowena Briones, Julia Daisy Fraustino, and Stephanie Madden are my friends, my writing partners, my silent tea drinkers, and my cheerleaders. We never write research questions when we should, but I think that's part of our charm.

The lesson that you should build a life that makes you happy is an important one, and I have Skippy Rowe and Agatha Rule, my friends from the same place but different times, to thank for reminding me of its simplicity and truth over and over.

*Oh, the comfort—the inexpressible comfort of feeling safe with a person—having neither to weigh thoughts nor measure words, but pouring them all right out, just as they are, chaff and grain together, certain that a faithful hand will take and sift them, keep what is worth keeping, and then with the breath of kindness blow the rest away. —Dinah M. M. Craik, *A Life for a Life**

I've thought, said, and done a lot of ridiculous things since I was twelve or thirteen, but Chris Bonebreak Jackson and Kelly Summe Johnson have always been my safest spaces and most faithful hands. We joke that we can't stop being friends because we have too much dirt on one another, but really, I can't stop being their homey g because my life wouldn't make sense without them in it. Their husbands, Rob and Jeff, and their children, Scottie, Andrew, and Charles, round out the beauty that is friends who are family.

My family is a constant source of support and love and encouragement, even if half the time they have no idea what it is I actually do. My parents, Gary and Diane Janoske, instilled a respect for hard work and dedication early on. I might have cried doing math homework, or going to softball practice, or about the general unfairness of it all in the sewing room, but I learned how to keep my commitments and how to be part of a team and how to work at something until I figured it out, and those things have never steered me wrong. Their unwavering faith in me is an unending comfort. My siblings, Brad, Sarah, and Emily, and their partners Stephanie, Chris, and Cole, might joke and call me Lead Nerd, but I rarely laugh harder or feel more loved than when I am in a room with them. Thanks for always being there for me, no matter what.

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Chapter 1—Introduction

Creating community means connecting individuals and helping them form relationships with others to create a unified group. Community also means creating trust and understanding, and relationships with emotional bonds, and a support system among those who call themselves part of the community. Often, people think of these types of communities in geographic terms—the local watering hole, or the post office, or a bowling league. In a crisis, communities can be expanded beyond the geographic to include virtual spaces, particularly when other media are not available for crisis survivors and supporters to connect and share information that improves recovery (Procopio & Procopio, 2007). Even Robert Putnam’s (1995a) idea of community as a place where people derive a sense of belonging has changed with the advent of the internet, and the ability for people all over the world to come together thanks to a device they can carry in their pockets.

In Putnam, Feldstein, and Cohen’s (2003) follow-up to Putnam’s original work (*Bowling Alone*, 1995a), called *Better Together*, they note that while they were initially skeptical that the internet could form true community “in terms of actual usage [by individuals]...the more personal type of connection is far more common” online (p. 226). These personal connections online have existed since the beginning of the internet; The Well, one of the first virtual communities, formed in 1984 in California. It was lauded as a cultural institution that helped change the world by bringing people together from across the globe to provide emotional or financial support to other members during personal and interpersonal crises (Hafner, 2001), a precursor to how individuals today use the internet to help themselves through crises on both a personal and community level.

Online communities, then, offer individuals a chance to expand their network and to use the interconnectivity of the internet to provide both informational and emotional support (Wright, 2002). This network expansion is helpful for all individuals during crises, but crisis communicators are especially encouraged to go online to communicate with individuals during a crisis (Coombs, 2012). Here, a crisis is defined as a unique moment in history, a specific, unexpected and non-routine event that leaves people feeling uncertain (Ulmer, Sellnow, & Seeger, 2011), a definition that will be discussed in much greater detail in the literature review. Within complexity theory, the knowledge passed during a crisis is known as community knowledge, “a process enacted through social intercourse, something that exists solely within the context of a given relationship and cannot be disconnected from the knower or from a given environment” (Gilpin & Murphy, 2008, p. 57). Online, this knowledge can be shared and used instantaneously, potentially improving an individual’s ability to use the information productively. Crises are an indisputable fact of existence, and there is a clear link between what is known about a crisis and the communication choices that follow (Nathan, 2000; Ulmer, Sellnow, & Seeger, 2011), so having and using this knowledge may be able to improve response to the relentless nature of crises.

Purpose of Study

This study will examine how individuals impacted by a crisis use social media to build and maintain online communities of practice after a crisis. An online community of practice, a more specific form of an online community, requires individuals to have something in common, to share a desire to learn and work within that common item, and to be around others who are interested in sharing the common item or experience

(Wenger, White, & Smith, 2009). Technology allows individuals to share not only information and ideas, but also specialized or rare experiences, without being limited by geography (Wenger et al., 2009). Compared to more traditional forms of media, the Internet is the new decision maker (van Dijck, 2009), with individuals frequently going online to either gather or share information. Fifty-three percent of American adults have shared or created local news or information online, by posting to a social networking site, emailing a link to a news story, or commenting on or tagging news stories online, according to the Pew Internet and American Life Project (Miller, Rainie, Purcell, Mitchell, & Rosenstiel, 2012). Additionally, 69% of surveyed Americans say that if their local newspaper no longer existed, they would not have trouble keeping up with the news or relationships because they could go online (Rosenstiel, Mitchell, Purcell, & Rainie, 2011).

The internet has the ability to bridge and expand social networks, which aid with information exchange (Kavanaugh, Reese, Carroll, & Rosson, 2005). Crisis situations create informational needs that are stronger than those in non-crisis times (Seeger, Venette, Ulmer, & Sellnow, 2002), which means that individuals will turn to both traditional and social media outlets to satisfy those needs (Procopio & Procopio, 2007). This information exchange is viewed as a clear function of a thriving community (Wright, 2002). Online, the community functions of social media are able to help with these information needs, but very few studies have looked at how that might happen or the actual help online communities provide (e.g., Macias, Hilyard, & Freimuth, 2009; Procopio & Procopio, 2007).

In 2002, Sellnow, Seeger, and Ulmer called for communication researchers to “focus specifically on the ways in which crisis creates novel communication processes with particular attention to the role of communication technologies” (p. 290). Kim & Dutta (2009), in their discussion of crises from the subaltern perspective, noted that listening to multiple perspectives and voices in a crisis supports understanding the discursive nature of a crisis and aids in dealing with the issues and challenges inherent in a crisis. While there are not specific mentions of online communities of practice in these calls, the need to understand those communities as a technology platform for enabling or enhancing communication is clear. Working with a community instead of an organization or an individual certainly creates a novel communication process worthy of study. Although some work has been done in the time since that call was made (e.g., Macias, Hilyard, & Freimuth, 2009; Procopio & Procopio, 2007), there are still a number of gaps in the knowledge base of how the interplay between crisis, community, and online interaction occurs, and how that interplay becomes a tool for those who are dealing with the crisis and need a community. The purpose of this study is to explore how individuals form online communities after a crisis, how those communities aid or otherwise impact crisis recovery, and how the model of an online community of practice is used to understand communities’ crisis communication.

Specifically, this study will attempt to answer the following questions:

RQ1: How, if at all, do online communities of practice form after a crisis?

RQ2: How, if at all, is an online community’s crisis recovery impacted by communication within online communities of practice?

The next section looks to situate these research questions within the larger understanding of two guiding theoretical frameworks, those of complexity theory and the community of practice model.

Theoretical Framework

This study applied theoretical frameworks from both complexity theory and the community of practice model to help answer the primary research questions. A brief overview of this theoretical framework will be offered here, and a more detailed and nuanced discussion will occur within the literature review later in this paper. Complexity theory looks at how a variety of items and individuals act and interact with one another to form patterns and change a situation (Gilpin & Murphy, 2008). The community of practice model looks at how providing a place to create and share specialized knowledge helps individuals prepare for future action (Wenger, White, & Smith, 2009).

Crises force communicators to both understand and accept a postmodern, complex way of viewing the world, and to incorporate the idea that individuals will seek others to help them reduce uncertainty (Berger & Calabrese, 1975). This uncertainty reduction helps researchers understand the complex relationships between online and offline communication, crisis, and community formation (Procopio & Procopio, 2007). Complexity theory offers an understanding of the self-organization process, which are the patterns an individual may use to seek and find an online community. This also acts as a learning process that allows them to make sense of a crisis (Seeger, Sellnow, & Ulmer, 2010). The community of practice model offers a focus on how and where individuals come together to learn about a shared experience. Within a crisis, there is an urgent need

for learning and change (Seeger, Sellnow, & Ulmer, 2010), which is aided by the same focus within a community of practice.

This desire for knowledge is also seen within social media, as Gilpin & Murphy (2010) note that “multiple strands of messages and dialogue intertwine, disconnect, and recombine to form patterns across platforms and social contexts” (p. 74). Social media allow for the rapid dissemination of both information and rumor (Herrman, 2012), which can have unintended consequences and potentially result in a crisis (Gilpin & Murphy, 2010). Social media allows individuals to gather knowledge that they may otherwise struggle to find by tapping into the information held by other people around the world (Gilpin & Murphy, 2008; Richardson & Cilliers, 2001; Wenger, White, & Smith, 2009).

Methods

This dissertation used a qualitative case study method, including a content analysis of two communities that formed online after two crises and semi-structured in-depth interviews with key members and participants of one of those communities. A case study method builds deep knowledge of commonly occurring but little understood phenomena (Merriam, 2009). These cases allowed the researcher to collect data within a real-life context, providing insights into complicated relationship links, interactions, and contexts (Yin, 2009). Crises are often studied in, and work well within, a case study context (May, 2006; Reiersen, Sellnow, & Ulmer, 2009). Case studies also present an opportunity to gain a rich understanding of how individuals dealing with crises might use online communities by illuminating decisions made by those individuals (Schramm, 1971). This focus on decision points was also enhanced by looking at interaction among

community members, message patterns, and content or themes expressed during different points in the community's existence (Wen, McTavish, Kreps, Wise, & Gustafson, 2011).

The cases studied here looked at how communities made decisions or helped individuals make their own decisions by providing information and support to community members. These cases have already experienced the growth of an online community of practice after a crisis. Hurricane Sandy, which landed on the East Coast in October 2012, had a number of Facebook groups that aimed to help people understand more about the storm, the impact it had, and how to survive in the aftermath. The Jersey Shore Hurricane News Facebook page was used as the case, as it is a substantial community with over 8,000 engaged and committed members who provided support to one another during natural disasters (Jersey Shore Hurricane News, 2013). The New Jersey shore was one of the geographic communities hit hardest by Hurricane Sandy, making it an appropriate choice for understanding the aftermath of the crisis (Daily Beast, 2012; McGhee, 2012). The second case looked at an informational network that formed on Twitter by following the combined use of two particular hashtags (#batman and #shooting) after the shooting at an Aurora, Colorado movie theater during a screening of *The Dark Knight Rises* in July 2012. The suspect, James Holmes, allegedly shot and killed 12 people and injured an additional 70 (Associated Press, 2012b). Twitter is less structured than a platform like Facebook, but it manages to gain "the broadest pickup in the most immediate way" (Gabbatt, 2013, p. 1) when it comes to posting and sharing information. The methods section provides a detailed discussion of the research design, the case events, and the social media platforms to be studied.

Implications of Study

This study offers applied and theoretical contributions to our understanding of how online communities of practice form and maintain themselves after crises. By better understanding the nature of these communities, how they work and how the individuals within them interact after crises, the researcher is able to offer insights for crisis communicators who find themselves interacting with similar communities. Here, the practical knowledge of what has worked and did not work in these case communities will be helpful in understanding how to best engage other, future post-crisis communities.

From a theoretical perspective, the community of practice model does not have a strong knowledge base in crisis communication. Much is known about how these communities work when they are full of technology experts, or individuals who share interests in a knowledge area, but no research was found that explored this specifically in a crisis context. Therefore, this study hopes to develop a broader understanding of the model within that context, and to see whether or not the current theoretical constructs are maintained and supported in that specific arena. While not generalizable, this study will offer a duo of in-depth examples of how communities act, interact, and engage with each other after a crisis.

The introduction has provided an overview of the study, presented the research questions, and offered an initial look at the literature and proposed method that will guide the study, as well as its potential implications. The next chapter, the literature review, will go in depth on the definitions guiding the study, the impact and interaction of crisis communication, complexity theory, social media, and communities of practice.

Chapter 2—Literature Review

This dissertation will develop an understanding of how and why individuals join online communities after crises. This project explores crisis and crisis communication as critical turning points (Gilpin & Murphy, 2008) for a community through the definition and discussion of these topics. To best understand how individuals act and interact within these communities, the literature surrounding communities of practice is discussed with that of both social capital and public relations. I also argue that complexity theory, with its focus on multiple interacting elements, provides a way to look at all of the elements within a community, and to connect that to a more foundational understanding of stakeholders/publics within the community. This understanding will narrow even further with a focus on the impact of social media on crisis situations, relationships, and community. Developing knowledge of how online communities of practice are used in a crisis aids future understanding of how they can be used in both crisis response and recovery for individuals. Within this literature review, crisis communication and other key terms are defined, and then situated within research done on public relations, complexity theory, social media, and communities of practice.

Definitions

Having a clear definition of both crisis and crisis communication is important as the research into and practice of communication in a time of crisis has grown both in volume and diversity significantly in the past decade (Seeger, Sellnow, & Ulmer, 2010). Since public relations scholars often research a variety of areas within crisis communication, this section provides an understanding of how that variety is useful within the broader need of this dissertation. Additional clarification is provided for both

social media and public relations, to build a more complete picture of how and where these concepts intersect.

Crisis. A crisis is a unique moment in the history of an organization (Ulmer, Sellnow, & Seeger, 2011). These unique moments typically have three characteristics to identify them as such: surprise (something with a likelihood or impact that is beyond expectations), threat (something beyond a typical problem for an organization), and short response time (a quick response is necessary to maintain control during a crisis) (Hermann, 1963). Because these characteristics have different results based on the organization or public facing adverse events, a crisis becomes perceptual; that is, if those who were impacted by the event believe it to be a crisis, then it is (Coombs, 2012). A crisis can take a variety of forms, including natural disasters, workplace violence, product recalls, financial problems, or other catastrophic events. Crises tend to be seen as spontaneous and are focused more on the present than what could happen in the future.

This concept of a crisis as a unique moment largely looks at a crisis as an organizational event, not one that focuses on a community or an individual. Currently, research on crises often focuses on an organizational perspective, especially guiding crisis communicators through message creation and dissemination (Coombs, 2010). This also includes a focus on how publics gather and process the specialized information that comes from organizations during a crisis (Avery, 2010). For an organization, this means a crisis is often a specific, unexpected, and non-routine event that produces high levels of uncertainty, presenting an organization with both opportunities for and threats to its high priority goals (Ulmer et al., 2011). Crises also refer to a critical turning point, a moment when an organization is faced with both destruction and opportunity (Gilpin & Murphy,

2008). This is a period of confusion or turbulence that leads to or allows for an organization to transition between crisis and routine states, and individuals trust an organization to return or renew them to a routine state (Gilpin & Murphy, 2008). Often, this turning point must be perceived by the individual or organization involved as a crisis. While what constitutes a crisis differs among individuals and organizations (Palenchar, 2010a), it is the acknowledgement by the organization of the existence of the crisis event that precipitates organizational change and growth (Gilpin & Murphy, 2008). Crises are also seen as “incidental interaction between variables whose result...could not have [been] anticipated” by the organization (Murphy, 2000, p. 452).

Additional understanding within this organization perspective comes from Coombs (2012), who noted that the perception of an unpredictable event often threatens the expectations of publics, which would have extreme repercussions for an organization’s performance during the crisis and lead to additional negative outcomes. A crisis is an unpredictable but not unexpected event, and organizations must attempt to prepare themselves properly (Coombs, 2012). A crisis focuses on existence and action—looking to understand what the organization or groups of publics can do to recover, renew, and move forward. Within this project, the definition also moves beyond the organizational focus to look at how unique, unexpected, adverse events can impact other groups of individuals, namely communities, and what that might mean for our understanding of crises and crisis response. The next section looks at how communication before, during, and after a crisis aids and eases this process.

Crisis communication and public response to crises. Crisis communication is a combination of activities used to both manage information and manage meaning during a

crisis (Coombs, 2012). Historically, crisis communication research has focused on creation of crisis responses by an organization, a basic form of guiding crisis communicators through the early stages of an event and the necessary message creation (Coombs, 2010). Crisis communication as a field began with a desire to better understand how organizations and organizational leaders might handle a crisis, including handling threats to reputation and organizational ability to renew itself effectively (Coombs, 2010). The idea of crisis management, slightly broader than crisis communication, “implies a comprehensive, strategic worldview,” and increases the fundamental understanding necessary in a crisis (Gilpin & Murphy, 2008, p. 7). This places communication as one part of crisis management, and certainly one of the most central and important pieces (Gilpin & Murphy, 2008).

When crisis communication focuses on managing meaning and information, it often also focuses on organizational response and messages and messaging (Coombs, 2012). Publics take those messages and understand the crisis information presented by adding their daily interactions and knowledge into the mix (Avery, 2010). Publics, or those who choose to interact with an organization, will use channels they know and are familiar with, even in a crisis (Avery, 2010). Additionally, those publics who are highly involved with the crisis tend to be more interested in active channels for information seeking, including newspapers, magazines, and other forms of direct communication (Avery, 2010).

Publics have a variety of responses to crises. Jin and Hong (2010) conducted a random sample survey and found that publics have four major crisis coping strategies: rational thinking (making sense of the crisis), emotional venting (reduce stress through

self-expression), instrumental support (others provide information or bolster current information), and action (self-support and engagement). They found that publics who engage in rational thinking, with or without instrumental support, are more likely to also engage in action, and follow a plan to make it through a crisis (Jin & Hong, 2010). This idea is also seen in the work of Liu, Jin, and Austin (2013), who conducted both interviews and an experiment to find that publics who had or were seeking information were more likely to communicate during a crisis. Additionally, publics who have the opportunity to emotionally vent through instrumental support (sharing how they feel with someone else, or seeking advice on how to handle a situation) are also more likely to take action (Jin & Hong, 2010). Negative emotional responses have also been found to make publics look at information presented less closely and to have more negative attitudes toward the crisis overall (Kim & Cameron, 2011). Finally, publics are more likely to believe that organizational goals are relevant to a crisis, and that organizations assume a higher amount of responsibility for a crisis than they would have otherwise expected if they had a positive attitude toward the crisis (Jin, Pang, & Cameron, 2012).

Crises have the ability to cause significant change for an organization, or to impede the health and safety of a wide variety of internal and external publics (Palenchar, 2010a). Communication during crises is socially constructed, where communicators work hard to understand how to best handle crises and the response, and move forward after the crisis passes (Palenchar, 2010a).

Social media. Within this dissertation, the terms social media, digital media, and new media will be used interchangeably. The Pew Internet and American Life Project (2011, p. 1) defined social media as “an umbrella term that is used to refer to a new era of

Web-enabled applications that are built around user-generated or user-manipulated content, such as wikis, blogs, podcasts, and social networking sites.” Social media as a set of tools share five characteristics: participation (everyone can create and respond to content), openness (everyone can post content and feedback), conversation (two way interaction), communities (groups with similar interests find one another easily), and connectedness (strong linking to other content) (Voit, 2008).

These ideas of community and connection are also seen in Kent’s (2010) definition of social media use during crises, which discusses the importance of interactivity, responsiveness, and dialogue between an organization and its publics. His argument was that social media are not actually new, but simply offer additional ways to engage in the same work public relations already does through more traditional methods (Kent, 2010). Instead of focusing on the media themselves, the focus in public relations work should be on engaging with publics and solving real-world problems, where using social media as tools may be helpful (Kent, 2010). These arguments draw out a number of important factors for understanding social media, but organizations must still be careful and contemplative in using social media. The inherent interactivity and increasing variety in dialogue make engaging via social media an entirely different animal.

Community. Community is a term with multiple associated meanings, most centering around the idea of place, and whether that place is physical or virtual. Yin (2009) notes that ‘community’ is a less than concrete term. When the place is physical, community refers to where people live, work, and conduct most of their day-to-day activities (Poplin, 1972). This is still subjective, where community may also encompass a person’s values, priorities, and individual boundaries; some people believe a community

stops at the end of the street, while others at the end of the state, nation, or world (McComas, 2010).

Community can also be defined “socially not spatially” (Wellman, 2005, p. 53). In this viewpoint, a community is a way to connect through a person-based understanding of networked individuals instead of a geographic understanding (Procopio & Procopio, 2007). Internet use does not isolate individuals from a geographic community, but instead allows for interactions that are geographically and socially remote (Shah, Schmierbach, Hawkins, Espino, & Donovan, 2002). A community, particularly a community of practice, is also a place where learning is central (Wenger, White, & Smith, 2009). Communities are further formed by those who are offering mutual support to one another and to share something meaningful about their own experience (Wenger et al., 2009).

Within this study, an online community of practice will be defined as all of the discussion, conversation, interaction, and posting on a website related to the specific crisis. More generally, this study will view a community as a geographic or virtual space, or some combination of both, where individuals act and interact with one another in order to share information, support, and experience with one another. The term ‘online community of practice’ will be used to refer to this way of thinking; uses of other terms (such as ‘online community’ or other variations) reflect terminology used within specific literature.

Complexity Theory

Understanding crises within the framework of public relations often requires a rethinking of traditional assumptions, including how organizations analyze, plan, and interact with their publics (Gilpin & Murphy, 2010). Crises force public relations

research to consider change and uncertainty, and taking a complexity approach to crises extends the understanding of how public relations and crisis communication interact and overlap. Complexity theory offers a chance to study “many individual actors who interact locally in an effort to adapt to their immediate situation” (Murphy, 2000, p. 447). These local adaptations, however, “accumulate to form large-scale patterns that affect the greater society, often in ways that could not have been anticipated” (Murphy, 2000, p. 450). The patterns and interactions within society are studied to show how everything is connected to everything else (van Uden, Richardson, & Cilliers, 2001), and how people and organizations act and interact to provide meaning to a situation—particularly a crisis.

In their book detailing complexity theory, Gilpin and Murphy (2008) argue that “successful crisis management is not guaranteed by scientific planning and prescriptive decision making” (p. 5). Instead, the focus is on a combination of factors, including the nature of the organization, the nature of the crisis, and the nature of the environment within which both of those things reside. In exploring the online communities of practice that exist after two different types of crises, it will be possible to increase understanding of how information shared online provides a specific benefit, or type of benefit, after a crisis. This research aims to aid both individuals and organizations in learning in the rapidly changing situation brought on by the crisis (Gilpin & Murphy, 2008), based on insights from the studied communities.

Complexity-based thinking expresses that exact knowledge and universal absolutes do not exist, and thus individuals must search for the limitations and boundaries of their knowledge (Gilpin & Murphy, 2008; Richardson & Cilliers, 2001). In a crisis situation, acknowledging this partial knowledge and environmental turbulence helps

communicators focus on the need for multiple avenues of action and communication (Gilpin & Murphy, 2008). This socially constructed view of knowledge, based in truth and individualism, echoes Lyotard's (1994) view that turning one concept into a universal truth should be eschewed in favor of "multiple, simultaneous, competing local narratives" (Tyler, 2005, p. 567). Venette, Sellnow, and Lang (2003) propose that organizational crisis response is a series of competing narratives between the organization and the media. If this is true, perhaps it is time to include the public in that understanding, and to put effort into viewing their local narrative as part of the response. As Heath (2006, p. 246) noted, "crises have a way of giving voice to many people," and understanding each of those stories and voices helps, rather than hurts, organizational response. Narratives have to sustain themselves during the scrutiny common in a crisis, so finding ways to minimize communication breakdowns and confusion will make response easier (Heath, 2006; Seeger, 2006). Additionally, the postmodern perspective within complexity theory sees a crisis as a disruption in the organization's dominant narrative, and looks to understand the natural multiplicity of crisis narrative to improve response (Tyler, 2005). This also fulfills a noted need to utilize and incorporate more informal communication as part of a crisis response (Bergquist, 1993).

Complex systems work with a set of seven principles: (1) complex systems are composed of individual agents or elements; (2) those agents/elements alter the system over time through local, rule-based, recurrent, adaptable, and nonlinear interactions; (3) the system itself is self-organizing, (4) unstable, (5) dynamic and tightly connected to history; (6) permeable with ill-defined boundaries; and (7) irreducible (Gilpin & Murphy, 2008). These principles have a compounding effect on one another, allowing complexity-

based thinking to offer a unique and eminent explanation for a particular situation or crisis (Gilpin & Murphy, 2008; Richardson & Cilliers, 2001).

These seven principles bring out a number of important understandings within complexity theory. For example, it is not the interactions of agents/elements themselves that create the behavior of the system, but rather the patterns of those interactions (Gilpin & Murphy, 2008). Cilliers (1998) talks about how these patterns impact the influence of any element in the system. So, for example, one community member's online post may not attract significant attention from others online, but a community that can showcase a pattern of similar statements does. This idea resonates with the idea within segmenting publics, discussed above: The loudest or most important public gets the most attention (Grunig & Repper, 1992). Communities also use this information to understand how to improve the reach and impact of their message to others online. Relating this to Ashby's (1954) law of requisite variety (where the system is at least as complex as the environment that surrounds it), it appears that successful organizations and communities are as complex and full of possibilities as the environment in which they find themselves. Within complexity, stability is not the desired state, and the environment is seen as integral to the system itself, putting the emphasis on "relationships, seeing the organization as an ongoing process and series of interactions" (Gilpin & Murphy, 2008, p. 31).

Characteristics of complex crisis situations include continually changing and dynamic relationships. These changing relationships encompass characteristics including seeing the organization and its environment as melding into one another so that neither has strong, independent influence over the other; believing that a history of crises

changes an organization without providing direction for change; and that the ultimate outcome resides in organizational transformation, not a return to the status quo (Gilpin & Murphy, 2008). Gilpin and Murphy (2008) discuss these organizations in terms of management because of the ability within them to secure a “comprehensive, strategic worldview” (p. 7), although without the control that some may assume would accompany it.

From a complexity perspective, crisis management involves both preparation for crises that may occur and efforts to effectively handle those that do occur (Miller & Horsley, 2009). Gilpin and Murphy (2008) acknowledged the existence and current dominance of the strategic approach to crisis communication, but note that based on what is known about complex systems, strategic management will only take an organization so far, as only so much can be predicted or contained, especially in a crisis situation. A postmodern approach to crisis communication takes the focus away from saving an organization and turns it toward “mitigation of suffering, attention to dissent, and a polyvocal organizational response” (Tyler, 2005, p. 566). Analyzing the communication that occurs within online communities means a crisis communicator engages with a variety of voices from the community. This engagement will help the communicator obtain a multifaceted focus and to develop a detailed picture of how the publics wish to handle and move forward through the crisis. This multifaceted focus may also help with a postmodern understanding that while the future cannot be predicted from the past, it is possible to learn from the past and to improve situations moving forward (Gilpin & Murphy, 2008). Improving understanding of these communities and the functions they provide will also improve the ability to learn in that way.

Learning about a community and its functions is also discussed as part of sensemaking. Sensemaking is often discussed as part of crisis communication and complexity theory, where there is “reciprocal interaction of information seeking, meaning ascription, and action” (Thomas, Clark, & Gioia, 1993, p. 240). Here, an event is classified as a crisis based on how it is perceived by and affects individuals or publics experiencing the event (Weick, 1995). Meaning is not intrinsic to an experience and changes based on individual or group perception (Weick, 1995). Complexity theory’s connection to individual and group perception of a crisis event, and the situational adaptive perspective it provides, make complexity an appropriate lens for discussing how online communities of practice share and spread information in the face of a crisis.

Beyond looking at communities as a whole, complexity theory does pay some attention to stakeholders, or individual agents, looking at how relationships are “constantly changing as priorities, values, attitudes, and players shift and give way to others” (Gilpin & Murphy, 2008, p. 114). These agents engage in interactions that are local, rule-based, recurrent, nonlinear, and produce a clear adaptability to new situations (Gilpin & Murphy, 2008). Trust is confidence in the organization, which emerges as a result of everyday interaction with the organization, and thus is both subjective and situational (Gilpin & Murphy, 2008). Complex thinking differs from more traditional understandings of stakeholders and publics in three key ways: by not having clear boundaries between the stakeholder and the organization, by recognizing that relationships are never static, and by not easily fitting into the quantified relationship measurement used by other crisis scholars and researchers (Gilpin & Murphy, 2008). Complexity looks at control, measurement, and complete understanding of an event, as

never entirely possible. Credibility and trust are still important pieces of the relationship between stakeholders or publics and the organization, but are seen as situational and subjective by both sides, at the mercy of the whims of both the organization and the stakeholders or publics themselves, ever changing and interacting (Gilpin & Murphy, 2008).

These constantly changing relationships between organizations and stakeholders or publics allow crisis communicators to explore new ways and types of interaction, and to study the impact they have on the organization (Gilpin & Murphy, 2006). This exploration includes understanding how information is passed between individuals, and the communities that form to share that knowledge and expertise (Gilpin & Murphy, 2006). Additionally, since social media now allows that passed information to be shared both instantly and asynchronously, “communication time becomes a paradox,” meaning publics’ and stakeholders’ experiences with organizations vary widely (Gilpin & Murphy, 2010, p. 73). In this way, “multiple strands of messages and dialogue intertwine, disconnect, and recombine to form patterns across platforms and social contexts” (Gilpin & Murphy, 2010, p. 73).

Looking at the communication among a whole community also fits within the postmodern concern for storytelling and the ability to give voice to a moment through localized and alternative understandings and reality (Tyler, 2005). Here, postmodernism allows those involved in a crisis to be thought of as a storytelling system (Boje, 1995), where stories are the primary ingredient in a culture (including online community culture), an ingredient that often works with its “sister agent, the gossip network” (Bergquist, 1993, p. 146).

As Gilpin and Murphy (2008, p. 42) note:

surprise, uncertainty, and a lack of determinacy are fundamental properties of complex systems, including societies and organizations. When it comes to crisis management, we may need to develop a tolerance for looser causality, lighter controls, and limited predictability.

The willingness prescribed here, to accept the role that other agents or elements have in the process, particularly when dealing with a crisis, makes complexity a relevant theory for seeing how publics and stakeholders make sense of a crisis at least somewhat on their own. While some scholars believe that this sensemaking is unlikely in such a complex environment (Qvortrup, 2006), complexity theory advocates additional support for nonlinear communication and the expansion of boundaries and environment to improve communication and sensemaking (Gilpin & Murphy, 2010). When using social media to understand how this sensemaking occurs, the variety of channels offer a range of perspectives and ways to reach and interact with publics and stakeholders (Gilpin, 2010). Additionally, these groups often overlap online, both in content and cross-references, which allow stakeholder and publics to “experience multiple permutations of the image expressed” (Gilpin, 2010, p. 282). Organizations willing to accept those lighter controls will find a wealth of information in places where publics or stakeholders are gathering to share information and make sense of a crisis, both generally over social media and through specific communities online.

Social Media

Complexity is also evident in social media, where relationships are interactive and ever changing. Within social media, public relations utilizes more of a socially distributed

model, where individuals with little or no initial interest in an organization can become interested or involved through viral interaction, public-defined legitimacy, and social stake (Smith, 2010). Viral interaction looks at the importance of the message to the community, the ease of sharing the message, and the clarity and articulate discussion of the message by others. In other words, even when an individual may not be interested in an organization specifically, the ease of sharing messages, and the inherent interest in well-crafted messages, means that individuals may interact with the organization's message anyway. Particular social media platforms, such as Twitter, also act as strange attractors, bringing together networks beyond an organization's permeable boundaries (Sundstrom, Briones, & Janoske, 2013). Meeting publics in an online space to discuss and share reactions to a crisis allowed organizations to build coalitions and find additional support for post-crisis recovery efforts (Sundstrom et al., 2013). Additionally, platforms like blogs allow for authenticity in a source that let publics engage in community-type interaction (Gilpin, Palazzolo, & Brody, 2010).

Understanding social media. This section will look at the basics of social media, including how these media are used to help individuals interact and engage with one another, share information, cultivate relationships, and build social networks. Having this general knowledge of social media, and what it can do and how it can be used, will enhance the later discussion of the particular cases proposed for this dissertation. Social networks challenge a model of one-to-many communication that might occur via broadcast or print media (Enli, 2009). Individuals are increasingly turning to social media to search for and/or share information about a big event, causing the creation of a new catch phrase: "if it doesn't spread, it's dead" (Jenkins, 2009, para. 1), where spreadability

is a more conscious choice on the part of the public than simply letting something go viral. Going viral within social media means something that is highly and continuously spread among individuals, typically over a short period of time (Mckee, 2010). The item is passed from one social media platform to the next, provoking discussion, or at least acknowledgement, from around the globe (Mckee, 2010). Viral also means the number of individual people who see the content, but there is no real agreement on the threshold of when content has been seen by enough people to be considered viral (Andrews & Murakami, 2011). Content that evokes strong positive (awe) or negative (anger, anxiety) emotion is more likely to go viral than weaker emotions (sadness), and generally, positive content is more likely to be shared (Berger & Milkman, 2012).

People want to interact and engage, often in playful or entertaining ways, and they are looking to social media to find ways to make more traditional content more engaging (Enli, 2009). However, Carpentier (2009) stressed that while new platforms may offer additional opportunities, organizations must maintain professional quality and social relevance in order to properly engage with their publics and stakeholders. Organizations may attempt to control what is expressed by moderating social media channels, but publics often add to and adapt the posted information to showcase their ideals and thoughts (Kent, 2010).

Messages are often seen to be personally legitimate if action is taken to spread the message (i.e., retweeting or sharing) (Smith, 2010). Finally, the idea of social stake looks to broaden the field's understanding of a public, where an individual may use his or her social media platform to establish a particular stance on an issue, which is a risky move for the individual or for an organization looking to encourage support for its stance

(Smith, 2010). These ideas help communicators understand who is engaged, how they are engaged, and how social media connections are improved and best utilized during a crisis. Here, social media are discussed somewhat generally to provide background information on how they can be used and seen as effective, and then those principles are applied to both crisis situations and relationship building as a precursor to online communities of practice.

There are three essential strategies for cultivating relationships online: disclosure, information dissemination, and interactivity/involvement (Men & Tsai, 2012). These strategies are the essential, daily activities of public relations professionals, used to better understand how to nurture and maintain relationships with both publics and stakeholders (Ki & Hon, 2008). This interaction is also culturally based; consequently, messages need to be customized and culturally competent (Men & Tsai, 2012).

Information sharing is easier via social media than more traditional media (Baron & Philbin, 2009; Heverin & Zach, 2010; Wigley & Fontenot, 2010), based on social media's ability to provide and gain access to that information anywhere (Procopio & Procopio, 2007; Purcell, 2011), and for people to more easily take action based on that shared information (Murdock, 2010). The sharing of information through social media allows social media to act as a secondary or confirming source during crises (National Research Council, 2011). This ease of use and action, however, also causes information overload among publics and stakeholders (Bucher, 2002).

By showing us how we interact online, social media also have the opportunity to show us what our lives are like. This interaction is more helpful in a crisis situation, where individuals may feel isolated or disconnected, or that they are the only ones

working through the crisis. Platforms take the data we input, and then filter that data through the tools utilized by the platform. This then allows us to connect to others by letting us see who likes our image, who used our hashtag, or who else is reading the same article, providing a context, or comparison, and potential for conversation (Rettberg, 2009). Documenting these major events, and sharing and comparing them with the major events of others, “helps us structure our lives and our memories. They also help ground us in our cultures” (Rettberg, 2009, p. 460). Rettberg (2009) mentioned that in seeing our personal story in a larger, cultural context, or in comparison to those around us, our place in the larger story or culture is confirmed, and we typically feel more connected to one another through doing so. In this sense, sharing an opinion or information as part of a group of people expressing similar or related information becomes more important than simply sending the information out into a void as an individual (Smith, 2010).

The dark side of social media. In social media, some individuals may be seen as more important than others, and having a disproportionate influence over events and trends, known as the influential hypothesis (Burson Marsteller, 2010). This hypothesis points to a darker side of social media, that as social media has become more available to the general population, it has become the grounds for some to advance issues and ideas that may not be representative of the whole. The anger and other negative emotions often generated by crises can also increase negative word-of-mouth (Coombs & Holladay, 2007), which also spreads faster and easier online than in a more traditional format. In this quick and easy online environment, publics are also actively engaging in spontaneous attributional inferences, increasing negative evaluative judgments over time (Schwarz, 2012). Crises tend to be first discussed with a negative tone and a critical perspective

toward an organization or individual believed to be at fault or in how a crisis is handled (Valentini & Romenti, 2011). Individuals with a large following online, including celebrities or other broadly well-known figures, can publish information quickly and efficiently without a gatekeeper or anyone to check if the information is accurate or fair (Moody, 2011). Additionally, as individuals learn more about one another online, cyberstalking can become a dysfunctional response to obsessive relational intrusion. There are consistent connections between cyberstalking and spatially-based stalking (Spitzberg & Hoobler, 2002). Other negative uses of social media include spying on activists, recruitment of and by terrorist organizations, mobile tracking, and data mining (Morozov, 2012).

Social media use during crises. Sharing information with a group becomes even more important during a crisis situation. Andersen and Spitzberg (2010) found that media use increased during crises, which made it even more important for messages to be timely, accurate, specific, sufficient, consistent, and understandable. Organizations that utilize social media are more likely to understand public preferences and expectations during crises (McAllister-Spooner, 2009), which improves organizational responses to crises (Yang, Kang, & Johnson, 2010). Pre-crisis social media communication competence also improves publics' resilience (Liu & Briones, 2012). Social media-based communication has three distinct stages: (1) perception, where publics gain and share information; (2) comprehension, where they develop positive or negative responses; and (3) projection, which involves reflections on what to expect next (Preston, Binner, Branicki, Ferrario, Galla, & Jones, 2011). During crises, social media platforms are used to fulfill a wide variety of needs, including: to ask for help, to confirm or gather

unfiltered information, to check in with family and friends or maintain a sense of community, to self-mobilize, to express critical thoughts toward authority, for humor and levity, to seek emotional support, and to inform or persuade others to take appropriate risk prevention behavior (Carr, Pratt, & Herrera, 2012; Fraustino, Liu, & Jin, 2012).

An information vacuum, especially in social media, is likely to be filled with inaccurate content (National Research Council, 2011), and while social media can be utilized to change misperceptions or misinformation (Keelan, Pavri, Balakrishnan, & Wilson, 2010; Walther, DeAndrea, Kim, & Anthony, 2010), that change may take more time and monitoring than is likely in a crisis situation. In an online experiment, effects of the medium (Facebook, Twitter, or online newspaper) were found to have a larger impact than those of crisis type (intentional or victim) (Ütz, Schultz, & Glocka, 2013). Here, communicating about the crisis via social media gave the organization a more positive reputation and fewer secondary crisis responses, such as a boycott (Ütz et al., 2013). However, communicating via social media also meant that publics and stakeholders were more likely to talk about the crisis when they had read the online newspaper (Ütz et al., 2013). Additionally, publics are most likely to utilize social media that their friends or connections use to spread humorous information, or information that will appear to give them insider knowledge (Liu, Austin, & Jin, 2010). Overall, this leads to a need for a more complexity-based understanding of crisis communication.

Complex understandings are also important in social media, especially blogs, which are very personal outlets, and may even act as grief counselors during crises (Macias, Hilyard, & Freimuth, 2009). These emotional functions are most likely to appear in blogs dealing with crises shared among the blogs' participants (Macias et al.,

2009). Social media's potential emotional benefits may be more effective after the initial announcement or discussion of the crisis than before the announcement; Liu, Austin, and Jin's (2011) experiment testing the social-mediated crisis communication model found that an organization using social media for the initial crisis report did not make a difference on publics' reported emotions. However, social media have also been found to provide significant emotional support or coping strategies for the more negative emotions surrounding a crisis, including grief and shock (e.g., Bressers & Hume, 2012; Choi & Lin, 2009; Jin, 2010; Macias, Hilyard, & Freimuth, 2009).

Yang, Kang, and Johnson (2010) discussed how crisis communication is essentially narratives, and note that blogs act as a particularly effective vehicle for putting those narratives out to a wide public. Effective narratives are essential for enhancing audience engagement in crisis communication, as they allowed for interactivity, decreased negative emotion, and identification with an organization (Yang, Kang, & Johnson, 2010). Individuals believed that the organization was actually speaking to and interacting with them, making them significantly more willing to accept the account of the crisis put forth by the organization, have more positive attitudes toward the organization, and be willing to help spread the good word of the organization (Yang, Kang, & Johnson, 2010). The ability for easily spreading "copy-cat" messages during messages allows individuals to feel like part of a community, and is seen through specific platform tools like retweeting or using the same hashtags to draw attention to an issue on Twitter (Smith, 2010, p. 332).

Relationship cultivation with social media during a crisis. While general relationship cultivation on social media has been discussed, it is important to note that crisis situations make relationship building more important and more complicated, thus warranting its own discussion. A further focus in this section is on the communication that occurs during a crisis, from both the organizational-public/stakeholder perspective and the individual level. This will also look at how that communication aids organization-public and individual relationship building and help everyone move forward. Many benefits exist in building these relationships during crises; for example, a study of the problem solving practices of individuals with chronic illnesses, found that the patients who formed and maintained relational ties built stronger social and emotional resources, which led to enhanced individual competence and managing of the illness (Kim & Vibber, 2012).

Although not a typical crisis understanding, something like a chronic illness tends to typify the online communities that form as communities of practice (Wenger, White, & Smith, 2009). The internet provided not only a place to seek information about the health issue, but also to build affective states through online personal networks (Kim & Vibber, 2012). This exchange of information and emotion allows for improved health coping through the density (ties and interactions) of their online relationships (Kim & Vibber, 2012). Using the example of a health crisis, Springston and Weaver-Lariscy (2007) found that publics are most worried about gathering information and reducing uncertainty. Publics want to be empowered to protect themselves during crises, and thus will respond positively to organizations that send messages of self-efficacy (Heath, 2006).

A model like the social mediated crisis communication model (SMCC) is helpful in understanding how publics share and use crisis information, both on and offline, and in figuring out who are the key influencers are or who is writing/contributing to an influential external blog or social media platform (Jin & Liu, 2010). According to a variety of tests of the model, publics and stakeholders use social media to gather insider information and check in with family and friends, instead of education (Austin, Liu, & Jin, 2012); those who saw social media's primary role during crises as spreading humorous information were less likely to use social media in times of crisis (Liu, Jin, & Austin, 2013); and publics are generally most interested in learning from the communication channels with which they have more direct access and interaction (Jin, Liu, & Austin, 2011).

Word-of-mouth communication also plays a role in how publics respond, particularly in a crisis. Publics are more likely to engage in negative word-of-mouth communication when angered by a crisis (Coombs & Holladay, 2007). Blogs or social media sites with crisis information provide new arenas for electronic word-of-mouth communication, and rumors spread via influential social media are even more critical as a crisis information source than more traditional word-of-mouth communication (Jin & Liu, 2010). Electronic word-of-mouth communication amplifies a crisis message (Kozinets, de Valck, Wojnicki, & Wilner, 2010), but publics will first determine the value of the information to the publics' intended recipients (Sohn, 2009). Traditional and social media also cover crises intensely, especially when human interest or negative evaluations are central to the crisis story (Liu, 2010).

When interacting via social media during crises, it is important to be transparent and authentic (McCorkindale, 2012). Rawlins (2009) identified three major characteristics of transparency: truthful information, stakeholder participation in identifying needed information, and objective reporting of policies and activities. Authenticity is seen as being real, genuine, and sincere with an audience (Gilmore & Pine, 2007), and on social media also includes how organizations hold conversations with stakeholders and publics, including dialogue that is not contrived or performed (Montgomery, 2001).

This need for authoritative and transparent information is also seen in Kennan and Hazleton's (2006) blending of human and technological systems to benefit the larger organization. This blend stems from an understanding of the impact new media has on organizations and publics. These two groups need to work together in times of stress and hardship, and note how important it is to have those relationships prior to those times (Kennan & Hazleton, 2006). Those relationships are also important in social media, as they are an outlet for providing important crisis warning information (Coombs, 2008). Issue monitoring via social media extends into crisis response and recovery in order for organizations to best understand what is happening and how they may be connected to crises. Engaging in social media is not an automatic fix to a crisis, either for an organization or a public, but it helps spread information and reach a wider variety of individuals in an expedient manner (Coombs, 2012).

Social media and community. Spreading information is helpful, but it is often more helpful to reach a community of people all at once, instead of attempting to reach each individual, something made easier by social media use. The internet generally, and

social media specifically, is a medium with both the capacity for and a powerful role in sustaining community. This role is especially helpful in times of community dispersion and crisis, and with uncertainty reduction during information gathering (Procopio & Procopio, 2007). Specifically, blogs can be used for personal and individual needs, like those that emerged after Hurricane Katrina in order to help people locate loved ones, share resources, and find ways to help those still in need of aid (Macias, Hilyard, & Freimuth, 2009). Andersen and Spitzberg (2010) note that while all crises differ, they also all are local in character, and thus require a localized knowledge in order to be handled effectively. Local blogs or community bulletin boards have been used in significant ways to help community members gather, update, and maintain information about one another after a crisis (Macias et al., 2009; Procopio & Procopio, 2007).

Community building. Communities may form through social media for a variety of reasons other than crisis information sharing. Individuals have turned to social media in order to have fun, kill time, and relax or escape from daily responsibilities (Quan-Haase & Young, 2010), or to interact with like-minded individuals and seek information from them (Ancu & Kozma, 2009), which helps decrease social loneliness (Wang, Fink, & Cai, 2008). Interactivity online also increases an individual's playfulness, connectedness, information gathering, and willingness to engage in reciprocal communication (Ha & James, 1998). Motivation to stay engaged and interactive with an online community of practice will also come from acting as an emotional or informational resource for others engaged in the same situation (Janoske, 2012). When using social media, engagement may look like personal participation (reading or reflecting on information), and interaction indicates production of physical and

conceptual artifacts (words, concepts, stories, or documents) (Wenger, White, & Smith, 2009). Hutchison's (2010) essay on the Bali bombing of 2002 looks at how social media allows for both photographs and narrative to represent a crisis together, increasing feelings of community and security instead of isolating individuals.

Intragroup communication. Computer mediated communication (CMC) can facilitate interactions among individuals, particularly those who may be geographically distant from one another. Those who use CMC to interact and build relationships, and eventually communities, find themselves with much more direct communication and better uncertainty reduction behaviors than their non-mediated counterparts (Tidwell & Walther, 2006). These online communities tend to form microstructures, or internal connections to other individuals within the community, which allows them to have greater conversational effectiveness and confidence (Tidwell & Walther, 2006).

During crises, a new participatory culture can form in these online interactions. Not all participants within online communities are equal; some have more power, knowledge, or experience than others (Jenkins, 2006). However, it is precisely that imbalance of knowledge and information that can make these communities so successful—on any given topic, more information exists than one person can know, so there is an increased need to talk with others and attempt to share and build upon what everyone knows (Jenkins, 2006). This collective intelligence is an alternative source of power, one that communities can use to their advantage (Jenkins, 2006). This power can be adapted and give a voice to publics that might otherwise be marginalized or disconnected from more traditional sources of information or media (Hoffman, 2004). Additionally, these communities can be a source of hope for individuals who find within

them groups with similar strengths, vulnerabilities, and needs (Stoddard, 2011). In this way, the internet allows for and can aid social cohesion during and after crises (Shklovski, Palen, & Sutton, 2008).

Knowledge building. When these artifacts bring individuals together after a crisis, they help spread information and build knowledge. Community construction of knowledge via social media is both broader and easier than via traditional media (Chess & Clarke, 2007; Palenchar, 2010a). This increase in digital information allows for an increase public engagement and knowledge (Murdock, 2010). Online communities are also very aware that information needs to be validated, and that it is difficult to sift through all of the information to find out what is true and what is false (Bressers & Hume, 2012). Therefore, information will be noted as validated or not when posted to the community (Bressers & Hume, 2012). For example, a content analysis of blog posts written in response to Alitalia's 2008 financial crisis found that crises may be framed differently on various social media outlets than in traditional media, so communicators may do well to alter their response strategies based on the expected outlet for knowledge (Valentini & Romenti, 2011).

This knowledge building also takes the form of people using their personal communities to gather, search for, select, and share information more frequently (Kim & Grunig, 2011). Community engagement is essential for managing risk and working well within society (McComas, 2010). Social media also becomes one significant way in which human resources are utilized efficiently in a crisis (Kennan & Hazleton, 2006). One way to use those human resources is to form a crisis management team that includes individuals with specific "knowledge bases" (Coombs, 2012, p.75), one of which

includes social media. Increasingly, this crisis management team member needs to have prior experience not only with social media platforms, but also in understanding and connecting with a wide variety of social media communities (Stewart & Williams, 2005).

Impact of social media and community during a crisis. There is very little research that looks at social media use in building or maintaining a community during a crisis. Some similar, if not entirely aligning, research streams exist, and provide a solid ground from which to ask the additional questions posed in this work. Community engagement has been discussed as an important aspect of communication; that is, providing geographic community members with information necessary to preserve the “health and welfare of society” (McComas, 2010, p. 462). However, community is often understood from a number of different aspects, either as an organization, or divided by culture or perspective. Community-based organizations have been studied in a crisis context, mainly to see how their responses are impacted by the existence or lack of a relationship with publics or the media prior to the crisis (Sisco, 2012). Additionally, the concept of community can be altered to focus on culture, and then discussed as an important factor in crisis communication (Liu & Pompper, 2013). Although seeing a particular perspective of a crisis represented on social media increases solidarity, individuals still feel alone and without necessary support to recover from the crisis well (Hutchison, 2010).

This communal solidarity is also seen in what are known as online social communities. These communities have content and community created entirely by and because of the discourse that exists, exemplified by a content analysis of Facebook groups created after the April 2007 shooting at Virginia Tech (Tyma, Sellnow, &

Sellnow, 2010). These communities were able to spontaneously connect those who participated via Facebook, which opened up a dialogue. This dialogue allowed survivors to begin reestablishing order and meaning after the crisis in a way that helped both survivors and observers (Tyma, Sellnow, & Sellnow, 2010). Individuals within communities are empowered during crises when they participate in crisis response message making and dissemination, which is helpful in crisis recovery (Harris, 2007). Online social communities have also been found to increase the quality of and potential for dialogue during crises, simply because those communities reach a wider variety of individuals (Falkheimer & Heide, 2007).

Even with this knowledge of dialogue and order, the full impact of social media-based communities used in a crisis still has yet to be fully explored. One of the first major research studies to explore how online platforms were used after a crisis to build community focused on Hurricane Katrina and the online usage that existed in New Orleans and surrounding areas (Procopio & Procopio, 2007). The study's authors found that problems with other communication methods lead people to the internet to engage in "the instrumental and expressive types of communication essential to community creation and maintenance" (Procopio & Procopio, 2007, p. 81). Individuals go online during crises to maintain connections with their social networks, to reduce uncertainty, to both get and provide emotional support, and to spread information (Macias et al., 2009; Procopio & Procopio, 2007). This online sharing of information and resources also helps individuals build social capital on and offline (Vergeer & Pelzer, 2009). Social media are often also available when more traditional media are not (Lindsay, 2010). Since users are frequently forced to leave their communities of origin in a crisis, social media allow them to

establish and maintain a sense of community online (Lev-On, 2012). Online communities also provide an immediate space to construct crisis meaning and this meaning may differ from the more political and/or restricted discourse constructed by traditional mass media (Bressers & Hume, 2012; Macias et al., 2009). Additionally, crisis management overall, and especially online, must become more community spirited, included along issues of culture, ethnicity, and/or race (Liu & Pompper, 2013).

However, even with this existing research on publics and communities that form after crises, there is still work to be done to further understand how communities come together and how they may impact crisis recovery. Thus, the following research question is posed:

RQ1: How, if at all, do online communities of practice form after a crisis?

The next section provides background on a specific type of online communities, known here as online communities of practice.

Communities of Practice

Crisis communication, as defined earlier, provides publics and stakeholders with specialized knowledge to manage and act during crisis events (Palenchar, 2010b). That knowledge is underscored by each individual's daily interactions with others and pre-crisis personal knowledge base (Avery, 2010). The combination of these two ideas—providing specialized knowledge and interacting with previous knowledge—find a point of overlap with communities of practice: a place to share knowledge with others, to glean from the specialization of others, and to prepare for future action.

However, even with the overlap that allows for a clear connection between crises and communities, little research has explored communities of practice during crises. Research

exists on how general communities form during crises (e.g., Macias, Hilyard, & Freimuth, 2009; Procopio & Procopio, 2007), or on how specific types of communities make a difference in community building or knowledge sharing in crises (e.g., Lee, 2005; Liu & Pompper, 2013; Quinn, 2008), but do not insert the full range of knowledge from communities of practice as a way to better understand the impact of technology, ways of learning, and community during crises. Since communities of practice have not been fully discussed within crisis communication, it is possible that the theoretical foundation that exists (what we know about communities of practice) could be updated or adjusted to better fit what we know about crisis communication. Additionally, since large portions of crisis communication theory focuses on organizational responses, and not on publics' voices, looking at communities of practice is one way to start filling in this significant research gap. Consequently, the next section explores how communities of practice increase the focus on public response, learning, and community building during crises.

Defining communities of practice. The history of intertwining technology and community begins in the early 1970s in California, with the software development community that was springing up there and elsewhere around the country. All of a sudden, individuals who lived hours or states away from one another were able to communicate in real time, and they wanted to expand the ways in which that was possible. Two of the earliest technological inventions to build this community came from David Woolley, a student working on PLATO (a computer-based learning platform) who created PLATO Notes, (a way to tag and track reports made by community members) and Doug Brown, another PLATO member, who developed a chat room to build informal, peer-to-peer communication within PLATO workers (Wenger, White, & Smith,

2009). These expansions of interaction “launched a series of development that supported collaboration and community” far beyond PLATO, especially once the internet became more widely accessible (Wenger et al., 2009, p. 14).

Moving forward, a number of advances in technology were helpful in building online communities. In 1972 we saw the introduction of email software, and 1977 introduced both the Electronic Information Exchange System (EIES), a computer-based conferencing system for online groups, and the first electronic bulletin board. In 1979, Usenet became the first peer-to-peer network for mass collaboration and conversation online. In 1985, The Well started as the first online community whose sole expressed purpose was to build community and discussion on a variety of topics among members (The Well housed, among other topics, a significant home for fans of the Grateful Dead). These advances became the archetypes for the idea of online communities of practice (Wenger et al., 2009). As the internet grew and developed, the technology necessary to help these communities grow and thrive grew and developed as well, and now countless communities exist to discuss, debate, and defend every topic imaginable. In this way, “technology is fundamentally expanding the possibilities of what it means to ‘be together’” (Wenger et al., 2009, p. 17). These communities are often referred to as communities of practice, defined and discussed in detail below.

Individuals continually work toward accomplishing a wide variety of pursuits, and as they work, they interact with one another and the world itself in order to learn. This desire to learn results in the creation of practices and the living of a specific area of knowledge (Wenger, 1999). These practices become the property of everyone who helped create them—who engaged in the shared learning—and are thus referred to as

communities of practice (Wenger, 1999). The concept of practice indicates action, but action within a particular social and historical context that provides structure to the practice itself, and includes information both explicitly stated and implicitly implied (Wenger, 1999). Practice acts as meaning, community, learning, boundary, locality, and a way to know (Wenger, 1999).

The three defining aspects of a community of practice are: (1) the *domain* (issues), or challenges, and passions shared by community members; (2) the *practice*, or the activities and techniques for working with and shaping the community; and (3) the *community*, or the relationships that form as members share and experience the domain and practice that brought them together (Wenger, White, & Smith, 2009). Event-based communities of practice take this one step further, where the domain is based on a very specific and possibly rare event, where knowledge is shared and relationships are formed but the community may disband once the event has occurred (Wenger, McDermott, & Snyder, 2002; Wenger et al., 2009). The events or new life stages that typically form examples of event-based communities of practice include being diagnosed with an illness (Anderson, 2011); starting a rigorous academic program (Janson, Howard, & Schoenberger-Orgad, 2004); learning a new language (Davies, 2005); supporting a specific political candidate (Levenshus, 2010); or getting married (Janoske, 2012).

Individuals do not necessarily have open access to any community of practice that exists. Instead, practice defines the community, and the community determines who has access to the practice (Davies, 2005). A community of practice requires that sharing the practice be the most important work within the community, and sharing in a way that reinforces membership in the community (Davies, 2005). There are localized meanings

within the community, and individuals within the community manage their identities through these practice-based meanings.

In 1999, Wenger put forth the first community of practice model, which outlined the stages of development that exist: potential, coalesce, mature, stewardship, transforming, defined below. In 2004, Janson et al. suggested a pre-potential stage, known as a critical point. This critical point occurs when potential community members fail to recognize the common ground they share with either a pre-existing community of practice or others with whom they might have formed a community of practice (Janson et al., 2004). Researchers see the critical point as an obstacle that has grave consequences for individuals if they cannot move beyond it. This expanded model is still the accepted understanding of what makes up a community of practice, with applications to a variety of areas, including sociolinguistics (Eckert & Wenger, 2005); educational professional development (Wang & Lu, 2012); learning a new language (Chen, 2010); interpersonal interaction (Clarke, 2009); or online support groups (Stommel & Koole, 2010). It has not, however, been explicitly studied to see how a community of practice might be useful in a crisis situation.

Wenger's (1999) stages are defined as follows: *potential* is when individuals discover one another online and compare commonalities, issues, and needs. These commonalities are often the basis for the community's identity, and familiarity with them and the technology being used increases trust and rapport at this point. *Coalescing* is the point at which individuals find value in communicating and learning from one another, and build a community together. *Maturing* involves creating additional information or materials that might be helpful to the community. This also includes utilizing alternate

forms of gathering; online communities of practice might find ways to meet in person, or physical communities might develop an online space where people discuss and share ideas.

This branching out between online and offline spaces aids in developing *stewardship*, or sustaining and developing the repository of resources and exchanges and materials that serve to orient new members to the community. Stewardship becomes increasingly important when it brings both explicit knowledge (that which is easily codifiable and thus available to the group at large at any point) and tacit knowledge (that which is rooted in experience and thus available to fewer individuals and not easily accessible) into the community, as humans need other humans to share experience in the form of tacit knowledge to improve (Janson et al., 2004; Kimble, Hildreth, & Wright, 2001). This form of knowledge creation and sharing is helpful in a wide variety of crisis situations, where specific information and experience with similar situations are equally important. Finally, *transforming* occurs when a community disbands because it has outlived its usefulness. However, even once a community disbands, community members often leave some sort of legacy behind, either through formal practices or informal knowledge, and often will keep in touch with one another beyond the confines of the community of practice (Janson et al., 2004; Wenger, 1999).

Furthermore, communities of practice are built by and for their members to suit their own needs (Janson et al., 2004). These needs often are legitimized through the ongoing explication, justification, and defense of the information presented by the community, a process which also increases loyalty and adherence to the community itself (Clarke, 2009).

Additionally, for a community of practice to exist, members must have regular interaction with each other (Davies, 2005; Wenger et al., 2009). This interaction may occur every day for the dedicated member, or at any frequency defined by the member, and this interaction does not need to occur face to face. Communities of practice generally exist online, as they offer support for the legitimate peripheral participant, often seen in the practice of lurking online (Lave & Wenger, 1991; Wenger et al., 2009). Lurkers generally engage less frequently than members who actively participate, but are still gathering benefits from what they observe. Research on communities of practice may focus on online communities, but that is not a requirement of the model.

The “shared history of learning” (Wenger, 1999, p. 86) that occurs in a community of practice also allows for changes in both the practice and the identities of the community’s members. Helpful members are showcased, ineffective members are ousted, newcomers gain experience and knowledge, and those who are no longer invested in the community lose their impact (Wenger, 1999; Zhang & Watts, 2008).

Online communities of practice. When communities of practice exist solely online, they fit within definition of social media set forth earlier, from the Pew Internet and American Life Project (2011): a collection of user-generated and user-manipulated content. From an economic perspective, online communities of practice allow for improved information transmission, which improves price transparency, facilitates learning, and advances technology adoption. However, as the community grows larger, it might reduce an organization’s ability to induce pro-social behavior within the community (Mayer, 2009). For example, Zhang and Watts (2008) found that online communities of practice offer substantial opportunity for knowledge sharing and

knowledge creation, which aids organizations in their knowledge management processes. Communities of practice are currently moving from focusing on close connections through interpersonal interaction to including geographically-dispersed members (Brown & Duguid, 1991). Due to this transition, disparate knowledge that was once difficult to capture now comes together to help the community exist, maintain and sustain itself (Butler, 2001; Williams & Cothrel, 2000; Zhang & Watts, 2008).

Simply putting people together, however, is often not enough to fulfill Wenger's (1999) definition of a full community of practice. Zhang and Watts (2008) were two of the first researchers to showcase how online communities build communities of practice by enacting Wenger's (1999) dimensions of practice, domain, and community through using the example of an online travel forum hosted in China. Specifically, Zhang and Watts (2008) analyzed 7,853 posted messages and artifact information from the forum, including the FAQ and instructions for newcomers sections. Participants in the forum showcased typical dimensions of practice, by engaging with one another, jointly agreeing as to what constituted appropriate discussions for the forum, and a shared repertoire with common language and terminology. Identity was formed as both a community and an individual member, where the community had a group purpose, but each member had their own role and expertise within that (Zhang & Watts, 2008). Finally, to count as online communities of practice, contributions were necessary from both the moderators and the general community, and the community needed software infrastructure that could easily facilitate knowledge sharing and management (Zhang & Watts, 2008). In sum, Zhang and Watts (2008) concluded that online communities of practice with knowledge

creation do exist, but that more common are online communities for knowledge or information sharing.

Online communities of practice are sustained when a critical mass of participants are willing to engage in a generalized exchange of information and solutions, instead of looking for equal participation from all members (Wasko, Tieglund, & Faraj, 2009). Those in the critical mass are often concerned with enhancing their reputation, and they also tended to have more expert experience within the field of the community, but often did not have access to colleagues (Wasko et al., 2009). The lack of a localized, or face to face, community of practice drove these experts to online communities for increased and sustained knowledge exchange.

When determining if an online community is, in fact, a full community of practice, a number of characteristics have been identified: an online location with potential for effective whole group computer-mediated communication (CMC), with a minimum level of interactivity, a variety of communicators, a minimum level of membership, and a virtual common space where the majority of the interactive group CMC occurs (Jones, 1997; Zhang & Watts, 2008). Interactivity here is defined as “the extent to which messages in a sequence relate to each other, and especially the extent to which later messages recount the relatedness of earlier messages;” a minimum level is the ability to have interactive discussions with another member (Jones, 1997, p. 0). A minimum level of membership is relative to the number of messages sent within the community; a community with a higher density of messages does not require the same stability of membership to produce interactive discussions (Jones, 1997). Forming a community of practice online also helps members who need the convenience or

availability of a technology to bridge temporal or geographical spaces, to reach large numbers of people at the same time, or to focus on a message without having to worry about interpersonal nuances (Bagozzi & Dholakia, 2002; Markus, 1994; Zhang & Watts, 2008). Additionally, since in an online space the practice and domain is easily stored and referenced, the history of the community is stored and becomes a learning resource, for both current and future members (Zhang & Watts, 2008).

Communities of practice are also concerned that as they build a strong practice and knowledge base, they are also inherently creating a base of otherness. This otherness is seen in those outside of the boundaries of the community, who may become antagonistic as a result, both toward and against the community of practice (Clarke, 2009). One study that delved into this idea of otherness looked at a community of educators in the United Arab Emirates who dealt with a student group who wanted to enact community change, but in a way that went directly against what the community felt was best. The anticipated backlash led the students to feel a sense of otherness in their community, which needed to be addressed before they could begin the more complicated task of working on the agenda they posed (Clarke, 2009).

When otherness is not the concern, but instead individuals form communities that are “inherently unstable, small-scale, affectual and not fixed by any of the established parameters of modern society,” this is known as a “postmodern tribe,” a social science perspective on online communities of practice (Cova & Cova, 2002, p. 598). In this understanding, individuals may belong to multiple postmodern tribes at once, and are able to leave a tribe at any time without significant consequence (Cova & Cova, 2002). This idea is utilized within a business perspective to create brand communities where

organizations provide a platform for tribes to form in celebration of both the brand itself and the individual's use and interaction with the brand (Muniz & O'Quinn, 2001). These brand communities are explicitly commercial, and are characterized by a consciousness of kind, shared rituals and traditions, and moral responsibility toward the community and its members (Muniz & O'Quinn, 2001). Brand communities engage online opinion leaders and are often instrumental in spreading both positive and negative word of mouth regarding the organization (Fröhlich & Schöller, 2012).

Online and offline connection. Sometimes, people involved in an online community of practice will also instigate offline activities or meetings in order to continue to fulfill the goal of the community (Atkinson, Rosati, Stana, & Watkins, 2012; Janoske, 2012; Matzat, 2010; Wenger et al., 2009). For example, an online community of practice called DetroitYES! was established in 1997 by Detroit artist Lowell Boileau to help people understand how the city was being brought to ruin, and how they might be able to bring it back to a point of exploration and salvation. Members of the community would often meet offline to play softball in an area that had been marked for construction viewed as counter to their goals. This external contribution to the mission of the community was seen as increasing the sense of community pride that had been first established via online connections (Atkinson et al., 2012). Both online and offline, the community worked together to build knowledge and allow new voices to tell stories and engage in rituals that not only increased interactivity but allowed each individual to construct the community in their own way (Atkinson et al., 2012). Offline interaction increases trust among community members, which reduces concerns with sociability,

which increases online knowledge sharing, leading to a mix of offline and online interaction to be seen as the most beneficial for the community (Matzat, 2010).

Emotional support. Whether through online, offline, or the mix of both types of connection described above, individuals tend to seek connection with others when faced with times of actual or anticipated stress (Wandersman, Wandersman, & Kahn, 1980), as might be expected in a crisis situation. Based on the online nature of the connection offered by online communities of practice, emotional support becomes hyperpersonal, as individuals are more willing to be friendly, sociable, and intimate than they would in face-to-face communication (Walther & Parks, 2002). These online communities of practice encourage people to share their own personal experiences and informational support with one another (Eichhorn, 2008), which translates into emotional support, relationship maintenance, and increased self-presentation of the members (Greenhow & Robelia, 2009). Sharing emotions also leads to increased participation in online communities (Guldberg & Mackness, 2009). Online networks further allow for easier and more expansive inclusion to those who might not otherwise participate in a community during a time of need (Notley, 2009). Bonding social networks are possible in online communities of practice, specifically those that relate to health concerns, because of the reciprocity and empathic communication shared, and the resulting increase in trust among members (Preece, 2004).

Social capital and communities of practice. Online communities are also improved when relationships and connections within them are identified, and social capital is one lens for discussing that improvement through traditional networking ideals. Social networks are groups with a high domain and strong interpersonal connectivity that

may not be working toward a joint enterprise. These groups are formed via online communities of practice, yet often still establish themselves via principles found in more traditional offline networking (Wenger, White, & Smith, 2009). To best define social capital, first two different sociological perspectives that exist within the area must be discussed. Robert Putnam (1995a, 1995b) and Pierre Bourdieu (1986) both discussed the problems of living in a civil society, but Putnam focused on strengthening society through solidarity and togetherness while Bourdieu looked at social conflicts as elements of domination and deprivation (Siisiäinen, 2000). Furthermore, Putnam looked at trust and voluntary association of individuals and Bourdieu focused on conflict, power, and violence perpetuated by those who are interested in the game (Siisiäinen, 2000).

Understanding social capital. Clear definitions of social capital are built on these differing perspectives. Bourdieu (1986) defined social capital as “the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition” (p. 248). Coleman (1988) looked at social capital as both the social structures and the facilitated action inside those structures, where social capital occurs through changes in relationships and their structure. In this view, information supports action, making information an important commodity that individuals obtain by utilizing their relationship networks (Coleman, 1988).

Putnam’s (1995a, 1995b) vision of social capital is more collective, as it encourages group members to act in the best interest of the group, instead of the best interest of the individual, based on the norms and trust established within the networks. Hazleton and Kennan (2006) build upon reach by Putnam (1995a,b) and Nahapiet and

Goshal (1998) by emphasizing the multi-dimensional nature of social capital, as organizations use it as a means of “creating, maintaining, and using relationships to achieve desirable organizational goals” (p. 322). In this dissertation, a more Putnamian focus on trust and the need for civic community will help investigate how individuals come together (both on and offline) during crises to build community.

This understanding of social capital has three dimensions: structural, relational, and communication (Hazleton & Kennan, 2006), which provides insight into how communities of practice build and maintain social capital to use, both generally and during crises. Within the structural dimension, individuals are constrained by networks, which expand, organize, and reorient as necessary for goal attainment. The relational dimension focuses on the nature of the networked relationships, including trust of and identification with others in the network. Seibert, Kraimer, and Liden (2001) found that strong relational connections increases access to information and resources. The final dimension, communication, looks at the role of messaging in forming and maintaining relationships and communication behaviors, including exchanging information, identifying problems and solutions, and managing conflict (Hazleton & Kennan, 2006).

Much like with communities of practice, theorists are also moving away from the belief that social capital must occur face to face. Putnam’s (1995a) original beliefs about social capital formation came from community interaction, including voter turnout, public meeting and religious service attendance, civic group involvement, and famously, bowling league participation. However, “new communication technologies are driving out of fashion the traditional belief that community can only be found locally” (Hampton & Wellman, 1999, p. 476), and have been for some time. Social capital has evolved to be

more about the “social and supportive aspect of interaction that defines community” (Hampton & Wellman, 1999, p. 492), and not solely focused on a physical area or face-to-face interaction. The internet both supplements and increases an individual’s organizational involvement (Wellman, Hasse, Witte, & Hampton, 2001), especially when the individual is motivated by information acquisition (Shah, Kwak, & Holbert, 2001). Preferences for technology-based social capital are changing the face of civic participation, as individuals are simply taking their exchange of civic information, ideas, and opinions, and moving them online (Shah, Cho, Eveland, & Kwak, 2005).

Strong and weak ties. Another well-known theorist within social capital and social networking is Mark Granovetter. His work in the 1970s on strong and weak ties helped to provide a base for what would become major strides in social capital theory and social network analysis. His work in 1973, on the strength of weak ties, talks about the strength of a tie as a “(probably linear) combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which characterize the tie” (Granovetter, 1973, p. 1361). These characteristics are somewhat interrelated, and ties are characterized as strong, weak, or absent (either nonexistent or not substantially significant; Granovetter does note that in disasters and other similar contexts, it may be appropriate to separate negligible ties from nonexistent ones). If strong ties exist between people A and B, and people A and C, then B and C are likely to both be similar to A, and thus similar to one another, increasing the likelihood of a strong tie between B and C when they meet (which is likely, given their shared strong tie to A). Time and similarity will only increase the strength of the tie, which means that weak ties between A and B, and A and C, will lead to a weak, if not absent, tie between B and C (Granovetter, 1973;

Meng, 2011). Although Granovetter discusses the “forbidden triad” (1973, p. 1361), where A has strong ties to both B and C, but there is no tie between B and C directly, he notes that it never occurs—by sheer existence of two strong ties, there will always be a tie between B and C, even if it never becomes a strong one.

In larger networks, it is also very rare that there will be only one tie as the path between two points; in other words, A and B are connected, and so are A and C, but also B and D, and D and A, and A and E, and E and C, and so on (Granovetter, 1973). When information is traveling among the network described here, the probability that it will flow from A to C is directly proportional to the number of ties, and inversely proportional to the length of the relationship path, or the number of people between the two sharing information. Weak ties, then, serve as a bridge—a way to create more, and shorter, paths for information to travel within a network (Granovetter, 1973). Additionally, depending on the information sought, strong ties may not have the necessary information, knowledge or expertise to be helpful (Wright, 2002), so online or other networks of weak ties are more beneficial. The more an individual invests in those weak ties, or building a more beneficial network, the more social capital and social support the individual obtains (Meng, 2011; Nahapiet & Goshal, 1998).

Granovetter (1973) also links the issue of trust and weak ties, noting that an individual is more likely to trust a leader if there are intermediate personal contacts (either strong or weak ties) that connect the individual to the leader, and in doing so, vouch for the leader as trustworthy. This also relates to the transitive nature of ties: if A is connected to B, and A is also connected to C, then B connecting to C is more likely if A-B and A-C are both strong ties; less likely if A-B and A-C are weak ties; and

intermediately likely if one is strong and one is weak (Granovetter, 1973). Trust and reputation are derived from the network itself, and the provided combination of personal experience and acknowledged referrals (Jøsang, Ismail, & Boyd, 2007). Treating all ties as equal fails to give consideration to the different types of resources that are transferred and the unique linkages that exist within a network (Robins & Pattison, 2006). During crises, individuals go online not necessarily to become more sociable, but because they have a high degree of social connectivity and participation offline, and that connectivity is transferred to online interactions as well (Nie, 2001). Additionally, online information gathering pursuits are positively related to the production of social capital (Shah, McLeod, & So-Hyang, 2001). In a crisis, people are going to mobilize themselves online (Procopio & Procopio, 2007).

Structural holes and boundary spanners. Finally, the concept of structural holes is important for this dissertation, the name given to a weak tie bridge between two dense, strong-tie filled networks (Burt, 2005; Granovetter, 1973). Community members are known as brokers if they are one of a few who span those networks, improving the flow of information between the two. Members who have closure gain social capital by having few structural holes, which allows for an intense interconnectedness for the single network of strong ties. Brokerage offers the ability to widen connections without overloading it with too much information; closure allows for the “tight alignment of ideas” (Burt, 2005; Ganley & Lampe, 2009, p. 268).

Boundary spanners are those individuals who facilitate the sharing of knowledge by linking two or more groups that are separated by location, hierarchy, or function (Levina & Vaast, 2005). These individuals increase an organization’s social capital

significantly by using and relating the capital produced in other areas or fields to the organization (Levina & Vaast, 2005; Nahapiet & Ghosal, 1998). This is often accomplished because the boundary spanners occupy managerial positions, and then use their collected information to both personal and professional advantage (Wisensfeld & Hewlin, 2003). Within the bounds of complexity theory, boundary spanners are the interacting agents, who share their knowledge in order to produce adaptability and the broadest possible range of acceptable crisis responses; here, crisis communication needs autonomous decision making skills that would greatly benefit from social capital (Gilpin & Murphy, 2008). Internet users with bridging ties (those that allow them to be boundary spanners) have both higher degrees of social engagement online and more local civic participation offline (Kavanaugh, Reese, Carroll, & Rosson, 2005).

Typically, studies of organizational communication networks look at uniplex networks, or those that revolve around a single relationship forming a single network. A more fundamentally representative network, however, is the multiplex network, where multiple relationships create multiple networks (Lee & Monge, 2011), or one individual links to another based on more than one type of relationship (Wasserman & Faust, 1994). These multiple networks are interdependent, and ties in one network have been shown to impact the formation or dissolution of ties in other networks (Robins & Pattison, 2006). Multiplexity allows organizations to be connected through a variety of resource exchanges (Granovetter, 1985), including solutions, metaknowledge, problem reformulation, validation, and legitimation (Cross, Borgatti, & Parker, 2001). These communities are often based in cohesion, where there is a high density of ties among members (Newman, 2003). Multiplex networks are more likely in smaller geographic and

functional levels, as organizations engage in relationships with those who pursue the same resources within a particular environment (Lee & Monge, 2011). This suggests that information or knowledge sharing is kept within specific regional boundaries and organization types (Lee & Monge, 2011).

Collective action and status in communities of practice. Regardless of the existence of strong or weak ties, individuals are motivated in a wide variety of ways to contribute information to a group, often revolving around self-interest and the ability to gain a higher status based on the contribution (Willer, 2009). Individuals who make high contributions to collective action or knowledge earn higher status, exercise more interpersonal influence, are cooperated with more, and receive gifts of greater value (Willer, 2009).

Benefits to collective action and status. Individuals with high status also reap benefits to their professional reputation and become more deeply embedded into the network (Wasko & Faraj, 2005), or simply have high knowledge self-efficacy and enjoyment in helping others (Kankanhalli, Tan, & Wei, 2005). These complex motivations are also relevant during crises, where the holding of specialized knowledge may offer individuals greater network status (Coombs, 2012; Wasko & Faraj, 2005). These benefits are seen as strong enough to override the need for a high level of commitment to the network or for information reciprocity from others within the network (Wasko & Faraj, 2005). The cycle frequently begins when an individual shows concern for the group by contributing information, gaining respect from the group for doing so, and being more interested in continuing to contribute due to the increase in respect (Willer, 2009). Intentions to share knowledge within a network is also positively

impacted by attitudes toward and subjective organizational norms surrounding information sharing, and overall organizational climate (increases in a perceived climate of fairness, innovation, and affiliation lead to an increase in knowledge sharing) (Bock, Zmud, Kim, & Lee, 2005).

Knowledge sharing. Although not discussed in a crisis situation, Cummings (2004) discusses the idea that structurally diverse work networks improve the work of their members by engaging in external knowledge sharing with the other individuals in the network. A structurally diverse network will have members from a wide variety of different organizations, roles, and positions within them, and that increased knowledge allowed for better exchange of information and improved feedback with customers, experts, and others (Cummings, 2004). Because members of this network are in different environments, they have access to an increased diversity of task-related information, which provides increased and improved opportunities for knowledge sharing (Cummings, 2004; Monge, Rothman, Eisenberg, Miller, & Kirste, 1985). Cummings (2004) also suggests that organizations foster a culture that supports this sort of knowledge sharing across diverse networks, and provide incentives to employees who participate.

Knowledge sharing is also a way to improve status within an online community, which tends to be assessed through publicly available social references (Stewart, 2005). These references impact who communicates with whom, and how information is passed through the community, as those with high status are engaged in conversation more often than those with low status (Thye, 2000). The term 'status,' in this way, refers to an individual or group with prestige or honor, instead of a specific place within a social system, which allows the individual or group to expect respect and acceptance from

others (Blau, 1964; Weber, 1968). Additionally, individuals in the community pass status on to others by vouching for them to the rest of the community; providing high status vouchers also increases the status of the individual doing the vouching (Stewart, 2005). Social capital helps individuals increase their status through reciprocal exchanges within a particular network (Lin, 1999; Smith, 2005). Having a shared vision for an online community both directly and indirectly affects an individual's intention to continue building those relationships through the amount of trust that is developed (Wang & Chiang, 2009). Additionally, strong social interaction within the network improves shared vision and trust, necessities for building and maintaining dense social capital (Bourdieu, 1986; Wang & Chiang, 2009). This sort of interaction and accepted respect and status is also helpful for building relationships and gathering information from those outside of an immediate social circle or community (Granovetter, 1973), both of which are skills helpful and necessary in a crisis situation.

Structure of online communities of practice. Some online communities of practice include these ideas of networks, status, and relationships into their creation and setup. Having a clearly structured network increases participation in the community, as newcomers have increased ease of adaptation to norms and rules, which are clearly spelled out on the site, and organizational management is easily accomplished through the shape and frequency of the relationships among the individuals in the network (Ganley & Lampe, 2009).

Since collaborative online communities often rely on users and visitors to provide the content and value of the site, they are important members of the organization, and yet they do not have to abide by traditional organizational tools or control in order to

maintain their position or status, as their position in the community network provides those benefits (Ganley & Lampe, 2009). Often, high status rankings provide increased privileges for a user, or increased assumptions of authority and trustworthiness from other users (Ganley & Lampe, 2009). All of this knowledge on online communities of practice and social capital paints a clear picture of the benefit of having these resources generally, but not as much is known about the benefits that may exist for utilizing these communities during a crisis. Therefore, one final research question is posed:

RQ2: How, if at all, is an online community's crisis recovery impacted by communication within online communities of practice?

In sum, this literature review aids our understanding of how and why individuals would seek and form online communities of practice after crises. The utilization and abilities of social networks, the need for organizational relationships, the complex nature of crises, and the role of social media all play a role in community formation and maintenance. However, there is little research actively tying all of these threads together. Overlaps and consistencies can be found, but how and why these communities exist, the purpose they serve for members, and how organizations could utilize them to improve their crisis response and restoration processes remain to be understood. Consequently, this dissertation looks to take an introductory, collaborative step at developing that understanding by conducting interviews with key members of online communities of practice created after crises, and by engaging in qualitative content analysis of those online communities of practice, discussed in the following chapter. This case study approach will allow researchers to begin looking at the community of practice model and its applications in crisis situations.

Chapter 3—Method

To better understand how online communities aid individuals after crisis events this dissertation employed a qualitative case study approach (Yin, 2009). With this design, the researcher looked to “systematically investigate an event or a set of related events with the specific aim of describing and explaining this phenomenon” (Berg, 2009, p. 317). Two data collection methods were employed: (1) a qualitative content analysis of two online communities of practice that formed after two different crises and (2) qualitative in-depth interviews with key members and participants in each of the communities. Content analysis allowed for establishing layers of meaning or uncovering patterns within texts (Berg, 2009). Interviews within a case study provide “perceived causal inferences and explanations” of the topic at hand (Yin, 2009, p. 102). Using these methods together maximized the knowledge gathered and produced more convincing and accurate conclusions than using either method alone (Yin, 2009). Qualitative work overall aids with conceptual development and strengthens theoretical findings (Miles & Huberman, 1994). Other benefits to qualitative work include flexibility and increased ability for discovery and exploration of a new area, the ability to reveal complexity through thick description, and the power that comes with studying a process over a sustained period of time (Miles & Huberman, 1994).

A multiple methods approach matches the methodological thinking associated with the study’s theoretical framework: Complexity theory strongly encourages “methodological pluralism,” where no one method is seen as better than another and the partial knowledge provided by each method combines to increase understanding (Richardson & Cilliers, 2001, p. 12). Instead, various methods are treated individually

and then combined to provide a richer picture of the concepts and participants under study (Gilpin & Murphy, 2008). Multiple approaches, in this way, provide the best possible explanation for phenomena under investigation (Richardson & Cilliers, 2001). There are so many variables and so much partial knowledge in the typical crisis situation that complexity-based thinking and multiple methods help provide a framework for drawing helpful conclusions in these complex situations (Gilpin & Murphy, 2008).

Case Study

Case studies are appropriate methods for answering research questions that ask how something happens (Yin, 2009) such as how an online community of practice forms and functions after crises. A case study method has long been used to build deep knowledge of commonly occurring but little understood phenomena (Merriam, 2009). Case studies collect data from a multitude of sources within a real-life context, allowing researchers to maintain the holistic and meaningful characteristics of real life events (Yin, 2009). Yin (2009) also suggested using case studies to explain complicated causal links, to describe interactions and contexts, to illustrate topics of evaluation, and to improve enlightenment when there is not a clear set of outcomes. Finally, case studies present an opportunity for a rich understanding of how electronic discussion groups are used by people facing life threatening situations (Wen, McTavish, Kreps, Wise, & Gustafson, 2011). Cases studies focus on meaning in context, which is best when description and explanation are sought over prediction (Merriam, 2009).

Case studies, however, can be a complicated method to utilize. There is little basis for scientific generalization to populations outside of the scope of the study; nor is there a basis for causal relationships. Case studies typically yield large amounts of detailed

information, resulting in unwieldy narratives that may be difficult to construct and put into future practice. With this large data yield, this work is meant to be theory building and expanding, instead of generalizable to a larger population (Berg, 2009). However, as this study explores the nature and constitution of online communities, generalization is not an expectation of the project. Also, while the dissertation is a detailed and complex study with two cases, it was not unwieldy. The benefit of comparison and themes across case studies in exploratory work is tantamount. And, as Yin noted (2009, p. 15), one can “even do a valid and high-quality case study without leaving the telephone or Internet,” where cases can be constructed entirely through interview or content data gathered through those technologies, instead of relying upon other data collection methods, such as participant observation (Yin, 2009).

Yin (2009) also suggests that “multiple-case designs may be preferred over single-case designs” (p. 60). The benefits for having more than one case to analyze include the potential for more powerful analytic conclusions, the possibility of either direct replication or contrasting situations for analysis, and a stronger base from which to build theory (Yin, 2009). The major drawback to a multiple case analysis is the need for additional time and resources from the researcher (Yin, 2009). Analyzing both cases together allows for easier understanding of the theoretical replication, or the contrasting results between the cases (Yin, 2009), and to better answer the question of “do these findings make sense beyond this specific case?” (Miles & Huberman, 1994, p. 173). Miles and Huberman (1994) also discuss that “cases cannot simply be idly lumped,” but should instead protect each case’s unique configuration while cycling back and forth between the cases, their dynamics, and key pieces (p. 208).

Crises in particular are often researched in case study format. “Complexities are inherent following a crisis,” and utilizing a case study format allows the researcher the ability to explore and understand complexities such as descriptions of the crisis event, decision making processes, patterns, and work done toward recovery (Reiersen, Sellnow, & Ulmer, 2009, p. 125). While some case studies are seen as self-serving or delivering wisdom after the fact, there is a growing body of case work that provides organizations with transparent planning and strategy, as well as evaluation measures, for both internal and external issues (Jaques, 2008). One of the goals of this study is to better understand the online community of practice model, and to improve understanding as to how communities function and form after crises. There are a range of case studies in the crisis literature, which focus on a variety of crises, including natural disasters (Chen, 2009; Smith, 2010); food recalls or other issues of public health (Gaither & Curtin, 2008; Reiersen, Sellnow, & Ulmer, 2009); and violent acts (Wigley & Fontenot, 2010), similar to the two cases that will be discussed in this study. Case studies also offer the opportunity to apply theoretical knowledge to practical situations or push for future action (May, 2006). Applying this knowledge and being reliant upon the case study to provide a broad exploration of an issue makes a case study an appropriate method for study here (Kruckeberg & Bowen, 2004).

Using Online Sources

Online community of practice case studies take the perspective of one individual as an exemplar member of the community, or multiple individuals who act in similar ways, and use those experiences to better understand the interaction among community members, the pattern of messages and messaging, and the content or themes expressed

during different points in community participation (Wen et al., 2011). When looking at how these online communities of practice share knowledge, they are discussed as a knowledge network, or a group that passes knowledge from one source to another. These sources include individuals, organizations, or non-human agents that are knowledge repositories, such as websites. Individuals within this community then create, distribute, or apply knowledge that is passed among the sources (Choi, 2010). Researchers need to remember that the internet is an environment where fast interactions and response times are the norm, long documents will not be read, and full disclosure may not be realistic or achievable (Rosser, Gurak, Horvath, Oakes, Konstan, & Danilenko, 2009).

Within this dissertation's research process, the researcher took great care to observe and appreciate the emotional responses of participants while attempting to bracket her own emotional responses. Principally, this was because the researcher was not personally affected by the crises discussed, and did not want to offend participants by pretending to have been affected (Chua, 2009). During the Facebook interviews, every participant cried while discussing their reactions to the crisis and/or their relief in finding the community of practice to help them during recovery. While the researcher did avoid acting like she had been affected by the crises, her response to the emotional outpouring of participants was to be sympathetic and to try and better understand the role the community played in their handling of that emotion. This was not a neutral process; instead, the connection formed between researcher and participant likely allowed for a better understanding of the data and the importance of the topic.

Additionally, the researcher did not remain invisible to the communities; postings were made on the case sites indicating that they are under observation, and interviews

were requested with multiple members of each case site. All postings disclosed the researcher's email address and identity.

While announcing the research intentions to the community may have influenced future communication patterns, or provoked members to opt out of continued research participation (Eysenbach & Till, 2001), the data of most interest to the researcher is that which existed in the more immediate response to the crisis, which was in the significant past for two of the case studies (July 2012 and October 2012 for the Colorado shooting and Hurricane Sandy, respectively). Therefore, announcing the researcher's intentions to these communities did not alter the primary data of interest. The researcher announced observation, as transparency with participants is an ethical requirement for research (Eysenbach & Till, 2001). Additionally, informed consent is required when research participants believe themselves to exist in a private context or with a reasonable expectation that no observation or reporting is taking place (American Sociological Association, n.d.). Since individuals participating in the online groups were not assumed to seek public visibility, it was appropriate to seek consent from the participants by making it clear that the communities were under observation (Eysenbach & Till, 2001; Pequegnat et al., 2007; Stewart & Williams, 2005). Online community participants were also recruited as interview participants; anyone interested in participating in an interview reviewed and consented to an institutional review board-approved consent form before the interview was conducted.

When discussing online-based research, Stewart and Williams (2005) provide strong insights as to what is different and what remains the same when compared to research conducted offline. Online, there are no physical space constraints, which means

that the number of people participating in the research is not limited, but a larger number of participants means longer and more detailed discussion (often made easier by technology that threads the conversations) (Stewart & Williams, 2005). Individuals online often expect or maintain a certain amount of anonymity, leading to instances where participants speak or act in ways that are not wholly representative of their true thoughts or beliefs (Stewart & Williams, 2005). Two ways for a researcher to be more cognizant of this is to spend more time with the online community prior to conducting the research, to develop a deeper understanding of the culture within the community (Stewart & Williams, 2005), and to distinguish between different types of community interactions (Knobel, 2003). Spending additional time with the community also helps the researcher understand the social dynamics and to either target particular roles within the community for study, or to obtain a variety of roles for study (Knobel, 2003). For this study, I spent approximately 15-20 hours over a period of six weeks observing both the Facebook and Twitter communities by liking the page on Facebook and following the appropriate hashtags on Twitter, prior to engaging with them in a research capacity. Reading posts and tweets (all of which are available to anyone with an internet connection) allowed for some of that initial understanding of the culture and the interactions discussed by Stewart and Williams (2005) and Knobel (2003).

Ethical online research. The Association of Internet Researchers (2012) established three major considerations for conducting ethical internet research that the researcher followed in this dissertation:

1. *Human subjects:* The term ‘human subject’ is often not the most significant one for knowing whether or not a situation raises questions of research ethics,

and that researchers consider other terms to be just as significant (harm, vulnerability, and personally identifiable information) in understanding what constitutes inquiry that would be ethically challenging.

2. *Public/private*: Individual and cultural understandings of privacy are ambiguous, contested, and changing. Individuals may operate in public online but expect privacy, or know that their information is public but believe in restrictions on how that information is or should be used by other parties (including researchers). The Association suggests Nissenbaum's (2010) concept of contextual integrity as a guiding principle, which looks at a "not simply restricting the flow of information, but ensuring it flows appropriately," including paying attention to moral, political, and context features on how that information is used (p. 2).
3. *Data (text)/persons*: This consideration is of what 'counts' as a person: an avatar? A tweet? An online biography? and is important when looking to minimize harm to participants. Participants must be adequately protected, and one way to ensure this is to focus on how the research procedures extract data from lived experience. This involves looking at how far removed the physical person who created the online information is from the information itself. The closer data is to the lived experience of the individual, the more researchers must strive to protect the participant from psychological, economic, or physical harm.

Overall, the Association of Internet Researchers (2012) advocates a process approach to ethics in internet research, where researchers address and resolve ethical

issues as they arise. The association also provides a set of questions for researchers to ask themselves prior to the start of a project, and again in the process of analyzing ethical issues as they arise. These questions are discussed and answered here by the researcher as a way to enhance the ethical considerations of the study (Association of Internet Researchers, 2012).

1. *How is the context defined and contextualized? Does the research definition of the context match the way those who use the context would define it? What are the ethical expectations of users, particularly in regard to privacy?*

Both the Facebook and Twitter communities of practice are public feeds, which is common knowledge to all participants. However, participants may still expect a certain level of privacy, which the researcher attempted to support by refraining from attaching names to comments made online and providing all interview participants with a pseudonym. The context of the online space as a community, as a group of individuals who have come together to share knowledge and information, was thus the same definition for the researcher and participants.

2. *How is the context being accessed? How are participants approached by the researcher? If online access is public, do participants perceive the context to be public?*

The context, in this case, either the Facebook page or the Twitter hashtag community, was accessed by the researcher in the same manner the participants accessed it: by either “liking” the Facebook page or searching for specific hashtags on Twitter. Since both of these steps required action on the part of the individual, it is reasonable to expect that at least some community members see their interactions as private. The comments to the

communities indicating that they were being studied allowed for potential participants to ask the researcher to either remove their posts from the research entirely, to not participate in the interviews, or to participate but ask for extra considerations to maintain their anonymity. No participants took the researcher up on this offer.

3. Who is involved in the study? What are the ethical expectations of community members? What is the ethical stance of the researcher?

The people involved in the study are those who in some way participated in either the Facebook or Twitter communities. These could be individuals from anywhere in the world with an internet connection and an interest in the crises that created the communities. Neither community has a stated understanding of ethical expectations or beliefs, although Facebook as a corporation does note that Facebook users should not infringe upon or violate anyone else's rights (Facebook, 2013). The researcher thus followed the ethical guidelines put forth by the field and the understandings from the Association of Internet Researchers in order to maintain ethical behavior. The researcher's stance is that in helping participants maintain anonymity and privacy, allowing them the opportunity to explain their participation and ideas through interview participation, and having approached the data with an open mind and willingness to present the data honestly will maintain ethical behavior.

4. What is the primary object of study? What are the ethical expectations commonly associated with these types of data? Can information collected be linked back to an individual?

The primary object of study is the community itself, understood through the messages, interaction, and observations of its individual members. This information was gathered

through interviews and content analysis, two types of data with strong ethical expectations to accurately and honestly represent the experiences of participants, and for the researcher to be guided by strong ethical beliefs. If individuals provide a name within the online community (either a given name or an online avatar), those names were not used or reported in the research, thus greatly reducing the chance that information could ever be linked back to an individual. It is possible that an individual could search online for the direct quotes and find the original posting; participants were made aware of this possibility in the consent form for the interview. Participants who were willing to be interviewed were given pseudonyms for being quoted in the study. Additionally, direct quotes will only be used when the data is required to support a point, and will not pose a threat to the source.

5. How are data being collected, managed, stored, and represented?

Data was collected and stored on the researcher's computer, in password-protected files and backed up on a password-protected flash drive. Interviews were audio recorded with the consent of participants; audio files were stored in a locked drawer in the researcher's office and disposed of after five years of non-use. The researcher is the only one to have access to the data.

6. How are persons and data being studied? Does the method of analysis require direct quoting?

The research engaged in interviews and content analysis, both of which lent themselves to direct quoting. The researcher used a pseudonym for all interview participants in order to reduce the potential for connecting ideas to individuals. Since it is possible for someone to search online and find the individual responsible anyway, direct quotes are

only used when data is required to support a point and doing so did not pose a threat to the source. Additionally, when possible, themes and ideas from the content and interviews were drawn together into larger codes and groups of information, and not presented as attached to an individual idea or person.

7. How are findings presented? Could materials be restricted because of copyright?

Findings are presented in this, the completed dissertation and articles to be published in top-tier journals in communication or related fields. The only potential copyright concerns would come from using screenshots of either Facebook or Twitter content, so the researcher has not used screenshots to provide context or to quote individuals. No other copyrighted material was used during this study.

8. What are the potential harms or risks associated with this study? Who or what else could harm the community beyond the researcher? Are risks being assessed throughout the study?

The researcher included risk assessment as part of the ongoing understanding necessary for this project. Risk assessment includes thinking about when using direct quotes might pose direct harm to participants and working to protect participant anonymity as much as possible throughout the project. Risk assessment was included in memos and peer debriefing that occurred throughout data collection and analysis, and no action or inaction on the part of the researcher was seen as potentially harmful to participants. Readers of the published results of the research would have the opportunity to access the community themselves and to post information or thoughts about the research to the community, and those comments have the potential to be negative or cause harm in some way. The

researcher explained to the interview participants the potential for that result, and asked them to report comments of any nature to the researcher and to the appropriate governing bodies for each platform, as both Facebook and Twitter have ways of having excessively negative or inappropriate comments removed from a community.

9. What are potential benefits associated with this study? What greater benefit justifies the potential risks?

There are not specific benefits to the participants themselves. Instead, the benefits are to the greater knowledge and understanding of online communities of practice that can be used in a crisis situation. The researcher hopes that eventually, building this body of knowledge will provide general benefits to individuals who are involved in a crisis (improving what is known about crisis response online can aid individuals and organizations looking to gather and share crisis information online in the future), which justifies the potential for the types of risks that have been discussed here.

10. How are we recognizing the autonomy of others and acknowledge that they are of equal worth to ourselves? Will informed consent be required? What procedures to obtain consent will be followed?

Autonomy was granted to participants throughout the research process. Any participant who wished to have their contributions removed from the content analysis could have requested that from the researcher, although none did so, and community participants were in no way required to participate in an interview. Additionally, participants who did initially agree to an interview were told that they were welcome to stop their interview participation at any point, although again, none of the participants did so. Interview participants were all at least 18 years of age (although their participation may occur

within the content analysis), and informed consent was required. Since all interviews were scheduled through Facebook messaging and took place over the telephone, participants received the consent form through Facebook's messaging service to review prior to participating in the interview. Informed consent was not required for the content analysis, but the researcher did post a notice that research was being conducted on the community, inviting community members to ask questions or ask for their content to be removed from study. No community members asked for their content to be removed. Neither Facebook nor Twitter have publicly available requirements for external researchers.

11. What particular issues might arise around the issue of minors or vulnerable persons? In situations where identity, age, and ability are hidden, how will harm be considered as an ethical concern? How are minors identified when demographic information is not required?

It is possible that the communities included minors or vulnerable persons. Since the communities are focused on crises, the researcher understood that everyone in the community was affected by the crisis in some way, and thus proceeded with respect and sympathy for their particular experiences. Since often, identity, age, and ability were hidden, the researcher assumed that the standard measures detailed above to reduce harm were sufficient in protecting all persons, as very few ability concerns are impacted in online conversation. Individuals who are under the age of 18 were not able to participate in interviews, but the researcher does acknowledge that their contributions may have been part of the content analysis. However, as viable members of the internet community (Facebook and Twitter both ask for community members to be at least 13 years of age),

their contributions were included in the content analysis as part of the structure of the community.

Generally, Trottier (2012) notes that privacy violations are becoming a part of normalizing social media visibility, and that surveillance on social media is increasingly a lived condition; in other words, individuals are often willing to give up privacy in order to exist online. As such, the researcher identified herself to the online community of practice, including establishing a way for all community members to contact the researcher about the work conducted (Knobel, 2003), in order to clarify for participants at what point their privacy expectations and realities might be divergent.

Discussion of Case Sites

Yin (2009) talks about selecting the appropriate unit of analysis (the case) by noting what is specified within the research question(s) for the study. In this study, both research questions revolve around an online community that was formed after a crisis. Two cases (Hurricane Sandy and the Colorado shooting) were chosen to increase diversity in two main areas: the platform utilized (see below for further discussion of platform relevance), and their fit within established research categories of crises, where natural disasters and acts of violence are two of the largest crisis categories (Ulmer, Sellnow, & Seeger, 2011). Finding multiple platforms used by different communities also helps diversify the knowledge gathered in this research; the Hurricane Sandy community exists on Facebook, and the Colorado shooting survivors found community on Twitter. These platforms and cases will be discussed in significantly more detail in the next section.

When determining where to look for cases, the researcher started with those platforms known to be well-used for online communities, where well-used would indicate a place that a larger percentage of online adults might go for information in a crisis. According to the Pew Internet and American Life Project, in 2013, 73% of adult internet users reported using a social networking site like Facebook or Twitter (Duggan & Smith, 2013). As of December 2013, 18% of online adults use Twitter, and 71% use Facebook, with 42% of social network site users having more than two social networking accounts (Duggan & Smith, 2013). As platforms with huge shares of the online audience—Facebook has one billion monthly active users (Facebook, 2012), Twitter has over 100 million active users (Solis, 2012)—Facebook and Twitter are platforms with a significant enough presence to be used as case platforms.

Facebook is a social media platform that aims to “give people the power to share and make the world more open and connected” (Facebook, 2014). Seventy-one percent of online adults use Facebook (Duggan & Smith, 2013). Facebook allows users to create a profile page and then post pictures, videos, and text about their lives to share with others. There is also an option for groups, businesses, or organizations to create a Facebook page, that works like an individual profile page but can also provide analytics about the individuals that interact in that space.

Twitter is a micro-blogging platform, where users can send messages of up to 140 characters, either directly to others or into the general platform. Twitter aims to help individuals “create and share ideas and information instantly, without barriers” (Twitter, 2014). Eighteen percent of online adults use Twitter (Duggan & Smith, 2013). Twitter

can be and is utilized by businesses, media, developers, and individuals to engage with others, express themselves, and discover what others are discussing in real time.

Miles and Huberman (1994) also discuss the question of how many cases should be studied, and note that it is a conceptual issue, not a statistical one. Instead, they advise the researcher to ask how many cases would give the researcher confidence in the analysis, noting that it depends on the richness and complexity of the cases. Using multiple cases allows for the possibility of direct replication, and analytic conclusions that are similar in more than one case are more powerful than a single case alone (Yin, 2009). Thorne (2009) also notes that a single narrative case study might represent a pre-existing bias and a matter of opinion instead of a more representative analysis. Since there is no magic number for how many cases is sufficient, but instead the number that makes sense for the project (Miles & Huberman, 1994), this study focuses on two cases in order to provide a range of crisis types and multiple viewpoints of what it means to deal with a crisis in an online community of practice. The two cases are detailed in the section below.

Case #1: Hurricane Sandy and Jersey Shore Hurricane News Facebook.

Hurricane Sandy, a “superstorm” that hit the East Coast between October 29-31, 2012, was responsible for the deaths of approximately 100 people (Keller, 2012), shut down the New York City subway system for days, and caused New Jersey Governor Chris Christie to estimate overall damage of \$29.4 billion (Francescani, 2012). The researcher selected this case due to the extensive nature of the damage caused by the crisis, information seeking needs of those impacted, and its recovery efforts, and due to the extensive role that social media played in the recovery. Additionally, a number of significant research

studies looking at communities and social media during a crisis have dealt with natural disasters (e.g., Macias et al., 2009; Procopio & Procopio, 2007), allowing the researcher to build on and extend previous research.

New York Governor Andrew Cuomo asked the federal government for \$30 billion in disaster aid for the state (Francescani, 2012), and on November 1, 2012, United States Health and Human Services Secretary Kathleen Sebelius declared a public health emergency in New York (NY1 News, 2012). The Federal Emergency Management Agency (FEMA) sent over 4,000 personnel into the New York and New Jersey areas to 24 Disaster Recovery Centers (FEMA, 2013), as initially more than six million area residents were without power (NBC News, 2012), and by November 1, more than 450,000 ConEd customers were still without power, and some would remain without for weeks (NY1 News, 2012). Total estimated economic losses from Hurricane Sandy are between \$30 and \$50 billion. In comparison, the two other most costly storms in United States history were Hurricane Katrina in 2005 (over \$100 billion) and Hurricane Andrew in 1994 (\$46 billion) (Stone, 2012).

Response was seen as overall collective and helpful, but some local officials admitted that they could have done more. Mayor William Akers of Seaside Heights, New Jersey noted that he was overwhelmed, and should have communicated information sooner, or spoken to residents personally, although he also noted that it was not from lack of caring or effort (Goldberg, 2012). When minimal information was available in the Mountainside, New Jersey community, a number of residents went to the Facebook page of the area's Recreation Department, asking for answers and expressing their anger at what they saw as a lack of a solid emergency plan (Goldberg, 2012). One town over, in

Westfield, New Jersey, the website and Twitter feed for the town were regularly updated, and the mayor held two dial-in conference calls for residents, the first of which had 4,600 phones connected (Goldberg, 2012). New Jersey Senator Linda Greenstein cautioned against relying too much on electronic communication, however, as storms like Sandy often cut off power swiftly and for extended periods of time (Goldberg, 2012).

Whether or not electronic media is a focus in recovery, they were the used by a lot of people in the immediate aftermath of Hurricane Sandy. According to *New York Magazine*, Hurricane Sandy created a “vortex in which the virtual community experienced the storm both in seclusion and all together” (Coscarelli, 2012, p. 1). Instagram, the photo sharing website, saw uploads of up to 10 images per second tagged with #Sandy during the storm (Laird, 2012). One function of all of this social media sharing is that not all of the pictures were real; fake sharks, ominous skies, and floods on the floor of the New York Stock Exchange all made the rounds, and all were eventually ousted as either not from the time of the storm, not from where Hurricane Sandy existed, or were crafted entirely on a computer (Coscarelli, 2012). BuzzFeed, a prominent social media website, discussed the impact of these rumors, eventually deciding that they were a small price to pay for having the platforms at all: “We end up with more facts, sooner, with less ambiguity” (Herrman, 2012, p. 1). As of March 20, 2013, some areas in New York and New Jersey that had been affected were still waiting to receive recovery money from the government (Hayden, 2013); although it was last updated during the one year anniversary of the storm, FEMA provides information and updates on its website on the work it’s done to help victims (FEMA, 2013); and residents of affected areas are still working to recover from the devastation (Russell, 2013).

Justin Auciello created the Jersey Shore Hurricane News Facebook page in 2011, a few days before Tropical Storm Irene hit the New Jersey area. During Hurricane Sandy, Auciello evacuated the area, but had friends who stayed in a hotel powered by a generator sending him pictures and information about the area (Calefati, 2012). As of December 8, 2013, the Facebook page had 217,421 Likes, and 10,869 people who had participated in conversation on the site in some way (Jersey Shore Hurricane News, 2013). Although the page also mentions other severe weather or news that local residents should be aware of, there were frequent updates about Hurricane Sandy recovery, what organizations were offering support, and how residents can take advantage of those offers to rebuild (Jersey Shore Hurricane News, 2013). On the About section of the page, Auciello states that he has years of journalistic experience, both traditional reporting and social media-based, and notes that the page is meant to be a “bottom-up, two-way news outlet...news for the people, by the people,” and that it is also available to be used as a “community resource (events, missing people, lost animals, etc.)” (Jersey Shore Hurricane News, 2013). As a case, this Facebook page had a large existent community, a strong support and commitment to providing information and updates that are not often found online, making it a reasonable choice for a detailed study.

In looking at the timeframe in which to study this community, three separate weeks were chosen. A stratified purposive, within-case approach to gathering this information was used, which allowed for specific subgroups of moments in time to be chosen and compared, while also providing insight into the potential for growth, development, and connection within the community over time (Berg, 2009; Miles & Huberman, 1994). This type of purposive sampling is one of, if not the most common

sampling method for crisis communication research (An & Cheng, 2012). All posts from these weeks (including all likes, comments, and shares) were gathered into documents for analysis, allowing for nesting of within-case information (Miles & Huberman, 1994). This resulted in 522 posts, with a combined total of 159,092 likes, 47,155 comments, and 130,922 shares. The subgroups of weeks for data collection were the first week of the storm (October 29 to November 6, 2012), to see how the community began and dealt with one another during the initial crisis; a week at the six month anniversary of the storm (April 28 to May 6, 2013), which is also close to the time the Jersey Shore boardwalk area reopened (Stump, 2013); and the one year anniversary week of the storm (October 29 to November 6, 2013), to see the potential for long term community engagement and resilience.

Case #2: Aurora, Colorado shooting and Twitter. On July 20, 2012, James Holmes, 24, entered the Century Theater in Aurora, Colorado and identified himself as The Joker before killing 12 and injuring 70 others (Associated Press, 2012b). The attack began approximately 30 minutes into the midnight showing of the third installment of the Batman trilogy, *The Dark Knight Rises* (Associated Press, 2012b). Authorities noted that Holmes had been stockpiling explosives and ammunition for months prior to the shooting, many of which were used to rig his Denver apartment, in an apparent attempt to harm or kill first responders to that scene (Associated Press, 2012a). The Bass Pro Shops in Denver, Colorado, where the guns were purchased, were said to have followed protocol in the sale (Pearson, 2012). Holmes was seen as an excellent but shy student with no criminal background prior to the shooting; he had dyed or painted his hair red prior to entering the theater in order to look more like the Joker, who he noted was the

enemy of Batman in the films (Associated Press, 2012a). Holmes bought a ticket to the movie, went into the theater as part of the crowd, and propped open an exit door to don protective tactical gear before throwing two gas canisters for smoke and confusion and spending some of his 6,000 rounds of stockpiled ammunition. At least one bullet went through a theater wall, striking someone in an adjacent theater (Associated Press, 2012a). The FBI initially aided the local investigation, although it did not appear that the incident was related to domestic terrorism, and President Obama cancelled his events for the next day and ordered flags to be flown at half-mast at the White House (Pearson, 2012). Later, Christopher Nolan, director of the film, came out condemning the shooting as savage and appalling (Pearson, 2012).

While a Twitter community is less contained than one on Facebook since there is no single page to capture all of the tweets related to a topic, it is still able to be bounded and defined. Twitter has, according to leading social media blog Mashable, “long been accepted as having become a serious social platform for hard news” (Laird, 2012, p. 1). Twitter is also seen as the platform where there is “the broadest pickup in a very immediate way” during a crisis (Gabbatt, 2013, p. 1). Users ask questions and get almost immediate responses with Twitter, and the photos and information that are sent out in real time get the quickest and biggest pick up by Twitter community members (Gabbatt, 2013).

The particular community that emerged after the shooting was accessed through the search engine Topsy, which is used to find and sort tweets and images, pictures, and links shared through Twitter. Twitter’s official guide for journalists suggests they use Topsy instead of their internal search function (Twitter for Newsrooms, n.d.). Topsy has

tweets indexed from at least mid-2008, and provides an influence algorithm to allow search for tweets that were frequently retweeted, or came from an account that is influential, or sort by relevance to the topic (Boutin, 2011). A search on Topsy for the terms ‘#batman’ and ‘#shooting’ returned 687 items, ranging from July 19, 2012 to March 20, 2013. These terms would have been used in tweets by individuals who responded to or initiated conversation about the shooting, and in that way created a community worth understanding. In January 2013, a Colorado judge found that there was probable cause in the case, and ordered Holmes to stand trial; the trial had been initially scheduled to begin in February 2014 (CNN, 2013). However, Holmes’ trial has been indefinitely postponed due to the need for additional psychiatric testing, although Holmes has admitted guilt in the shootings (Associated Press, 2013). While still a purposive sample, this moves beyond the within-case nesting (Miles & Huberman, 1994). Instead, an intensity-based sampling occurred, which would provide rich information during an intense but not extreme time for the phenomenon (Miles & Huberman, 1994). In this case, the six months following the shooting provided a reasonable number of tweets to study without being overwhelming or extreme.

Interview sampling. Purposive sampling provides the researcher with those participants who will offer the richest details in helping to answer the research questions (Merriam, 2009). After 89 interview requests, nine members of the Facebook community were willing to participate in in-depth interviews, completed after the content analysis, allowing for both maximum variation and theoretical elaboration within that community (Miles & Huberman, 1994). Seventy-one interview requests were sent out over Twitter,

and while three people responded to those requests, all ultimately declined to be interviewed for the project.

Interview participants were solicited from each case community, with an aim of 10-15 participants per community for a total of 20-30 interviews. A posting was made to each of the communities' main space or using appropriate means to draw attention to the continuation of the conversation (on Twitter, this included using two hashtags (#batman and #shooting) from the initial conversations and attempting to reach the most frequent contributors to the conversation directly). Since this proved to be an insufficient method of gathering participants (no one responded to either message), individual participants were sought out and contacted through the social media platform's messaging system (paid inbox messages for Facebook and @mentions on Twitter), asking for an interview.

As a clear community leader (those who control the space, are given deference by other community members, or have some other form of specified leadership within the community), Justin Auciello, the creator of the Facebook page, was contacted as well, both to let him know of the research that would happen, and to invite him to be part of the process through an interview. Other potential Facebook interviewees were chosen through a purposive sample in order to have a variety of levels of involvement and perspectives within the community (Rubin & Rubin, 2005). Sampling was based upon member interaction within the page; individuals were approached for an interview if they had very high levels of interaction, very low levels of interaction, or seemed to have posted something particularly relevant or unique to the community. All of these characteristics (levels of interaction, relevance or uniqueness of posting) were based upon the researcher's perspective, formed through weeks of watching the community and

immersion in the content analysis. Based on the researcher's analysis of the Twitter community, there was no single person who could be credited with acting as a clear leader. Other participants were chosen through the same purposive sampling as was used for the Facebook interviews (Rubin & Rubin, 2005). Due to the lack of interaction upon these requests, the researcher's Twitter account was briefly shut down under suspicion of solicitation; the account was reinstated only with the promise that no additional requests would be made.

While no interviews were conducted with members of the Twitter community, some of the community members did write responses saying they did not wish to be interviewed. Those messages were coded along with the other content, and some of that information is presented here; when that happens, community members were also given pseudonyms. Some punctuation changes were made to the direct quotes from the interviews to improve clarity and understanding, but all posts, comments, and tweets were put forth as they existed within the community.

Interviewees included those who organized or otherwise facilitated the community, community members with varying levels of participation and physical distance from the crisis, and members who had left the community by the time of the interview. All interviews were conducted over the telephone, for ease of contact and because geographic distance made in person interviews logistically impossible. As participants may have had concerns about maintaining their online anonymity or identity as a constraint to completing the interviews, the call for interviews made it clear that participants could engage in a phased approach to the interview if they wished. A phased approach offered the participants maintenance of their online anonymity and/or identities

through participating in email rather than in-person, telephone, or Skype interviews. Then, participants had the opportunity to migrate to in-person, telephone, and/or Skype interviews if they felt comfortable doing so as to facilitate a more dynamic conversation between participants and the researcher. Although this was offered to all potential interview participants, none of them took the researcher up on this option. Consent forms and research protocols were sent to the participants through Facebook's messaging system. Follow up questions with participants occurred via email.

Since there was difficulty in obtaining interview participation, the researcher continued to reach out to additional participants over a period of two months, and asked the leader of the Facebook community for aid in identifying potentially responsive community members. While Justin was initially willing to provide such a list, it never materialized, despite multiple follow-up requests from the researcher. Since the interview sampling was purposive, the researcher acknowledges that the participant makeup may not reflect the full variety of community participation. In order to best hear the variety of voices in the community, the researcher specifically requested a wide variety of participants in the call for interviews. Since online communities of practice are often built to suit the needs of members (Janson et al., 2004), and those communities offer support for the legitimate peripheral participant (Lave & Wenger, 1991; Wenger et al., 2009), the researcher was gratified to be able to interview community members with a wide variety of interaction levels, from lurkers to those who actively both asked for and provided the community with support, which enabled a broader understanding of participation in an online community of practice.

The Interview Method

An interview is a conversation with a purpose (Rubin & Rubin, 2005), the most common method of qualitative data collection (Merriam, 2009), and one of the most important sources of case study information (Yin, 2009). In-depth interviews are ideal when research questions cannot be answered quickly or simply, or when participants may need room to explain their responses or experiences (Rubin & Rubin, 2005). Interviews allow researchers to better understand how individuals make meaning of their world, themselves, and those around them (Berg, 2009). These types of interviews also allowed for participants to offer both facts and opinions, which allows for otherwise unobtainable insights (Yin, 2009). Questions took many forms: main questions to get conversation started and allow it to expand and evolve; probes for additional depth and detail, elaboration and clarification; and follow-up questions for the expansion of ideas, incorporate new ideas, and to explain potential oversimplifications (Rubin & Rubin, 2005).

Interviews include an opportunity for both detail and depth, which act as evidence and exploration respectively (Rubin & Rubin, 2005). There is a fluid and flexible format, meant to increase rapport between the researcher and the participant, and the researcher must pay attention to the personality they present in that interaction (Berg, 2009). Additionally, social interpretations and nonverbal communication play a large role in participant responses, so researchers need to take care to hear not only what is said but how it is said (Berg, 2009). Berg (2009) also suggests that the researcher become comfortable with awkward silences, particularly when researching potentially

uncomfortable or emotional topics such as crises, and to simply let the participants talk and be respectful of their response.

Drawbacks to interviews as a method are the potential for bias (both from the researcher and the participants), often based around the questions themselves. There is the potential for question ordering bias, affectively worded questions which provoke negative emotional responses, double barreled questions which ask for responses to two issues in one, or questions that are overly complex (Berg, 2009). Interviews are also time consuming and researchers need to be prepared to enter into a conversation where they are unsure as to what might be said or how a topic might be discussed (Rubin & Rubin, 2005). Although interviews do not allow the researcher to witness interaction among participants (Berg, 2009), that interaction is observable through the content analysis portion of the case. Limitations of telephone interviews include less time to build trust through casual conversation, and a difficulty in knowing when certain questions may be sensitive or stressful to the participant (Rubin & Rubin, 2005). Limitations of email interviews include a decrease in the depth of material, the loss of nonverbal cues, and the potential for a smaller sample size (Chen & Hinton, 1999; McCoyd & Herson, 2006). The researcher tried to minimize these limitations by spending time building rapport and explaining the project prior to the interview, and searching for a connection with the participant that moved beyond the topic of the interview (Rubin & Rubin, 2005).

The interview protocol was semi-standardized, with some structure and consistent questions among all participants, with the option for additional or further questioning when appropriate (Berg, 2009) (see Appendix A for the protocol). Individuals want to talk about what is important to them, especially when discussing a crisis situation, so the

interviews encompassed a wider range of topics in order to provide space for the participant to discuss what they find important (Rubin & Rubin, 2005).

All interviews were fully transcribed by the researcher to aid with data analysis. The researcher wrote memos after each interview, and multiple times throughout data collection and analysis in order to identify overlaps between personal and research experiences, maintain reflexivity, and provide a space for the initial analysis of concepts (Rubin & Rubin, 2005). Writing these memos helped the researcher move from empirical data to a conceptual level, adjusting and expanding codes and moving toward a deeper understanding of the material (Miles & Huberman, 1994). Memos were analyzed as well, pulling together incidents from the interviews or interactions within the community that had overlaps or useful connections to the collected data.

The Content Analysis Method

Content analysis reveals the constructs and understandings of a group situated in a complex discourse (Berg, 2009). Berelson (1952, p. 18) looks at content analysis as “the objective, systematic, and quantitative description of the manifest content of communication.” This interest in message construction and content illuminates details not otherwise found from other methods. Content analysis is “fruitfully employed to examine virtually any type of communication” (Abrahamson, 1983, p. 286), making it an excellent method for investigating social media platforms, which have a variety of interaction and engagement. The analysis includes both manifest content (that which is physically present and countable) and latent content (more of a deep structural meaning behind the message) (Berg, 2009). Looking at latent content aided the researcher in deciphering and discussing the emotional and subtextual meanings that existed in messages related to the

crisis. When determining the impact of the online community of practice, latent content offers insight into how individuals offered one another support, either physical, mental, or emotional, and the impact that would have on the community overall. Berg (2009) suggests that when working with latent content, there need to be at least three independent examples for each interpretation, each one from a different respondent within the analysis, and suggests that working with both more fully conveys the overall analysis.

Content analysis has seven major elements to analyze: words or terms, themes, characters (individuals), paragraphs, items (the whole unit of the message), concepts, and semantics (how strong or weak the word is) (Berg, 2009). This study made the most use of words, themes, items (such as whole tweets, or whole status updates or comments), concepts and semantics. Strauss (1987) notes that when engaging in open coding of these elements, the researcher ask four questions to act as guidelines:

1. *Ask the data a specific and consistent set of questions.* Generally, this is asking what the data are pertinent to, but also involves openness to unanticipated results. This study utilized the research questions elucidated above.
2. *Analyze the data minutely.* In the beginning, more is better; more ensures significant theoretical coverage, and additional coding can be performed later to combine or remove codes. Data were considered on the minute levels that stemmed from the major elements previously discussed.
3. *Frequently interrupt the coding to write a theoretical note.* This is a key piece of grounded theory, where the researcher takes time to make note of ideas and

comments that occur while coding. Notes or memos written while coding often provide the basis for future theoretical ideas and contributions that might otherwise be lost in the minutiae of coding. The researcher made comments and memoed throughout the entire project, and referred back to them frequently to pull out any common threads or themes.

4. *Never assume the analytic relevance of any traditional variable until the data show it to be relevant.* The assumption is that all variables are contributing to a condition or explanation, but that may not be the case. The data must support all assumptions in order for the researcher to present it. Patterns or potentially relevant items are discussed later in this paper in terms of the relevant literature and complexity theory to help offer explanations or support for analytic relevance.

Since communities for the analyzed crises are still ongoing, the content analysis began with the date of the crisis (October 29, 2012 for Hurricane Sandy and July 20, 2012 for the Colorado shooting) until the content of the community moved away from regular (multiple postings or interactions per day) and significant discussions of the crisis itself (discussions involving interactions among community members, not simply posting information), or six months after the date of the crisis. Combining two goals of crisis response, those of limiting the duration of the crisis (Mitroff, 1994), and responding quickly, especially via social media (Coombs, 2012), leads to an argument for believing that the most important or impactful information occurred within the first six months of the crisis.

The researcher analyzed all posts within those six months, including likes, shares, retweets, and comments. A coding scheme was developed and compared with the coding scheme utilized for the interviews for consistency and connection (see Appendix B for the coding scheme). Categories captured basic information about the content of each message, including length, date, and the potential for including other individuals or organizations in the message (either through an @mention on Twitter or a linked name on Facebook). Other categories break down the literature review and cover concepts from complexity theory, organization-public relationships, community and social media, online communities of practice, stewardship within online communities of practice, offline connection, social capital, and action and status.

Validity and Reliability

Validity, reliability, and generalizability are seen as the “scientific holy trinity” (Kvale, 1995, p. 20). Kvale, like Denzin (2009), notes that qualitative research might not capture an objective truth or reality, but that it is valid when it “accepts the possibility of specific local, personal, and community forms of truth, with a focus on daily life and local narrative” (Kvale, 1995, p. 21). This focus on local and community truth was utilized in this study to help determine the local narrative constructed online after a crisis.

Qualitative research is generally interested in multiple perspectives and knowledge, but in finding those perspectives through a valid, reliable, and ethical manner (Merriam, 2009). Yin (2009) notes that qualitative researchers aim for theoretical generalizability, not analytic generalizability, where they focus on a purpose to build and advance theoretic ideas and concepts. According to Gilpin and Murphy (2008), a complexity standpoint “does not expect rigorously accurate prediction nor view its lack

as a shortcoming” (p. 42). Instead, they suggest researchers work toward accepting “looser causality, lighter controls, and limited predictability” (Gilpin & Murphy, 2008, p. 42) in order to grasp the inherent surprise and uncertainty within complex systems. As Lincoln and Guba (1986) suggest, the use of rich, thick description throughout the findings allows readers to establish connection and applicability between the research questions and findings for themselves.

Along with the readers, researchers look to establish validity in order to make professional and lay judgments on the work being done (Lincoln & Guba, 2000). This provides trustworthiness, authenticity of the work, and credibility, not only for the researcher, but for the participants. Validity is categorized as craftsmanship (whether a study investigates the phenomena intended), communication based (testing the knowledge claims made), or pragmatic (whether the results help bring about action that produces results) (Kvale, 1995). Here, the research is valid, well grounded, justified, and with conclusions correctly derived from their premises (Kvale, 1995).

Kvale (1995) discussed knowledge as a construction of reality, a conversation about social reality, which fits nicely within the postmodern understanding of this study. Here, validity hinges on the fundamental conceptions of the subject being investigated, dovetailing with the need for researchers to fully immerse themselves in the online community in order to more fully understand what they find (e.g., Knobel, 2003; Stewart & Williams, 2005). Stewart and Williams (2005) advocated analyzing the community based on form (context and background knowledge), style (nonverbal communication, in this case meaning font or typeface or other non-word based characteristics of expression), and content (the words themselves). The researcher spent time learning the policies and

informal codes of the group by reading and making notes on interactions, reading the About section detailing information on the Facebook community (nothing similar existed for the Twitter community), and distinguishing how and when opinions and decisions were posted by community members. These ideas also reinforce Kvale's (1995) discussion that research credibility is built through authenticity as a researcher, using ethical standards such as those laid out earlier for working with online participants, and gathering feedback from informants through member checks. Although the researcher lives in Maryland, an area affected by Hurricane Sandy, the personal experience was not significant or traumatic in any way; additionally, the community studied is in New Jersey, and the researcher knows no one who lived in or was affected by Hurricane Sandy in New Jersey, making the impact on community immersion minimal at most.

Triangulation. Patton (2002) talks about reliability occurring through four forms of triangulation, where triangulation occurs within data sources (data triangulation), among different evaluators (investigator triangulation), of perspectives to the same data set (theory triangulation), and of methods (methodological triangulation). This study utilized data and methodological triangulation to achieve reliability. Yin (2009) also discusses both a case study protocol (the instrument that guides data gathering, containing procedures and general rules to guide the researcher and elaborate on the questions being asked) and a case study database (a compendium of case notes, documents, any tabular materials, and narratives produced by the researcher) as methods of achieving reliability; both of those were utilized within this study as well.

Ethics. Using both a protocol and a database allowed the researcher to not only improve reliability, but to maintain ethical consistency across cases. Evidence is never

fully morally or ethically neutral (Denzin, 2009), so researchers must resist the pressure for a single gold standard of work. However, researchers also attempt to find the best interpretation of the work they do, and to find one that makes sense not only to them, but also to participants. Truth will always be partial, as researchers are blinded by their own perspective, allowing for qualitative work to be open to change and differing interpretations, which broadens understanding of ideas (Denzin, 2009). The research was generalized from one case to the next based on the underlying theory (here, complexity theory and the community of practice model), not based upon representativeness (Miles & Huberman, 1994). Cases were discussed as exemplars, and compared on conceptual, not representative, grounds; each case has some characteristics that are unique, some that it shares with some other cases, and some that it might share with many other cases (Miles & Huberman, 1994). Multiple case sampling, in this way, gives the researcher confidence in the theory, because it has worked out, or not worked out, across the cases.

Reflexivity. Reflexivity allows a researcher to be part of the social world they are investigating (Berg, 2009). This involves a consistent internal conversation on the part of the researcher, asking what they know and how they know it, with the goal of understanding how that knowledge came to be (Berg, 2009). The reflexive researcher “does not merely report findings as facts but actively constructs interpretations of experiences...and then questions how those interpretations actually arose” (Berg, 2009, p. 198).

In this dissertation, I employed reflexivity through consistent memoing, member checks, and peer debriefing (Corbin & Strauss, 2008; Silverman & Marvasti, 2008). Memoing occurred prior to, throughout, and after data collection, aiding me in

understanding my personal thoughts and beliefs related to the two crises discussed in the selected communities. Memoing and peer debriefing also offered ways to identify and remove researcher bias and understand how my beliefs impacted data collection (Corbin & Strauss, 2008). Peer debriefing increased credibility and provided a place to safely have researcher assumptions challenged and ideas discussed with a sounding board (Leech & Onwuegbuzie, 2008). Peer debriefing occurred throughout the research process, where I discussed research progress and general results and concerns with a colleague over the telephone, on a semi-regular basis. Member checks were done with each interview participant in the form of checking not only their interview responses for consistency and accuracy, but also to discuss with me the results of the content analysis of the site, to see if my conceptions and conclusions match their own ideas about the community (Silverman & Marvasti, 2008).

This reflexive writing and interaction with others involved in the project helped me better understand and integrate my background as a scholar within crisis communication and social media, my personal experience with the crises discussed, my own experiences with online communities of practice (whether related to crises or not), and my beliefs in the ability and power of social media to bring people together in a positive way. My postmodern understanding of reality as a social construction impacted the work done as well. Here, knowledge is seen as communication between persons, which creates a narrative, with an emphasis on a local context and the perceived reality of participants (Kvale, 1995; Lyotard, 1994). With a social construction of reality, the emphasis is on the discourse within a community of researchers (Kvale, 1995), increasing the helpfulness of peer debriefing.

Additionally, working on this project meant immersing myself into a situation that I had never lived through, and trying to put myself into the shoes of those who were, in the case of Hurricane Sandy facing the potential total destruction of their homes and businesses, or dealing with the fallout of a violent shooting, as in the Colorado case. In trying to understand what it was like to be part of these communities, I would try to place myself into their experience, often without realizing that it was happening. More than once, I would get up from the computer and think that it was a shame that I could not go to the store, because I was almost out of bread, but I really should not be on the road because it is more important for emergency personnel to get through, so I should just stay home. I would visualize a movie theater in my mind, anticipating exit strategies or debate whether the easier escape was worth the extra exposure of an aisle seat. Other times, I would take a break to look out the window, and completely expect hurricane weather, rain and wind and dark skies, to be completely surprised by the winter sunshine and fluffy clouds I was seeing. I tried to see if there were noticeable signs or indications of what made someone commit such a violent act, to see if there was something I could avoid the next time I went to the movies. Perhaps what this really indicates is how connected the individuals were to their communities, and how well they were able to describe their situations, but regardless, I found myself more and more connected to this community, a community that had formed almost 15 months previously.

Data Analysis

In order to bring together a coherent analysis of interviews and content analysis within the case study, and capitalize on their advantages while minimizing disadvantages,

analysis began with an adjustment of Plowman's (1998) steps of case study analysis to combine case documents and website content:

1. Find key themes among the interview transcripts, case documents and/or website content
2. Compare themes among interview participants to one another in search of patterns
3. Compare key themes and patterns from interviews with those of case documents and/or website content
4. Search for rival explanations to account for researcher bias or alternative patterns
5. Apply complexity theory to analyze the key themes and patterns that emerged.

Analysis of a case study relies on theory and use all methods of data available (Yin, 2009). Within this project, data analysis strategies spearheaded by Corbin and Strauss (2008; also, Strauss & Corbin, 1990) was utilized with both the content analysis of the online communities and the interview transcripts in order to build upon the postmodern belief in knowledge as a socially constructed entity, and best understand, explain, and illustrate the information that is gathered.

The work of Corbin and Strauss follows the work that was done in the mid and late 1960s by Glaser and Strauss. Early work within this area of data analysis was more open to quantitative work, and had a more pragmatic bent, but the general ideas and concepts within analysis have remained similar. Glaser published a book (1992) discussing his version of data analysis, which emphasized induction and emergence of ideas, where a researcher enters the project with no preconceived questions or

frameworks. Instead, he believed that theory could be generated by allowing ideas to come naturally from the data gathered and studied. Corbin and Strauss (2008) are more pragmatic and flexible than Glaser was, and are often looking to verify theory instead of focusing solely on creating new theory. This approach, known as grounded theory, has an understanding of knowledge as socially constructed, with individuals working to elaborate on the knowledge that they have through interactions with others (Corbin & Strauss, 2008). Corbin and Strauss also believed that knowledge is complex, and complicated, with lots of moving pieces, and that in order to properly and effectively represent that knowledge, researchers needed a complex method for analyzing the data that they gathered (Corbin & Strauss, 2008).

Grounded theory begins with the importance of understanding the data by coding it for major ideas and constructs. These constructs, through coding, then become concepts, which then become variables to understand and discuss (Corbin & Strauss, 2008; Shoemaker, Tankard, & Lasorsa, 2004). Coding is then done on a constant comparative level, which means that the researcher is continually going back through all of the data that they have collected in order to compare new ideas or concepts with older or other ideas that have already been fleshed out of the data (Corbin & Strauss, 2008). Coding begins with open coding, which is done with the data in a large, continuous stream, gone over line by line by the researcher or a team of researchers, in order to draw out any concepts that are significant, or mentioned frequently, or that seem to be part of a larger understanding. Significance, here, is referring to a number of ways a concept is viewed as important: if multiple participants mention it, if one participant mentions it frequently, if a participant(s) says it's important, if it matches theoretical constructs, or if

it fits into a larger theme or concept that the researcher is building (Corbin & Strauss, 2008). This is also sometimes referred to as substantive coding, perhaps because of the immense substance of both the data and the effort required to mine it in this way (Corbin & Strauss, 2008).

Within this study, coding began with a list of potential constructs from complexity theory, including uncertainty, control, trust, self-organization, multivocality, instability, dynamic, ill-defined boundaries, and adaptability. A coding sheet was developed to list these codes, along with a brief definition or example (see Appendix B for the coding scheme). As the coding process continued, codes were adjusted, dropped, or added.

Research continued with axial coding, where the ideas and concepts created in open coding will begin to piece together into larger constructs, or bigger groups of ideas that go together in some way. Selective coding was the final stage, where those larger groups of axial codes are distilled down into a selected main code or idea, one that signifies the direction of the research or the most important idea or couple of ideas thus far discovered (Corbin & Strauss, 2008). Corbin and Strauss (2008) would argue that this may not be an actual step, but instead that researchers are engaged or open to the possibility of doing all types of coding at each point in the analysis process. When it comes to naming the codes used, Corbin and Strauss (2008) also advocate utilizing what they call *in vivo* codes, or those that use the words or phrases of the participants themselves, instead of whatever tag the researcher decides is necessary or reflective of the idea.

Selective codes are often what are used to inform the conditional/consequential matrix, one way Corbin and Strauss (2008) suggest analyzing the data. The matrix is meant to showcase the wide variety of influences that impact the concepts or areas being investigated, and coding may be one way to bring some of those influences to light. The matrix looks like a number of concentric circles, with the outermost circle being the broadest level of potential influence, an international level, and going down through other levels, in decreasing size: national, community, organizational/institutional, sub-organizational/sub-institutional, group/individual/collective, interaction, and action pertaining to a phenomenon. The matrix looks at the number of conditions and consequences that exist at each level, and discusses them and their impact before moving on to the next level. The matrix is meant to be a unique conceptual guide, done anew for each particular research study, and was created as a response to the work of Miles and Huberman (1994), giving researchers a more structured and contextualized way to understand their data (Corbin & Strauss, 2008).

The researcher utilized NVivo, a qualitative data analysis software, to help with the organization and ease of moving from one stage of coding to the next. NVivo allowed the researcher to analyze all data within one code at the same time, to compare and contrast multiple codes at once, and to make models and visualize relationships between different codes to see how aspects of the work fit together. NVivo does not do the work of coding for a researcher; all of the coding for this project was done within NVivo by the researcher. There is the potential, when working with analysis software, to let it autocode certain data points, or to rely too heavily on pre-constructed coding options, although those features were not utilized for this project. It is thus more accurate to think of the use

of NVivo within this project as “data management” instead of data analysis software (Seale, 2003, p. 295).

Other ways to analyze the work that is being done include understanding or acknowledging the potential impact of the questions that were asked of participants, comparing and contrasting concepts within the data, looking at the language used (both generally by the participants and specifically by the researcher in naming codes), understanding the personal experience of the researcher as an impact factor, waving the red flag or attempting to pull out personal biases (either researcher or participant), and flip flopping, or turning an idea around or looking at it from another or new direction in order to understand it in a different way (Corbin & Strauss, 2008). All of these data analysis processes were utilized over the course of the research in order to gain as much understanding of the results as possible.

Once the data has been coded, grounded theory makes a number of suggestions for moving forward into theory building and additional analysis. Strauss and Corbin (1990) suggest starting by knowing the codes, and going over them carefully, being prepared to fill in any gaps or make additional connections between concepts, validating the scheme to figure out how the abstraction fits in with the raw data and making sure nothing salient was omitted, and then being prepared for and accepting that there may be outliers or pieces of data that do not fit neatly into coding, and that those pieces are meant to be expected, accepted, and integrated into the larger analysis.

In conclusion, communities of practice research provides an enriching way to look at how and why people gather into communities after a crisis by focusing on online communities of practice. The challenges of gathering research off the internet are vastly

outweighed by the ability to gather a broader and hopefully more diverse pool of information than would be logistically possible in an offline scenario. Broadening the knowledge of online communities and what unique and supportive functions they provide to those in a crisis will hopefully have significant implications for understanding how communities of practice function online after crises.

Chapter 4—Results

This chapter presents the study's findings, organized by research question.

Analyzed data were 6,657 pages encompassing 522 Facebook posts, 687 tweets, and 139 double-spaced pages of transcribed interviews. All interview participants were given a pseudonym with the exception of Justin, creator of JSHN. Similarly, all posts, comments, and tweets included from the content analysis are reported without names attached. No interviews were conducted with the members of the Twitter community as indicated in the previous chapter.

Research question one looks at how online communities of practice form, and thus is discussed within the community of practice framework of domain, practice, and community. Research question two aims at understanding the impact of being organized as a community of practice, with focuses on how information is gathered and shared, actions taken, and long-term recovery outcomes. Most of the results are discussed as relating to both JSHN and Twitter, but there are some findings where only JSHN was relevant or showcased a theme; these times were noted as they occurred. Taken together, these results provide a clear picture of the benefits and drawbacks of using an online community of practice to aid with crisis response and recovery.

Research Question One: How, if at all, do Online Communities of Practice Form After a Crisis?

To best understand the importance of online communities of practice, it is first necessary to look at why, and thus how, online communities of practice are formed, and what functions they fulfill for the individuals involved. While there is a body of research on these communities and their functions online, this is one of the first times they have

been understood from a crisis communication perspective. These communities may begin as random conglomerations of individuals, but eventually develop the characteristics noted by Wenger et al. (2009) as necessary for forming communities of practice: domain, practice, and community. Each of these characteristics will be discussed as individual aspects of the model, with specific themes drawn out and discussed under each, elaborating on how they were formed and utilized by the community itself. After those three groupings of themes, the concept of a community steward is discussed as an individual element within the community of practice; a person or persons who acts as a leader or individual with specific knowledge on how to help the community move forward, and who impacts all three characteristics (Wenger et al., 2009). Later, in the discussion, these ideas of domain, practice, and community will be expressed as necessary building blocks toward understanding how they impacted the community response to crisis.

Domain. Domain suggests the idea that the community comes together to “express something fundamental they have in common...[a] topic [that] must be of more than just a passing interest” (Wenger et al., 2009, p. 4). The content analysis and interview analysis revealed the following themes related to domain: connecting through online information exchange, filtering information, using physical location to understand community, using physical location to show credibility, connection from a distance, and “We’re damn New Jerseyans.”

Connecting through online information exchange. People come to either Facebook or Twitter, and these communities in particular, in order to feel connected to those who are going through the same situation. In order to get that connection, people

needed to first find one another. Justin noted that he chose Facebook specifically because he “wanted to create something that was going to be accessible to everyone,” and that “Facebook is a lot more robust when it comes to reporting information and sharing information,” which were his main goals with the site. Justin also discussed the relative power of both platforms, noting that “the power of Facebook for news reporting is that you can literally build a story within a post itself, through the comments, and with Twitter, you just can’t do that. You can monitor replies to people, but it’s just really finesse.” With Facebook, Justin felt like he was able to “put the power in the hands of the people, let people report it, let people report it in real time, because quite frankly I’ve had a lot of people here, and I’ve realized that, what’s the point of reading a news article six hours after the fact?” Facebook offered JSHN the opportunity to build more conversation, and to give people the ownership of the platform that Justin thought might be helpful in building the kind of community he wanted to offer.

Even when not interesting in building community, the need to share information online is still powerful. Steve, a reporter who used the Twitter community, mentioned in his rejection of an interview that he was “simply using the trending Twitter hashtags in order to boost the number of clicks to my news organization’s website.” This unintentional bit of information helps to clarify—it is easier to find the right information (or the right people) people when everything uses the same ways to gather itself. Find those ways of communication, and you’ve found the people sharing your experience. The information that people wanted, and the ability to find and talk to others who were experiencing the same things, was not showing up in more traditional news outlets, so people took to social media to find one another. And as Steve mentioned above, Twitter’s

ease of search and trending topics made it easy for people who wanted to have a specific conversation find others willing to engage.

Other attempts at sharing information through Facebook often came from other communities who were similar to JSHN, and were trying to capitalize on the success JSHN was experiencing. However, no one within the JSHN community ever commented in a way that even acknowledged those other communities existed. Justin also talked about other online communities that have been formed by formal nonprofit organizations to less success than JSHN. Those, he said, happened where

they go in quickly and they create it, and you know what, it's helpful, it's a good thing, but those communities don't survive, they don't last, cause after the first two weeks, they kind of slowly fade away and they move to the next disaster. So it's not sustainable, and it's not sustainable because the people behind it are not based in those communities.

However, even with all of these differences, because JSHN was such a source of information, including photos and videos, mainstream news sites like CNN were reaching out to community members, asking them to "direct message me so we can chat about it here on Facebook." Not all community members appeared to know direct messaging was an option, however, like one woman who signed all of her JSHN posts "Take care and please write me back to let me know you're alright. Love and prayers, Elaine." While this was a lovely sentiment, she never addressed those comments to anyone in particular, meaning that no one ever responded or wrote her back, decreasing her connection to the community she was trying to reach.

Sometimes, it wasn't the technical knowledge, but the information itself that was seen as less than pertinent. During one of the interviews, Charles discussed what could possibly make the community less helpful, including if it "just kind of became like just a bunch of people talking about how they can't wait for summer, and not about how people can help, or what the weather coming is going to be like." Sally, another interviewee, talked about how even though JSHN was "a local communication network," they would have "people that come into the area" participate, even though she believed that "they don't live here, they don't need to know." She recounted one instance where that was particularly noticeable, when

during the hurricane, locally it would be posted where you could go, what gas station was open, because nothing was open. Couldn't get gas, you couldn't get food, couldn't get anything. People from out of the area were watching, were seeing it on JSHN and coming here and buying up all the things, like, they'd say all right, such and such a gas station is open. They would come here with gallons, 5 gallon empty containers and then fill them up and then take them back up to where they came from. Um, leaving our resources in this local area depleted. And that, I have a problem with that.

Again, the idea of community and being able to help one another triumphed over everything else.

Filtering information. Beyond simply using social media to connect and share information, some individuals were finding that social media allowed them to filter the information, like the woman who noted that she'd "rather check here than watch it on TV...they are stirring up too much drama!!" Others noted that they "don't have a TV

cable, so I haven't seen any of this," and thus "are [*sic*] smartphones are only area of outside contact." Even if people did have television, they often preferred finding a community online, because the "news media...they are like vultures!" or busy "reporting what they want you to believe, rather than the truth." JSHN, on the other hand, was seen as "living up to your name!! awesome reports. I trust this more than regular media." John talked about how with JSHN, it was helpful to have information coming from "other friends of yours, other people putting pictures up, you know, that might not have made the headlines." That ability to "bring out stuff that you wouldn't see on tv, or news that you normally wouldn't hear on your normal news" meant that one could gather both more and better information in a faster manner. JSHN gave him the ability to just "look something up, and if nobody found something you wanted to see, or you see that in about a minute, and you might have watched a half hour's worth of news and you never found it."

When it came to specificity, the localized nature of the information was also seen as an important way to filter what was relevant and what was not. Kim talked about how the page was "forecasting for how it was going to hit the Jersey Shore, which would directly affect me," instead of the larger area covered by television or radio news. For Sally, even the "local paper online" was not enough—it was "so vague, it's not even worth reading. You want details, you want to know what's really going on, go to JSHN." Charles mentioned that all of the television and radio stations in his area were actually based out of Philadelphia, but "it's completely different from what ours is," and thus it was "kind of nice to have your own identity." Justin talked about the difference between himself and the typical news anchor by saying "they're in it to make money, you know?"

This guy isn't doing this because he wants to build and nurture his community." Instead, Justin saw himself as there to "serve as the one who organized the information, composite reports, and also serve as the editor, serve as the filter." Acting out this role as organizer and filter allowed JSHN to provide a better service to the community as a whole.

Using physical location to understand community. Even though the communities studied here were both online, where someone was physically located could make a large difference in whether or not they were seen as actually experiencing the same crisis, and thus as a member of the community. For JSHN, Charles noted that even living an hour from the Jersey Shore meant that he "definitely felt disconnected, but it wasn't because of any actions, it was just because the area I lived in was far less damaged than the area of the people I was talking to." This lack of connection physically made Charles more interested in connecting online, but noted that even that was difficult: "I tried to do as much as I could, I tried to connect myself as much as I could, but it's hard to connect yourself mentally to those people who lost everything." Another man posted that "for those who know the area, this [a destroyed building] is all you need to see to understand the force of Sandy."

The way people connected to the physical location was also interesting. For JSHN, they tended to mention their town, or the actual damage they suffered at the hands of Hurricane Sandy, like the woman who said "all Lavallette neighbors: I cannot believe our town is underwater. Lets [*sic*] make sure we band together to help each other whenever we can." On Twitter, people used hashtags for the area, either for the town itself (#Aurora), the closest metropolitan area (#Denver), or the state (#Colorado). There

appeared to be no logical explanation for which physical location was chosen—all three were used for general information tweets (“#Denver movie shooting suspect identified as 24-year-old James Holmes by federal law enforcement”), asking for help breaking the story further (“Youscoopers in #Aurora and Denver, CO, do you have any photos/videos of the #shooting?”), and other general tweets (“UNANSWERED Questions About #Colorado #Theater #Shooting...#Batman #Coverup??”). There was still a clear need to ground the tweet in a specific location, even if the tweeters used a variety of acceptable locations in order to establish that connection. Regardless of how they showed the connection, though, it was obvious that the area had “always been a special part of my life, whether I am there or 1000’s [*sic*] of miles away.”

According to Tom, this related to a special benefit of JSHN, that even though generally, “anybody north of Tom’s River is viewed with great suspicion,” and

Loveladies is a very expensive area...the whole state pretty much seemed to be very well covered...I don’t think any one area got more attention because of political or financial influence...the areas that were hardest hit and the people that were greatly affected were fairly represented.

For a lot of people, especially at the beginning of the storm, it was important to establish themselves as having a connection to a specific location. Thus, when JSHN would post pictures of places destroyed, comments would flow in saying things like “I live 3 houses away from that!!!!” or “I live about a block away, hoping all goes well!” or the more general “this isn’t far from me.” This could become exceptionally specific and connected with other memories tying people to the area, with people noting “I live right by you down the road from the Ice Palace,” or “I lived 3 houses past that bridge before

you got to Church St...any news on the Octagon House that's on Church St?" This specificity also potentially allowed those who had evacuated to gather information about how their home or other place of importance had fared in the storm. This worked beyond simple pictures, as well—one woman who had not evacuated posted frequently to JSHN with updates on how things were faring in her neighborhood, to the benefit of a number of her neighbors, who would respond with messages such as “thanks for valuable updates for those of us who are far away and are not aware of the conditions on the island. Be safe.” Others offered similar things, like the man who would be “spending my weekend in Brick Beach. If anyone needs anything or wants me to check on their property after Friday afternoon, please message me.”

Using physical location to show credibility. Physical location was also offered by those communicating as a way to show credibility. A woman on Twitter asked others to “please pray for my state #waldocanyonfire #aurora #shooting #batman #givinghope,” a message that would have been strikingly different had it not been “her” state. A different woman on JSHN would sign her comments “With love from GSP Exit 117.” Credibility could also be based on the length of time a person had lived in the area; one woman commented on a picture of a restaurant with “went to Wilson’s (what we old time customers call Keyport Fishery...throwback from when Bob (?) Wilson owned it) for early dinner last night.”

Based on the complexity of the area, sometimes even that credibility was confusing, as noticed by one woman who noted that “having grown up in Ocean Township....I never could get the order of the towns straight down there.” Another man noted that he’d “lived in Middletown for 6-7 years and don’t know what ‘section’ I live

in lol...hope my side is okay.” That seemed to be enough to connect them to the community, however; no one made negative remarks or told them they did not know enough to be part of things. And when people asked about areas that were not deemed to be connected enough, people either refused or could not give information, noting “paramus isn’t even the jersey shore?! [sic].” If it became obvious that the poster was not part of the community, people noticed: “I was like, wait a minute, this is somebody posting from another state. So, you kind of looked at it like, ugh. That source isn’t good.” Sally agreed, saying that “personally, I resent them being on it...they’re not, they don’t live here, they don’t need to know.” This disconnect was especially relevant when news organizations made similar mistakes, and community members were concerned, because

Mantoloking is not the same location as Mantoloking Shores, South Mantoloking, etc. they are part of Brick or other municipalities so it's inaccurate and very unnerving to hear that your home is on fire and there is nothing you can do. It would be nice if the news could get it right since we aren't there to see the property damage for ourselves.

Another woman agreed with her, noting “I can understand just a regular person not being able to get the distinctions of all our little communities, but the news people?!?! That's their job!”

Whereas JSHN allowed people to explicate the nuances of where they lived and how that connected them to the crisis, people communicating on Twitter seemed to be using #Aurora, #Denver, and #Colorado as terms to make their tweet relevant or allowing them to connect to the larger conversation. Since there is not a single place to host a conversation on Twitter, the only way to participate (or to be found) is to use hashtags to

connect tweets. Thus, while #Denver or #Colorado makes it appear as if physical location matters just as much as it does on JSHN, in reality, the tweeters are likely only trying to join the conversation, regardless of where they may be located. Aside from the brief exceptions mentioned within this section, no one else on Twitter used location as a way to build larger or better connections, but simply as a way to connect at all, due to the functionality of the platform.

In some instances, the idea that other people belonged to a specific area also meant that they were expected to give back or act like they were from New Jersey. In a somewhat humorous example, some community members talked about how they “need the entire Jets and Giants roster out here...since you know...you DO play in Jersey.” Cast members of MTV’s *Jersey Shore* were also expected to help by donating either time or money to the recovery efforts. Similarly, those who were from outside of the area but showcased what the community deemed exceptional aid were declared “honorary New Jerseyans...you are a very special breed of person indeed!!!!”

Connection from a distance. As an extension of physical location, the idea of connecting to one of these communities from a distance (seen as anything outside of the center of the crisis, so broadly, beyond the state of New Jersey or the town of Aurora, Colorado) was important—whether or not it was permanent. Sometimes, requests for information from people outside of the area were from people who “evacuated yesterday and I’m dying for some news!”

Most of the people using these communities in this way were no longer living in the affected area, however, and in order to be connected, they would offer up their old connection as credibility. Here again, specific hashtags could be used to establish this

connection and showcase it through their use of an area, like a woman who tweeted “what a tragedy...my thoughts and prayers are with the people of #Colorado <3.” People on Twitter were not likely to mention their current location, but instead to utilize hashtags for the place where the crisis occurred (#Aurora, #Denver, #Colorado). This connection could be exceptionally specific, like the woman who posted on JSHN that she

Lived and worked in Keyport from 1983 to 2005, My ex-husband was Dr. James McKean the Dentist on Maple Place across from the Cumberland farm. Hey does the Chicken Coup still make those amazing potatoes! Lived to shop at the Keyport Fishery and at the Ye Cottage Inn.... My heart breaks for the owners and families effected by the storm [*sic*].

This community helped those outside of the storm just as much, who noted that they “feel so helpless over here guys but want to let you know that we are thinking of you all and just trusting.” Others showed their solidarity in slightly different ways, like Charles, who said he lived “an hour and a half from there [the hardest hit part of the Jersey Shore], so I really didn’t post too much, because I didn’t want to clog it up with information.” That way, he said, “rather than people asking questions I didn’t have the answers to, I would send them to the Facebook page in hopes it would answer the majority of their question.”

Others, particularly on JSHN, had specific connections to the place suffering, and would make that clear as part of their message. Even though they were physically far away, they felt emotionally close, and wanted to express that. One woman commented on the Jersey Shore recovery efforts by saying “thanks to everyone for helping to keep our beaches and ocean safe and clean for everyone...even us Jersey girls who live elsewhere and come back each summer as Bennies!” (‘Benny’ is a more or less derogatory term

used by year round residents of the Jersey Shore to describe tourists who flock to the beach each summer.) Another woman “appreciate[d] being connected this way...having grown up not far from there and now far away, this wrenches my heart.” There was a post from Japan, which noted the woman had grown up in the Jersey Shore area, and that “reading so many comments like this [of ways to help one another] makes me proud to be from the Jersey Shore.” It was also common to see comments such as “of course my heart is in New Jersey!!” While most frequently, it was that the individual had a personal connection to the Jersey Shore, but not always. Sometimes, it was simply that a person was “in England & very interested in what has occurred to your lovely coast line & the progress that is being made to get it back to it’s [sic] former glory in time for the busy tourist season.”

These comments of connection went hand in hand with a thank you to JSHN for existing. Community members said things like “I’m a Jersey Girl!!! Displaced to CT and this photo warms my heart and soul,” or “U guys really are the best. Even tho Im [sic] in Oklahoma, Jersey is where I spent 15 years as a kid until I was 19. However its where my heart remains. I pray for the people of the best state and culture I ever learned to love [sic].” These were people who needed the information provided by JSHN, even if they were not in the direct vicinity, “this page is such a wonderful source... we’re out of state and that makes it even more difficult to get information. Once I found your page, all the information I’ve needed has come up on my news feed. I can’t thank you enough.”

Another woman noted that, although she lived in Florida, JSHN allowed her to “know everything that’s going on (sometimes more than they [family in New Jersey] know).”

Those who had stayed in the area were then asked to act as a bulletin board, where others

could then say “thanks for the valuable updates for those of us who are far away and not aware of conditions on the island. Be safe.” People also offered to help JSHN reach others by “sharing as much as I can, when I can.”

People who did live in the area impacted by Hurricane Sandy were, at times, quite upset with those who wanted to stake a claim on their suffering from a distance:

im [*sic*] sorry, but dear second homeowners... YOU'RE NOT F-ING HOMELESS. the priority here is ensuring that the people who have LOST EVERYTHING begin to build their lives back up. they will get to your vacation homes and income properties later. YOU ARE NOT AS IMPORTANT.

Once it became clear that those from out of the actual area were posting, others began using it as a bulletin board of sorts, including things like

Anyone in Asheville, NC area who may see this or if you've got friends or family in that area who may want to contribute, my brother is taking a trip to NJ this Friday and has a trailer to bring things up. Let me know and we can figure out a meeting place to pick up contributions!

There were also multiple posts of people who had come from out of the area to provide support and help in recovery. One was a family who drove from Texas to New Jersey to deliver supplies, and another was a pilot from Illinois, also delivering supplies. Finally, some of the people posting from far away were doing so for people still in the affected areas, like the woman who said “I have family in Brick, Howell, and Point Pleasant without power! I’m in Norfolk, VA.” In an attempt to connect community and domain, people would often offer their connection to the area when asking a question. One man said that he was “from toms river [*sic*] but have lived in Miami for the past 7 years. I

collected a lot of donations but do not have the funds to ship all these boxes up there. Please advise.” This type of posting may have been both a way to be connected and a way to share potentially helpful information from those who might not be able to post on their own.

“*We’re damn New Jerseyans.*” The idea of physical location and its connection to both community and credibility has been discussed as relating to both JSHN and the Twitter community. However, there is one area that seemed to only apply to JSHN, where New Jersey banded together around the community’s love for the state itself. While this idea within JSHN will be discussed below, it did not articulate itself or gain much traction in that way on Twitter, save for one example discussed at the end of this section.

The idea of New Jersey is a model often held up for cultural critique or criticism, but the individuals who live or lived in that state feel a fierce sense of pride, and that was something they used to bond themselves together during the crisis. This also shows the effect of social capital ideas, where there is strength through solidarity and togetherness, and that acting upon that should be in the best interest of the group (Putnam, 1995a, 1995b). The initial comment was made to show a lack of fear in the face of a hurricane, because “we’re damn New Jerseyans. Hurricanes are part of the Jersey shore.” It also seemed to be something that was not easy to move away from; individuals strongly believed in “once Jersey, ALWAYS Jersey” or “Jersey Strong since birth.” Generally, “Jersey Strong!” was a common sentiment to see sprinkled throughout the comments as a way to bolster morale or stamina in the face of rebuilding and recovery, as was the idea that “we are in this together. We all live here.”

John, one of the interviewees, was expansive in his idea of domain by saying “everybody that was from there, or lived there, has been on that page, who’s been to the Jersey Shore, I mean, everybody’s got something in common, you know? I mean, I would have to say that’s kind of bringing everybody together.” John further explained that while “anybody could have been a part of [the domain],” and that he was grateful that people from far away were “sending money and donations for thing,” there was a clear distinction because “it wouldn’t have hit you the way it hit people who live here. That’s home, that’s got everything you need, got destroyed.” Even within groups of people who might have been able to explain it to one another, there was a distinction, noted by one woman who “grew up going down the shore my whole life. My husband never quite ‘got it.’ The best description I have is ‘To me, it’s like a religious experience.’”

The connection to New Jersey, and the idea of being “New Jerseyian,” clearly meant something to community members. It was to be a behavioral guide, as noted by one woman who was “horrified by some of the meanness in this thread. Are we really all new jerseyians posting here? Bc for the most part, ive seen nothing but kindness & compassion from my fellow njians this week [*sic*].” Tom talked about how “even though I don’t live there [anymore] and it’s not my home, I’m not going to tolerate somebody being derogatory about New Jersey or about the people.” This was even obvious in posts six months after the storm, where one man mentioned “we have been recovering at a great pace. Sure, I’ll give you the fact we aren’t 100% yet. But, we will adapt. We are strong. We are New Jersey.” As always, not everyone agreed. One woman talked about how “I lost my ability to be jersey strong when I lost my home.”

The idea of New Jersey strength was also specifically tied to notions of recovery. One woman talked about how “EVERYONE HAVE [*sic*] BEEN INCREDIBLE I AM SPEECHLESS TO THE SELFLESS PEOPLE OUT THERE...SO PROUD TO BE FROM JERSEY!!!” Others talked about how “we Jerseyans have to stick together” or how “this storm will bring out the best in us. We all have a great capacity for love!!!” Additionally, “taking care of our neighbors...that is the Jersey spirit!,” as was having “total strangers coming together and willing to help each other...we are the real Jersey Shore,” leading another woman to declare that her “faith in mankind has been renewed.”

The same idea was visible, but to a much lesser extent in the Twitter community. The hashtag #AuroraRISES was used by some to try and bring about community connection and help people feel that sense of location-based strength, but it did not have much pickup, and there did not appear to be other similar efforts, perhaps due to the lack of broader cultural connection—for better or worse, the Denver area has never gained the overarching national or worldwide knowledge similar to New Jersey, New Orleans, or Boston.

Practice. When practicing in an online community of practice, the individuals are sharing both their common and personal experiences in dealing with the crisis. Here, the individuals involved are able to learn from and with one another, and to do so in both formal and informal ways, by sharing outside sources or colloquial knowledge, respectively (Wenger et al., 2009). This section will take these ideas of practice and discuss them through themes of a lack of exact knowledge among community members, the necessity of connection, the impact of event history, the impact of personal history,

the sharing of personal beliefs, the importance of humor, and the potential for disagreements.

The lack of exact knowledge among community members. One of the clearest findings to come across the JSHN community of practice is that they were using one another to gather information that they did not otherwise have, and that that knowledge was, at best, inexact. While people conversing on Twitter may have had just as many questions, those questions did not appear in the content analysis; as such, this theme will focus on the lack of exact knowledge among JSHN members. While later analysis will look at where information came from, and the variety of types of information that were presented, it is also important to look at the impact of inexact knowledge, because it was obvious that the community members believed, as one member of JSHN put it, “we need answers!!!!”

Some of this knowledge deficit was basic, everyday life skill knowledge. People would ask questions about time differences (“what is the time difference?...LOL some one [*sic*] help us out on this!”); traffic laws (“if a light is out...doesnt [*sic*] the four way stop go into effect?”); weather and meteorology (“can someone explain to me why the pressure of this storm is so important?”); definitional (“when you say ‘under water’ do u [*sic*] mean completely?”); or even what it means for firewood to be seasoned. Questions were also posed to act as rumor detection, or to help community members avoid scams by talking about a group and saying “they want money, can anybody tell me if this is bullshit.”

During the storm, the lack of knowledge was often related to what people were experiencing and wanting to know what was happening in real time. They wanted to

know why sirens went off, or if specific streets still had power, or if and when the Parkway might be closed, or if they could expect garbage trucks to pick up the next day. JSHN posted approximately every half hour, asking people to report in about where they could go to find food, ice, gas, or other necessities. One man even came into the community to ask “should I be scared?”

Other questions revolved around wondering about the basics of recovery. For example, one man asked on multiple comment threads if there was “a ‘we are okay’ site where I can check on friends in the effected [*sic*] area?” When permits were announced as necessary to enter certain townships after the storm, questions like “does anyone know if you get a permit today is it good for entry tomorrow too?” and “does this mean permits will be handed out beginning at 8am? What time do the lines start?” were common. It was unclear from the community posts whether or not this information was clearly available from other sources and people were not paying attention, or if the information was not being provided by those other sources. Regardless, it is important to understand that the information needs of these communities were wide and varied.

In the months beyond the storm, people wanted to know the details of the recovery efforts, and what that meant for their personal abilities and enjoyment. This meant wondering when beaches would be cleaned up or reopened, whether or not their insurance would cover specific repairs, whether specific places would be rebuilt and when, and whether or not places that had been rebuilt would offer typical activities. Sometimes, people would post for others, such as the woman who wanted to know if there were “any people to help seniors empty th [*sic*] home or basements.”

One interesting aspect of some of this question asking and knowledge gathering was that community members sometimes wanted others to act as fortune tellers when answering questions. People would post things like “when will the worst be over??!” or “just trying to figure out how long we have left with power.” One woman commented that she was “smelling gas or something burning in Brick. Anyone know what this could be???” and another wanted to know if the post about generators blowing up was why her sink just started making noises. Other times, people would post asking for help or other things, but would not provide enough information for others to be helpful. While people wanted to help, if the individual only posted “my nieces [*sic*] best friend is on the roof of the house and water is almost reaching them!,” it will be difficult for anyone to go and offer rescue without an address.

The necessity of connection. Participants took the traditional idea of things one needs to survive a natural disaster (food, water, shelter) and added the concept of electricity. Since the shooting at the Aurora movie theater did not take away any of these necessities, this section will focus solely on the experiences within JSHN, and the heightened sense of importance given to electricity as a means of connection to others. This was more about keeping lines of connection open and less about keeping the lights on—JSHN was thanked repeatedly for providing information because “for those of us without power it’s our only means of finding out what is going on.” John added to that, noting that “you couldn’t call, but you could get through to Facebook,” and Jean said that because a phone call would use so much power, “people were so scared to use their phones,” so Facebook, where you could “go in, look at what was going on, get out,” became the communication channel of choice.

Residents in New Jersey were concerned about getting information from their local townships, and even more concerned about the information they would be missing if they did not have access to email or social media. One woman noted that La Vallette had “sent emails to resident [*sic*] who can return—but what about those who do not have email—how will they be contacted.” However, email or social media-based messages were not always seen by everyone, and that knowledge gave community members the upper hand when they wanted to be seen as unaware. While messages were sent out through email to residents about being unable to return to their homes, one woman vehemently noted that she was “going tomorrow. Let them turn me down to my face. I still have no power how do they know I even got to see this message! This is crap!” Her position, where she was able to use having that information to create a willful resistance to the information, was made possible because the information was not available through a wide variety of outlets.

Having information limited to a specific number or type of outlets, like Facebook, meant that the availability of other resources, such as electricity, also became important. One woman on JSHN noted that “if you’re only able to charge your phone during the day, I most certainly wouldn’t be wasting the charge fighting with people on fb.” Tom added to the idea that electricity was valuable by noting that he “would want to have internet access as soon as possible to let my loved ones know that I’m okay.” Liz also noted that she “wanted to stay in touch with what was going on,” so when her neighbor got power, she went there and “did get back onto the computer, just through my phone.” She also noted that her friends “were very worried about me, because they didn’t hear from me in a couple of days, because like I told you, I lost electricity.” People made all

sorts of suggestions for handling the scarcity of the resource, including only using the phone to check in with family, or to use car chargers. Local stores, religious buildings, and shelters all mentioned their willingness to let people charge phones and other electronic devices as part of the recovery.

Some community members were initially unsure how it would even be possible to continue to get information, where one man asked, “if the power is out how are you online?” only to be informed that “People have FB on their phones. This is 2012.” However, it’s important to remember that that was not an outlet for everyone: “oh yeah--- those darned smarty-pants phones...I don’t have one.” This limited the amount of time or energy a person was willing to give to passing along information on Facebook; Jean mentioned that she “didn’t really share a lot because I...didn’t want to waste battery to do that, I was just trying to get in, let somebody know that I saw it.” This may be one reason why most posts on JSHN got such high numbers of comments, likes, and shares; people were trying to do as much as they could on limited or unstable electricity. One woman even noted that she had “no power, can someone tell me when landfall is expected,” although others quickly pointed out that she was on Facebook, so she must have internet access of some sort, and could likely find the information herself.

Connection was also seen as necessary for surviving the storm no matter the circumstances. Being online, specifically someplace like Facebook, allowed Sally to not only “stay focused on what I had to do for survival,” but also allowed her to escape the realities of her situation with others who would understand why that escape was sometimes necessary. Sally had two elderly family members live with her for ten days

following the storm, and “they were driving [her] crazy. So being online, it was like, I can get away from these people even though they were ten feet away in the living room.”

The impact of event history. Beyond the information available on the internet, people also came to the communities to talk about how previous crises might impact the response and recovery present during the current crisis. This section will first look at previous natural disasters and their impact on Hurricane Sandy, and then at the impact of previous acts of violence on the Batman shooting. Justin talked about the importance of both foresight and history in deciding to create JSHN, four days before Hurricane Irene hit New Jersey in 2011. He says that he knew “the last time we had a legitimate threat of a serious tropical storm impacting us was Gloria in 1985, I was five years old. And that was the last, so I knew that statewide media really did not have a lot of experience in this, so I said you know what, let’s put power in the hands of the people.” Building JSHN then became both an acknowledgment of the lack of preparation and the impact that history would have on what people would need for response and recovery.

Because of the lack of major tropical storms or hurricanes in New Jersey, a lot of the history shared was not known by many. The “Storm of ‘62” was mentioned as “very bad and after awhile, the Jersey Shore came back from that...not exactly the same as it was before, but it came back” as a way to help people see that while “it won’t be as quickly as we’d like...but the Jersey Shore will come back from Sandy, as well.” People were able to “recall many hurricanes as a kid in the sixties but nothing like this,” or notice that “already this is worse than the hurricane of ’38.” Comparisons also included that there were columns with “the flood mark from the Nor’Easter of ’92.” This lack of major storm knowledge also meant that some people “can’t believe water was in my

house...we never flood,” and that Sandy was “the storm we heard about/feared all our lives.”

Other aspects of history noted included things like “that pier always collapses” or that another pier “was never repaired from a previous storm,” or that “this beach looks like this just in a regular storm,” helping JSHN members to realize that things might not be quite as bad as they seemed. More specifically, people would also talk about the previous recovery of places that were shore institutions, where “unfortunately Joey’s takes a hit every year, but he always rebuilds.”

Sometimes, this historical information was overwhelmingly negative. Hurricane Katrina was a frequent point of comparison, and one woman posted that “NOLA never recovered. Towns & communities just abandoned, 7 years later.” She mentioned this to try and make a point about the need for more effective recovery, adding to her post with “no one wants the public to know that, & FEMA needs to step up & help out the JERSEY SHORE & bring families back into their homes.” Others wrote that they “hope people left the coast and learned from Katrina.”

The comparison among storms was also prevalent. People wanted the kinds of help that they had heard about based on past storms, like how the “Red Cross DID give out cash cards to Katrina victims,” or the change that “after Katrina it was supposed to be mandatory that shelters accepted pets.” Or, they wanted to warn others to “GET OUT!!!!!! DON’T make Sandy our Rita!!!!!!” Other community members noted that some people “keep saying ‘well we rode out Irene’ ...this is WAY worse than Irene.” One woman also felt the need for a larger comparison, saying “we survived 9/11, we will survive this!”

Previous historical actions were also lauded as helping the Jersey Shore move more effectively through Hurricane Sandy. One man said

thank God they did the Beach Replenishment project from Monmouth Beach to Manasquan in 1999. As soon as it was finished, Hurricane Floyd came in Sept. 1999. If that had not been done then, there would have been a worse disaster. It's always best to do preventative measures so we can rest easier when the troubled times come!

A lack of this kind of work would have meant that “this flooding would have been a lot further along up the street and would have resulted in a lot more flood water!”

Sometimes, the impact of event history was looking at how Hurricane Sandy will influence future actions, by individuals and government alike. It was noted that “OEM learns from past experience...there will be planning meetings and all will be better prepared next time.”

A few members of the Twitter community talked about the Batman movie shooting in relation to other violent acts. Sometimes, this was done after other events, like the Sandy Hook school shooting, which brought about tweets such as “Aurora, Sandy Hook and The Dark Knight Rises #sandyhook #connecticut #thedarkknighttrises #aurora #shooting #batman <http://t.co/o6o2sfMx>.” One reference went quite far, as one group tweeted that #IsraeltheRegion #IsraelInside #Colorado #Batman #shooting ‘We understand the loss you’re experiencing,’ Netanyahu.. “Additionally, this related to the conspiracy theories that surfaced (and are discussed below): “#SandyHook IN #BATMAN movie!!!! Another reference to the Connecticut #shooting !!! - YouTube

<http://t.co/Z2x31Kgy>” and “#Aurora #shooting: The parallels between the world of #DarkKnightRises and our own. <http://t.co/wPF8zr4s> . #Batman #theatershooting.”

The impact of personal history. In addition to having event history to rely upon for information, one of the other noteworthy findings about having so many different people participate in an online community is the breadth of common and personal experiences that people bring to the conversation. Both complexity theory (Gilpin & Murphy, 2008) and social media research (Falkheimer & Heide, 2007) talk about the importance of engaging with a variety of voices, and how connecting to others allows us to see our own story in context. When attempting to learn about the crisis, or how to handle response and recovery, having individuals who had lived through other, similar crises became important pieces of shared information, as one community member noted that “many mistakes made then can be learned from today.”

Credibility was, as always, important in describing the impact of these previous storms. One woman said she was “from the Mississippi Gulf Coast area and I have seen it happen many times.” Another woman bolstered her willingness to help by saying she had “post Katrina rebuild experience,” making her “good w a shovel and excellent w spackle/drywall [*sic*].” In providing comparison points, some noted that they had “lived up the street from here for the past yr [*sic*] and a half and it floods during high tide but not like this.” Some used their credibility to enforce their ideas for handling the crisis, like the man who said he had “been through six hurricanes and evacuated during four. Of [*sic*] you are in an evacuation zone you need to evacuate. Galveston after Ike in ’08 was pummeled. You won’t be sorry for evacuating.” In one particular instance, credibility

came under debate, as people questioned the age of a picture posted on JSHN. The debate was finally settled when someone said “it’s an Instagram pic. That’s why it looks old.”

Justin said that a woman who had been present when JSHN helped people through Hurricane Irene sent him a private message and “she said, hey, can you put up a post and ask people to share tips on how they’re preparing for the storm?,” which ended up being helpful for all community members. People were also considered “nuts” for wanting to rebuild homes in a natural inlet, even though “mother nature opened it back up and here we go filling it back in to start the process all over again.” When it came to building and rebuilding, one person thought that this “SHOULD have thought this out 20 years ago...but lets [*sic*] think 20 years from now” instead.

Some community members were part of special needs populations, those individuals with a personal history of physical or mental disabilities who might need extra help taking action during a crisis. Since you cannot tell if someone is part of a special needs population over the internet, it required community members to be much more forthcoming with this information, and to clarify how their special needs may or may not impact the actions they would take, and their recovery. Having this information upfront also allows other community members to tailor their responses, and allows emergency responders or crisis communicators to get a better sense of the makeup of the community population. Granted, not everyone who is a member of a special needs population will plaster this information online, but as connection to the community formed, individuals were commonly seen to be upfront about their options. Sally, a partially disabled interviewee, said that “having Facebook, having this online, helps me to be able to do things...I can still participate in society and be part of it.” Another

woman commented on a post about evacuating and going to a shelter, “there are no rooms available for the disabled...so where do we go?” Similarly, a woman asked others, “DO YOU HAVE A SPECIAL NEEDS CHILD & really know how difficult it is to relocate?” She chose to stay at home and board up her windows instead.

The sharing of personal beliefs. The community was also a place to share information that may or may not be acceptable in other situations. On Twitter, individuals asked others to see how the “#Batman #Shooting Used to Gain Support for Destruction of 2nd Amendment,” or to be prepared, because “here we go, more nazi-like crackdown from an over reactive #batman #shooting country.” On Facebook, it was often outcry against the Federal Emergency Management Agency (FEMA), or donation centers, or insurance companies, and their action or supposed lack thereof on the part of the Jersey Shore residents waiting for help in recovery.

As a response, one man in the community said “just like anything else there is a bureaucracy to wade through. Go to FEMA.gov and begin your trek through disaster assistance.” Justin would often post information as “directly from the FEMA website” because “there is a lot of misinformation circulating on social networks. Check here for an on-going list of rumors [regarding federal aid] and their true or false status.” Rumors included where to find shelter, FEMA payouts to local residents, and what sort of supplies FEMA may or may not have any longer.

Sometimes, these pieces of information were coupled with comparison to other major storms, never positively, where “you can thank the federal government for all the delays and lack of progress or funding. The feds were in New Orleans for years...they left Jersey after 6 months.”

This knowledge sharing was well represented on Twitter, as some tweeters believed that the Batman shooting was “once again, another reason #guns should be banned in the USA. #batman #shooting,” and mentioned how they were “waiting for #Palin #Beck #Limbaugh #Romney to start defending gun rights. Bring it on Bitches! #Aurora #Colorado #Batman #Shooting.” There was even some self-reflection: “#DarkKnight #Shooting To Be #Exploited For #Political Grist.” Regardless of the side of the debate one might be on, it is important to note that the connection to the community or the crisis itself was less pronounced, at times only incidentally mentioned through a hashtag, as the event was simply used to propel an individual’s political beliefs into a larger spotlight. The community of practice functioned by giving people space to share this knowledge, perhaps especially since it was knowledge that might not be well received in other, more formal, groups or gatherings.

The importance of humor. While not a survival tactic shared by all participants in the community, “some use humor when they are stressed or freakin...not everything needs to be so serious,” especially black or dark humor, as a way to both share and make sense of their personal experiences. While most of this discussion will focus on JSHN, the few examples of humor related to the Batman shooting are included as well.

Humor was also used in response to a legitimate question or issue. A frequent post on JSHN would ask about the dearth of provisions, and responses would include “Mystic island casino completely out of keystone light” and “almost out of wine bad.” Another man talked about the power outages, saying that his area was “due to be fixed by 11/14 [9 days from then]. Thanks JCP&L. Will mail my next bill with the ice cubes dangling off my face.” A post about reminding parents to take extra precautions for their

children led to “also, can we remind parents that teaching your children to juggle using fully operational chainsaws is an ill-advised activity?” Other times, the humor itself was the question: “now if a boat lands in ur yard do u get to keep it?”

People managed to find humorous responses to any type of conversation within the community. In a JSHN post asking people to please stop spreading rumors, one man replied to say that “I heard Elvis is alive and bigfoot has been spotted [*sic*] down on the shore!” One woman posted a clearly altered picture of Godzilla walking through waves and asked, “please verify?” On Twitter, a user noted that the shooter “must have been an Avengers fan.” One woman noted that “my hamster is FREAKING OUT” about the storm. Another looked on the bright side of losing power, and thus her frozen food, by saying “we are going to live on pop tarts and halloween candy. Atkins...see ya!” The bright side of flooding was also brought up, with a man noting “FOR SALE: Ocean Front Home (Fixer Upper).” One of many pictures of the stormy sky was posted, and one man asked “is there a UFO in the background??? wow,” followed up with “come on, how many of you looked? really????” Sometimes, humor took a turn for the dramatic, as when one community member referred to someone else by saying “I’d like to beat down that classless gerbil.”

One specific area that got a lot of attention on JSHN was MTV’s show *Jersey Shore*. Community members had a lot of overwhelmingly negative opinions about the show and its portrayal of the actual Jersey Shore, often expressed humorously: “God is upset at us, because he watched an episode of “The Jersey Shore”, [*sic*] and now he thinks we are all as...out of control as they are. And he’s specially mad at those who actually sit and watch it. Now we all have to pay!!! LOL.” A number of people

commented about how “maybe pauly D and snooki and the situation and mtv can raise money for the shore,” or “the cast could do us all a favor and go swimming.” A request to “quick, someone chain the jersey shore cast to the pier before its too late [*sic*]” was met with 33 likes. Similarly, when a bar frequented by cast members was destroyed, comments included “looks like Snooki will be water pumping instead of fist pumping!” and “guidos are crying with heartache...and tearing their v-neck shirts in agony.”

There were also instances of unintentional or incomplete humor. There was a JSHN comment that a local fire department was “currently open as a warming station and will be open until 8am. Please bring your own blankets.” On Twitter specifically, people would write something like “lol me and my sisters [*sic*] convo...#batman #shooting” and then include a link, supposedly to something humorous. However, without providing information about the link, and when the hashtags indicate a not-obviously humorous topic, it does seem possible that many people clicked on the link. On Facebook, posting “WE ARE GOING TO DIE SAD FACE ☹” became humorous when someone else posted directly below it with the image of a very frightened Indiana Jones in the Temple of Doom.

When the humor elicited a positive response, community members would often take note, saying “Lol props to the Godzilla picture. That gave me a chuckle,” or a basic “hilarious. That made me lol.” When asked what JSHN did well, Sally noted “there’s humor a lot, it’s a lot of humor...it’s very nice. Very helpful.” No other interviewees noted humor or humorous discussions as something they were particularly looking for or noticing within JSHN. Those who disagreed with the use of humor often did not take major offense, but often suggested it be contained: “I’m all for humor. But not to scare

and worry people!” Sometimes, it became more personal, when one woman believed that “some of you people are pathetic! Lives are at stake and your [*sic*] making jokes about the jersey shore cast grow up!”

The potential for disagreements. Conflict that occurred within the communities took a variety of forms, but most of the anger or disbelief expressed was directed at other individuals, and not at the larger forces such as the weather potentially responsible for the issues being faced. People had strong and intense emotional reactions in these communities, which were often how they dealt with their common and personal experiences.

Often, the disagreements stemmed from differences in priorities—a number of people got involved in a discussion about whether or not JSHN should discuss animal rescue in the same way as human rescue, to the point where one woman said “there is a damn good reason why I prefer animals to humans and people like you are one of those reasons.” An often repeated discussion was whether or not people had the right to be more concerned about primary or secondary homes: “I love seeing people crying about ‘there goes my summer vacation.’ People are losing their homes. Think before you type.” One man got very angry and wanted to know “why the Hell are no pictures of 300 Kerr Avenue 4 Unit Condo in Lavallette, NJ...what gives? What the hell is wrong with the photographer?,” providing an interesting connection to the individual information needs discussed earlier.

One of the largest negative discussions, which repeated itself multiple times throughout JSHN, was between those who did evacuate and thought that was the only logical course of action; those who did not evacuate and now needed help; and those who

did not live close enough for evacuation to be an issue but still had an opinion. Examples of the first and third groups: “they should block the bridge. If you stayed on the island until now you deserve what you get” and “those people should’ve left. Think about this [*sic*] people who you are now putting in danger. Shame on them... a mandatory evacuation should mean NO ONE will come back to save your stubborn ass.” A woman speaking up for the middle group said

stop! Just stop! My folks have decided to stay and it's killing me as I'm stuck 800 miles away. Several of their neighbors have decided to stay as well. No idea why they've decided to make such a risky gamble---except that they're old and somehow feel they'll be more in control of their lives staying in familiar surroundings. All I know is every minute is excruciating for me. As I'm sure there are other family members who are worried about their loved ones as well. I can tell you, Irene didn't help just a short year ago and I'm worried that's been a factor in helping to color their judgment today. But all you people with all the hateful words, you act like you're going to be personally mandated to help do a rescue aren't helping those who feel helpless watching this all play out.

Both personal and general attacks were also common. One man mentioned that now he understands “why Christie talks to people like he does.” Others talked about how “people seriously lack common sense sometimes” and “you cannot legislate stupid.” Interestingly, one of the most common insults on the page was for someone to be told “I hope you’re the very last person in New Jersey to get power back,” or, if they had a generator, “I hope you run out of gas as payback.” Similarly, less common but still pervasive, a compliment was often followed with “may you be blessed with heat and

electric very soon.” And sometimes, one got the feeling that people simply did not like one another, such as the woman who said, “Sean with all due respect...actually u [*sic*] are NOT DUE ANY RESPECT.” Or perhaps the later suggestion that “if you comment, telling people to relax, you should include if you have heat or not.”

One woman offered the potential that “there are some very bored people at home today as their company has closed and they will be posting stuff...just to get a ‘rise’ out of everyone—and we are all feeding into it unfortunately. Those bored people on here—go help out some neighbors!!” Others talked about how they will “pray for those who put their lives at risk for these idiots. But I will judge the idiots for putting those lives at risk.”

Once recovery was underway, there were still disagreements, this time because “so many people make comments and really don’t know the facts” about how insurance companies and FEMA are asking people to move through the process or lack thereof. Another man noted that “you can set your watch to it. There can’t possibly be good news about the gradual restoration of the shore, not EVER, without someone griping that since THEY are still not back to normal no one should be happy that other things are returning.”

While discussion of Justin as the main community steward will occur more significantly at the end of this section, it is important to note that community members often called for him to step in during a disagreement, either to stop it from progressing or to delete a member of the community entirely. One man thanked Justin for clarifying important information, and then said, “now, if you could just get certain people from making stupid comments during this terrible time, that would be good.” For his part,

Justin often noted that he disliked being put in this position, where he had simply “reported [something] to keep the community informed” and yet “now [he has] to spend [his] Sunday evening policing this thread.” Infrequently, Justin would post something asking community members to “PLEASE be respectful to each other. Do not argue! We all need to focus and work together here. Thank you,” one of which gathered over 1,100 Likes. Here, disagreements are also seen as an essential part of collective learning—putting information out to the group, and seeing how others respond or incorporate that knowledge allows for the potential that they will experience the information in different ways, and need to discuss that within the community.

Community. While much of a community of practice is focused on knowledge and information, the final piece involves having someone with whom that knowledge is shared and with whom a relationship is built. In a community of practice, “socializing and learning are not necessarily distinct” (Wenger et al., 2009, p. 8). There is a diversity of experiences that keeps people involved and connected, and maintains the ability for the community to have a wide variety of knowledge shared. This section will look at connection to others through a variety of themes: connection to the community, potential for offline connection, connection beyond the crisis, and emotion as connection.

Connection to the community. This theme looks at variety in how people interact with one another in order to understand how community was established and what it provided the participants. One JSHN member summed it up nicely by noting that “supporting each other will [help] though, everyone is worried, maybe scared, we all have to get through this together and help each other and listening to each others [*sic*] concerns is cathartic...people have to express themselves,” driving home the importance

of having people to turn to during a crisis. In this case, Jean thought that perhaps, “the community is more like the ones who kind of survived it.”

Additionally, Charles noted that “it’s just a friendly setup, with pictures and threads and posts,” and Justin talked about the importance of that, “to be able to see what other people in their community were writing about” as a “completely grassroots community.” He also was very serious about the fact that “to nurture community means to really support that community on a day-to-day basis. To keep people engaged.”

Connection also occurred as a willingness to help one another, whether on or offline. Individuals would note when they had special skills or talents or products that might be helpful, and others would respond with what they needed that might match. In some ways, JSHN became like a very large community bulletin board, with people posting from both sides, trying to find ways to connect that would allow them to have what they might consider a better response to the crisis. Everyone was “willing to help out,” and requests to “inbox me” with ways to do so were frequent. People were often “willing to do just about anything,” and would offer skills with various power tools or large mechanical equipment to help. Others would ask for “help with pulling wet carpet, and trash to the curb,” seemingly menial tasks that might be insurmountable for someone. Jean mentioned this from a recovery perspective, because through the community, “you do hear a follow up. When they reopened some of the businesses this summer, it was kind of like yay, I found out my favorite cooking store reopened. So, it’s like, oh cool, they lived. They made it, you know? So...yeah. It’s a community, it definitely is.”

Another important aspect of connecting through community is that of legitimate peripheral participation, where it is not just those who are actively commenting, but also

those who are passively reading the information, which the community must serve. Here, knowledge sharing is important even when the person in one half of the relationship is giving the information and the other half is simply receiving it. Charles, a 29 year old South Jersey resident and interviewee, talked about how he “didn’t really post too much, because I didn’t want to clog it up with information. But I did share a lot of the posts, just because I knew there were a lot of people who had questions and needed help.” In this way, his peripheral participation as a lack of adding information directly to the community, is viewed as being an active member of the community of practice. Members who do even less, however, and perhaps simply absorb the information for their own benefit, are still considered necessary and welcome members of the community (Wenger et al., 2009).

Trust was also an important part of the connection that was built, in building relationships among people who needed that in order to share certain types of information. Because community members knew that others were going through the same situation, they were more likely to trust them, and to ask for favors. Often, these favors required knowledge of a personal nature, such as home addresses or specific information about family members or important possessions. Jean talked about trying to learn the condition of a second home at the Jersey Shore from another part of the state. Roads were blocked or closed, and she “couldn’t get out, I had no gas in my car, and it was terrible...and that website [JSHN] was like my only resource to know really what was going on.” So Jean went to “putting things up, asking people, I see your pictures of Barnegat Lake, can you go down 6th Street” and take a picture of her house. She cited no discomfort with asking this of strangers over the internet, saying that “I didn’t care. You

could loot, take whatever you want, take my propane, take my food...I want to know if my house is okay. So I was fine putting my address up, I was desperate.”

This connection to the community also extended to information that was not related to the crisis at hand, but still seen as relevant knowledge sharing within the community. Often, people would include their own personal information that may only be tangentially related to the post being put up, but allowed them to share something that made them feel more connected to those on the other side of the computer screen. JSHN posted a picture of a restaurant that had suffered damage during Hurricane Sandy, for example, and got responses such as “I celebrate my birthday there every year!” or “I used to go there all the time.” Jean, a 43 year old interviewee, talked about seeing a bar pictured on JSHN: “oh my god, that’s the first place where I ever had a drink when I was, you know, underage. It went under, it went into the ocean, and I was watching it on there like, oh how sad, I was sitting right there at 19 years old.” This connection to physical places that were discussed in the community, a particular type of knowledge sharing, led to increasing emotional connection with other members of the community.

Potential for offline connection. While these communities of practice existed within computer and smartphone screens, there is always the potential for the relationships that are formed online to move to offline connection, or for people who are connected offline to both join the same online community, bringing their bond with them. The community of practice model notes that having the opportunity to move offline can increase trust and openness online, and that some communities need to be seen by and interact with the world (Matzat, 2010; Wenger et al., 2009). Allowing an online community of practice to also exist in offline space is another way to ensure the

community of practice thrives even after the event that brought people together is no longer as salient. This theme will solely discuss JSHN, a community that paid attention to building those offline connections. There was no mention of offline connection among individuals in the Twitter discussion.

Some of the offline connections existed between individuals who knew one another prior to the crisis. These previously established relationships added a sense of familiarity within the community, and allowed individuals to use those relationships as a base for connecting with others online. Justin noted that, within JSHN, “people saw a lot of fun in it, in connection with people and...saying, ‘oh hey Joan, I hadn’t seen you in awhile! How’d you fare after the storm?’ Stuff like that.” People found their neighbors or friends on the site, or in one instance, a woman posted that she knew of an elderly couple that did not evacuate, and another woman posted “those are MY parents!” Another woman saw a post from a volunteer rescue worker, and responded with “Matt! Stay safe, cousin, while you all work to rescue people.” Sometimes, the sheer relief at “running into” a friend, and concern for that person, could be seen through the post, like the woman who commented “SHELLEY!!! YOU OKAY?” Other times, the existence of a previous offline connection allowed individuals to find one another online, share their stories, and share their sorrow, as seen in this conversation between three women who realized an offline connection and “met” through JSHN:

Woman #1: My aunt owned the house next to Woman #2...your aunt
was good friends with mine...this is sooo sad

Woman #2: Omg [Aunt] and [Uncle]? I knew them as a kid!!! Ginny’s house
(my house) is gone.

Woman #1: Yes, [Aunt] and [Uncle] were my aunt and uncle. I remember them talking about you. I am so sorry about this devastating loss...if there is anything I can do to help let me know

Woman #3: Woman #2, I am Woman #1's twin sister & also spent my childhood at my aunt's. I am so sorry for this disaster you are going through.

People were also able to gather additional information through careful reading, like the two women who realized that one was looking for a friend named Sue, and the other woman lived next door to her, and they were able to share comforting information about her safety.

JSHN did have a post asking for names and addresses of people who had stayed behind and might need attention from rescue services. A number of people who responded were doing so for elderly or disabled friends and relatives. One woman asked people to go visit a friend who “has M.S. disabled and needs to bring medicines with him. Home health aide can't get to him.” Another posted that “my dad can't get up to his second floor bc [*sic*] of his wheelchair. Send help please.” Some people needed extra oxygen; others needed a generator to keep a refrigerator running for insulin; still others needed to get to a pharmacy to refill prescriptions but might not have a car or be able to leave their homes. According to Sally, a partially disabled interviewee, “having Facebook, having this online, helps me be able to do things...I can still participate in society and be part of it, without having to physically be there.”

Other individuals would use the online community to let others know about the offline connections that were available as part of recovery. Tom noted that “this one lady who had electricity set up a charging station and a coffee pot and some other things in her

front yard for those that didn't," and posted about it on JSHN. One woman posted about her ongoing recovery efforts, a long term cleaning service and supply donation center, and individuals from the community came to help her. Later, she offered a "big shout out to [a man whose name was linked in post] who came the first day I set up (and in every spare moment since!)," and noted that "we still [six months after Sandy] have people who randomly see us on facebook...and pop by...every morning I would wonder if I would have anyone to help, or enough stuff to help, so every person that came resonated that much more!!!!" Liz talked about how she noticed on JSHN that "people that are rebuilding need Christmas things...and that if people have Christmas decorations that, any extras, people could use them cause they lost all their decorations." Other women both noticed that they were headed to the same donation center, and coordinated their efforts to rent one truck instead of two.

Connection beyond the crisis. While it was helpful to share crisis-related experiences with others experiencing the same event, it was also important for community members to cement their bond by discussing non-crisis-related ideas and events as well. Sometimes, these ideas and events were emotional, and other times they were of a relatively random but interesting nature. Within this project, this form of connection mainly existed within JSHN; less frequent examples from Twitter are discussed at the end of the section.

One thread to pop up during the first day of Hurricane Sandy was a discussion about different car makers. It started with a woman posting "I was actually hoping for damage to my Honda so I could get a Subaru again—they are the BEST vehicles!," and took off from there, with people weighing in on which was the best between the initial

pair, or suggesting other car makers as better than both. Another discussion revolved around climate change, with a number of people saying things like “starting to wonder about this whole global warming theory. Is man made pollution causing warmer ocean, causing mega storms?” Here, there was a debate beyond whether or not global warming existed, but also to what extent there was research to support both sides of the debate.

Many people shared memories of growing up in New Jersey, or taking trips to the Jersey Shore with family and friends. These could be directed at the community at large (“That’s the Golden Gull—my late Dad built it and I grew up in that house! Dad would have been so proud to see it still standing” and “breaks my heart to see these pics after spending a lot of time there and working there, if anyone remembers me working the rides and or a stand with guitars and amps my nickname was rock and roll bob”), or to one person in particular (“I remember we were with you guys the last time I saw it. Shirly got pregnant on that vacation”). These memories were not always polite or easy to understand without context, but they did indicate a willingness to share and bond with others in the community, like the woman who commented on a picture of a building underwater, “I’m glad it’s gone. That place killed my husband in 2005. So I’m glad this place is in the water. Now I can live in peace. Amen.”

Other topics were very general and perhaps simply meant to keep individuals informed about general news and information. One man posted a picture of a swan who showed up in his yard after Sandy, and others chimed in, telling their own swan sighting stories or posting pictures of themselves with the swans. Another man talked about why everyone should own firearms, linking to “just a few examples for all you ignorant sheepole out there” that garnered quite a backlash from other community members.

JSHN also took the time, especially in the months following Sandy, to continue to alert people to major changes in the weather, traffic alerts, or other, general community news that helped people stay informed and connected to one another when not focus on crisis response and recovery.

Connection on Twitter was minimal in this area. Most of the tweets not directly related to the crisis still had something to do with the broader issues, such as gun control or conspiracy theories. It is possible that tangential conversation would have occurred on Twitter, but not used the hashtags within the scope of this project, and thus would not have been analyzed. However, without using those hashtags as a way to indicate connection to the community, they would not be available to anyone else looking to form a connection, either.

Emotion. As part of expressing a connection to the community, individuals involved in the community of practice had a wide range of emotional responses to share with one another. While emotional responses cropped up in other sections and themes, this area will focus on responses that appeared to be solely emotional in nature.

Expressing emotion was also a way to work through the next step of the crisis. By sharing their emotions with one another, transparency increases, revealing the “mind” of the community and strengthening the relationships being built (Wenger et al., 2009, p. 187). As news of the shooting in Colorado spread and individuals wondered what to do next, they would frequently also share their emotions. One woman on Twitter noted that she “already got my tix for tonight but now I’m scared...” and another community member noted that he was “kinda scared sitting in this movie theater.” When it came to

moving forward, one woman in JSHN talked about the “disgrace” in how long recovery was taking as a double negative, because “we have been through ENOUGH!”

One woman noted, before Hurricane Sandy had even hit New Jersey, that “everyone is worried, maybe scared, we all have to get through this together and help each other and listening to each others [*sic*] concerns is cathartic...people have to express themselves.” This seemed to be expected within the community, and emotions were encouraged by community members through comments like “everybody has the right to rant about whatever your feelings are.”

On JSHN, even when there was not much to say in regard to a post, there would still be people who would comment with “prayers!” or “this is so sad” or “I can’t believe this” or even a simplistic “horrible!,” even if there was no one there to validate their emotion on an interpersonal level. These posts were still showcasing the mind of the community, and helping community members understand that they were not alone by making it clear that others felt the same way (Wenger et al., 2009). There was almost nonexistent named or direct interaction on these basic emotional posts. A string of 10 or 20 or 50 people would comment “unbelievable,” but none of them would say anything to another person expressing the same emotion. This phenomenon was even commented on within the community; one man noted “it always surprises me how many people take the time to comment on things saying ‘wow.’” Even without affirmation, this willingness to show and share emotion within the community was expressed over and over again throughout the life cycle of the crisis. This may be similar to Liking a post, where that small action is the nonverbal equivalent of these one-word posts. Here, the sense of solidarity or connection is clear, but not as specific.

There were glimpses of positive emotion, and having the community relationships available for support and expertise often helped others feel more positive. They were there to remind one another that “life doesn’t suck,” and to talk about how some recovery efforts “makes my heart sing.” Justin would often try to post positive pictures among the posts about where to find water, and those were always appreciated by community members, saying “SO FREAKING UPLIFTING AMIDST ALL THE DESTRUCTION...GOD BLESS YOU ALL.” Some of the positive emotions were only seen as such in comparison: “be glad your alive to live another day and help each other out [*sic*].”

Sometimes, emotion was expressed as anger or disbelief at whomever or whatever was deemed responsible for putting an individual in this particular situation. In the Batman community case, it resulted in comments like “People are fucked up” or “I hope this guy rots in prison.” There were rhetorical questions, looking to understand “what was he thinking!?” and “why would anyone do this,” or the broader “what the hell is going on in this world?” Negative emotions were also sometimes called out as unhelpful aspects of building community, where someone would note that “the fact that people are throwing out all of these negative comments is unbelievable. Way to deflect your fear of the storm onto an innocent person.”

Additionally, simply expressing negative emotion was a way to feel connected to the community. Tweeting something as basic as “this made me angry” or “it’s terrible to think what some people are capable of,” sentiments that were expressed multiple times within the community, was a way to add oneself to the community and the discussion. Similarly, commenting on JSHN with things like “Sorry, but I hate Sandy! And I never

say hate☹!!!!!!” or “we’re in tears but strong over on LBI” was a way to establish connection to the community. While most of the community members posted emotion without apology, it did come, often sounding like “this is not a pitty [*sic*] story about me I just wanted to share.”

For JSHN, sometimes this was directed at those deemed to be outside of the community, even six months after Hurricane Sandy made landfall. One woman talked about how it “still looks like a bomb went off. People need to get out of their little bubble and look at the big picture.” Another talked about how

the recovery is not going well. Some woman last week had the audacity to tell me that because some of the restaurants in my town are open, everything is fine and I don’t know what I’m talking about. Maybe a couple businesses are open, but there’s not many residents in town for them to serve.

The opposite end of this came from those who knew they were outside of the domain, and wanted to connect on an emotional level anyway. One woman posted that she feels

the emotional distress of this whole situation and I haven’t lost anything. I’m scared to drive, I’m definitely on edge. I can’t imagine how the people who lost everything are feeling! So I just wanted to thank those of you getting involved with the emotional aspect of it. We are going to need it!

On Twitter, a number of people who has ambiguous physical location but had not been in the theater during the shooting (and thus could be considered to be outside the domain), would use the retweet (RT) function to express their emotion, and thus their connection to the community, through their use of another person’s words. A cartoonist who created a cartoon entitled “The Dark Knight Mourns” had a number of RTs, as people used it to

express both their sorrow and their fear. Another large group of people used a RT to express relief that news organizations had found the suspect “doesn’t appear connected to known terror groups.”

Emotions also changed as time moved on, and the community began to feel that the rest of the world had started to forget about their plight. Some put off going back to their homes for months because “i did not want 2 b upset and figured it would b much better by now [*sic*]. I actually cried when I saw such horrific devastation.” On Twitter, one of the few emotional comments after the shooting was “it’s been one month since the Aurora shooting? Seems like just yesterday...how time flies and forgets to heal. #Batman #Shooting #Aurora.” On JSHN, a similar sentiment was posted as “many of us still cannot believe it has been one year since Sandy reached our shore...this storm forever changed our state.” Most of the people still commenting a year after Sandy were anxious to continue discussing the storm, saying things like “people are still waiting to get back into their homes and move on with their lives. With that in mind, I don’t know how anyone could really care about something like [a boardwalk rebuilding project].”

Community stewards. One of the most important roles in a community of practice is the community steward, due to their insider perspective on a particular aspect or information important to the community (Wenger et al., 2009). The community steward role should exist outside of the confines of domain, practice, and community—the steward should enhance and improve all of those things, and act in ways that help the community improve generally, not just in one of those three areas (Wenger et al., 2009). The initial understanding of a steward was someone who knew the technology well enough to use it and explain it to others in the online community (Wenger et al., 2009),

but as this section will showcase, the role of a steward has since changed to encompass much more. Within this section, individuals who became community stewards for JSHN (there was no identified community steward for Twitter) will be discussed from both within their own understanding and the knowledge and expectations of others, to get a fuller picture of the role.

By starting JSHN, Justin became a de facto community steward, and established himself as a leader and, to a certain extent, arbiter of what would be discussed within the community. His initial motivation for forming JSHN grew out of a combination of interests, including citizen journalism, meteorology, and the use of social media, and being a self-described “news geek.” Justin also talked about wanting to “create something that would be accessible by everyone” as a way to “provide people with the best information at that time...to help them make informed decisions.” While JSHN had Justin, and as this section explains, a number of other stewards, there were no such identifiable individuals in the Twitter group, and thus this discussion will focus on JSHN.

In addition to creating JSHN, Justin also established strong relationships with the people in the community, where

I don't even know who they are, I know them virtually, but I don't know them in real life, if I saw them on the street I wouldn't know who they were, were reaching out to me personally, on a personal level, because they knew that actually, there was this undercurrent of emotion behind my reporting.

From the other side of that relationship, Sally talked about Justin as “a rock...an anchor, someone to help, he just kind of held us all together. A support system, somebody there saying okay, you go left, you go right, do not panic, everything's under control.” She also

noted the importance of having Justin around, where he might not have slept, “he couldn’t, as much as he was online. He was always on.”

Justin also noted that while he was the main community steward for JSHN, other community members jumped in and offered help in a variety of ways, where people were literally organizing themselves internally, helping each other, responding to each other, and they would also give me ideas...a woman like three days out [from Sandy], or four, sent me a private message. She said hey, can you put up like a post and ask people to share tips on how they’re preparing for the storm?

Having multiple people provide insight and information allows the site to grow organically, and to bring in a variety of areas of expertise. The woman who did not evacuate and thus was able to offer updates on her neighborhood was considered a community steward, and an important one. One man took it upon himself to maintain accurate, real-time postings of gas availability and pricing in his area, and people would ask for him and his expertise in the comment sections of those posts specifically.

Community members would also chime in when they felt there had been too much discussion on a particular topic, or when they thought the types of information could be improved. After two or three posts related to rescuing people with animals, or where to find a shelter that would accept both humans and animals, one woman asked, “since when did this become a pet page. I love pets but would rather come here to check out the updates.”

As noted previously, one of the major ways that community members asked for or looked to Justin for guidance as steward was when there was fighting or disagreement in

the comments. Individuals were emotional, and at times, people would say negative or hurtful things to one another. Sometimes, Justin noted that he could not be there to police every conversation, and other times, it was to respond with a simple “he has been banned.” One man commented on Justin’s policing of the community by saying “my hats [*sic*] off to JSHN. You must feel like a teacher of a special ed. classroom. God be with us all.”

There was also an interesting divide between community participants. Some knew Justin by name, and would either link to his profile or use his name to say things like “Justin E. Auciello Thank You so much you make New Jersey proud. Best Facebook site to hit the Jersey Shore...I know it must be tedious but, we appreciate you and all your hard work.” Sometimes the community members picked up on things about him based on his posting, like Kim, who asked during an interview “is he from Seaside Park? Cause they always post beautiful pictures of Seaside Park, and I kept looking and saying, this guy lives in Seaside Park.” And even though Kim knew Justin existed, and had thoughts about where he lived, when asked if she could remember his direct contributions to the site, her response was “hmm...not really.” She did note that generally, it was a good idea “to have just one person, as an admin, somebody that’s intelligent” in charge, mainly to “take off inappropriate posts that might be offensive.”

Research Question Two: How, If At All, is an Online Community’s Crisis Recovery Impacted by Communication within Online Communities of Practice?

After seeing how the structure of a community of practice works within online spaces in a crisis, this research question looks at the choices and actions community members may have made or done differently in their crisis recovery based on their connection to the

community of practice. This moves beyond simply understanding what the aspects of a community of practice are, and how those aspects impact daily life; while practice was discussed in the first research question, here the results delve into the importance of having a broader base of access to information and the tips and suggestions that gave them access to within the community, and what that meant for their recovery. There is also a discussion of knowledge gaps and rumor within the communities and the intricacies of both dispelling rumors and attempting to stop them before they begin.

Another area within this section looks at actions taken by community members based on the community itself and how online crises lend themselves to a one-to-one model of communication. Finally, this research question looks at the impact of long-term connection to the community, why having this community is important for future events, and what suggestions were posed by the community as to how to improve before those events.

Broadening information access to aid recovery. Utilizing a community of practice during a crisis meant that people had access to types and forms of information that they might not otherwise be exposed to on their own. This sort of massive information sharing was not something discussed on Twitter beyond people reacting to hearing the news of the initial shooting, such as the woman who tweeted “this is actually real? I THOUGHT IT WAS A JOKE” or people who would chime in to say “That #batman #shooting is nuts, I just heard.” None of the other information posted within this particular Twitter group appeared meant to aid in recovery or survival in any way.

When discussing the benefits of going online for crisis information, Sally talked about how there was “more information. There’s more people putting in information than

just talking to one person, and then it's faster. Easier. More credible." Having an easy place to verify information allowed her to "fill in the blanks, that kind of thing." With so many people presenting information, and watching to make sure the information was relevant and accurate and useful, meant that many people felt like there were real benefits to being online and crowd sourcing their recovery. These benefits also seemed to be specific to the fact that they were dealing with a crisis situation; Jean talked about how, "being a scientific person, I usually would want to know where my resource is coming from, but I was so desperate for information, Mickey Mouse could have been out in the street taking pictures and I would have been happy."

Information was gathered into these communities from a wide variety of other sources, often from community members who knew of sources that others in the community did not; crowd sourcing information in this way increased everyone's access to information. This information included other media sites like websites for local television or radio stations, or the television and radio stations themselves; Snopes.com for rumor control; other Facebook pages that were dealing with Hurricane Sandy, such as NJ Volunteer Exchange or Shore Helpers; websites for local townships or communities; websites for places that were offering food or shelter or other forms of recovery; information for more long term recovery from the National Guard or FEMA; YouTube and Google Satellite for pictures and videos of the destruction; websites for local utilities; the Google Crisis Map; 511 for road closure information; police scanners; and other individuals who might have additional information. There were minimal references or suggestions to utilize national news stations or websites; the more localized the information, the better it was received. The community of practice model is based in

sharing both domain and practice (knowledge and how to utilize it) (Wenger et al., 2009), and online communities of practice can be set up so that links and articles and information can be shared with the speed of platforms like Facebook or Twitter. The ease of linking to additional information, a common and accepted practice for the larger platform-based community, made that sharing a frequent occurrence.

Individuals would often discuss the need for a variety of topics presented in the community, especially in the months after the immediate aftermath of the crisis. However, the community was also good at self-policing, and noting when and why something was particularly helpful, even if just for one individual. Within an online community of practice, with essentially infinite space to post things, information that would help even just one person was seen as necessary and relevant, or at least worth posting. Community members felt like providing a variety of information was important because “anything is newsworthy right now in my opinion. Someone might have missed the post or on the news. Even if it was a repeat post, who cares?” The benefits of that one-to-one interaction will be explored further later in the discussion of this research question. The reporting of a non-crisis related fire was disputed by JSHN community members; one male thought it was irrelevant, but others shortly joined in, noting that “some people might be wondering where the smell of smoke was coming from. I [*sic*] of people might mistake it for a structural fire or a riot.” This was further justified as saying that providing the information on JSHN would keep people from panicking or disrupting emergency response personnel: “if i smelled smoke in my town i [*sic*] would probably bother my fire department or even police—so good for you for posting.”

One woman posted on JSHN that she was “glad I seen [*sic*] this on Facebook because this the only way I’m finding out about important advisories!” Another woman chimed in to say, “please post more specific messages so we know who is where and what’s happening!!” Marcus noted that the community provided

lots of issues that people are getting information from that page about. Like, some people may be interested in flood insurance, they may be interested in certain areas they didn’t have access to, so they were blocked off, because of flooding or things like that, so just from a logistical standpoint to get around, just to figure out what areas are open, what areas are closed. I think the forum is important for those types of communications as well.

This community was also used to help people answer the questions that they had. As noted previously, individuals in the community had a lot of questions that they looked to others to help them answer, and often, they would get a response (or multiple responses) within minutes. Sometimes, the answers would be comprehensive (such as a multi-paragraph response on the differences between flood insurance and disaster assistance), and sometimes it was one line on whether or not the Red Cross had set up shelters and a link to where the poster could find additional information. Individuals might also mention something that was not particularly a question, but others would chime in to add additional information; one woman commented “someone mentioned could route 9 flood. In this type of weather any roadway and anyplace [*sic*] could flood. This rain will be coming down so hard the ground will not be able to absorb it all at once.”

Community-based suggestions for recovery. The information presented frequently takes the form of tips or suggestions to other members of the community on

how they improve their responses and reactions to the crisis, like the woman who commented “if u want updates text your zip code to 888777 and it will send u alerts for ur town and ones near u!!! Good luck!!! [sic]” One of the major benefits of sharing tips in a community like this is that they were able to build upon one another and become better and stronger over time. This was most evident with a general tip about filling Ziploc bags with water before the storm and freezing them so they could be used later for ice or drinkable water. The first person to put the tip out there mentioned it in passing, and soon, almost a hundred people had chimed in to add their spin on it, mentioning that you could also fill any plastic container, to be careful to only fill containers part way so the water had room to expand, to put them in a baking pan so they did not leak and freeze to the freezer itself, noting that freezers will stay frozen for 48 hours after the power goes out and will stay colder if there is more in it, or posting pictures of their freezers, with stacks and stacks of water bottles ready to go.

It was not always clear how many people within the community took these suggestions as, for example, not posting about using a tip from JSHN does not automatically mean that they were not utilized. However, these suggestions provided resources for community members busy trying to recover from the storm. These tips also fell into the range of things your mother might remind you to do, including “everyone should wear swim shoes I think just to be safe” and “never use cruise control on wet road.” They also included information that was important but not likely to get the news coverage, like “please remind people donating canned food to make sure it is NOT EXPIRED!!” or that “people are not aware that they can go to these collections and shelters even if they currently have a place to stay.” Tips also came from the personal

experience, like the woman who kept track of which coffee stores were open “for all you COFFEE FREAKS LIKE ME.” Others shared tips based upon their negative experiences or poor luck, such as the person who “had friend wait for 2 hours and they would not take his cash or AMEX as payment. Keep this in mind when venturing out.”

The community also attempted to aid recovery efforts by making suggestions to those who were in charge of larger recovery efforts and potentially active within the community, such as “Fort Monmouth (which closed) has housing on base. Are these homes empty and if so, it would be a good place to house families who have lost their homes” or “owners with homes on the water should be allowed to dock and inspect their properties.” Other times, a post would not be directed to anyone, but simply be making a suggestion: “Someone with experience soliciting donations should approach the big chains—staples, office depot, target [*sic*].” While it is possible that politicians or emergency workers or people with experience in fundraising might see those posts and change policy in some way (although that was never made clear or explicitly stated within the community), they mostly seem to be posted for the benefit of giving people an outlet for their ideas and feeling like they were contributing to the conversation around the crisis. These suggestions also allowed others to rate the ideas being discussed, whether that meant they thought it was the “worst decision of the tragedy” or “absolutely amazing and the best news of the week.” When the suggestions posted were not enough to solve the problems presented, community members would also post phone numbers and addresses and websites for places that might be able to help, like non-emergency numbers for police and fire departments, how to contact the Red Cross or local politicians, and where to get information on the restoration process of the utility

companies. One woman even suggested that another “call S&S marine and ask for Steve—he has them [what you need].”

Knowledge gaps. Within any community, there is going to be information that is needed but either not yet known or not easily available. A community of practice is set up to learn from and with one another; this basic acknowledgement of the importance of knowledge sharing allows for knowledge gaps to be easily and quickly identified, and then to hopefully be just as quickly and easily filled in (Wenger, White, & Smith, 2009). This speed of information sharing, and the potential for so much information to not be readily available, also acts as breeding ground for rumors, discussed earlier. Here, the discussion looks at how the ability of community members to ask their questions, and to get an almost immediate response, played a large role in how connected individuals felt to the community, and the benefit of having community knowledge to improve recovery. They felt seen as individuals here (helped, perhaps in part, by the fact that they were individually identified—their comment linked back to either their Twitter or Facebook profile, allowing other community members to learn more about them). One woman posted to JSHN asking for specific information about rain and wind gusts, noting that “I know it will get worse, it will help the quantitative brain if I can gauge how much worse.” Having the ability to ask for information that is personally helpful, based on the individual interaction available in an online community of practice, allowed community members to improve their recovery by being more prepared and gathering the sorts of information they found uniquely helpful. Another woman noted that she “had a stroke in June and can’t make sense of weatherman jibber jabber, I can get precise point to point info here.”

Rumor. With information coming from so many different places, and from a variety of both reputable sources and personal experience, rumors within the communities were inevitable. The presence of rumors may call all other information into question, so understanding their existence and function is important to understanding a community of practice. Additionally, knowing which pieces of information are rumor and which are not allows community members to focus on the helpful information, thus improving their recovery efforts. One concern within JSHN was that, since not everyone in the community read every single thing published by the community, a rumor would be dispelled in one thread or interaction, but continue to exist in a different thread. Sometimes, individuals would exhort other members to “take the time to read through some of the posts here,” or “please be sure to read ALL captions,” or to “please check your facts” in order to help them understand what the truth was, and how to avoid continuing to spread the rumor, because often, “that’s a rumor that was killed days ago.” This could also take the form of a direct connection to another community member. One woman said “Lori—Answered you on your other post,” and expected that Lori would go there and be able to find the information. Justin would also regularly start a new post reading “DO NOT POST RUMORS ON THE WALL – IF YOU HEAR A RUMOR, SEND A PRIVATE MESSAGE TO THE PAGE AND WE’LL INVESTIGATE” in the hopes of controlling them before they were spread to too many more people. Justin said that he would work to verify potential rumors with “eyewitness reports and local authorities.” This was his solution because “it’s human nature, you know, people gossip.” And he would hear from “hundreds of people in a few minutes, and it worked, because it kept it private. And people were able to exhaust what was on their minds.”

Community members were also often cognizant of passing on information “correctly” so as to avoid starting rumors themselves and hindering someone else’s recovery process. Charles mentioned his caution as “hat[ing] to pass along wrong information. So I’d just rather send it verbatim than me try to translate it, you know what I mean? I didn’t want to get anything lost in translation so I usually would just show people the posts, and look, this is where you can go.” Another woman noted it “just goes to show you can write anything on the internet and some bumblehead will believe it.” Relatedly, community members were often split on whether or not the rumors were malicious. Some wondered “what the heck was the agenda of those snakes who put out that lie?” while others were convinced that “it isn’t being spread on purpose – the issue is accurate information is hard to get.” Often, it turned out that people would come back later to post items like “sorry, I won’t do any reposting anymore...I thought this was valid when I put it on here.” Justin would also often comment in these situations, noting that “that’s the problem with the rumor—if it was valid, it would help people. You have good intentions and jus [sic] want to help others.” He also noted that as part of dispelling rumors, he’d “rather panic people due to cold hard facts and save lives than feel responsible for not doing so.” Within a community of practice, the idea of having those good intentions and building connection is important, but correct or valid information may help build stronger connections that spreading information that turns out to be a rumor.

Rumors existed within all topics of information covered by or a concern for the community: whether or not non-union power employees from other states had been turned away by Jersey Shore power companies; what kinds of help and recovery support

was available through FEMA; where food and shelter and other necessities were or were not available; hiring practices; the collapse or loss of specific places or buildings; photos from previous crises; among other things. The disbelief could even concern the crisis itself, as it did for one woman on Twitter, who asked “Holy shit. This is actually real? I THOUGHT IT WAS A JOKE. #batman #shooting.”

Individuals would also put forth rumors in order to increase the number of people who might be willing to join their information crusade. Conspiracy theorists abounded in the Batman community, providing links to supposedly prove that “even some of the #media are starting to question the #batman #shooting #official #story” or that “PREDICTIVE #PROGRAMMING #Batman #Shooting Foretold in 1986 “Dark Knight” Comic,” or even suggesting to others that “you have to watch this. It’s kinda long buuuut it’s creepy #illuminati #batman #shooting.” For JSHN, “SUPER STORM SANDY [was]...GOD’S WARNING!...Not to believe the lies of the republican party.” Others spend time making sure everyone knew that “global warming/climate change is all a scam for profit. Enough with this Global Warming BS.” One man posting in JSHN advised that it was time to “get out the tin foil hats kids.”

Social media also make it possible for fake or blank accounts to be created in order to put forth less than desirable opinions and decrease the overall helpfulness of the community, but other community members were quick to call them out, asking “how credible is someone who can’t even use their real name when spouting conspiracy theory’s [*sic*] to be a “rebel rouser?” What are they, a Mexican wrestler who can’t show their true identity? You will now be known as Nacho Libre.”

Reputable information was always important to these communities and their recovery, but especially when dealing with potential rumors. Community members would invite one another to visit specific websites in order to “understand the...problem. There are big big in correct [*sic*] ideas being stated as fact here.” Other times, it was clear that “this is just a matter of semantics, but semantics matter!!!! It’s in the parking lot ACROSS from Monmouth Park Racetrack, NOT at Monmouth Park Racetrack itself. Take care, be safe, and rock on!” Additionally, there were places that were “serving hot meals the is [*sic*] not a rumor!!! Breakfast and dinner,” but, as Justin would point out, it was a complicated item to post, because “they are NOT serving hot meals to the public, Cheryl. That’s the distinction. Hot meals are for the utility workers.” Tiny details like this made a big difference in the message, in how many people went to the wrong place in hopes of a hot meal only to be turned away (“DO YOU WANT PEOPLE TO WASTE THE GAS THEY HAVE CHASING ALL OF THE FALSE RUMORS BEING SPREAD???”), and in how much community discussion would center on the issue of semantics instead of other recovery information.

When organizations or individuals would solicit on JSHN, community members would also take it upon themselves to look into them and report back: “I did some research on [an organization soliciting]. Looks like a scam. Don’t take my word for it, research online, and don’t send them money,” or “be careful. It could be a scam. I apologize to the original poster but I have heard of too many people being scammed and robbed. Just be careful.” Another woman followed that up with her own story of being scammed: “Good point, [original poster]. I was scammed with a post on here with someone housing 3 families and needing food. She put her address on here and I showed

up, her husband had no idea what I was talking about and she asked me for money.”

There were, of course, opposite stories, where requests for help were considered “wayyy sketchy” by some community members but were ultimately shown to allow two people to meet and exchange necessities, even if that included “offer[ing] that a patrol car meet us and take both our informations [*sic*] down...I know that this is the world we live in...but it’s a sad situation when you have the power to help someone and you blindly look the other way.”

Sometimes, not even information from other, supposedly reputable, sources was enough. Dealing with rumor and source credibility could impact recovery; if the information wasn’t believed or shown to be believable, individuals may not utilize any of the information presented, missing out on the building blocks of a community of practice. A man talked about how he hated “how the media jumps on baseless lies and blows them so out of proportion.” A woman chimed in that perhaps one way to stop spreading rumors was to know that “rumor [*sic*] aren’t worth repeating! Only repeat the source!” One JSHN member said that “this storm is bad enough, we don’t need to sensationalize it. And unless you see it with your own eyes, people, please get confirmation from a reliable source before posting such things!,” while others noted that “WE HAVE MORE IMPORTANT THINGS TO TEND TO!,” and that rumors should be soundly ignored, or asked “can anyone confirm with first hand knowledge?” If the rumor could be traced back to an initial source, the community would often post that as well: “the story started at WAFF-48 [linked in text]. feel [*sic*] free to give them a piece of your mind.” Sources were also used as negative confirmation: “sure it’s just rumor, my bff lives very close to [place rumored to be on fire]. she would have txt me [*sic*]if it was on fire!”

JSHN was a trusted source of information for community members, both for general information and for rumor control. Posts would include comments such as “Thanks, JSHN. You are quickly becoming one of the most important sources of info on Facebook. Keep up the good work, and good job on putting the stop on the many rumors being circulated.” Charles discussed his desire to share JSHN’s posts with his other Facebook friends because “this website offers a lot of information,” thus allowing him to “actually get information and share it, and then almost like the Telephone Game, where this person has it down the line.” Gathering information from JSHN then allowed Charles to act as one of multiple sources of information for his friends, broadening the reach of the community of practice.

One of the major ideas to come out of the Batman community was the speed with which information was retweeted. Often, this was seen at the beginning of the crisis—as people were trying to get the information out and quell rumors of terrorist group connection or to provide accurate numbers of victims. Later on in the crisis, the retweets still took the form of items that could be seen as news headlines (“[PIC] Christian Bale at hospital”); putting forth conspiracy theories (“#Colorado #Batman #shooting shows obvious signs of being staged”); or to connect the crisis to a broader idea (“No shortage of gun shops in the #Aurora area, more than 20 listed plus pawn shops #Colorado #batman #shooting”). This was also frequently done without providing the name or Twitter handle of the person who originally tweeted the information.

Action taken based on the community. Sometimes, the decision to take action or not was one that was discussed within the community first. While some of the actions discussed here may have been part of an individual’s crisis response, that action or lack

thereof influenced recovery. Additionally, some of the action discussed in this section refers to recovery by talking about actions taken six months or a year after Hurricane Sandy. When Hurricane Sandy was initially approaching, there was a lot of discussion about the need, or lack thereof, for evacuation. Some were concerned about media reports that only emergency response personnel should be on the roads, and that those found out unnecessarily would be ticketed. One man asked the community at large for help with this internal struggle—if he stayed, he would be directly in the path of the storm. But if he left, he faced the potential of a ticket he knew he could not afford to pay. So, he asked, “if I’m on the road, will I get a ticket?” Justin, JSHN founder, replied almost immediately that what was important was to “just get out. Evacuate. If you get a ticket, I’ll pay it for you.” Individuals were making major decisions about basic preparedness and response actions based on what they learned or sourced from the community. Other community members had similar questions, such as “they’re telling everyone ‘to evacuate’ well, to where. A lot of people don’t have money for hotels.”

Some of this action was immediate. Charles knew from JSHN that people needed ice to keep things cold while without power, and he used connections at a nearby juvenile correctional center (his mother worked there) to fill 15 large coolers with ice. He then went back on JSHN and asked “where can I take it where people will need it most?,” and then delivered the coolers based on the responses. Community members would also be proactive about asking how they could help, like the man who posted “JSHN you have a small army of professionals here. Please let us help.” This was also seen as a direct result of being part of the community, both JSHN and the state of New Jersey, where “someone yells help and a thousand voices answer...gotta love Jersey Folks.” To do his part, one

man posted that he had power and TV, and that if you sent him your address, street and town, he would “call emergency response to get u [sic]. Or loved ones.”

Engaging with a community of practice offered participants a chance to know and see how others were handling the crisis. Like the man mentioned at the beginning of this section, many people compared notes on whether or not to evacuate, and offering advice on how that might impact their recovery: “You can always stay, but if it means you might need help... You might not get it. R u sure u wanna [sic] risk it.” One woman even connected this idea to her knowledge of past storms, posting “SO many were overlooked this time around because of the overhype of Irene. I do believe that!”

This engagement also offered individuals insight into how people outside of the community were recovering from the crisis. At the six month mark beyond Hurricane Sandy, one woman posted to JSHN that she had a second grade class who wanted to find another second grade class with whom they could be pen pals. Her class had been hit by the storm, but she wanted “to demonstrate to my class that the destruction from the storm goes beyond just our community. I think together we can pull through this.” When individuals posted about coming from out of town to help with recovery, they often noted that having “this page makes it easy for those in need to reach out.”

In a confluence of multiple themes, some community members would pull information from multiple threads to help make sure helpful information could be taken by putting people who had needs together with those who had things to offer. In one such interaction, a man posted to JSHN that he had a child’s bedroom furniture to offer someone in need, including bunk beds, dressers, and a night table. A community member saw this, and noted that a woman had mentioned earlier that day in another thread that

she was looking for bunk beds for a family with young children. By tagging the individuals involved in the needing and the having in each post, the parties were able to get in contact with one another, and exchange the furniture.

A one-to-one model of communication. The community of practice, especially when pursued over social media, made it possible for increasingly individualized information to be available and to help people during recovery. The format of the community also made it easier to speak directly to another person in the community, through @ mentions on Twitter or linking to a person through Facebook. This could be coupled with an offline connection; in other words, if a post came up that a community member thought was relevant to a friend who might not see it, he or she could link that person's name in the comments, which happened rather frequently.

This one-to-one model allowed people to offer much more specific aid to one another. One woman posted to JSHN that "if any of u want me to check on people in Keansburg inbox me ill go to their house n check on them [*sic*]." Community members believed this was also true for those who might be monitoring the site to aid in rescue efforts, like the woman who posted to "keep this feed clear of unnecessary comments! You're making it harder for emergency management and those who actually need to be rescued! There are people still trapped in their homes!" and received 150 Likes.

Sometimes, that meant helping people know what not to do. One of the interviewees, Jean, believed that

that page had a lot to do with a lot of people having a reality check, they needed to get out...and it probably saved a lot of lives. Because you were informed on how bad it really was, in certain areas, and that you should not be there...the

boardwalk's not there, it's not going to be like what you think, so don't go, it's not safe. And I think it kept a lot of people focused in on helping, rather than I gotta go down and see it.

A number of the posts during recovery (six months or a year from the storm) would include suggestions or tips for how to improve, such as an “attempt at a proper dune would be prudent,” possibly believing that if they posted to JSHN, someone in a position of authority would see it, as they had seen posts during the storm itself.

Long-term connection to the community. While the community of practice can be very helpful in the short term, crisis recovery also needs to be understood from a long-term perspective in order to see the impact of lingering effects and to hopefully avoid worse crises or responses in the future (Gilpin & Murphy, 2008). Sometimes, the community members were still active and interested in what the community had to offer them, even a year or more after the initial crisis.

Six months after Hurricane Sandy, people were frequently using JSHN to debate whether or not recovery was moving at an appropriate speed. One side believed that things were not quick enough, even asking “what recovery?” Others talked about how “Seaside Heights would have everyone believe they are all recovering, but it is not so. Houses are still boarded up from the storm,” or showed fear that “the Jersey Shore as we knew it will never be the same.” Others felt like sufficient progress was being made, noting that is it “best to learn from the ancients, remember, ‘Rome was not built in a day,’ the shore will rise again, I’d rather it take its time with stronger remedies, stronger buildings and homes (no rush jobs).” Meta commentary and reminders also existed: “there are far too many people who think the shore areas should be cleaned up already. I

guess no one really gets the term complete devastation. They are moving forward every day.” This debate also allowed individuals to understand whether or not their personal recovery was moving at a standard pace, or if they needed to be doing more to improve their recovery, and to ask things like “how do we apply for the grant” for housing repairs.

There was also plenty of sharing of horror stories and warnings, like the woman who recounted the story of someone who “while surfin’ the old casino pier, crashed and broke his skeg [*sic*] hitting a sunken refrigerator.” Others included hearing how “Seaside Heights this weekend had metal sticking out of the sand and wires,” or having someone “strongly urge anyone who had water in their home from Sandy to have ALL wiring that was submerged thoroughly inspected. Your home can go up in flames when your [*sic*] not even around.”

The emotional connection provided by the community was also important, so that community members who were still dealing with the impact of the storm six months or a year out, after many had moved on from the crisis in some way, felt safe to post things like this:

I'm so tired. I'm not even sure I want to go home anymore. Some days I wonder why I'm fighting so hard to keep my house when it feels like everybody wants me gone. The town is being horrible, the mortgage and insurance companies are being horrible, and FEMA is the worst. All I want at this point is to get one good night's sleep free from nightmares.

That post was liked by five others, and had a number of commiserating or supportive comments follow it. Justin countered posts like this by talking about the good that was being done, including boardwalk rebuilding, stating that “highlighting the positive

aspects, which includes boardwalk rebuilding, instills inspiration and hope for many who are still suffering.”

People also relied on the community to help them make good choices during long- term recovery. There was significant discussion and outrage within JSHN about price gouging, and the community often shared the prices for gas and other necessities in order to compare and steer clear from those that were intent on gouging. In the aftermath of the storm, one woman commented that she hoped “someone is tracking which businesses supported people and those that price gouged. I want to make it a point in the time following Sandy that I support the businesses that supported the people of NJ.” Others felt the need to share and commiserate on their experiences with rebuilding by talking about how they are “still arguing with insurance on original claim and dealing with FEMA,” or that “ICC money is not enough...hopefully with God’s help it will work out or we will be walking away with a lot of others.”

Other recovery needs were more about trying to find two people with matching needs and offers. One woman wanted to “find the owner of a canoe that was left in our backyard during Hurricane Sandy.” Another woman had “a wall unit that is light wood and in great shape that I am happy to donate.”

Most of the posts at one year post-Sandy were talking about how “this storm forever changed our state,” and encouraging people to “remember that our friends and neighbors still need help. Volunteering just an hour of your time may make a world of difference to someone.” Some people were clearly frustrated at the ongoing topic dedication, saying “maybe it was something that had nothing to do with SANDY not everything in life from now on has to do with SANDY.” There were also mentions of

various memorials or ways people were commemorating the anniversary. More to the point, there was a fair amount of grumbling over how the government was “so sad and so wrong. Something needs to be done for people like these!!!,” and wondering why “the people who are being appointed to these positions are not being held accountable and are not standing up.”

There were also those who felt the connection to the community was not as strong, either never reaching a true connection with the individual, or having one that faded over time. In a discussion as to why he was not a good candidate for an interview, Steve mentioned that he “really cannot remember these tweets” and that he uses Twitter and trending hashtags “every day with all sorts of subjects and issues,” making it difficult to remember exactly what he had said about a single issue. This indicates that perhaps Twitter is not a full community of practice as defined in this project, something that is discussed in greater detail in the discussion section.

An existing community for future events. While the original understanding of communities of practice included the stage for transforming, or disbanding once the community was no longer useful (Wenger, 1999), thanks to the nature of social media, these online communities of practice never really go away. Hashtags may stop trending, and individuals may choose to un-Like a Facebook page, but that information is logged into the history of the internet, and is still there when another shooting or crisis takes place, and individuals remember that, and will return to it for help and/or information.

For those who remained connected to or close to the community even after the initial crisis was over, the community becomes a place to go when other issues arise. The Jersey Shore had a number of major issues in the year following Hurricane Sandy,

namely the destructive fires on the newly reconstructed boardwalk in September 2013, and an incident with a gunman at a local mall in November 2013. Both times, JSHN was flooded with individuals who wanted the chance to discuss this new development, and they returned to JSHN because they remembered that “it wasn’t just about the hurricane news...they post stuff like what’s going on, more about the community.”

This community also existed for non-crisis events. JSHN turned into a place where posts were about the weather, or traffic backups, but also a place to “tell us what’s going on in the Garden State this weekend.” Community members would often post about volunteer events they knew of, and encouraged others to participate, since it was for a cause that clearly hit close to home. There were also posts of items that could be considered of general interest to those who shared the Jersey Shore domain. Six months after Hurricane Sandy, one woman posted about running the New Jersey 2013 marathon, and asked the community to “come support us and help raise funds & awareness for LLS.” In humorous community connection, another woman replied that “anyone that runs without being chased gets a big thumbs up from me!!!” Other people noted that “today is officially World Naked Gardening Day (I might wait till tonight)” or that “Im [*sic*] watching Mean Girls before I go to the gym,” comments that received 7 and 5 Likes, respectively, from their fellow community members.

The understanding of an online community of practice has been both developed and expanded here, through the dual case studies of JSHN and Twitter. The research questions have allowed for analysis of how the community of practice framework works, and doesn’t work, in these crisis situations, and to understand what individuals might do differently because of their connection to the community of practice. Within the

discussion, these understandings will be further explored, bringing together what is known about domain, practice, and community, and then offering both theoretical and practical applications for the future use of this framework.

Chapter 5—Discussion

Wenger, White, and Smith (2009) argue that the “history of mutual influence between technology and community creates a vortex of inventiveness that propels both forward” (p. 172). Here, they are looking at the community of practice framework, and at various forms of technology hosting communities, and seeing how the two influence one another. This project has added a third unique element to this vortex, that of a crisis situation, which shifts to be more time sensitive, more aware of logical or structural holes, and, in some instances, how to adapt the boundaries of the community in order to accommodate everyone who had something to contribute. In order to understand how these otherwise disparate ideas come together, this section will determine whether or not the two cases meet the definitional standard to be considered communities of practice and look at communities of practice in crisis situations. The chapter ends with a discussion of the dissertation’s strengths and limitations, and paths for future research.

Definitional Crisis-Based Online Communities of Practice

Wenger’s (1999) stages of a community of practice are potential, coalescing, maturing, stewardship, and transforming; each of the stages will be defined and discussed as part of (or lack thereof) both communities in this section. *Potential* allows for individuals to find one another online; many community members and interviewees noted learning about JSHN from a friend or someone else they knew who was already a fan. On Twitter, the conversation could be found if an individual looked at the day’s trending topics or saw what hashtags were being used by major news sources. With *coalescing*, members must find value in communicating together, which was obvious in how thankful individuals were for JSHN. There were no comments by people in the portion of the

Twitter discussion studied that indicated they were grateful to have other people to talk to about the shooting, nor did they particularly realize there was the potential for a larger and more connected conversation.

By both creating helpful materials and allowing for some offline connection, JSHN fulfilled the *maturing* stage; community stewards who took on this task also brought about the *stewardship* stage. The power of community stewards will be discussed more fully later in this chapter, here it is simply important to remember that JSHN had one main steward in Justin, and a number of other community members willing to take on minor stewardship roles; no one on Twitter could be seen as a community steward. No one on Twitter instigated or mentioned offline connection, and as discussed, no one can be seen to have truly started a community on that platform, particularly one that invited community stewardship. Although stewardship is later in Wenger's idea of community development (1999), had someone within the Twitter community established themselves as a steward, stronger bonds may have formed, allowing the community to be established backward or out of order.

Finally, since JSHN still exists, there was a minimal level of *transforming*, or leaving and ending the community. While the amount of interaction did decrease over time, from 17,964 comments during the week of the storm to 1,338 comments the week of the one year anniversary, there were still a large number of individuals participating in the community and engaging with one another, which does not match the definitional understanding of transforming as the complete disbanding of the community. Relatedly, it is still possible to tweet using the hashtags studied here, or to search for them and thus view the original conversations. While the time frame for this study was the six months

immediately after the shooting, a brief search on Twitter in late March 2014 shows that those two hashtags had been used together as recently as March 14, 2014, but with minimal use in the year since data collection ended. At this point, it appears that while the Twitter hashtags did provide individuals with a way to organize similar thoughts and ideas, it does not meet the stages laid out for consideration as a community of practice.

However, the lack of yet attaining transformation does not rule out JSHN (or Twitter) as a community of practice; Wenger (1999) believed that all communities would end or transform at some point, but made no definitive statements as to a timeline for that to occur. It is possible the JSHN will end one day, but until then, it is important to note that some individuals have stuck around. This is important both because recovery can last for years in some cases, and because it is possible that the same or a similar crisis will happen again, and individuals want to be prepared to handle it. It may also be possible for communities to not end, which future research could explore given that social media may facilitate longer-term community sustainability and crises may be events that sustain communities given that they are ever present. In the case of JSHN, given that hurricanes are seasonal, this could provide a unique test case to continue exploring over time.

This suggests the need for an additional stage of a community of practice, as either an addition to or replacement of transformation, which could be called *continuation*, where at least some community members remain engaged with the group beyond its expected conclusion. When considering what may help an online community of practice reach continuation, it is important to remember that it would not reach continuation simply because it had not yet reached transformation. In other words, a community that had yet to run its course (where people are still actively dealing with the

practice and domain of the community) would still be in stewardship. Communities that might be expected to end, however, like JSHN after handling Hurricane Sandy was no longer something to monitor daily, could move into continuation instead of transformation.

Continuation, then, is based on the idea that some community (as the third function of a community of practice) provides additional support beyond the original practice and domain established. In other words, in the case of JSHN, people came to the community to deal with Hurricane Sandy, but stayed because they formed relationships and enjoyed the change in practice from hurricane response and recovery to general community knowledge and areas of hyper local interest. If another hurricane threatens the Jersey Shore, the practice will revert to its original focus. These communities of practice then appear cyclical; the need to keep coming back to the same information and people time and time again, with periods of lower connection levels in between. While this nature of continuation is not strictly crisis-based, a community of practice for crises that may reoccur is a strong example of the concept and also allows for additional connection to complexity theory, where continual learning and adaptation and improving after one crisis in preparation for another crisis is a major consideration (Gilpin & Murphy, 2008).

At this point, it appears that while the Twitter hashtags did provide individuals with a way to organize similar thoughts and ideas, it does not meet the stages laid out for consideration as a community of practice. That is not to say that the conversation on Twitter was entirely without merit; it did allow individuals to express emotions, share news, and act as an outlet for conspiracy theories and calls for additional consideration of how the government generally, and gun control specifically, plays a role in these types of

violent crises. It would be thus appropriate to discuss this existence as a informational network, not a community of practice. This particular Twitter grouping has a lot of benefits to offer individuals facing a crisis situation, as it helps them be engaged but without forming sustainable relationships; information shared in done in a passive sense, not a personal one like was seen throughout JSHN, but the benefits of a full community of practice is not among them.

This appears to have been partially a function of Twitter as a platform, which does not allow for connected conversations; instead, it is up to each individual to seek out the hashtags around which a conversation forms, and to continue to engage in that search over time. If a person uses different hashtags, they are part of a different community entirely, and one may never find the other. Those looking to form online communities of practice, or to act as a steward within one, especially in communities that utilize hashtags, may want to give specific consideration to establishing those hashtags early, and seeking out others using similar but not community-based hashtags. It may also have been a function of having fewer people involved on an extremely personal level with the crisis; Hurricane Sandy directly impacted a much larger group of people than the Batman shooting, which may have meant that more individuals were interested in seeking out information on levels of both interest and necessity, which helped grow that community. All of this is not to say that Twitter, or discussions of a violent crisis, could never become a community of practice; simply that in this particular instance, that combination lead to something else entirely.

JSHN is thus the only one of the two communities discussed here to meet the stages of a community of practice, and will thus be the focus for the rest of this section on

defining online communities of practice. Other definitional needs laid out in the literature to be considered a robust community of practice include (Jones, 1997; Zhang & Watts, 2008): possessing an online location with the ability for whole group communication, a variety of communicators, a minimum level of membership, and a virtual common space suitable for member interaction. Facebook offers whole group communication to anyone who Likes the JSHN page, as they are then free to comment and post and contribute to the discussion, which leads to a variety of communicators. The minimum level of membership, then, is to Like the page; communities of practice are also open and welcoming to what Wenger, White, and Smith (2009) refer to as the legitimate peripheral participant. Finally, the virtual common space for interaction would be the page itself, with the posts and comments and opportunities for both mentioning another community member directly or for sending someone a direct message.

Additionally, online communities of practice also bring about a strong sense of otherness (Clarke, 2009), members against everyone else, which becomes even more obvious and prevalent in crisis situations, where the line between those affected and not affected might be blurry, but it does exist. One way that was manifested within JSHN was the split along domain, where who was affected meant a wide variety of things, from evacuated and lost everything to those who used to live in New Jersey and hopes things go well for the people who still live there. The debate that played out in the results between those who had vacation homes and those who had primary residences on the shore, and the disdain for the Bennies, also showcases how the distinction of impact can have an impact on the community. This impact of domain was discussed thoroughly as part of research question one, where domain can both be a way to connect and a way for

the community to splinter; it will also be discussed in more detail in the next section of this chapter. Additionally, although earlier sections of this work have discussed ways in which Facebook might improve ways to streamline and clarify the information sharing that occurs, JSHN still meets the definitional needs of the label of a community of practice.

Complexity theory also plays a role in these understandings. Within the seven major aspects of the theory, some are more obviously clarified for community members than others based on the findings of this study. For example, there are no explicitly stated rules of interaction, but the social media platform has its own implicit expectations and community stewards then help create additional ones that make sense based on their specific domain and practice. There is also virtue in looking at how individual actors come together and use one another to adapt to their situation (Murphy, 2000). Looking at two different online communities showcases the specific benefits of sharing information online; Twitter in the updated information, general, informational network sense, and JSHN in the detail-oriented, specific and community of practice sense. Understanding complexity within a community of practice illuminates patterns in the types of posts and the information both sought and provided. In a community of practice, you do not have to be the loudest to get the most attention or to be heard and communicated with, but there are other standards of behavior and expectation that should be followed, which are discussed below.

Moving beyond strict definitions, there is the question of how to handle multiple online communities of practice, and what that means for outside crisis communicators looking to build relationships and learn from these communities. There were multiple

sites similar to JSHN on Facebook, and many other hashtags used to discuss the Batman shooting; while the ones here were the most popular in terms of numbers, that does not mean that the other communities had nothing to offer individuals. Some were more localized, some were focused on specific aspects of the crisis (such as volunteer opportunities for Sandy or conspiracy theories for Batman), but they all fulfilled some need for the population at large. These platforms can thus act as strange attractor basins bringing people together to build coalitions of information and support (Gilpin & Murphy, 2008; Sundstrom, Briones, & Janoske, 2013; van Uden, Richardson, & Cilliers, 2001). This potential for competition, then, was actually used to increase helpfulness; the strange attractors brought people together and gave them a common focus, and those ties allowed the central communities to build themselves stronger and better informed because of it.

The Multiplicity of Domain

Domain, as defined by Wenger, White, and Smith (2009), involves having a shared challenge faced by members of the community, something that brings people together and, as a consequence, leaves other people out. In the case of this research, the challenge, and thus the domain, was the crisis itself—either the natural disaster of Hurricane Sandy along the New Jersey shore, or the violent shooting at a movie theater in Colorado. This study has tried to broaden the understanding of domain within research question one by looking at how physical location can help to both understand community and establish credibility, while also allowing others to connect from a distance, complicating our understanding of what domain can be. Due to the nature of the crises studied, the domain in each case became inextricably linked to a location. This is in direct

contrast to the more typical understanding and study of a community of practice, which has looked at domains focusing on the diagnosis of a major or rare illness (Anderson, 2011). These sorts of subjects are important community builders, but applicable to such a wide range of people that the notion of location becomes much less important, if not entirely forgettable. Wenger, White, and Smith (2009) also mention the idea that communities of practice are helpful because they allow people to gather together without the confines of geography, but that idea is different when individuals are joining together in a community of practice in part based on geography.

With JSHN, this concept of geography moved in two separate directions at the same time. On one side, the people being challenged were as such based on their physical location: They lived in the area impacted by Hurricane Sandy, and thus needed the community of practice to help them face the knowledge (practice) and relational (community) needs brought on by the storm (domain). On the other side, individuals who had a less direct connection to the domain (by not living in the Jersey Shore area) were sometimes still interested in building either or both knowledge and relationships with others in the community. As the results bore out, this often came because that second group of individuals had a more distant domain, most commonly where they used to live in the area, or they have friends and family who live in the area. There may also be a cultural connection at work here, where individuals may believe that even though they've never been there, they know something about New Jersey, and the Jersey Shore specifically, thanks to its place in the cultural consciousness. Balancing these alternate understandings of domain was a complicated endeavor, and one that future communities of practice should perhaps make explicit to members—the need to both recover and to

invite others into that recovery process. There were also individuals who had neither type of connection to the domain, but rather seemed to be generally interested in offering support or messages of hope to those more involved, but on the whole, they were more likely to stop in to the community once, offer their support, and then disappear from commenting and engaging fully. Those who were based in the domain were more active in sharing information and needing detail and the one-to-one communication that was discussed as part of research question two. Those who were further outside were still willing to help, but often had limits to their time or resources that made that more difficult. Exceptions to this discovered through the interviews are discussed next.

At times, the dual nature of the domain that brought people into the community of practice was unremarkable and allowed people to live in harmony. Unless the individual self-disclosed, or an individual was interested in doing community profile-based detective work, it was not immediately clear where someone involved in the community of practice lived, and therefore, they were able to engage in practice and community without worry of not fitting in. In the interviews, even those participants who lived outside of the domain such as Charles, who lived about an hour and a half inland, and Tom, who lived in South Carolina, reflected that they did not feel like they were discriminated against or held outside of the conversations due to their physical location. They did note, however, that part of that was in their willingness to pitch in; for example, Charles brought coolers full of ice to those in need and Tom had plans to come up and help his friends and family who still lived in New Jersey rebuild. In addition, their willingness to share the information from JSHN with those who had a closer physical

connection to the storm also contributed to their feelings of connection to the community in general.

In other situations, however, the differences in physical domain were laid clear in the community, sometimes very harshly. Comments were often made about the need for those who lived in the area to be given preference in recovery efforts over those who “only” owned secondary or rental properties. Those deemed “Bennies,” a relatively derogatory term for people who vacation on the Jersey Shore, were not often seen as having equal stake in the recovery process, and were thus sometimes dismissed as unimportant or not worth listening to within the community. This is an interesting development to come from JSHN, especially because so many of the contributors had evacuated, and were thus taking advantage of technology to be temporarily physically distant but emotionally close, similar to how Hurricane Katrina evacuees used online bulletin boards to exchange information on how their homes and possessions had fared after evacuation (Procopio & Procopio, 2007). Community members did not ever note seeing the irony between being physically distant themselves and suggesting the refusal of aid to those who were distant on a more permanent basis. This also becomes relevant when general arguments or disagreements cropped up in the discussions. There were a lot of people upset that others did not evacuate the Jersey Shore area when Hurricane Sandy was on the way, and they let those who did stay know it. However, little is known about the people arguing—someone posting about how terrible it is to not evacuate could have evacuated, or not, or could live in Idaho and just enjoy telling other people what to do.

This would be more difficult for those who had lived in the affected area long ago. Places change, and when you are not as sure of the geographic area, or how close

some locations are to one another, it is easy to out yourself as no longer a local very quickly. Then, the memories and stories and ideas those individuals had about their connection to the domain may or may not be enough to help them gain traction in being a part of the community. This is where personal history and its impact on credibility came into play. People commenting from Florida or along the Gulf Coast had a lot of expertise and knowledge about surviving a hurricane, otherwise known as being very influential and helpful for the practice of the community, and that was enough to override their lack of connection on the basis of domain. This was helpful for those who were living in the affected area, and also helpful for those contributing their knowledge. While the benefits of community stewardship will be discussed later, it is also important to note that interviewees who provided and read information through personal history, and thus utilized or acted as an informational or emotional resource for others, meant that they felt more connected and are thus motivated to stay engaged in the community.

This idea of the magnification of domain is one of the touted major benefits to social media—that one person with an internet or mobile connection can connect to anyone in the world, making them less socially isolated, with more close relationships, and reaping the benefits of support from their social networks that those without one (Pew Research Internet Project, 2013). In fact, Facebook users get the most support from their social networks than any other platform (Pew Research Internet Project, 2013). These far-flung individuals were then able to provide recovery tools and support and information that was distant, but not in a way that mattered to those who received the benefits. It may have even been easier for those who were further away to provide this sort of logistical support—without the additional worry of a draining battery or where

that night's meal would come from, they could put all of their energy and effort into sourcing and providing relevant and helpful information. That domain, and the connection to it, allowed community members to feel a sense of camaraderie with one another, and to build stronger relationships than might have otherwise existed, sentiments echoed in the discussion of connection through information exchange as part of research question one.

When all of these intricacies of domain are taken together, there is a multiplicity of understanding that does not currently exist in the community of practice literature. Therefore, this research recommends an expansion of the term to include acknowledgement that the challenge of domain can be inextricably tied to location, even if the community itself is not. Additionally, it should be noted that the tension between community members who have that location-based tie and those who do not can cause problems and emotional fissures within the community itself.

Figuring Practice Out Together

One of the largest takeaways from this study was using JSHN to understand the depth and breadth of information that people were seeking and sharing in order to successfully navigate the crisis, and how being part of a community of practice helped them in doing those things. People want to talk about their situation, and previous research has shown that individuals use social media in a crisis to do a wide variety of things: to ask for help, to confirm or gather unfiltered information, to check in with family and friends or maintain a sense of community, to self-mobilize, to express critical thoughts toward authority, for humor and levity, to seek emotional support, and to inform

or persuade others to take appropriate risk prevention behavior (Carr, Pratt, & Herrera, 2012; Fraustino, Liu, & Jin, 2012).

Purveyors of information. People within these communities of practice were interested in both asking and answering questions with and for one another. The sharing of personal experiences and informational support was highly encouraged (Eichhorn, 2008), which allowed for emotional support to follow (Greenhow & Robelia, 2009). This was another example of one-to-one communication, instead of one-to-many communication: Instead of waiting for an organization or news outlet to provide the information, community members were providing it for one another. This information was often a combination of personal experience, individual knowledge, and information that they had already gathered from other sources. Intragroup communication research notes something similar, the idea of microstructures within groups, which allows for greater conversational effectiveness and confidence (Tidwell & Walther, 2006). Within communities of practice, these microstructures are formed around the posts themselves, each thread gaining its own knowledge and personality as it developed. This also meant that some community members participated in selected threads, which lead to people sometimes missing information or asking a question in one thread that had been answered elsewhere, making these microstructures helpful and complicated at the same time.

In providing this information for one another, aspects of social capital and strong and weak ties become apparent as well. Weak ties, as explained by Granovetter (1973), create information bridges, where having a weak tie connecting two networks of information works most efficiently to spread information among groups. The function of Facebook that allows JSHN members to post information from outside sources, or people

say that their information comes from another source, they're acting as a weak tie within two tie networks. Social capital calls this person a boundary spanner, or one who facilitates the sharing of knowledge (Levina & Vaast, 2005); complexity theory refers to them as interacting agents (Gilpin & Murphy, 2008); and when they move from simply sharing information to acting as a leader in gathering and distributing it, a community of practice model will refer to them as a community steward (Wenger, White, & Smith, 2009).

In order to facilitate this sharing of information within JSHN, Justin tried to make the topic of each post clear and basic. However, people would post questions and answers anywhere they happened to be able to do so, and as such, a lot of potentially helpful information would have been impossible to find without reading every single post and comment. It is difficult and complicated for someone on a normal day to wade through 506 comments to see if the answer to your question has already been provided, not to mention during the increased anxiety and uncertainty of a major crisis potentially coupled with limited power, so it becomes much easier to simply post your question and hope that someone is willing to answer you. This also means that you are dealing with the potential for question or community fatigue—if everyone is unwilling to search for their answers, and instead simply posts their questions, then people are going to get very tired of reading multiple posts dealing with the same thing, again decreasing the utility and effectiveness of the community. While this was seen to be especially relevant when community members were dealing with rumors, it was also apparent for more general information spreading and question answering.

Other microstructures can be formed when outside information is introduced. The community of practice was very open to using and presenting information from somewhere else, and both Twitter and Facebook make it easy to link to other sources so that individuals can do additional research on their own. This makes a strong argument for the idea that while something like an Office of Emergency Management (OEM) or politician can be an important source of information, communities of practice are developing in such a way as to make those official sources perhaps no longer the most important, or even an important, source of initial information for those who have a community to turn to instead of or in addition to those more formal sources. Participants in this study talked about going on Facebook instead of elsewhere for their information because they trusted it more, because they felt it was credible, and because they did not have the time or the energy or the battery life to go to multiple sources and multiple places to get what they needed to know. It was much easier to comment with a question and then like the post so that Facebook would do the heavy lifting of letting them know if and when responses were posted.

Gilpin and Murphy (2008) call this community knowledge, that which exists within a relationship and cannot be disconnected from either the knower or their environment. Perhaps this community knowledge makes it even more important for an OEM to monitor the posts and comments, as the community stewards like Justin should not have to shoulder all of that information processing by themselves. Postmodern scholars advocate paying attention to the narrative present in a community (Tyler, 2005; Yang, Kang, & Johnson, 2010), and also to “the sister agent, the gossip network” (Bergquist, 1993, p. 146). These intertwining ideas, plus knowledge that more people

monitoring also means additional help in managing rumors and problems and inconsistencies, means that Justin's solution of having people send unfounded rumors to him via private message was brilliant. Through that private message, he allowed the individual to express their knowledge without forcing harmful information upon the community as a whole.

While both Facebook and Twitter are large purveyors of information, Twitter has a special reputation for having "the broadest pickup in the most immediate way" (Gabbatt, 2013, p. 1), which played out in how the #Batman #shooting community of practice handled their actual practice. Many of the tweets utilizing the hashtags were simple retweets, often from other individuals (even if those individuals may have originally retweeted a news organization). This allowed an individual to both partake in the discussion and to fulfil a value of the community and the platform, where having the newest and most up to date information is most important. Smith (2010) found that information was viewed as more personally legitimate if an individual took action to spread the message, such as retweeting or sharing.

Members of the studied communities of practice clearly took this seriously: 217 of the 687 analyzed tweets included an acknowledged retweet (some people may have retweeted something without proper attribution), and the 522 Facebook posts had 130,922 shares. Sometimes, the retweets included a message from the person doing the retweeting; Facebook does not allow an individual to see the information added to a share if they are not the person doing the sharing or friends with the sharer. The ease of which people can retweet or share, however, remains the same across platforms, and that allows community members to be willing to make it clear the information they are getting from

the community is helpful and other people should be aware of it, an idea supported both with this work and in the research literature (National Research Council, 2011). An additional bonus for Facebook users is that by liking or sharing a post, Facebook considers a person more interested in that content, and will thus include it in a News Feed more frequently, making it even easier for community members to stay on top of what is being posted.

Information needs. One of the results discussed the idea that often, information that was posted was incomplete or missing key factors to make it as helpful as it could be. People, for example, would post that they had a generator for sale (a real commodity), but would not include information about how powerful it was, or how much they were asking, or where they were located, or how to best get in touch with them. Now, some of this information is easy to assume (Facebook has a messaging feature for getting in touch), and maybe the individual does not care how much it costs if it will bring heat and light to the home, but that lack of information again makes things harder than they need to be in an already dire situation. The information does not become useless, but it does lack full utility. In complexity theory, the idea of a lack of exact knowledge relates to the need for continuous learning through feedback loops (Gilpin & Murphy, 2008). Gilpin and Murphy advance complexity thinking by advocating for information associations helmed by “human boundary spanners” (Daft & Weick, 1984, as cited in Gilpin & Murphy, 2008, p. 162). This term appears to be close to a community steward, as someone who helps the community learn, even when individuals have very different ideas as to what was important, why things were being done in a specific way, or what might be important to know moving forward.

On Facebook, there were a lot of very clear and urgent needs, including real-time information on gas and food and generators and dispelling rumors. On Twitter, it was a lot of simply sharing the news, and finding a gathering place for like-minded conspiracy theorists. This may mean that Facebook is better situated for some of these kinds of conversations; Twitter is great for going and getting the original news item, for finding out about it at the top, but when it comes to real crowd sourced information, where having such a variety of voices is not only helpful but necessary, then a platform like Facebook appears to be more helpful and more explanatory, and thus could do more to help people improve their recovery. This study discussed Justin's desire to use Facebook as "something that was going to be accessible to everyone," and the importance of that when it comes to sharing information, as part of answering research question one.

This study also found support for complexity theory's focus on organizational history and culture (Gilpin & Murphy, 2008). Community members who had previous experience with storms, particularly those who were either currently or used to be from an area known for handling hurricanes, were encouraged to chime in and share their best ideas and tips and solutions with the community. When it came to recovery, these same individuals were also there to provide insight on how the government had worked before, such as being able to say what FEMA had or had not offered the survivors of Hurricane Katrina. Having those comparisons and options allowed community members to put their own experiences into context and to have a better understanding of just what sorts of information and resilience would be necessary.

Active information sharing. Research has shown that people look for active channels of information, which used to mean direct communication on a one-to-many

scale, such as newspapers or magazines (Avery, 2010). Communities of practice, however, allow for a strange hybrid of one-to-many communication (the general posts on JSHN, for example), and one-to-one communication (the interaction among members in the comments). Having a community of practice focused on both traditional news information and individual information fulfills a variety of needs, increasing a member's connection to the community. This also shows support for the idea that online communities offer a space to construct crisis meaning away from the political or restricted discussion offered by traditional mass media (Bressers & Hume, 2012; Macias, Hilyard, & Freimuth, 2009).

There is also room here to discuss Jin and Hong's (2010) coping strategies: rational thinking, emotional venting, instrumental support, and action. All four of these strategies were seen through JSHN's community of practice, with the most time and energy going toward emotional venting and instrumental support. These are discussed within research question one's theme of emotion, where sharing emotion strengthens both the community and the relationships built within it. Perhaps once online communities become better at increasing online and offline connections (see below), there will be an increase in action. Within JSHN, community stewards could be prevailed upon to improve rational thinking as information sharing. Unfortunately, since Twitter did not have emergent community stewards, the community missed improving their information flow from this specific benefit.

Information uses and abuses. The amount of general life knowledge one needs to not just survive but thrive in a crisis situation can be overwhelming. The wide variety of information, from household tips and life advice to meteorological knowledge and

logistical questions, was impressive, and only in a community of practice could those questions hope to all be answered. In a community of practice like the one found in JSHN, there were enough people to provide enough differences in background to make answering these questions feasible. Even if every person in the community only knew the answer to one question, there were still more people than questions, so most things got answered. Thus, there truly were no stupid questions—anything that was asked was something that at least one other person wanted to know, and that someone else wanted to answer as a way of contributing to the practice of the community. Asking and answering became community service. It also became additional support for Jenkins' (2006) idea that an imbalance of knowledge and experience in a community can make the community more successful—being forced to talk and share and exchange information with one another in a sense of paying it forward made the community stronger, not only in the knowledge base that was formed, but also in the relationships and sense of trust that was built among members.

In a community of practice, the focus can so often be on amassing information and presenting it fully formed, when in reality, the process of building and sharing information is one of growth and increased community stability. Information was also able to be tailored specifically to the audience, in ways that were both feasible and familiar. There was an entire thread based on the need to fill the freezer with plastic bags full of water, and individuals seemed to greatly enjoy not only learning of this tip, but of sharing how well the tip had worked for them.

This becomes tricky when the community moves from being able to answer questions to being expected to predict the future. Individuals want to know when

something will happen (when the storm will reach land, or when it will hit a particular area/street), or whether or not a particular store will be open the next day, or all sorts of other things that people just cannot know with any sense of certainty, but the questions are asked as if, somewhere within the community, there might be someone with a specific answer that can be counted on. Meteorology, for example, is not an exact science, but most community members were not interested in remembering that fact, and they would get actively mad when reminded of it. There was a belief that there was an absolute answer, a correct answer, a definite answer available to them, and all they had to do was ask.

These findings have a clear impact on the practice of a community of practice. The information was tailored to the community, but instead of solely focusing on traditional news values, the community focused on its own values. It answered the questions deemed important by the members, and left the rest alone. This is also helpful for emergency managers, who then are better able to understand which pieces of information were the salient ones, and what kinds of questions they should be prepared to answer in specific situations.

Personal information sharing. The practice of a community becomes the property of everyone who has a hand in creating the community, and thus we refer to those groups as communities of practice (Wenger, 1999). Within those communities, people are more likely to be interested in learning and sharing information with those online groups with whom they have direct access and interaction (Jin, Liu, & Austin, 2011). This harkens back to the need for a broader understanding of domain, one that includes the complexity notion of history and credibility, where access and interaction

and granted to a wider variety of people, even those who are more tangentially connected to the challenge, as those less obvious connections may allow them to make noteworthy contributions to the practice of the community. Relatedly, a structurally diverse network will have members from a wide variety of different organizations, roles, and positions within them, and that increased knowledge allowed for better exchange of information and improved feedback with customers, experts, and others (Cummings, 2004).

Personal information is also shared as general information. Individuals in these communities shared their address, the names and stories of various family members, intimate memories of major life events, and other information seemingly without a second thought. This may be a side effect of a larger cultural willingness to overshare on social media, but there is clearly also an element of the crisis involved. For example, Jean talked about how she did not care what people did with her posted address, concern and anxiety over the state of her home superseded that entirely. She got the help that she needed; someone saw her address, went to her home, and reported back on how it had fared during the storm. But, she also opened herself up to additional problems and concerns by sharing such personal information. Self-disclosure of this sort helps to make the community culture more complex, as it sharpens and details understanding of other community members, giving us additional insight into the other agents that are helping to define the community and its rules and regulations, which can have major and long lasting impact.

It also should not be ignored that there was a significant double standard prevalent in the community with regard to in-person information gathering. The community was hungry for information, and members wanted to know about their specific street, but

those same members also were quite vicious about the people who stayed and did not evacuate from the area. Those people who did not evacuate, or the rescue workers who were sent in after them, were the ones taking the pictures, and providing the information about the immediate aftermath. But, those same people who did not evacuate were in turn both asked for their help and railed against for putting themselves and others in perhaps unnecessary danger. This duality of need, the variety of emotion, provides valuable insight into understanding a community of practice as it searches for information, particularly an online one dealing with the desire to use social media space as an emotional outlet (Macias, Hilyard, & Freimuth, 2009).

From an emotional standpoint, these communities were lifelines to the individuals who needed to talk about their experiences and understandings of the situation in order to process them effectively. Community members wanted to be around others who were just as scared and uncertain as they were, people who would have both sympathy and empathy. This is also a solid reason for wanting to be part of the community; to have a place where that empathy would come through, that could be returned to throughout the storm, and allow a person to be seen at a time where it felt like the government would not acknowledge you and Sandy did not care about your feelings, but the people online did. However, the current community of practice model allows for learning (practice) and for building connections (community), but does not fully discuss the ability for these communities to provide such strong (and basic) emotional connections between individuals. Within social media, where individuals have become used to expressing their every thought and need as it occurs to them, the community of practice model should expand to make room for an expanded notion of practice. The learning that comes from

sharing our emotions and hearing about the emotional reactions of others has the power to impact our choices and our chances for recovery, and they should be given additional attention.

Rettberg (2009) talked about the importance of sharing information and memories, and how doing so allows for an increase in connection. JSHN certainly afforded individuals that opportunity, where even those who posted basic comments such as “wow!” or “that’s terrible” were thus able to connect themselves to the larger group, to feel more like they had a place in the world, and that connection would allow them to move forward with their recovery.

Challenging Understandings of Community

The community of practice framework notes that while digital spaces and social networking platforms are not necessarily a community, having that technological framework and tools are what makes online communities of practice possible. During crises, individuals who join these communities may be doing so because they want to throw their knowledge out into the void, or because they hope someone will come and rescue them, but they stay because they are able to build relationships and share information with others who are in a similar situation and are interested in engaging in concrete and substantial ways.

The intersection of complexity and community. Here is where the intersection of complexity theory and the community of practice model is helpful, and is relevant to both research questions, as this section will look at how both connection to the community (RQ1) and connecting beyond the crisis (RQ2) work together to improve recovery. Gilpin and Murphy (2008) note that stability is not the desired state for a

complex system, and thus communities will be more successful when they are as complex as the environment in which they find themselves. Hurricane Sandy was a very complicated, complex crisis situation, with a lot of people, moving pieces, information and misinformation, all in a time-sensitive and emotional process. Thus, in order to be successful, JSHN needed to be just as complex, providing answers just as often as it was given questions, and working to make sure that the information presented was accurate, free from rumor, and helpful by including as many different sources as possible, again increasing the complexity.

However, not all attempts at this sort of community building are equally successful—people who worked to get #AuroraRISES as a trending hashtag had almost no success, and nothing else was established to take its place. One possible explanation for this is the lack of cultural ideas to cling to—even though the depiction of someone who lives or vacations at the Jersey Shore is often negative, and not helped along by MTV’s show of the same name, it did give people a common starting place with which to either agree or disagree. MTV’s *Jersey Shore* became such a common joke or topic on JSHN that people began to use it as an example to make larger points about response and recovery. The fact that being from New Jersey is such a cultural touchstone makes it possible that this sort of pride, or perverse pride, in being from the area means that the domain connection is unique to that area. In other words, perhaps people from New Jersey need to be more prideful than people from other areas because they’ve been the butt of cultural jokes for so long. There is a culture surrounding Batman and comic books that may have been utilized in a similar way for Twitter; one of the most commonly retweeted pieces on Twitter was a cartoon of the Dark Knight in mourning. However, this

particular subculture did not seem to have the impact or unity with one another, perhaps because this piece was not so heavily linked to the community. With New Jersey, the domain was not only where the crisis happened but also an important part of the community and how people formed relationships, making it even more relevant to recovery. On Twitter, Batman was part of the practice, but only a part, and that part was not connected to any other aspect of the community, perhaps making it less relevant.

This also becomes relevant when we think about other groups of people who are outside the community but would find it beneficial to either interact with the community or to act as a legitimate peripheral participant, gleaning information as it is passed among others. Wenger, White, and Smith (2009) talk about this in the understanding of medical communities of practice, where doctors are interested in learning about the patient perspective for research or treatment or emotional knowledge, and thus often become legitimate peripheral participants. Often, they are not afflicted with the disease or treatment under discussion, but they have much to gain from seeing how those who are handle themselves. In a crisis like a natural disaster or act of violence, the doctors hoping to learn from a community of practice become emergency response personnel or crisis communicators, or, in the case of JSHN, the New Jersey Office of Emergency Management. NJ OEM used JSHN to see what people were saying, to see who needed to be rescued and where they were located, and other important pieces of information that would otherwise be almost impossible to gather in such a clear and timely manner.

The idea that the OEM came into the community to gather information, to offer information and help those that could be helped, followed Gilpin and Murphy's (2008) idea that a crisis communicator needs to engage with a variety of voices from the

community in order to best understand how the publics wish to move forward with the crisis. In all of the discussion that occurred about politicians and city ordinances and the suggestions that were made for how to improve recovery for people, this is what the community was doing—letting its voice be heard on how they would like to recover. New Jersey's OEM listened, at least partially, but there are plenty of other governments and crisis communicators who could have significantly improved their response by paying attention to what was being posted in a place like JSHN. Retroactively looking at the community can also aid a postmodern understanding that it is both possible and important to learn from the past and to use that information to improve situations moving forward.

Offering offline options. Offline communication and connection can be one way to help communities of practice stay stable and effective as they change and grow over the course of a crisis. The ability to merge offline and online communication allows community members to feel connected to other groups, to share information gleaned from offline interactions, to enhance volunteer and recovery efforts, and to help those outside of the community learn from and better understand what the community can offer.

Community of practice interview participants discussed the connection they had with other groups that existed both outside of the community and outside of social media entirely, something that was infrequently discussed within the content analysis. Jean talked about being invited to see a documentary about the Sandy recovery efforts due to her interaction on JSHN, and how that helped her find additional peace with the crisis and the process of recovery.

Individuals within the community are also clearly talking to individuals outside of the community, and then posting the information gathered from those interactions. It appears that there is a lot of other community knowledge building and sharing occurring offline, and then the online communities of practice are getting the overflow and benefit of that. With Twitter, a number of people sent out messages that clearly indicated they had heard about the shooting from another place, often because they would include the link to the news outlet in their tweet. This bridge between offline and online (or at least, outside and inside the community) knowledge is another key consideration for crisis-centered communities of practice. Lack of electricity probably plays a role here as well; an individual has to ration out their Facebook time, causing them to gather information offline to supplement or add to the online knowledge base. This may account for the large number of likes and shares that JSHN posts would receive; people were unwilling to waste their phone or computer battery with lengthy community engagement, but wanted to maintain a connection, so they would come online to glean the most recent information, share something relevant to help others searching for information from good sources, and then leave.

Community members would post about their volunteer efforts, or donation needs, and there would be responses within minutes asking for directions and additional information to help fulfill the needs. The ability to help in a physical way was also discussed online, and those who had participated in offline events were lauded and congratulated. Wenger, White, and Smith (2009) talk about people who are stewards in order to gain personal status in the community, or to increase their level of respect; this appears to be true for those who participate in offline interaction as well. That level of

stewardship, even though it took place outside of the community, added benefit to the community of practice, and thus made that individual more admired and the community as a whole feel more operational. However, even though there may have been external benefits to acting as a community steward for JSHN, there were also the more altruistic motives, or even motives of personal gain that were not community related, like the woman who asked Justin to solicit tips for hurricane preparedness. Theoretically, the online community of practice framework should be open to the potential for, and benefit from, offline connections, especially during a crisis, where volunteering and donating are seen as worthwhile and necessary actions toward recovery. Practically, the online community of practice should also open itself to contacting and connecting with offline groups that already exist, and look to build relationships in order to facilitate this mutual benefit.

Wenger, White, and Smith (2009) discussed how a community of practice can create new perspectives for those existing outside of the community but seeking to work with it. Their example is doctors participating in disease-based communities of practice, trying to understand and learn the patient perspective on both disease and recovery in order to improve their own actions within medicine. This is applicable to crisis communicators and emergency managers looking to see what information is required by a community, the types of recovery needs that exist, and how individuals are handling the event emotionally, which may impact their willingness to engage in other recovery options.

A number of individuals on JSHN discussed their motives for evacuating or not evacuating prior to Sandy, which may help crisis communicators craft better messages

for future storms; individuals on Twitter talked about how they were afraid to go to the movies after the shooting, which might encourage communicators to focus on their safety measures in encouraging people to come back to the theater. Complexity theory would support this idea of offline and online connection as well, as it brings in both the importance of history as impacting future events, and the need for organizational learning as a way of moving forward and beyond a crisis. It thus seems possible that having offline or external community members pay attention to the community can reap many benefits in increasing communication effectiveness, recovery efforts, and preparation for future events.

One-on-one communication. Social media are challenging the one-to-many communication focus that occurs with other forms of media (Enli, 2009). These platforms not only make it possible, but expected, that there will be the potential for one to one communication, particularly in a community of practice, where part of the purpose is to come together and share information and experiences. Within these two communities, the expectation of one-to-one communication focused on getting direct aid from organizations, obtaining information about how businesses or residences fared in the storm, and being able to connect directly with others in the community. Thus, anyone who participates in the community, even as a legitimate peripheral participant, is expected to potentially offer solutions or ideas or recovery to those who need it. This is also a clear response to Seeger, Sellnow, and Ulmer's (2002) call for improved understanding of novel communication processes in a crisis; the ability of communities of practice to make one- to-one communication feasible is an area ripe for study and increases in both theoretical and practical knowledge. This one-to-one focus is both

desired and practiced by community members; people thought that posting to JSHN or tweeting about the issue would allow them the opportunity to engage with others in a more direct fashion.

Justin mentioned in his interview that he had people messaging him, saying they could not get through to 911, but that they could post to JSHN, and they needed help. This expectation of being saved through direct communication was compounded by the types of posts that would occur through JSHN. Justin would ask people to post whether or not they had power, or what they needed, but would not say anything about what he would do with that information. From the interview, it was clear that he had connections to emergency responders and the New Jersey OEM, and would be passing on that information to them. In some relatively rare cases, these workers or the OEM would post themselves, offering help or suggestions directly to community members, but it was never clear how they would choose who to respond to, or whether or not they actually followed through on those promises. Practically, communities of practice going forward should consider making that information more transparent. It may cause community-wide need and expectation, but it might also help individuals feel better about their own recovery options to know that one to one communication was possible, and could bring them tangible results.

The disconnect over information needs is perhaps the epitome of the desire for one-to-one communication during a crisis. It was not enough for JSHN to post a picture of one street and its specific flood damage; people who lived on the next street over, or three towns away, wanted someone to go and take a picture of their street and post it. There was a tension between wanting things to be all about the individual, and wanting to

help the community as a whole. They are glad to see the general information, to know how things are, especially when it's a place of general interest like the boardwalk or certain stores and restaurants, but what community members also wanted was information about their neighborhood, their street, their home.

One of the other benefits of online communities of practice is that the platforms are set up to offer quick and easy one to one communication. On Twitter, the @mention offers one of the main ways to build community. Talking @ someone means you've invited them into the conversation, or that you think they should see the conversation that's happening. This is similar to putting someone's name in a comment on a Facebook post. It's a way of saying that they should know about the information or the community, and that the original poster is, in a quiet way, inviting them to be part of it. These one to one invitations occurred with regularity in both communities.

The power of community stewards. The search and need for one-to-one connection also inspired one main individual, Justin, as creator of JSHN, to step up and act as community stewards, or those individuals who have an insider perspective or information that is particularly important to the community. Other individuals would step up within JSHN when they had information of a specific type that was generally useful. For the community at large, based on the interview responses, it was unimportant who filled the roles of steward, as long as someone was around to be in charge and to be responsible for certain types of information and relationship building. The one-to-one conversation could be with anyone willing to have it and potentially be considered successful. Similarly, complexity theory says that there are not clear boundaries between the stakeholder and the organization, or in this case, the community (Gilpin & Murphy,

2008). With Twitter, and its focus on being a breaking news source, most community members had the unrealized potential to be stewards of low impact to others, putting out information that would potentially establish them as an authority on the crisis. Instead of this, what mainly occurred was the simple retweeting of information that was available from other sources. This was especially distressing since there was no consistent leader for the community as a whole. With JSHN, Justin, as creator of the page, could be considered the organization, although he was also personally impacted by Sandy. With so many individuals being stewards of their own area of expertise, and with everyone searching for that one to one communication, it was very easy to blur those lines between individual and community entirely.

Blurring those lines also helps make the case for stronger connections between offline and online community. Granovetter (1973) talks about how trust is more likely within a community if there are ties and personal contact between an individual and a steward, which allows for increased perception of the steward as trustworthy. These stewards can also act as structural holes, those weak tie bridges between two networks full of strong ties (Burt, 2005; Granovetter, 1973). Bringing an additional network of well-connected or well-informed individuals into the community is an important role for a steward, and has significant benefits for a community in an information-depleted crisis situation.

When these stewards and strong tie networks come together, they create collective intelligence, an alternative source of power for the community (Jenkins, 2006), which can be used as a source of hope for other communities in the future (Stoddard, 2011). Here again is the impact of history, but in a forward thinking way. Strong community stewards

allow for the community of practice to be strong enough to act as an example for future communities who may face similar situations. This is also a benefit for the original community; should its members find themselves facing another crisis, similar or not, they know they have this community to rely on.

Relatedly, Coombs discusses the need for “knowledge bases” (2012, p. 75), but his conception is broad and general, and comes from a distinctly organizational focus. However, the idea can be made relevant to online communities of practice by paying attention to the potential for sublevels. We know that disparate knowledge that was once difficult to capture now comes together to help the community exist, maintain and sustain itself (Butler, 2001; Williams & Cothrel, 2000; Zhang & Watts, 2008). Rather than focusing on the need for knowledge of social media in general, as Coombs (2012) suggests, these communities of practice advocate knowing how social media platforms work, but also how to interact with individuals once the community exists, and how to be a steward or source of specific knowledge, and how to build beneficial offline connections. This is not an organizational perspective, but a personal, community-focused perspective. Online communities of practice, especially those utilized in a crisis, are personal, and as such, so are the knowledge bases necessary to make them successful.

The literature also mentions the idea that being a community steward is often done in order to build self-esteem or rank within the community (Wenger, White, & Smith, 2009). This was a concept that Justin railed against quite strongly in his reasoning for creating the community and why he continues to build the community. Yes, he won awards for it, but that was not what drew him to doing it, and he makes that point rather clearly. Instead, it is more accurate to think of the steward in these communities as

working toward Putnam's (1995a, 1995b) vision of social capital. This is a more community-oriented understanding, a move toward the best interest of the collective group over the individual, based on trust and relationships established within the network. Thus, our understanding of stewards should be expanded to hold this new, and more complex, balance between helping the self and helping the community.

Suggestions for Improving Online Communities of Practice

When choosing an online space for a community of practice, there is a lot to consider. This section will detail some ways that current platforms can improve by making conversations easier; increasing ability to gather and sort information, especially questions and answers; and facilitate relationship building in general. Justin mentioned that Facebook reached out to him after the success of JSHN, wanting "the world to know that Facebook is more useful than just sharing baby photos." This project has discussed already why some people choose to go online (ease of information sharing, to stay in control, or to verify and get what is seen as more credible information), but there were almost no opinions as to why people went to Facebook or Twitter to start with. Many interviewees noted that they saw JSHN pop up on the news feed from a friend, or that someone they knew was already using the site, so they checked it out and decided to get involved with the community. With Twitter, there was one brief discussion with a community member refusing an interview of his tendency to use trending hashtags to garner more acknowledgement of a particular media source. Additionally, Twitter is seen as having broad pickup as the place for breaking news (Gabbatt, 2013), so it makes sense that people would go there for the initial rush of news. However, a deeper look at how

these online communities can improve might allow for bringing people in more directly during a future crisis.

As online communities grown and become more effective at helping people navigate crisis response and recovery, it is also useful to see how they might be improved, because while the community members studied here were generally positive in their discussions of what being online and in a community of practice offered them, they also had a wide range of suggestions. Some of them were for the community, some of them were for social media in general, and some of them were for Facebook specifically. No one in the Twitter community made platform-specific suggestions.

One of the biggest suggestions dealt with the idea that, while the community did its best to gather and sort information based on geographic area, that gathering and sorting could still be improved. If each post and subsequent comment thread is taken as its own entity, those threads should have a way to be sorted, processed, and easy to find. So many people were saying the same things, talking about the same issues, or posting the same questions, but in the noise of so many threads, it becomes clear that having somewhere to spread out the information and highlight the most important parts would be a welcome addition to the community.

Instead of worrying about threads on Twitter, community members or stewards should be concerned with hashtag usage. People do have conversations on Twitter, but if they do not include the correct or consistent hashtags, conversations become all but impossible to find, making the community that much difficult to coalesce. While it is possible that individuals took their conversations “off hashtag,” and continued to build relationships solely through @mentions as suggested above, there would be connections,

but no one else would be aware of them, making them fall far short of the requirements for a community of practice. This means that one significant practical suggestion for organizations or would-be community stewards is to provide a hashtag, or set of hashtags, early in the communication process, and then to enforce its usage as much as possible. Twitter is viewed here as an informational network, in part, because of the ease of splintered conversations on the platform. Without this clarity of conversation, Twitter is set up to be more difficult to host an individual community of practice, one space where everyone knew or could learn to gather. In this study, the practice was lost in the hundreds of people retweeting the same information about the shooting, or putting out duplicate updates without adding any of their own information. Twitter may also be a platform where people go to find the most relevant hashtags or conversations, add their news, and then leave, assuming the information will help someone else but not considering the potential for relationship building in the sharing of that information.

The idea of breaking up the information was also practical, especially as it related to the discussed concerns over electricity and trying to streamline online interaction. On JSHN, early on in the storm, there were a couple of posts asking whether or not people had power, and what area they were in. One post had 710 comments, and another had 3,315. On the post with 3,315 comments, the first comment went up within one minute of the post, and although the final comment did not occur until almost five days later, most of the comments occurred within the first hour, with hundreds of comments coming in every minute. This sort of mass sharing of information meant that the stewards interested in knowing where power was out had almost more information than they could handle, but also that people were not taking the time to see if other people had posted similar

information. This sole focus on practice significantly cut down on the potential for community, and greatly inhibited the benefit of using Facebook for improving either of those, even if it was only to see who else in your town was sitting in the dark.

Additionally, if you were out of power, and therefore looking to conserve it, you were much less likely to surf through over 3,000 comments to find people in a similar location and use that post to build community. Here, threaded commenting, or commenting based on geographic area, might be two specific suggestions for improvement.

Another, similar issue is that people might respond to a question, but they might do so 40 comments down thread, and then either are not willing or able to link to the person directly to let them know their question is being answered. This is a shame for the person who might not ever read far enough to know their question was answered, for the person whose answer never gets utilized, and complicated for the person reading the thread who may or may not be aware enough to connect the question and the answer, leaving them with multiple pieces of disconnected, and thus unhelpful, information. If there was a way to link questions and answers, such as threaded commenting, that would be even better. Trying to figure out what this bit of information is supposed to answer, and why it might be relevant, is too time-consuming and irritating to be of much good in the middle of a crisis.

Other suggestions are basic but speak to the lack of technical or platform knowledge that has been addressed. Some JSHN community members were quite upset about having to click a Like button on a topic that was so devastating to them, even as they knew that doing so was the best way to get Facebook to continue to show them JSHN updates and information in their News Feed. A number of people also had trouble

sharing posts from their smartphones, and would ask for suggestions or make suggestions on how to fix that for the future.

Other suggestions can focus on crisis communicators who may wish to join a community of practice or informational network in order to spread helpful crisis recovery information. Emergency managers or others communicating in a crisis should pay attention to the culture of the community before joining—to look at how individuals are organizing themselves, and what codes of conduct or unwritten rules they may have established for how to interact with one another (Wenger et al., 2009). It may be helpful to try and build a relationship with the community steward prior to simply jumping into the community. For example, Justin from JSHN developed a strong relationship with the New Jersey OEM and then was able to help them utilize the community more effectively based on his knowledge of how it worked and was organized.

Engaging with communities of practice may be overwhelming for a communicator or emergency manager, where multiple individuals may need intense help or aid at the same time, or ask the same questions over and over without acknowledging a response provided because they cannot find it easily. In these cases, communicators and managers should focus on providing the aid and resources that they can, and to make appropriate expectations clear to the community from the very beginning.

Crisis communicators also should not be discouraged with a lack of intense interaction either. As shown in these two cases, information may have been heavily interacted with, minimally interacted with, or not interacted with at all. This idea of differing interaction levels is supported by those participants who noted they went onto Facebook briefly, and only to post questions or check for specific updates, because they

were concerned about battery life on a smart phone or wasting what little electricity was available to them. This general idea is also noted by Wenger et al. (2009), who discuss the need for legitimate peripheral participants. These participants are those who may only take information in and not respond within the community, but that does not mean the information was not necessary or helpful to them, or that they should be ignored by the more robust participants or the community stewards.

There are also practical information needs that should be met before the information from a community of practice can be helpful to emergency responders and other crisis communicators. People within these communities often left out key information that would be helpful or necessary in order to provide them with aid; for example, one man posted to JSHN that he had been without power since 3:30 p.m. that day, which fit into the broader post topic, but also made it impossible for the information to be helpful, as he did not include where he was located. So, he connected to the community, but not in a way that was going to help him beyond relieving him of the burden of the knowledge.

For a community of practice, part of the balance is helping people build relationships online when they do not know one another in any other way. As we saw with these communities that was not always true—people would invite those they knew offline to join the online community, or they would serendipitously find offline friends in the mass of people online. When it came to ways to improve online communities, helping people build offline connections as another way to improve the actual connection was a common suggestion.

Future Research

One avenue for exploration lies in better understanding the differences between the kinds of questions people were asking in these communities and the ability for them to be answered. Future research should explore the differences between what people were asking for within these online communities and what kind of information people were actually provided. Understanding the news coverage that existed, and comparing that to the information that was being requested and answered online could provide insight to emergency managers or crisis communicators looking to prepare messages and comprehensive understandings for individuals who might face a similar crisis in the future. Future research could also explore the idea that social media may allow for longer-term community sustainability, especially in communities where ever-present or reoccurring crises may sustain the online communities over time.

As a broader way to understand these questions, future research should look at other crisis types and additional social media platforms, to see whether or not the community of practice model or the concept of an informational network exists in those situations. Future research should also attempt to identify if the physical location remains important in crisis situations that are less bound to a specific place than the ones studied here.

When discussing how and what individuals are willing to share during a crisis, other avenues for exploration also become available. The public health literature has some work that discusses a person's willingness to self-disclose during an illness, including the lack of choice between withholding and sharing information when an illness has visible side effects (Johansen, Andrews, Haukanes, & Lilleaas, 2014) and the

need for preservation of family and community life by deciding when and how to self-disclose an illness (Jowsey, Ward, & Gardner, 2013). While neither of these works looks at crisis on a larger scale, it does provide a starting point for understanding self-disclosure in a crisis, particularly to those who are not intimately involved or as negatively affected. A theory or work that looked into how and why self-disclosure rates and interests change in a crisis situation would be of benefit to those looking to build better and more helpful communities of practice. When looking at interactions within a community of practice, care should also be given to notice when communication occurs on a one-on-one level in order to improve our understanding of the impact it could have on the field.

Strengths and Limitations

The strengths of this dissertation lie in the in-depth knowledge gathered to better understand how and why individuals form relationships online during a crisis. This information is helpful from both a professional and personal perspective; professionals who can understand the need for communities of practice in a crisis can help to create and maintain better communities of practice in a crisis, which will, in turn, help prepare a welcoming and beneficial space for the individual who is interested in going online for information about their own crisis experience. The thorough research completed for this project allowed for new insights into two specific and commonly used social media platforms, Facebook and Twitter, and how they are being used outside of their original purveyance. From a practical standpoint, both platforms could now be equipped with small changes that would make a large impact on the experience of individuals trying to navigate a complex crisis.

There are also a number of necessary and helpful theoretical additions, first in introducing the community of practice model to crisis communication literature, and then in expanding that model to accommodate what was learned. The community of practice model should expand its stages; instead of assuming that all communities will transform, or end, crisis-based communities may move toward continuation, or the need to exist on a smaller scale in preparation for future events. The model should also broaden its understanding of domain to include the possibility of an inextricable link to physical place, even if the community isn't tied to a location, and that the balancing between those who have the domain connection and those who don't impacts the community in a myriad of ways.

The model should also be expanded to include conversational communities like the one on Twitter studied here, where the focus is on information and not relationships. Finally, the field of crisis communication must expand its organizational, one-to-many communication focus to include the potential for an individual, one-to-one communication potential through online communities of practice.

This project also took one of the first steps toward building bridges between the academic areas of communities of practice, complexity, crisis, and social media, a direction ripe with potential and interesting questions and answers. Practical suggestions can revolve around the specific platforms studied, with threaded comments on Facebook and hashtag specifications on Twitter. There is also the need for crisis communicators to understand the importance of location, information needs, and the confluence of multiple relationship types within a community. Finally, online communities of practice should be built prior to a crisis; allowing relationships to build or preparation information to

disseminate before the crisis occurs may not be feasible for certain crisis types, but for the more easily predicted, like natural disasters, areas with reoccurring crises should develop these communities before they are necessary.

Limitations exist for this project as well. While the research completed was robust in content analysis, there were only nine interviews completed for JSHN, and zero interviews completed with individuals from the Twitter Batman community. The nine interviews with members of JSHN were enlightening and helpful in parsing through some of the ideas from the content, and additional interviews could have provided analytical insights. Additionally, since finding willing interview participants was so difficult, it is possible that those who were interviewed showcased a different or smaller than normal subsection of the population of the community.

Based on geographical constraints, interviews were only conducted via the telephone, which would reduce some of the impact and all of the nonverbal aspects normally helpful to providing insight in an interview (Chen & Hinton, 1999; McCoyd & Kerson, 2006). Participants in online communities did have some concerns about their anonymity, and, based on the response rate for interviews, were perhaps uninterested in being interviewed at all, indicating that I may have interviewed a subset of the population with more willingness or interest in having their name and ideas associated with the project or the community. Thus, active members of the community may have been more willing to participate in interviews, limiting the variety of experiences or knowledge that would be based on community participation. Interviewing and content analysis was conducted by one researcher, who was not personally involved or significantly impacted

by the crises discussed, which may have impacted participants' willingness to disclose or discuss the events to the level of detail preferred.

Another limitation is that, only two crisis types were examined in this project and there are a lot of other types of crises that exist such as... (Coombs, 2012). This work did not focus much on the differences in the communities as a function of the crisis type; future research should look at crisis type for potential impact on how a community of practice is formed and utilized. Similarly, the two social media platforms chosen are two of the five most widely used by American adults (Duggan & Smith, 2013), but again, it would be valuable to look at other platforms and analyze their potential for hosting or adapting communities of practice.

Finally, the crises chosen here both occurred in the United States, even though anyone in the world with an internet connection could (and did) contribute to these online communities of practice. Additional insights may have been missed by not focusing on crises with international impact, or crises that took place entirely outside of the United States, to see what additional implications may exist when the domain changes so pointedly.

Conclusion

This dissertation aimed to understand the intersection of the community of practice model, crisis communication, complexity theory, and social media, filling a hole in the literature and responding to the call of Seeger, Sellnow, and Ulmer (2002) for explicating novel communication processes in a crisis. By looking at two potential communities of practice, one fully realized and one a more informational network that existed around two separate crises, on two different social media platforms, this work is

able to pull out some unique aspects of each of those four areas, and to use them to complement and inform one another.

Both theoretical contributions and practical recommendations have been offered in this work. The community of practice framework should be expanded to include detail necessary to understand the impact of a crisis situation, and crisis communication knowledge should be expanded to include the importance of community building in recovery and resilience. Findings suggest that location is very important in building community, the need for adapting information to the needs of the community, and the acceptance of many different relationship types. One of the biggest discoveries is that one- to-one communication in a crisis is not only possible but expected through social media.

Practically, social media platforms need to spend time thinking through how people might need to connect during a crisis, and to make it easier for them to get the information they need quickly and easily. The lack of power was a major concern, again highlighting the need for speedy and effortless searching, which would also cut down on the duplicate postings and multiple questions and concerns that were mere repeats of one another so the focus could be on helping individual recovery go smoothly.

Finally, this dissertation allowed information from a variety of different fields and understandings to come together to make concrete assertions about how to best help individuals form community and improve response and recovery both during and after a crisis. With continued research and end-user engagement, it is my hope that this information will one day help individuals feel even slightly less alone and slightly more

confident in their ability to recover successfully from crises thanks to the community available to them.

Appendix A—Semi-structured In-depth Interview Guide

Hello! My name is Melissa Janoske, and I am a graduate student researching crisis communication and online communities at the University of Maryland. Thank you so much for agreeing to be interviewed today about the Jersey Shore Facebook page/The Dark Knight Rises Twitter community.

Have you read over the consent form? If so, do you have any questions? Do you give consent to be interviewed today?

Is it ok if you are audio-recorded today?

Great, thank you for your participation! Now, before we get into the main questions, I'd like to know a little more about your perceptions of community and crises and how people interact online.

1. How did you get involved with the Jersey Shore Facebook page/The Dark Knight Rises Twitter community?
2. Explain to me the steps you took to respond to the crisis as it was immediately happening.
 - a. How did you know to do these things/where did the information you needed come from?
3. Explain to me the steps you took to respond to the crisis in the day or two immediately following.
 - a. What about in the weeks or months following?
 - b. What does your response to the crisis look like now, ___ months after it happened?
4. How do you define an online community?
 - a. What things do you think are important in building an online community?
 - b. Are there limits or restrictions to who can participate in an online community like the one you described?

- i. If so, what kinds of limits or restrictions? If not, why not?
5. How can online communities help individuals respond to and recover from events like Hurricane Sandy/the Dark Knight Rises' shooting?
 - a. How can they hurt or negatively impact individual response and recovery?
6. Have you ever participated in other online communities?
 - a. What was the purpose of these communities?
 - b. Did you participate in any other online communities related to Hurricane Sandy/The Dark Knight Rises shooting?
 - c. How long did you participate in those communities?
 - d. Why did you stop participating/why are you still participating?
7. How involved are you in other social media platforms? [Probe for channel, context]
 - a. Are these communities? Why or why not?
 - b. Could they become communities? What would have to happen for this to be so?
8. How would you define something as a crisis?
 - a. Do you think Hurricane Sandy/The Dark Knight Rises shooting is a crisis?
9. Why do you go online for information about crises?
 - a. What kind of information is available online during a crisis? [Probe for platform, context]
 - b. How do you assess quality and accuracy of online sources or information?
 - c. Where else do you go for information on a crisis (online or otherwise)?

10. How did you hear about the Jersey Shore Facebook page/The Dark Knight Rises Twitter online community?
 - a. How else do you remember hearing about this particular crisis?
 - b. Did any of these sources appear to have better or more helpful information than others? If so, what was the information?
11. How were you impacted by this particular crisis?
12. What made you want to seek out information about this particular crisis online?
13. What made you want to participate in the Facebook/Twitter community specifically?
 - a. How did you participate in the community?
 - i. Commenting?
 - ii. Commenting on other people's comments?
 - iii. Liking, sharing, or retweeting them?
 - iv. Other? [Probe for specific actions or interactions]
 - b. How long were you/do you anticipate being a member of this community?
 - i. What made you stop participating/makes you keep participating?
 - ii. Is there anything that would make you start participating again?
14. How, if at all, did the community help you respond to the crisis?
 - a. How, if at all, did the community negatively impact your response to the crisis?
15. What action did you take based on what you learned or saw in the community?
 - a. How were you impacted by (not) taking this action?

16. Did you tell anyone else not in the community about the things you learned or saw in the community?
 - a. Was this on another social media platform or in real life?
 - b. Who did you tell? What is your relationship to them?
 - c. Why did you share this with this person?
 - d. Do you think they did anything based on the information you shared?
17. What else did you do in response to something you learned or saw in the community?
18. What do you think this community has done for you in relation to the crisis?
19. Do you know other people who are active in this community?
 - i. If yes, who?
 - ii. If not, why not? Did you try to form relationships with others?
20. What were your interactions like with other people in the community?
21. How important is it to have someone 'run' the community?
 - a. Were there leaders in the Facebook/Twitter communities?
 - b. How did you feel about their leadership?
 - c. How did their leadership or actions impact the community as a whole?
22. How would you characterize the other people in the community, and their reactions and responses to what was happening?
 - a. How did this impact the way the community as a whole responded or reacted?
23. Have you ever connected with someone from this community offline, or talked about doing so?

- a. If so, what was that like?
 - b. If not, is that something you would ever be interested in doing? Why or why not?
24. What would make you seek out other, similar online communities if you're affected by another crisis in the future?
25. How would you improve social media platforms to make it easier to respond to a similar crisis in the future?
- a. What would you change about the platform itself?
 - b. What else would you want to see from the people who participated in the community?
 - c. Is there anything else you think could be done to improve the online community?

Ask for demographics: age, gender, race/ethnicity

Is there anything else you'd like to add or elaborate on? Thanks so much for your participation!

Appendix B—Coding Scheme

Complexity Theory

1. Lack of exact knowledge (positive/negative): a plentitude and variety of meaning, not a lack of it; can be either good or bad
2. Interaction of agents/elements
3. Self-organizing: learning from interaction and adapting based on feedback from individual and shared history
4. Unstable: constant evolution, requiring ongoing flows of energy; stability is not a desired state
5. Dynamic and impacted by history: history is an essential feature of emergent patterns; past history produces present behavior
6. Permeable, ill-defined boundaries: focus on relationships, where the organization is an ongoing process and series of interactions
7. Irreducibility: a system that is more than the sum of its parts; one must look at everything in order to understand anything
8. External environment, impact: noting an environment or impact coming from outside of the organization or an individual agent

Social Media

1. How many interactions (Likes, shares, retweets, other) does the item have?: write number
2. Date posted to community: write date posted; if a response, include date of original post
3. Mention of another person or organization: name of person/organization

4. Mention of a specific place (town, business, other): name of specific place
5. How community is built or maintained through social media: discussing ease of community building through social media
 - a. General ideas of what makes a community
 - b. Why go online
6. Something being/going viral: the term 'viral' is used by a community member
7. Mention of other platforms or communities: list the platform and/or the community; is the mention positive or negative?
8. Emotional response: what is the emotion associated with an event; should have the emotion named in the comment or discussion
 - a. General emotion
 - b. Anger or disbelief (at others/actions of others)
9. Emoticons/Emoji: use of any emoticon or emoji (note if use appears sarcastic)
10. Sarcasm (explicitly stated or otherwise): use of irony, convey contempt, bitter or cutting expression or remark
11. Relationship building (individual) through social media: do the posters mention building relationships, the importance of building relationships, or how glad they are to have a relationship with someone else online?
 - a. Offline connection
 - b. Personal attacks
12. Improving Facebook: suggestions or comments from community members on what else the platform could or should provide in order to meet need

Community of Practice

1. Information shared
 - a. Information from the person posting: is one person providing information or answering a question from another person
 - b. Information the person posting got from another media source: what is the information, indicate alternate source
 - c. Information the person posting got from another person: what is the information, indicate relationship
 - d. External knowledge sharing: does the poster intend to share the information with someone else?, who they will/want to share this information with
 - e. Rumors and how they might be stopped
 - f. Questions asked and answered among and between community members
 - g. Unrelated: what is not related to the main topic but discussed anyway?
 - i. What is the response to these off topic discussions?
2. Domain: expressing something fundamental community members have in common
 - a. Jersey Strong
 - b. JSHN from a distance: those who live outside of New Jersey commenting or engaging
 - c. Noting where people are located when they post; are they elsewhere because of evacuation?

3. Practice: sharing a practice, including all activities and techniques for coping with a crisis
4. Community: seeking learning or socializing companions
5. Trust and/or mutual engagement: explicit stating of trust or willingness to engage with another community member
6. Acknowledgement of community steward: mentioning the steward, either by name or position
7. Discussion of community steward role: is the steward providing positive or negative items, information, and gathering space for the community
8. Offline connection (potential): are people interested in getting together offline to engage in some way?
9. Offline connection (actualized): have people actually gotten together offline?
What is the response to that connection?
 - a. Actions taken based on JSHN
10. Social capital: evidence of ties or connections between individuals in the community
11. Stages of development
 - a. Potential: individuals discover one another, compare commonalities, needs, and issues
 - b. Coalesce: individuals find value in communicating and learning together
 - c. Mature: creating additional information or materials that would be helpful to the community

- d. Stewardship: developing resources and materials that orient new members to the community
 - e. Transforming: community disbands because it is no longer useful to members
12. Structural holes (network holes): are there missing links in the community, or places where there should be people bridging information?

Crisis

1. Uniqueness of event
 - a. Surprise: something with a likelihood or impact beyond expectations
 - b. Threat: something beyond a typical problem for an organization
 - c. Response time: quick response is better for maintaining control; what is length of response time?
2. Recovery
 - a. Recovery after six months
 - b. Recovery after one year
3. Power outage and electronics: the importance of having power and the lengths to which people would go to remain connected to the internet
4. Government and insurance: what were the expectations of both? Were they met, why or why not?
5. Laws: what laws were in place to prevent these crises? How can or should the laws be changed based on this event?

Other

1. Special needs populations: do people self-disclose being part of one? How does this impact their experience?

Appendix C—Participant Interview Request

[The following message will be sent via the message service or system pertinent for each social media platform (i.e., Facebook Message or Twitter Direct Message) to individuals I would like to interview. If those who receive this message indicate their interest in participating, they will receive a simple email thanking them for their interest, which will include the consent form and ask them what times would be convenient to schedule an interview. Other options for the interview can be offered, including via email, Skype, or in person (based on geographic ability) if the participant is interested.]

Subject: [Hurricane Sandy Facebook group/Batman shooting Twitter community]

interview request

[name/username of contributor],

I am a graduate student at the University of Maryland researching how online communities can help people respond to and recover from crises. I'm writing to see if you are willing in participating this dissertation research project.

I have seen your contributions to the [Hurricane Sandy Facebook group/Batman shooting Twitter community], and noted that you seem very involved in participating in this community. I hope that you will be willing to discuss your knowledge of this community, and what it provided you after the [hurricane/shooting/other], and how your interactions with others in this community might have helped you.

My current project looks at how online communities form after a crisis, and what is special about them being online. I'm also interested in if people feel connected to those they meet online in a community like that, and how that might help you feel better after a

crisis. I also want to know how that information gathering impacted your actions, and think you could offer some key insights.

Interviews should last no more than 45-60 minutes, and can be conducted in person, over email or Skype, or over the telephone. Your name will not be used in the study.

Please let me know if this is something you would be willing to participate in, or if you know of someone else who might be interested in working with me. If you are willing, please send me a reply message stating your interest and we will send you a consent form and schedule an interview time that is convenient for you. You are, of course, free to ignore this message or respond to it indicating that you do not wish to participate. If you are under 18 years of age, please ignore this message. I'm also happy to answer any questions you might have.

Thanks for your time. Your insight would be greatly appreciated!

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