THE SOCIAL CONSTRUCTION OF DONATIONS:

AGILITY, ADAPTABILITY, AND ALIGNMENT AS SUCCESS

DETERMINANTS IN RELIEF SUPPLY CHAINS

by

Mary M. Nelan

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Mary M. Nelan

Approved: _____
Karen Parker, Ph.D.
Chair of the Department of Sociology and Criminal Justice

Approved: _____
George H. Watson, Ph.D.
Dean of the College of Arts and Sciences

Approved: _____
Ann L. Ardis, Ph.D.
Senior Vice Provost for Graduate and Professional Education

I certify that I have read this dissertation and that in my opinion it meets the academic and professional standard required by the University as a dissertation for the degree of Doctor of Philosophy.

Signed: _____

Tricia Wachtendorf, Ph.D.
Professor in charge of dissertation

I certify that I have read this dissertation and that in my opinion it meets the academic and professional standard required by the University as a dissertation for the degree of Doctor of Philosophy.

Signed: _____

Anne Bowler, Ph.D.
Member of dissertation committee

I certify that I have read this dissertation and that in my opinion it meets the academic and professional standard required by the University as a dissertation for the degree of Doctor of Philosophy.

Signed: _____

James Kendra, Ph.D.
Member of dissertation committee

I certify that I have read this dissertation and that in my opinion it meets the academic and professional standard required by the University as a dissertation for the degree of Doctor of Philosophy.

Signed: _____

José Holguin-Veras, Ph.D.
Member of dissertation committee

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ABSTRACT

The convergence of material donations following disaster events is well documented in the literature. This influx of goods is often dubbed a "second disaster" with non-priority and unnecessary goods causing transportation and storage challenges to the community of survivors. Interviews were conducted following Hurricane Sandy in 2013 and two tornadoes outside of Oklahoma City in May 2013. By utilizing the Triple-A model (agility, adaptability, and alignment), which has previously been applied to commercial and humanitarian supply chains, and the social construction paradigm, this dissertation investigates how stakeholders understand donations and the roles of the features of the Triple-A model in the disaster relief supply chain. Findings illustrate conflicting views about the necessity for agility, adaptability, and alignment. From a broader perspective, the findings reveal that individuals involved in the supply chain differentially assign value in the donations process, including if they value donor needs over survivor needs, and if cash or materiel items are of greater value to the donors and survivors. Agility, the timing, flexibility, and reaction time in the supply chain, was viewed as necessary to a healthy supply chain, however there was not a universal understanding of how to achieve an agile supply chain. Overall, alignment of donor interests and survivor interests was constructed as necessary by stakeholders in the disaster affected community, however donation drive coordinators lacked a clear understanding of how to align the interests of survivors and donors. Lastly, adaptability to structural changes was constructed as necessary, except in the cases of individuals and organizations that placed a higher value on donor generosity over survivor interests.

Further research is necessary into the social construction of the value of donations, as well as how agility, adaptability, and alignment are understood in the disaster relief supply chain.

Chapter 1

INTRODUCTION

In the aftermath of disaster events, whether they are natural disasters, technological disasters, or human induced, there is an outpouring of donations from individuals and groups. This outpouring of support can come from an area geographically close to the place where the event took place or from a great distance away. Following Hurricane Katrina, goods arrived from around the country to alleviate the suffering of the survivors. After 9/11, booties for the search and rescue dogs were shipped in to help the dogs climbing over the debris in New York City. In 2012, after the Newtown, Connecticut School shooting, teddy bears arrived by the carload to offer some comfort to the children who survived the attack, or who had lost their friends.

In each case, the donations are well meant, and are intended to help those who have just experienced a disaster. Yet the fact that they are offered with good intentions does not mean that they are always helpful. New Orleans and surrounding areas were overrun with donations that exceeded the needs of the survivors. The booties sent to the dogs after 9/11 could not be used because they would have compromised the safety of the dogs; they would not have had the traction they needed to navigate the debris (Wachtendorf, Penta, and Nelan, 2015). Finally, the influx of teddy bears after the Newtown, Connecticut school shooting were unnecessary, as children didn't lose their toys in a disaster event, and there was little need for stuffed animals in this community (CBS News, 2016).

Supply chain management during and following disaster events is an important issue that must be further addressed in research and demands socio-technical solutions to address associated problems. While donations provide an immediate need for the survivors, in many cases, they also present challenges for the affected community (Fritz and Mathewson, 1957; Holguin-Veras, Jaller, Van Wassenhove, Perez, and Wachtendorf, 2014a; Wachtendorf, Brown, and Holguin-Veras, 2013). Excessive donations, especially of low priority or non-priority goods, can clog supply lines and cause delays of high priority items (Pan American Health Organization, 2001).

While high priority goods not reaching the area in an efficient time period presents significant challenges following a devastating disaster, the influx of unneeded items can generate further challenges. Historically, excessive donations (such as clothing) cause problems in post-disaster environments, especially in relation to the limited amount of storage for incoming donations during the post disaster period (Destro and Holguin-Veras, 2011). The research presented in this dissertation employs the social construction paradigm to further understand how individuals make sense of their concerns with donations and the supply chain. This approach is a new and innovative way to study disaster relief supply chains. By focusing on how individuals understand and construct their understanding of disaster donations we can better develop effective measures to alleviate the challenges that are caused by excessive and inappropriate donations.

Supply chains are defined as the flow of goods, from manufacturing through the delivery to the end user (Mentzer, et al., 2001). Previous research into supply chain management has focused on both commercial and humanitarian supply chains; however, of the two, commercial supply chains have been studied more extensively.

Research into commercial and humanitarian supply chains has traditionally focused on the logistics of supply chain management. These studies have addressed the supply chain from a top down approach; the perspective of the research pursues an answer to the question of how to best solve issues within the supply chain by changing management practices (see Lee 2004; Van Wassenhove 2006; Apte 2010). Specifically, previous research on commercial supply chains has proposed a model to create more successful and long lasting supply chains. This project seeks to apply that model, the Triple-A model, to disaster donation supply chains. Triple-A stands for Agility, Alignment, and Adaptation (Apte, 2010).

Theoretical Framework

I utilized the social construction paradigm to further understand the phenomenon and the perspectives of those involved at different levels of the supply chain. A social construction approach emphasizes how individuals interpret their experiences and observations as well as how they construct meanings associated with those experiences (Creswell, 2007). Utilizing the social construction paradigm in the context of this research allows for an emphasis on how the participants view the supply chain rather than strictly an analysis of the supply chain itself. The social construction paradigm is useful in this research because it emphasizes the differences in individual definitions and constructions of a social phenomenon. Social construction facilitates an understanding of how individuals, who are involved in different levels and different roles in the supply chain, differentially understand the supply chain.

Respondents are drawn from individuals whose organization participated in one of two disaster events. Interviews were conducted with a range of organizational actors, from donation drive coordinators to those who distributed the donations in the disaster

area, and include representation from state/government run organizations, non-governmental organizations (NGOs), grass-roots non-profits, and emergent donation drives. Range selection recognizes that each of these individuals could have differing perspectives on the donations supply chain. The social constructionist paradigm allows for an analysis that preserves the individuals' perspectives and understanding of the donations process.

Significance of the Work

Donation supply chains are heavily reliant on actual donors to continue operations, and it is therefore vital to understand how individuals involved in the process understand the donation process. Unlike commercial supply chains, donation chains must have donors to begin the process, be it through monetary or material donations. Once the donations enter the chain, they being a journey to the donation distribution centers and hopefully on to survivors that need those items. We cannot fully understand how to address the challenges that afflict post disaster communities in relation to donations until we understand the perspectives of individuals involved in the donations process. This study will make inroads towards that understanding.

Previous research on humanitarian aid has focused on the application of the Triple-A model to humanitarian supply chains, and scholars have had varying degrees of success with this application (Van Wassenhove, 2006). Much of this research is quantitative with an emphasis on the logistical efficiency of humanitarian supply chains. The study presented here fills a gap in the literature by addressing the supply chain through a sociological and qualitative lens. Interview data was analyzed based on a preliminary coding of the data and through my own experiences and observations while in the field following both Sandy and the Oklahoma tornadoes.

Research in the logistics field has primarily studied the operation of supply chain management from a top down approach, or how management can seek to solve the challenges that occur as a result of an inefficient and ineffective supply chain (Seuring and Muller, 2008). By looking at supply and demand, at how the supply chain reacts to changes in that structure, and how quickly changes can be implemented, existing work still does not adequately examine stakeholders' perspectives in that process. Much of the research is done in an effort to increase profit and decrease cost and create sustainable supply chains (Thomas and Griffin, 1996; Lambert and Cooper, 2000; Seuring and Muller, 2008).

While research on logistics typically studies the overall validity of the agility, adaptation, and alignment model, this research instead focuses on how individuals perceive the supply chain, both its successes and challenges, and if agility, adaptation, and alignment are necessary factors in the success of donations management. The question here is not whether these factors are present in the disaster donations supply chain, but how stakeholders in the disaster relief supply chain view them and if they are necessary to a successful supply chain. How do individuals who are involved in the processes of the supply chain construct their understandings of its agility, adaptation, and alignment? Do donors, donation drive coordinators, and donation distribution center volunteers construct different meanings for the supply chain? Do they see agility, adaptation, and alignment as important components of a successful supply chain?

The broader impacts of this study extend beyond the scientific contributions to disaster sociology. The findings from this work will inform the supply chain and logistics fields. The results are of value to the applied field of emergency management. A greater understanding of what donations organizers assess as beneficial to their

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efforts may allow emergency managers to strategize ways to better communicate and coordinate with such emergent activities.

Looking Ahead

Following this introduction chapter is Chapter 2, a more in depth review of the literature in convergence, disaster donations, supply chain management, and humanitarian aid. In Chapter 3, I introduce a more detailed explanation of the Triple-A model for supply chain management. In Chapter 4, I introduce my methodology for the data collection and data analysis. Chapters 5, 6 and 7 – respectfully - examine each component of the Triple-A model. Chapter 8 concludes with a broader summation of the implications of this work.

Chapter 2

LITERATURE REVIEW

In the event of a disaster, whether natural or technological, individuals and corporations have time and again donated money and goods to the affected community and the survivors. While research on this phenomenon has spanned both the field of disasters (Wachtendorf et al., 2013; Wachtendorf, Penta, and Nelan, 2015; Holguin-Veras 2012; Holguin-Veras, Jaller, Van Wassenhove, Perez, and Wachtendorf, 2014a; Neal, 1994; Scanlon, 1992; Fritz and Mathewson, 1957) and humanitarian literature (e.g. Apte, 2010; Balcik, Beamon, Krejci, Muramatsu, and Ramirez, 2010; Dubey and Gunaskaran, 2015), there is a gap in the research when considering the role of grass roots organizations and how they factor into the donation process. After particularly devastating disasters, messages from governmental leaders and other familiar faces are used to solicit donations from private donors (Walker, Wisner, Leaning, and Minear, 2005). Understanding donations and the challenges that they can cause following a disaster is a vital area of study, given the projection that disasters will continue to increase in the future (Thomas and Kopczak, 2005).

Disaster Definitions

There are several definitions of disasters that have emerged as disaster resarch has grown as a field. Initially, disasters were defined as

> An event, concentrated in time and space, in which a society, or
> relatively self-sufficient subdivision of a society, undergoes severe
> danger and incurs such losses to its members and physical appurtenances

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that the social structure is disrutped and the fulfillment of all or some of the essential functions of the society is prevented (Endleman 1952 as cited in Fritz, 1961, p. 655).

This definition specifies which features differentiate a crisis or emergency from a disaster. Specifically if a population or community is affected by an event but society still functions without interruption, then the event would be classified as a crisis or accident (Fritz, 1961). This definition, however, does not account for the differential impact that disaster events can have on different parts of the population. These unequal impacts are seen among the elderly, women, children, prisoners, as well as other vulnerable populations (See Thomas, Phillips, Lovekamp, and Fothergill, 2013).

Disasters were considered external to the social system, and disruption in the stability of the social system would require adaptation and eventually recovery from that disruption (Perry, 2007). The hazards tradition puts more focus on the physical event and how it intersects with with vunerable populations (Wisner, Blaikie, Cannon, and Davis, 2004), embracing the idea that disasters are "social in nature" instead of just physical events (Mileti, 1999, p. 3). The literature continued to increase emphasis on social vulnerability of populations to threats and disruptions rather than the event itself (Cutter, 2005), including seeing disasters as internal rather than external to the social system (Perry, 2007).

The hazards approach to disaster accounts for these differential impacts on vulnerable populations, but fails to go further in understanding disasters and the impacts of management issues within impacted communities.

The definition of disasters within this field has increasingly focused on the social phenomenon rather that the event as the trigger (Perry, 2007). Quarantelli (2000), a founder of the field, identifies disaster as the following:

Disasters are relatively sudden occasions when, because of perceived threats, the routines of collective social units are seriously disrupted and when unplanned courses of action have to be undertaken to cope with the crisis (p. 682).

Based on this definition, it is not the physical place, chronological time, or the nature of the event itself that is important. Rather, it is the social aspects of space, time, consequence, and disruption that are deeply linked to the vulnerability of the population (Perry, 2007). This definition builds on the hazards approach by accounting for vulnerable populations but goes further to explain disruptions in how the community functions.

This research draws on Quarantelli's (2000) definition of disaster. Specifically, this research will address the third feature in Quarantelli's (2000, p. 682) definition, disasters are "when unplanned courses of action have to be undertaken to cope with the crisis." Donations would fall under this feature as they are courses of action to adjust to the disruption, especially emergent donation drives as they by definition are unplanned.

Convergence

Following most disasters there is an urgent need for critical supplies in the affected area; however, it may not always be clear exactly what is needed (Apte, 2010). Supplies are expected to arrive in a timely manner, based on "the premise that victims cannot wait" (Benini and Conley, 2007). Materiel convergence (the influx of supplies of a material nature) is one type of convergence associated with disaster response (Kendra and Wachterndorf, 2003; Kendra and Wachtendorf, 2001). The other two convergence types include personal and informational inflows (Fritz and Mathewson, 1957). Personal convergence is "the actual physical movement of persons on foot, by auto or other vehicle" (Fritz and Mathewson, 1957, p. 4). Personal convergence includes the influx of volunteers, search and rescue personnel, government officials, and aid

workers, among others. A third type of convergence is informational, which is "the movement or transmission of messages" (Fritz and Mathewson, 1957, p. 4). This type of convergence coincides with personal convergence and includes movement towards information and communication centers, and typically arrives in the form of "inquiries, offers of assistance, and other messages" (Fritz and Mathewson, 1957, p. 15).

Unsolicited, unauthorized, and inappropriate goods entering a disaster zone are especially burdensome. It may be difficult for some to look at these acts of spontaneous generosity in a critical light; yet, given the negative impact that these donations can have on an already taxed community, it is an important area of study (Fritz and Mathewson, 1957). The six characteristics of these donations have remained largely unchanged in the last 60 years:

> … these supplies: (1) normally arrive in volumes far in excess of the actual needs; (2) in large proportion, are comprised of unneeded and unusable materials; (3) require the service of large numbers of personnel and facilities which could be used for more essential tasks and functions; (4) often cause conflict relations among relief agencies or among various segments of the population; (5) materially add to the problem of congestion in or near the disaster area; and (6) in some cases, may be disruptive to the local economy" (Fritz and Mathewson, 1957, pp. 22-23).

These spontaneous donations thereby generate a complex problem in post disaster settings, and the challenges that Fitz and Mathewson identified in 1957 are still relevant today (see Holguin-Veras et al., 2014a). This finding is especially significant given the overwhelming number of individuals and organizations involved in the process. Supplies are donated and put en route to the affected area by donors that number in the thousands and, in some cases, tens of thousands (Holguin-Veras et al., 2014a).

Three years after Fritz and Mathewson (1957) published their paper on convergence the US government conducted the 1960s census, which put the population of the United States at approximately 179 million people (US Census Bureau, 2016). 50 years later, the census for 2010 put the population of the United States at approximately 308 million people (US Census Bureau, 2016). With greater populations within the United States potentially exposed to hazards in their communities, and a greater domestic population to provide post-disaster assistance, research on the nature of materiel convergence remains relevant.

In addition to an increase in overall population, other factors have impacted how our society relates to disaster events. Today, we live in a world of immediate information distribution from news sources and social media. Previous studies have documented connections between media reports and charitable donations following a disaster. Specifically, after the 2004 Indian Ocean tsunami, if the media increased the amount of time or print space they spend reporting on the event then there was a correlative increase in charitable donations (Brown and Minty, 2006). While previously it might take days or weeks before distant communities learn about the devastation caused by disaster, the 24/7 news cycle and broad reach of social media platforms can generate a desire to help within hours or even minutes after disaster strikes.

Moreover, compared to the 1960s, the relative cost of shipping or transporting goods has decreased, thereby better enabling emergent groups to before part of the post-disaster supply chain effort. On January 7, 1963, postage was recorded as $0.05 per ounce. In comparison, on April 10, 2016, postage was recorded at $0.47 cents per ounce (USPS, 2016). This comparison must take into account how the value of money changes over time, $0.05 in 1963 would be roughly $1.41 in today's money given the

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total economic cost to the individual (Williamson, 2016). Therefore, shipping costs have become less cost prohibitive over time, which may account for the increase in individuals and groups who participate in shipping goods donations into disaster-affected communities.

This influx of donations (supplies and equipment), both critical and necessary items as well as items that are not a high priority, cause numerous challenges. Low priority items can cause congestion in the supply chains to disaster areas (Destro and Holguin-Veras, 2011). The influx of low priority items (such as clothing) also creates logistical problems (e.g. storage, transportation) and redirects focus from necessary resources and tasks (Destro and Holguin-Veras, 2011).

Disasters can compromise the area's physical infrastructure (Holguin-Veras, Taniguchi, Ferreira, Jaller, and Thompson, 2011; Holguin-Veras, Perez, Ukkusuri, Wachtendorf, and Brown, 2007). In turn this breakdown in the infrastructure leads to a difficulty in transporting goods into the affected area. The humanitarian supply chain can threaten the operation of an already disrupted commercial supply chain that is trying to get goods and services into the affected area. The humaniratian supply chain's impact can halt efforts to restore the infrastructure of the commercial supply chain, as was seen in the early 1980s a cylcone made landfall in Fiji. Approximately 80% of the housing was destroyed as well as their agricultual economy (Cuny 1983). The humanitarian aid arrived quickly, but, according to Cuny, residents of Fiji had to prove that they were unemployed to receive aid. Local businesses and distribution channels were distrupted by the event, but they were not quickly reinstated or rebuilt as the focus was on bringing in aid. The humanitarian aid system began to directly compete with the local economy. Local businesses closed, and cutting off locally generated assistance,

and aid was consequently delayed because local supplies were no longer available in the community (Cuny 1983).

There are many types of organizations involved in disaster relief: governmental, non-governmental organizations (NGOs), established national non-profits, grassroots organizations, and emergent groups. It is important that these organizations, no matter their type and classification, align their messages and duties in the response effort (Apte, 2010; Van Wassenhove, 2006). Research also suggests that organizations should demonstrate agility and adaptability to the changing needs within the survivor populations (Apte, 2010). That said, given the different levels of experience among the organizations, as well as the differences between the missions of non-profit organizations, for-profit businesses, and government agencies, achieving these objectives can prove a challenging task (Apte, 2010).

In the aftermath of Hurricane Mitch, which made landfall in Honduras in 1998, impacted communities saw excessive clothing donations, to the point that the influx precipitated a stoppage of additional supplies from entering the area. Clothing was piled up on the airport runway in boxes, which obstructed the runways and planes filled with supplies delayed in landing (CBS News, 2016).

Following Hurricane Katrina, there were significant challenges in transporting critical supplies due to the hurricane's destructive impact on the build environment and in identifying storage facilities for supplies (Wachtendorf et al., 2013). Communication also proved a key problem in the supply chain. Drivers and coordinators were not always aware of the damage to the infrastructure or the need for permits to enter certain areas, which delayed the delivery of some supplies, and curfews also provided an obstacle to timely delivery of supplies (Wachtendorf et al., 2013).

Following the 9/11 terrorist attacks on the World Trade Center buildings in New York City, food consisituted one of many goods that was brought into the area. According to Kendra and Wachtendorf (2001), the influx of donated food posed several challenges. Much of the spontaneously donated food was not inspected to ensure health quality, nor could it be adequately refrigerated. Moreover, given that the attack on the World Trade Center was intentional, some officials expressed concerns that ad hoc food donations could contain intentionally hazardous contaminants. In addition to the food, donors were sending dog food and dog booties for the service dogs who were trying to locate individuals in the rubble. The media prompted these donations by reporting that the dogs were getting burns to their paws due to the rubble. These donations were not useful as service animals have specific dietary needs and the footwear was not appropriate given the duties of the animals (Holguin-Veras, 2012; Wachtendorf, et al., 2015).

While some donations seem like they are practical, cultural differences are an important factor in their usefulness in an affected community. Following the Indian Ocean Tsunami in 2004, commercial tents were shipped to the devastated areas to provide temporary shelters for families, but many survivors preferred to construct their shelters using tarps and tree branches. This preference was due both to the size of their families, their community interactions, and the uncomfortably warm temperatures in the donated tents during the afternoon hours (Wachtendorf et al., 2015). Some food, medication, and clothing donations following the tsunami also were useless due to cultural differences. These unsolicited donations included tinned pork, Viagra, heavy jackets (in a tropical setting), and Christmas costumes (International Federation of Red Cross and Red Cresent Societies, 2006).

Stopping donations once the communities' needs are met is a further challenge after disasterous events (Wachtendorf et al., 2015), and it is not unusual for the need to already be met between the time supplies are asked for and when they actually arrive (Wachtendorf et al., 2015). Even well-intentioned donations can miss the mark and cause further challenges to communities affected by disaster. Donations are not always needed, or if they were at one time it is possible the need has already been met. Arguably, the affected community should not be responsible for disposing of them.

While it may be counter-intuitive for organizations to accept donations of non-priority or low-priority items, humanitarian agencies may accept donations in order to retain donors for the future. In the event of excess donations, agencies must satisfy their donors by distributing donations in the area that the donor specified, even if the items are not needed in those areas (Apte, 2010). In the aftermath of the Indian Ocean Tsunami, Medicins Sans Frontieres (Doctors Without Borders) decided to stop accepting donations towards their relief efforts; they determined that they had already met the donations needed for their efforts and actually had exceeded their needs. Due to the excess of donations they tried to gain permission from donors to distribute 60% of the donations toward the Indian Ocean Tsunami to other emergencies (Flint and Goyder, 2006).

In some cases, the donations from outside areas cannot reach the survivors of a disaster event, as was the case in Aceh, Indonesia following the Indian Ocean Tsunami, because there were no set distribution channels and the donations could not be accessed by those in need (Apte, 2010). In the aftermath of the Indian Ocean Tsunami, some communities were isolated and survivors could not be reached. The World Food Programme had to use donated helicopters to reach isolated survivors with life-saving

supplies (World Food Programme, 2005). More recently, after the 2011 tsunami in Japan, several neighborhoods on a penninsula were completely cut off from the rest of the country when the only road to access those communities was washed out and covered in debris, which left the community isolated and without fresh food for months (Tana, 2011).

Cash donations are the most effective and efficient way to help survivors following a disaster event (Holguin-Veras et al., 2014a; Center for International Disaster Information, 2015). Cash is a flexible resource that allows organizations and individuals to direct their response and relief efforts towards the actual and immediate needs of the community (Thomas and Fritz, 2006).

Monetary donations do not require transportation and storage and the introduction of cash into a disaster area can positively affect the local economy. Even though this recommendation has been communicated for many years by established and internationally known NGOs, such as the American Red Cross (American Red Cross, 2015), material donations still flow into disaster-affected areas. Used clothing, bottled water, and non-perishable food items still fill community centers and churches following disaster events. In some cases, items that are not distributed to survivors following an event are then shipped to the next event (Wachtendorf, Penta, and Nelan 2015).

Media is a major artery for information coming out of disaster areas. As a result of this information, potential donors draw conclusions about what the survivors need (Wachtendorf et al., 2015). These conclusions were evident following the Newtown, Connecticut elementary school shooting in 2012. Following the shooting, teddy bears, toys, and school supplies began arriving for the children in the community. The number

of teddy bears that arrived in the community is estimated at 67,000. One Newton, Conneticut residents stated that he believed that the donations were more for those who donated them than for the residents of the affected community (CBS News, 2016).

This phenomenon makes the mass media a major culprit in convergence following a disaster (Fritz and Mathewson, 1957). Fritz and Mathewson (1957) proposed delaying media reports until the media and emergency personnel could coordinate the messaging to the public from the affected area.

According to Scanlon (2011) the conclusion that media is the primary generator of convergence is flawed. Scanlon cites two events in his text (a tire fire and a gas explosion) to highlight how the media is not the primary culprit in causing convergence. He shows that in both cases the media had limited or delayed information in each event and that the response was not contingent on those vague media reports.

In theory, the convergence of goods can be positive in a disaster event; but only if the goods address a specific need and the donations of goods is managed in such a way that it allows for proper utilization (Tierney, 2003). While it is accepted that the best practice is to buy supplies locally (in order to pay back into the local economy), this may not always be possible (Holguin-Veras et al., 2007). In catastrophic disaster events the local supplies of necessary goods may have been compromised, and therefore outside resources are necessary (Holguin-Veras et al., 2014a). The result is both unecessary and necessary supplies for the community are transported along the same routes, causing a bottleneck and leaving both the donations and the supplies delayed in reaching their destination.

Supply Chain Management

It is important to further understand the logistics of the disaster donation supply chain in an effort to find a more effective and long lasting solution for the problem of excessive and inappropriate donations following a disaster. The Fritz Institute defined logistics in humanitarian aid as the following: "the process of planning, implementing and controlling the efficient, cost-effective flow and storage of goods and materials, as well as related information, from the point of origin to the point of consumption for the purpose of alleviating the suffering of vulnerable people. The function encompasses a range of activities, including preparedness, planning, procurement, transport, warehousing, tracking and tracing, and customs clearance" (Thomas and Kopczak, 2005, p. 2). Logistical operations must be planned to effectively "get the right goods to the right place and distribute to the right people at the right time." (Van Wassenhove, 2006, p. 477)

As previously mentioned, commercial logistics and humanitarian logistics have critical differences in how they function. These differences include the following characteristics

> (1) objectives pursued, (2) nature and origination of the commodity flows transported, (3) knowledge of demand, (4) decision making structure, (5) periodicity/volume of logistic activities, and (6) state of the supporting systems, e.g., transportation and communications (Holguin-Veras et al., 2014b, pg. 87).

An additional difference between these two types of supply chains is that commercial supply chains retain managers and individuals involved in the logistics of the supply chain in a more constant and static way than humanitarian supply chains. Disasters may not occur regularly, especially those on a larger scale. Due to the lack of predictability and the low occurrence, it is possible that individuals who were involved

in the humanitarian supply chain in the previous disaster have retired or moved on to other positions by the time the next one occurs. For example, there was a 16 year gap between the 1995 Kobe earthquake in Japan and the 2011 Tohoku disaster, during this gap many of those involved in the 1995 disaster who worked in the humanitarian supply chain may have moved on to other careers (Holguin-Veras et al., 2014b; Holguin-Veras et al., 2012). Those who specialize in humanitarian logistics of supply chains are a relatively small group and may not be inclined to publish their experiences and expand the knowledge base in this area (Holguin-Veras et al., 2012; Holguin-Veras et al., 2014b). This leads to a group people controlling the humanitarian supply chain with relatively less experience and who have not yet dealt with a major disaster.

Research into supply chain management has largely focused on commercial supply chain logistics. Within this literature, studies have focused on the importance of coordination between different companies or organizations (e.g. supplies or raw-materials, distributors, retailers) involved in the chain. These partnerships work to avoid higher costs in transportation, an increase in delivery times, higher costs, an increase in loss and damage to inventory, and inferior customer service (Lee, Padmanabhan, and Whang, 1997). Past research outcomes have included suggestions for integrating the supply chain, by solidifying partnerships with those organizations involved in the supply chain, through contracts or through mergers (Lee, 2000). In order to achieve integration, the members of the supply chain would have to have shared interest in adapting to improvements, they must all profit from the innovations (Simatupang, Wright, and Sridharan, 2002).

The importance of coordination and partnerships between members of the supply chain is not confined to commercial supply chains. Within humanitarian supply

chains, there are governments, international organizations, local organizations, corporations, as well as others involved in the humanitarian effort (Balcik et al., 2010). While these partnerships are important in humanitarian aid, they are not easily collaborated and not viewed as always viewed as desireable among organizations (Fenton, 2003). Many organizations do not make an effort towards partnerships with other groups, and as a result there are not many success stories of collaboration within humanitarian aid (Fenton, 2003; Rey, 2001). Organizations can coordinate in two ways, vertically and horizontally. Vertical coordination is when an NGO might work directly with an organization handling the transportation of goods, while horizontal is coordination with other organizations that operate on the same level of the chain (Balcik et al. 2010).

Communication is a vital aspect of coordination, as information sharing leads to more effective relief efforts overall (Altay and Pal, 2014). However, organizations might be hesitant to share information, and subsequently coordinate or partner with other organizations. These obstacles can be a direct result of competition for donors, attention from media outlets, and a competition for local resources, which creates challenges for a successful response effort (Bharosa, Lee, and Janssen, 2010; Wakolbinger and Toyasaki, 2011). There is evidence that following Hurricane Katrina organizations were unwilling to share even low priority data, thereby impeding information flow in the relief effort (Day, Junglas, and Silva 2009). Coordination, whether it is through communication or through partnerships and transportation, within the humanitarian supply chain could minimize costs, both monetarily and in the challenges caused by excessive and inappropriate goods.

Commercial logistics and humanitarian logistics fundamentally differ in how they seek to minimize costs. Commercial logistics strive to minimize private costs, while humanitarian logistics are focusing on minimizing social costs. Social costs constitute a combination of the private costs and the "economic valuation of human suffering." (Holguin-Veras et al., 2014a, p. 2) The virtue of using social costs as a measurement in humanitarian logistics is based on the fact that normal economic transactions are not present in relief aid distribution. Rather, the impact of humanitarian aid logistics can be measured in two ways: (1) a decline in how much the survivors who are receiving the aid have suffered due to a deficiency in access to critical supplies, and (2) the increase in suffering among those survivors who "do not receive aid at a point in time." (Holguin-Veras et al., 2014a)

Another key way in which commercial logistics differs from humanitarian logistics is in the structure and predictability of these supply chains. Commercial chains run on routine, they have set players who make the decisions, have defined roles in the process, and procedures are standardized (Holguin-Veras et al., 2014a). However, this level of organization and reutilization is not strictly possible in an emergent humanitarian chain. Needs among survivors and the disaster affected community evolve, and those changes in need are difficult to predict and can change from day to day (Charles, Lauras, and Van Wassenhove, 2010). Humanitarian logistics, especially following a disaster, are reliant upon improvisation as many supply chains interact with one another. This interaction can involve cooperation, overlapping, and even competing for the same resources (Holguin-Veras et al., 2014a).

Further differences are illustrated by the reactive nature of humanitarian supply chains, and their temporary nature. While the events themselves can be unpredictable,

advance planning is necessary and delineated by three characteristics: preparedness, response, and collaboration (Tomasini and Van Wasshenhove, 2009; Balcik et al., 2010). Humanitarian supply chains are also reliant on establishing what resources are needed as quickly as possibly so that they can acquire those primary resources. These resources could be necessary for transportation (such as planes or automobiles), and early relief supplies (Bhattacharya, Hasija, and Van Wassenhove, 2014).

The financing of these supply chains comes from different sources. Commercial supply chains are reliant upon revenues from ongoing operations while humanitarian supplies are financed through donations from companies and individuals (Bhattacharya, et al., 2014). As previously mentioned, humanitarian chains are complex; they have thousands of contributors (groups and donors) and points from which donations originate.

Due to the importance relief chains, and understanding how they function within humanitarian aid, previous research has suggested models for that will create more effective supply chains. For instance, Blecken (2010) recommended the application of the reference task model to relief supply chains. While this model addresses issues that Blecken identified as problematic in relief supply chains, it approaches the problems from a management/top-down perspective. This model would serve to solve logistical issues within organizations, applying commercial supply chain principles to the relief supply chain, without accounting for the individuals who influence the donations.

A second model that is suggested for the humanitarian supply chain is that of auction procurement (Ertem and Buyurgan, 2011). This structure would allow humanitarian organizations to choose which suppliers to partner with based on their "bids" to support the effort. Larger humanitarian aid organizations would have more

control over whom they partner with and who is involved in the relief effort. Again, this model does not account for grassroots organizations, emergent organizations, and individual donors who are involved in and influence the relief supply chain. In this dissertation research, I focus utilize the Triple-A Model to approach how individuals involved in the relief effort understand the supply chain. The following chapter introduces the Triple-A Model.

Chapter 3

THE TRIPLE-A MODEL

A-A-A Supply Chain Model

The Triple-A (AAA) supply chain model is a business model for commercial supply chains that focuses on how agility, alignment, and adaptability are necessary in a functioning supply chain. Efficiency on its own is not enough to ensure the survival of a company and their supply chain. Supply chains that do not have the ability to react to changes in an effective and timely manner have a decreased chance of surviving (Lee, 2004).

Commercial Logistics

The Triple-A supply chain model was originally developed to better understand successful supply chains, analyze them, and transfer their success to other supply chains (Lee, 2004). There is evidence that this model does create successful supply chains, and thereby improves overall organizational performance (Whitten, Green, and Zelbst, 2012). The following are the definitions of agility, alignment, and adaptability laid out for commercial logistics.

Agility

Agility in a supply chain is characterized as the ability to "respond to short-term changes in demand of supply quickly" (Lee, 2004). These disruptions to the supply chain are external. The methods to implement agility in a supply chain are laid out in

Figure 1. Agility is a critical aspect for a successful supply chain due to fluctuations in both supply and demand. A successful supply chain will effectively respond to these fluctuations quickly and in a cost-effective way. Commercial supply chains can be interrupted due to sudden disaster events or heath epidemics, as we have seen in the past with such events as 9/11 and the 2003 Asian SARS epidemic (Lee, 2004). In today's global world, where supply chains cross borders, agility allows for a supply chain to recover quickly in such events.

Alignment

Alignment is characterized as the ability to "create incentives for better performance" (Lee, 2004). Alignment is a necessary component in this model because it addresses the fact that all companies are inclined towards self-interest. Therefore, by aligning the interests of different companies, the supply chain can be successful. The methods to achieve this objective are outlined in Figure 1.

Adaptability

Adaptability is the ability for a supply chain to "adjust supply chain's design to meet structural shifts in markets" and to "modify supply network to strategies, products, and technologies" (Lee, 2004). Figure 1 highlights the objectives of adaptability within the Triple-A model and how those objectives are reached. Changes in markets are sometimes the result of "economic progress, political and social change, demographic trends, and technological advances" (Lee, 2004). These changes may result in a change in suppliers, a relocation of facilities, and even outsourcing the manufacturing of the product (Lee, 2004).

Figure 1   Objectives of Triple-A Model

	Methods to achieve objectives
Agility	Promote flow of information with suppliers and customers
	Develop collaborative relationships with suppliers
	Design for postponement
	Build inventory buffers by maintaining a stockpile of inexpensive but key components
	Have a dependable logistics system or partner
	Draw up contingency plans and develop crisis management teams
Alignment	Exchange information and knowledge freely with vendors and customers
	Lay down roles, tasks, and responsibilities clearly for supplier and customers
	Equitably share risks, costs, and gains of improvement initiatives
Adaptability	Monitor economies all over the

	world to spot new supply bases and markets
	Use intermediaries to develop fresh supplier and logistics infrastructure
	Evaluate needs of ultimate consumers – not just immediate consumers
	Create flexible product designs
	Determine where companies' products stand in terms of technology cycles and product life cycles

(Lee, 2004)

Humanitarian Logistics

Following a disaster event, supply chains must be designed and deployed immediately, yet at the time there may be little understanding of the event's scale and immediate needs (Balcik, Beaamon, Krejci, Muramatsu, and Ramirez, 2010). The topic of humanitarian logistics and especially supply chain management following disasters is not only relevant but a vital area of research.

It is necessary to find more effective ways for humanitarian supply chains to function, and by implementing models designed for commercial supply chains we might gain more insight into this area. As previously stated, humanitarian supply chains differ from commercial supply chains. Commercial supply chains are concerned with minimizing private costs and humanitarian supply chains concerned with minimizing

social costs (Holguin-Veras Jaller, Van Wassenhove, Perez, and Wachtendorf, 2014a). Social costs are calculated as a combination of private costs and a quantification of human suffering.

Several studies (Dubey and Gunaskaran, 2015; Van Wassenhove, 2006) have attempted to apply the Triple-A supply chain model to humanitarian logistics (Van Wassenhove, 2006). This research has concluded that humanitarian supply chains can learn and grow through a better understanding of commercial supply chains (Van Wassenhove, 2006).

Agility

In the commercial supply chain, agility is defined as being able to respond to short-term changes, being flexible and efficient. Van Wassenhove (2006) states that in humanitarian logistics, agility is better defined as "rapid deployment on demand" (p. 486). Humanitarian logistics requires agility in the creation of and continuation of supply chains. The chains must emerge very quickly after the event, and in order to be successful new supply chains of different goods must emerge as the response and relief effort evolves (Van Wassenhove, 2006).

Like fashion supply chains, humanitarian supply chains deal with short life cycles, high volatility, and low predictability (Christopher, Lowson, and Peck, 2004). Humanitarian supply chains have short life cycles, since donations coming into the area are meant to meet an immediate need and the flow of donations will eventually stop. In the aftermath of disaster the supply chains are volatile, since the needs of survivors change rapidly, those changes should be reflected in the donations, and therefore the need for specific donations is not stable or linear. Finally, with respect to low predictability, it is difficult to gauge the level of demand and the number of supplies

that will converge on the area. Fashion supply chains also are characterized by high impulse purchasing (Christopher et al., 2004), which donors may also be guilty of in their purchases of clothing, hygeine items, and bottled water.

Given these similarities between fashion and humanitarian supply chains, three lead-time measurements often used in understanding the agility of supply chains in the fashion industry can also apply in our consideration of humanitarian operations. These lead-time measurements are the time-to-market, the time-to-serve, and the time-to-react (Christopher et al., 2004). The time-to-market considers the length of time between recognizing the demand to having the item available. The time-to-serve lead-time is marked from the time that the customer's demand is recognized to when the goods are delivered to their satisfaction. Finally, the time-to-react lead-time focuses on how long it takes to adjust the output of the supply chain in response to changes in demand (Christopher et al., 2004). With regards to disaster donations, if donations arrive too early or too late, then it is possible that the supplies will not be useful at their time of arrival in the relief and response effort. The timing of donations is an important aspect of donations entering the area. If that is the case, these communities are then required to store or dispose of the excess goods. Therefore, in humanitarian supply chains, agility will be illustrated by the ability for supply chains to begin quickly following an event and the timeliness of the donations.

Alignment

In commercial supply chains the alignment component requires that all involved have coordinating interests. Within humanitarian supply chains, alignment has a similar goal. Van Wassenhove (2006) stated that the goal of alignment in humanitarian supply chains is to coordinate the differential interests of multiple groups who are involved in

the chain. Several challenges occur when trying to coordinate between different organizations within humanitarian aid, including competition for donors and differing missions. In addition to coordinating between organizations, alignment can account for aligning the interests of others involved in the supply chain, such as donors, emergent donation drives, and emergent distribution centers.

Adaptability

Commercial supply chains are required to respond and react to structural shifts. To be adaptable, they must be dynamic in how they function. Adaptability from a humanitarian aid perspective encourages organizations to form alliances and join forces (Van Wassenhove, 2006). Adaptability is best characterized as the coordination between humanitarian organizations, and with the media who puts out messaging about what donations are needed (Van Wassenhove, 2006). Dubey and Gunaskaran (2015) measured adaptability through a respect for culture, an understanding of limitations among supply chain partners, and adaptation according to environmental needs.

Importance of Study

To date, few empirical studies examine the Triple-A model in humanitarian aid supply chains. Studies on this topic show a positive relationship between the Triple-A Model and successful supply chains (Whitten et al., 2012; Dubey and Gunaskaran, 2015).

This dissertation utilizes interviews collected from individuals involved at different levels of the disaster relief supply chain, and from different levels of organizations (e.g. grassroots organizations, NGOs, government organizations). Given these different positions in the supply chain, and different positions in the relief effort

overall, those involved in the supply chain may have differing views about the value of agility, alignment, and adaptability as necessary components of a successful supply chain. These differences are important to recognize, since individuals in the supply chain who do not view agility, alignment, and/or adaptability as necessary will be less likely to implement changes in the supply chain to improve these conditions.

In order to survive and thrive, organizations are required to adopt new innovations and evolve to suit current markets (Damanpour and Schneider, 2006). Innovation in organizations is the implementation of "a new product, service, process, technology, policy, structure, or administrative system" (Daft, 1978; Damanpour, 1991; Zaltman, Duncan, and Holbek, 1973 as cited in Damanpour and Schneider, p. 216). If individuals who have different roles, and who come from organizations with different missions, do not view the Triple-A model as necessary in disaster relief supply chains, then they will be unlikely to implement new innovations that move towards a more agile, adaptable, and aligned supply chain. An important contribution of this research is a greater understanding of how stakeholders in the disaster relief supply chains view the components of the Triple-A model. By gaining further understanding of stakeholder views, then we can find successful routes to implementing future innovations and changes in the way that supply chains are managed.

Disasters persist to challenge our communities and response systems. As long as we live in unpredictable environments, we are subject to disasters, both natural and technological. This study makes important scholarly and applied contributions to the body of disaster social science knowledge. We need to further our understanding of how society reacts to disasters, the consequences of those reactions, and how to decrease the suffering and hardship on survivors of these events. The vast number of events that

have generated an outpouring of assistance in the form of material donations suggest that contending with the outcomes of this generosity is an ongoing concern. This study seeks to build a better understanding of how the supply chain functions from the perspective of individuals involved in the donations effort. From this perspective, I hope to communicate a better understanding of grassroots organizations and emergent donation drives, as well as improve our overall understanding of humanitarian logistics and the supply chain.

Chapter 4

METHODS

This research seeks to investigate how individuals directly involved in donations management construct their understandings of the donations supply chain. The data used in this research was collected following Hurricane Sandy and the May 2013 tornadoes in Oklahoma, and includes both interviews and observations.

The analysis of this data seeks to answer the following three research questions, in an effort to further the knowledge of disaster donation supply chains:

RQ 1: Do individuals involved in disaster donation operations view agility as necessary to the effectiveness of the supply chain? If so, how?

RQ 2: Do individuals involved in disaster donation operations view alignment as necessary to the effectiveness of the supply chain? If so, how?

RQ 3: Do individuals involved in disaster donation operations view adaptability as necessary to the effectiveness of the supply chain? If so, how?

Each of these research questions will be individually addressed in the following chapters: Research Question 1 in Chapter 5, Research question 2 in Chapter 6, and Research Question 3 in Chapter 7.

Social Constructivist Paradigm

I will approach the data using the social constructivist paradigm, which focuses on the interpretation of the respondents' perspectives (Lincoln, Lynham, and Guba, 2011). The social constructivism paradigm allows for meanings to be "varied and

multiple, leading the researcher to look for the complexity of views rather than narrow the meanings into a few categories or ideas" (Creswell, 2007, p. 20). The understanding of how effective a donations supply chain following a disaster is subjective and individuals at different types of organizations will all have experiences and understandings of how the supply chain functions.

The goal of this research is to investigate how individuals construct their views on materiel convergence, disaster donations and the effectiveness of the donation supply chain. The constructivist framework is appropriate for this research because it focuses on how individuals develop their knowledge and meanings through experiences and interactions with others (Creswell, 2007). Individuals from different types of organizations may generate varied meanings for an effective supply chain due to variations in their past experience. Those from state run organizations, large and established non-governmental organizations, established grassroots organizations, and emergent groups may have differing perspectives on what donations are useful, what donations are problematic, and how this impacts the supply chain. The constructivist paradigm allows for an appreciation of this subjectivity and differences in constructed meanings between individuals and organizations (Creswell, 2007). The individuals who were interviewed in this study will have come to their understandings of these issues based on their own interactions with donors, survivors, and other organizations, creating the potential for unique understanding of the supply chain.

This approach appreciates the subjectivity in the assessment of supply chain functioning, as opposed to the positivist approach, which might otherwise attempt to determine how people come to "accurate" or "inaccurate" assessments. This study does not seek to determine overall functionality of the supply chain, but rather how

individuals within different types of organizations assess the effectiveness of the supply chain. The positivist approach would seek to have an objective answer to the accuracy of the supply chain. That is not the goal of this research.

By utilizing the constructivist framework, this research can further the understanding of how people from different types of organizations assess the relevance, importance, and functionality of the Triple-A model in disaster donation supply chains. This objective is valuable because in order to understand how to address challenges faced by excessive or inappropriate donations, we must understand who is framing those items as excessive or inappropriate, as well as what the individuals involved in the donations supply chain understand to be problematic in the process. If participants in the supply chain privilege some factors as more important than others in generating efficiency, their ultimate decisions in operating within that system might different greatly from others with alternative assessments of similar factors.

Data

This research uses the interviews and observations conducted as part of a National Science Foundation sponsored study that examined motivations behind disaster donations. Data was collected from November 2012 through June 2013. Natural disaster events were studied as part of this project. One event had a longer-fuse warning period and one had a short-fuse warning period, and both took place during the eight-month study period.

Hurricane Sandy made landfall in the United States in October 2012 and a series of two tornadoes struck the Oklahoma City area in May 2013. Hurricane Sandy had some lead warning time for those who were affected as the storm was first reported by the media when it was in the Caribbean and slowly made its way up the east coast of the

United States (Sharp, 2012). The storm made landfall on October 29, 2012 in the United States. The original point where it made landfall was near Atlantic City, NJ (Sharp, 2012) at which time it no longer met the classifications for of a hurricane or a tropical storm (Zollitsch, 2013). The reduction in classification led to monikers such as "Superstorm" and "Frankenstorm" (Sharp, 2012), but the damage caused by Hurricane Sandy was still significant. Sandy hit with a storm surge that ranged from 9 feet in New Jersey to 14 feet in Manhattan, New York (Zerkel, 2014). The storm resulted in a death toll of 149 people in the United States and resulted in 4.7 million people (across 15 states) left without electricity on November 1 (Sharp, 2012). The damage was widespread, with both New Jersey and New York garnering significant attention in the aftermath of the event. Millions dealt with lack of power, fuel shortages, and floodwaters following the storm. Researchers from the Disaster Research Center at the University of Delaware, including myself, were on the ground during the immediate weeks following the storm to collect data on the damage and resulting relief efforts.

The shorter-fuse event took place in Oklahoma. Two major tornadoes (EF4 and EF5) occurred in May 2013 around Oklahoma City.

Tornadoes have different ranking systems that categorize their level of damage. The two largest tornadoes that touched down on May 19 and 20, 2013 in Oklahoma were an EF4 and an EF5. An EF4 is characterized as causing devastating damage and has wind speeds from 166 to 200 MPH. Typical damage following an EF4 tornado includes "…well-constructed houses and whole frame houses completely leveled; structure with weak foundations blown off some distance" (Marshall, McDonald, and Forbes, 2004). An EF5 tornado is characterized as causing incredible damage and has wind speeds above 200 MPH. Typical damage at this level is "…strong frame houses

lifted from foundation and carried considerable distances to disintegrate" (Marshall, McDonald, and Forbes, 2004).

The tornado included in this study began on May 19, 2013 with the "Lake-Thunderbird-Shawnee Tornado" in Cleveland and Pottawatomie counties (National Weather Service - Norman, OK, 2013). The tornado was rated an EF4 and traveled a length of 20 miles and resulted in the deaths of two people and ten people were injured (National Weather Service - Norman, OK, 2013b). One day later, on May 20, 2013, the "Newcastle/Moore Tornado" touched down in Grady, McClain, and Cleveland counties. The tornado was classified as an EF5 and traveled 17 miles with a length of 1.3 miles across (National Weather Service - Norman, OK, 2013). The tornado resulted in the deaths of 24 individuals and 212 individuals were injured (National Weather Service - Norman, OK, 2013c). An initial assessment found that more than 1,000 buildings were destroyed and an estimated 1,200 were damaged (The New York Times, 2013). Researchers from the Disaster Research Center at the University of Delaware (including myself) were in Oklahoma to conduct research within a week.

Sample Selection: Events

Weather events associated with donation drives were selected specifically to examine differences between types of organizations and donations collected and distributed (Warren and Karner, 2009). Events were selected based on four criteria. First, they occurred during or shortly before data collection was to commence. Second, these events garnered substantial national media attention and were consequently expected to experience materiel convergence. Third, these were both domestic events in the United States. Although our research interests extend beyond disasters that occur within the boundaries of the United States, we focused here on events that share nation-

affiliation, both out of consideration of distance to deliver relief, involvement of similar organization types, and cultural context (although we also acknowledge that subcultures and regional differences exist between the impacted areas). Fourth, these events reflect temporal and spatial impact differences: one a slow onset weather event (hurricane) affecting a massive land area on the East Coast, the other a quick onset weather event affecting multiple suburban and rural areas in a generally concentrated area in the Midwest with a long history of dealing with this phenomena.

Sample Selection: Donation Drives and Individual Participants

Participants were identified through a purposive sampling technique. Internet searches, searches of Facebook groups, and news reports were used to identify donation efforts in response to the four events chosen here. Organizations and donation efforts were intentionally selected to maximize differences and capture the variety of experiences and perspectives through inclusion of the wide array of groups and individuals involved in disaster relief and kinds of relief they provide (Mileti, 1987; Pope, Royen, and Baker, 2002; Killian, 2002; Warren, 2002). This study centered on sampling from donation efforts that primarily focused on collecting items that the literature has previously identified as being problematic post disaster, such as clothing, food, and medications (Neal 1993; Holguin-Veras et al., 2014a), though it included some financial donation-focused efforts as well. The study included representation of faith-based groups, small local organizaitons, national volunteer organizaitons active in disaster, school efforts, efforts from social and community groups, efforts affiliated with businesses, and independently organized efforts by individuals. Participants reported

residing in Delaware, New Jersey, Pennsylvania, New York, South Carolina, Texas, Georgia, Tennessee, Oklahoma, and Michigan/New York.

Observations and Interviews

Observations included fieldwork following Hurricane Sandy and the Oklahoma tornadoes. These observations included site visits to donation collections centers, donation storage areas, donation organization areas, and donation distribution centers. Observational fieldwork was conducted in November 2012 (Hurricane Sandy) and May 2013 (Oklahoma Tornadoes). The fieldwork provided a basis of familiarity with the donations social setting as well as providing data for the research (Lofland and Lofland, 1995).

Interviews were conducted in person and by telephone. In person-interviews were conducted at the donation drive or at a location of the participant's choice, frequently where the drive was originally held. Most interviews were with a single individual representing the organization, but there were two recorded group interviews with at least two participants present. Several of the informal interviews (unrecorded and unstructured) involved two or more participants. Formal interviews followed the approved interview guide (Appendix A) and were recorded while informal interviews were less structured and were not recorded. Participants who took part in recorded formal interviews were required to sign an informed consent form (Appendix B). Researchers conducted informal interviews in the field following the Oklahoma tornadoes when interviewees could not take the time for formal interviews.

The research team conducted a total of 46 interviews from 38 organizations, with 24 audio recorded (from 22 organizations) and the remaining 19 documented in hand written field notes and field research debriefings. Of the recorded interviews, 13

were related to Hurricane Sandy and 11 were related to the Oklahoma tornadoes. All of the remaining 19 interviews (from 18 organizations) that were recorded in notes were from fieldwork following the Oklahoma tornadoes. One of the individuals we interviewed was a private donor, and therefore is not counted in the number of organizations. Two of the organizations that participated were both formally interviewed and different members of the organization were informally interviewed. The organizations are counted both in the formal interviews and the informal interviews; however they are only counted once in the total number of organizations who were interviewed.

We spoke with a total of 23 organizations during the Oklahoma fieldwork; however, we eliminated 4 of these organizations for the following reasons: 1 organization did not deal with donations at all, 1 organization was later interviewed formally, and 2 of the organizations were not interviewed due to scheduling conflicts.

Formal recorded interviews ranged in length from 12:33 minutes to 2:10:33, with an average length of 56:29. Interviews were transcribed verbatim. Informal unrecorded interviews averaged approximately 15 minutes in length.

The Internal Review Board (IRB) at the University of Delaware approved this study on March 22, 2013 (Appendix C). The study population was outlined as 30-100 subjects involved in disaster relief donations efforts, all over the age of 18. There were no anticipated risks associated with the study. The interviewees were informed in the consent process that the information they provided was not confidential. No compensation was given to interviewees for their participation in the study. Participants in the study were not anonymous to the researchers.

Interview data and field notes are stored indefinitely on the secure server at the Disaster Research Center at the University of Delaware.

Coding

The interviews, field notes, and field interviews were coded utilizing the Triple-A model for supply chain management. The coding took place in two stages. The initial approach included inductive line-by-line coding. By utilizing line-by-line coding, I was able to locate themes and nuances within the data that informed subsequent coding (Charmaz, 2006). I utilized the outcomes of this first stage of coding to develop thematic categories and further develop how the Triple-A model may be present in the constructions of meaning from participants.

The second stage of coding included focused coding, which helped address larger groupings of data and synthesize that data (Charmaz, 2006). Taking the themes that were identified in the line-by-line coding process, I used codes that are more "directed, selective, and conceptual" (Charmaz, 2006, p. 57) to further tease out the data from the interviews and notes. While line-by-line coding is more inductive, looking for the themes in the data, focused coding is more deductive, trying to use the themes that I will already have identified to code the data.

The coding addressed agility, adaptability, and alignment of the donations supply chain following Hurricane Sandy and the 2013 Oklahoma tornadoes. An initial inductive review of the data revealed that these characteristics are an appropriate frame with which to analyze the data. This initial review was based on personal experiences collecting the data as well as a review of the interview transcripts.

Individual interviews were analyzed for themes that fit within the Triple-A model.

Agility

Agility was measured by addressing individuals' constructions of the temporality of donations. Any mention of the timing of donations and how that affects the overall impact of donations on the disaster relief process was included.

Adaptation

Adaptation was measured in how individuals modify their behavior in response to structural shifts in the supply chain, including coordination between organizations.

Alignment

Alignment was analyzed through constructions of how interests of different organizations, donors, and survivors align in the disaster aftermath, and how this affected the effectiveness of the supply chain.

My own experiences and observations with the donations process are acknowledged in the research in an effort to shift the focus of the study to the individual participant's experiences and constructions. I have personally participated as a disaster relief volunteer following 5 different disaster events: Haitian Earthquake in 2010, Hurricane Irene in 2011, West Liberty Tornado Relief in 2012, Hurricane Sandy in 2012, and Oklahoma tornadoes in 2013. My time as a volunteer has ranged from 1 day to 1 month in the field. My experience as a disaster response volunteer in disaster zones has influenced this research as I have seen first hand the challenges and advantages of donations for disaster survivors. My work as a volunteer helps me to understand individuals who we interviewed as a part of this project in a unique way; I feel that I can relate and better understand their views while working with donations.

Using participant observation as a methodology is useful in the following settings:

> (1) the research problem is concerned with human meanings and interactions viewed from the insiders' perspective; (2) the phenomenon of investigation is observable within an everyday life situation or setting; (3) the researcher is able to gain access to the appropriate setting; (4) the phenomenon is sufficiently limited in size and location to be studied as a case; (5) study questions are appropriate for case study; and (6) the research problem can be addressed by qualitative data gathered by direct observation and other means pertinent to the field setting (Jorgensen, 1989, p. 13).

Participant observation is a useful methodology in this study because the research centers on the different ways that individuals construct their understandings of the supply chain. These individuals are insiders in that they are directly involved with disaster donations and their meanings are created through interactions with other insiders and survivors. During the relief effort, both the collection of donations, the organization of donations, and the distribution of donations become an everyday occurrence. Therefore, the phenomenon of disaster donations is readily observable to researchers and potential subjects are accessible in both collection and distribution centers. The challenges associated with disaster donations can be observed in distribution and storage centers, which allows for data to be gathered in those settings.

The data was coded based on significant statements having to do with the agility, adaptation, and alignment of the supply chain. Each statement was given equal worth and was used in the development of themes (Creswell, 2007). "What" the individuals experienced (known as their "textual description"), as well as "how" their experience shaped their construction (known as their "structural description") of the supply chain was analyzed (Creswell, 2007). The textual and structural descriptions added dimension to the construction of their meanings.

While the broader coding categories were anticipated, I was open to the possibility for emerging codes and constructions in the analysis stage, specifically during the line-by-line coding stage where I searched for themes in the data (Creswell, 2007; Charmaz, 2006). I did not force the data into the preexisting Triple-A model, but rather worked to see if the model fit the data for disaster donations. The findings presenting in this research represent data that fit within the themes presented by the model (agility, adaptability, and alignment).

Limitations

The analysis is limited in that the findings are not representative of the whole disaster community who are integral parts of the donation supply chain. The sample used was not random; we utilized social media, media outlets, Internet searches, and snowball samples to find our participants. Given that the sample was not randomly selected, it is possible that the findings present here may change with a different sample of participants. However, research was conducted until there was saturation in responses (Morse, Barrett, Mayan, Olson, and Spiers, 2002).

The focus of the research presented here is primarily on emergent donation drives by community groups, small businesses, or chapters of larger organizations. It does not include perspectives from large private sector corporations, for example, that also engage in humanitarian assistance after a disaster. Such private sector entities may generate a combination of needed and unnecessary materiel, sometimes in significant volumes. Although not the focus of this particular research, such questions about the perspective of large private sector organizational actors on the Triple-A model and the value of its features in humanitarian assistance operation would be valuable to explore in future research.

The research also focused on natural disaster events. Previous research has suggested that there is a difference in donation practices when comparing natural disaster events to human-induced disaster events (Zagefka et al., 2011). More donations are expected following a natural disaster event since there is less blame placed on the victim or the community. However, the differences may change if the human-induced disaster event is the result of terrorism. Materiel convergence was observed after such events as the September 11, 2001 attacks and the Sandy Hook Elementary School shooting in 2012. Assessments of the components of the Triple A model and constructed meanings could prove different in disaster donation supply chains following technological and man-made.

Chapter 5

SOCIAL CONSTRUCTION OF AGILITY IN DISASTER RELIEF SUPPLIES

Introduction

The phenomenon of materiel convergence into a disaster zone is well documented. Many studies have focused on the influx of goods, the usefulness of those goods, and the logistical challenges that are a consequence of that influx. This convergence has been dubbed a "second disaster" as it generally creates more problems for the affected community that is already in a weakened state (Fessler, 2013; Islam at al., 2013; CBS News, 2016). In this chapter, I study how individuals involved in the donations construct the necessity of agility in the supply chain. Previous studies have outlined how important this avenue of study is in order to create more efficient and effectively managed supply chains of materiel donations (Whybark, 2007; Beamon and Blacik, 2008).

Convergence

Following each disaster is an urgent need for critical supplies in the disaster area, although it may not always be clear exactly what is needed (Apte, 2010). Supplies are expected to arrive in a timely, yet rapid manner, based on "the premise that victims cannot wait" (Benini and Conley, 2007).

The definition of disasters has increasingly focused on the social phenomenon rather than the event as the trigger (Perry, 2007). Quarantelli (2000), one of the founders of the field, identifies disaster by 5 features:

Disasters are relatively sudden occasions when, because of perceived threats, the routines of collective social units are seriously disrupted and when unplanned courses of action have to be undertaken to cope with the crisis (p. 682).

Based on this definition, it is not the physical place, chronological time, or the nature of the event itself that is important. Rather, it is the social aspects of space, time, consequence, and disruption that are deeply linked to the vulnerability of the population (Perry, 2007). Spontaneous donations following an event fits within the third feature of Quarantelli's definition: the event will "cause the adoption of unplanned courses of action to adjust to the disruption" (Quarantelli, 2000, p.682).

Materiel convergence following disasters refers to the influx of donations (supplies and equipment), both critical and necessary items as well as items that are not a high priority and are problematic in nature. These low priority items can cause congestion in the supply chains to disaster areas (Destro and Holguin-Veras, 2011). Therefore, materiel convergence results in both positive and negative impacts. The influx of low priority items (such as clothing) creates logistical problems (e.g. storage, transportation) and redirects focus from necessary resources and tasks (Destro and Holguin-Veras, 2011).

The convergence of donated goods in a disaster area create challenges with the possibility of a compromise to the physical and virtual infrastructure following the disaster event (Holguin-Veras, Taniguchi, Ferreira, Jaller, and Thompson, 2011; Holguin-Veras, Perez, Ukkusuri, Wachtendorf, and Brown, 2007). The breakdown in infrastructure could be constantly changing as the effort continues as well, as reconstruction begins on roads and airports (Charles, Lauras, and Van Wassenhove, 2010). As the reconstruction evoles, the pathways that donations follow will have to change as well. A breakdown in the infrastructure can lead to problems in

transportation, and storage of goods that are not needed immediately. As such, large quantities of items entering a disaster zone can cause logistical challenges.

Donated goods entering the area are not generally organized, creating further obstacles. The goods come from many different areas outside of the disaster area and are often donated by thousands of donors and organizations . The goods arrive within a short period of time, and enter an area that has a limited ability to deal with the goods (Holguin-Veras , Jaller, Van Wassenhove, Perez, and Wachtendorf, 2014a). The end user, or suvivor, has very little participation in this process and minimal influence over which supplies come into the area (Argollo da Costa, Campos, and Albergaria de Mello Bandeira, 2012).

Some non-governmental organizations (NGOs), such as the American Red Cross, are well established, and have structured plans regarding the process of donation reception, transportation, and storage. Yet there are also pop-up or smaller organizations known as MONGOs ("My Own NGO") (Polman, 2010). These organizations are part of a countermovement, trying to move aid toward an increasingly grassroots level. These MONGOs believe that they can "get things sorted out in a crisis zone more effectively, quickly, and cheaply than the 'real' aid worker with… self serving motives and cumbersome buearcracy" (Polman 2010, p.50). However, these groups sometimes generate further set backs as a result of their lack of knowledge in disaster zones. Many donations provided by these groups may be well intentioned; however, if the donations are not of high priority, they will cause further congestion along supply lines (Polman 2010).

In disaster supply chains, if we hold to the Triple-A model, it is important that the range of involved organizations are aligned in their message and their duties in the

response effect. In regards to the supply chain, the organizations must also be agile and adaptable to the changing needs within the survivor populations (Apte, 2010). Given the different levels of experience among the organizations, as well as the differences between the missions of non-profit organizations, for-profit businesses, and government agencies, aligning objectives is no easy task (Apte, 2010).

The following logistical problems have been previously identified in relation to the donation of goods following disasters: "a huge quantity of items, an extremely heterogenous flow, arriving within a short timespan to an area with limited space, resources, and personnel to process and distribute them to their intended recipients, people in great need" (Holguin-Veras et al., 2014a, p. 6). As a result, transportation and storage of the supplies becomes problematic. Many of the items donated are useless, and can even prove to be dangerous. Expired medications and food are examples of such potential hazards.

While it may prove counter-intuitive for organizations to accept donations of non-priority or low-priority items, humanitarian agencies often do not want to turn away any donors. In not refusing some donations, organizations must now satisfy their donors by distributing donations in the area that the donor specified, even if the items are not needed in those areas (Apte, 2010). In some cases, the donations from outside areas cannot reach the survivors of a disaster event, as was the case in Aceh, Indonesia following the 2004 Indian Ocean Tsunami. Following this event, donations from outside of the affected area converged on the affected communities. Since there were no set distribution channels, those in need could not access the donations (Apte, 2010).

Guidelines from organizations have emerged through the years that have recommended both individual donors and organizations focus on monetary donations

(Center for International Disaster Information, 2015). The rationale for these conclusions was simple: monetary donations are more efficient; financial contributions do not generate the same logistical challenges associated with materiel transportation and storage; and, the introduction of cash into a disaster area can positively affect the post-disaster local economy. Even though NGOs, such as the American Red Cross, have long communicated this recommendation (American Red Cross, 2015), the appearance of materiel donation continues to thrive. Used clothing, bottled water, and non-perishable food items still fill community centers and churches following disaster events, such as Super Storm Sandy in 2012 and the May 2013 tornadoes in Oklahoma. In some cases, these items are not expended following the event and are then shipped to the next event (Wachtendorf, Penta and Nelan 2015), further negatively contributing to the already taxed supply chain system.

Positive outcomes can come with the convergence of goods following a disaster event. That said, the goods must address a specific need. In addition, proper utilization of donated goods is partially contingent on appropriate management of the items (Tierney, 2003). While it is documented that the best practice is to buy supplies locally (in order to maintain the health of the local economy), this may not always be possible (Holguin-Veras et al., 2007). In catastrophic disaster events, the local supplies of necessary goods may have been compromised, and therefore outside resources could prove necessary (Holguin-Veras et al., 2014a).

Disaster response differs from traditional humanitarian aid in that it is: 1) an urgent event; and, 2) there is considerably more media coverage following disaster events that ongoing humanitarian missions (Apte, 2010). There is a need for further

understanding of logistical operations within humanitarian organizations within disaster literature. The Fritz Institute defined logistics in humanitarian aid as the following:

> The process of planning, implementing and controlling the efficient, cost-effective flow and storage of goods and materials, as well as related information, from the point of origin to the point of consumption for the purpose of alleviating the suffering of vulnerable people. The function encompasses a range of activities, including preparedness, planning, procurement, transport, warehousing, tracking and tracing, and customs clearance (Thomas and Kopczak, 2005, p. 2).

Logisticians must plan operations to effectively "get the right goods to the right place and distribute to the right people at the right time" (Van Wassenhove, 2006, p. 477).

During or following slow-onset disasters, humanitarian aid organizations are able to more effectively address the needs of the population given longer planning periods and sufficient time to determine needs in the area. Said another way, such operations have longer lead times, longer time for organizations to consult with populations in the affected area, and longer time frames to provide relief for the population (Apte, 2010).

Supplies sent to disaster survivors are unpredictable because of the variance among donors. In slower onset events where there are longer lead times to create a supply chain for relief supplies, a lack of coordination between donors, media reports, governments, and military agencies can create similar challenges (Van Wassenhove, 2006). Humanitarian organizations work independently of each other in many cases. By not centralizing their resources through partnership can generate inefficient and ineffective methods of collecting and dispensing goods to those in need (Whybark, 2007). There is an inherent competition among the organizations for donations and media attention, as well as different agendas, and different missions (i.e. religions, political, ideologies) (Van Wassenhove, 2006). Without coordination between donors

and between organizations, this can cause further delays in priority items getting to survivors when they are needed.

Excessive and Inappropriate Donations

In commercial supply chains, supply and demand is well managed and laid out. In disaster events it is not as clearly defined. Unknown in such contexts is exact quantity of the supplies needed and supplier for these items (i.e. the donors). These donors may have access to lists of needs (which may or may not reflect actual needs in the area), but lack awareness of the inventory currently in transit by other organizations (Apte, 2010).

In addition to potentially dangerous donations, as noted earlier, some goods provide no added benefit to the disaster relief milieu, such as the sex toys, tuxedos, and flags Holguin-Veras (2012) has cautioned against. Even, items that the Pan American Health Organization deem low-priority (i.e. of some use but not needed immediately, and must be stored) can cause problems. They require storage, or in some cases were necessary immediately following the event, but the demand waned while the donations continued. Following Hurricane Katrina, an influx of clothing donations flowed to the Gulf Coast region that caught organizations on the ground unprepared. With no storage facilities for clothing, items were left outside and caused further complications as the clothing needed to be protected from rain and weather (Holguin-Veras et al., 2007). Donors generally do not understand the complications that emerge as a result of non-priority items and rather place the responsibility for the use and distribution of the items on the organizations (Holguin-Veras et al., 2014a).

Following the Indian Ocean Tsunami in 2004, a mass convergence of donated items flowed from all over the world. A bottleneck of the supply chain ensued due to a

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lack of coordinations in the supply chain management operations and an excess of inappropriate goods. The bottleneck created problems at the airports, the ports and custom areas, and warehouses, leaving some items to be left outside exposed to weather in the same manner seen a year later after Hurricane Katrina (Argollo et al., 2012). The problem of excess goods led to incomplete inventories and inequitable goods distribution, in addition to the same supply chain challenges noted above.

Agility

The Triple-A model has been applied to commercial supply chains in an effort to explain why some supply chains are successful and others are not. The model focuses on the agility, adaptation, and alignment of those supply chains (Lee, 2004). This chapter focuses on the first A, agility, and how that concept is constructed within the disaster relief supply chain.

Lee (2004) defines agility as the supply chain's ability to respond quickly to changes in supply and demand. Lee studied agility with respect to commercial supply chains; however, the idea of agility changes a bit in humanitarian supply chains since there is little lead time with which to create a successful supply chain model. In humanitarian logistics the concept of agility is best described as "rapid deployment on demand" (Van Wassenhove, 2006, p. 486).

Like fashion supply chains, humanitarian supply chains deal with short life cycles, high volatility, and low predictability (Christopher, Lowson, and Peck, 2004). Humanitarian supply chains have short life cycles, since donations coming into the area are meant to meet an immediate need and the flow of donations will eventually stop. In the aftermath of disaster the supply chains are volatile, since the needs of survivors change rapidly, those changes should be reflected in the donations, and therefore the

need for specific donations is not stable or linear. Finally, with respect to low predictability, it is difficult to gauge the level of demand and the number of supplies that will converge on the area. Fashion supply chains also are characterized by high impulse purchasing (Christopher et al., 2004), which donors may also be guilty of in their purchases of clothing, hygeine items, and bottled water.

Given these similarities between fashion and humanitarian supply chains, three lead-time measurements often used in understanding the agility of supply chains in the fashion industry can also apply in our consideration of humanitarian operations. These lead-time measurements are the time-to-market, the time-to-serve, and the time-to-react (Christopher et al., 2004). The time-to-market considers the length of time between recognizing the demand to having the item available. The time-to-serve lead-time is marked from the time that the customer's demand is recognized to when the goods are delivered to their satisfaction. Finally, the time-to-react lead-time looks at how long it takes to adjust the output of the supply chain in response to changes in demand (Christopher et al., 2004). With regards to disaster donations, if donations arrive too early or too late, then it is possible that the supplies will not be useful at their time of arrival in the relief and response effort. The timing of donations is an important aspect of donations entering the area. If that is the case, these communities are then required to store or dispose of the excess goods. Therefore, in humanitarian supply chains, agility will be illustrated by the ability for supply chains to begin quickly following an event and the timeliness of the donations.

There is a cycle to the supply chain in humanitarian aid and in disasters. Logisticians have created distribution models that recognize the impact of timing on supplies entering a disaster affected area (Sheu, 2007). These models lay out the

logistics for a relief procedure, as well as a focus on traffic patterns and distribution processes. This chapter argues this point through qualitative analysis and not logistical models.

Apte (2010) uses the term humanitarian logistics as a label for the "supply chain spanning the life cycle of a disaster." (p. 16) There are three stages in this cycle, preparation, disaster response, and recovery (also labeled ongoing humanitarian relief). These established stages are evidence that there already is a concept of a timeline or process involved in disasters. Therefore, the implementation of a timeline in regards to materiel convergence should fit well within our understanding of the evolution of the disaster cycle. Argollo de Costa et al (2012) use previous disaster experiences to outline a series of best practices that were learned from logistical snafus. In order to build a timeline, an analysis of previous disasters and lessons learned from those events could create a structured forecasting of needs (Shue, 2007b).

After an event there is an urgency with regards to transporting supplies and donations to the area of need. Van Wassenhove (2006) highlights the very beginning of the response effort, specifically the first 72 hours when it is important to transport critical supplies to the affected area, which may be at a great monetary cost to the organizations. Following this stage, within the first 90 to 100 days, there is still a need to transfer goods from the organizations to the survivors, however to lower the overall cost to the organization, an effective option is to buy the goods locally (Van Wassenhove, 2006).

For the initial stage of the response effot, experts from aid agencies begin an assessment of damage and the need, which forms the initial lists of the quantities of goods that are of immediate need in the affected areas (Thomas and Kopczak, 2005).

These assessments look at nutritional needs, displaced populations, and the state of the basic infrastructure (Benini and Conley, 2007). Initial supplies that are already stocked by the organizations are sent to the area. From this point agencies begin their fundraising for the effort – aimed at government agencies and the public – to obtain commitments for donations (both cash and in-kind) (Thomas and Kopczak, 2005).

As the relief operation evolves, so, too, does the evolution of the recovery supply and demand (Van Wassenhove, 2006). A consequence of high variability among the donors and organizations is that the quanitity, quality, and variety of supplies are typically unknown before they arrive, and the timing with which these items arrive may prove inappropriate. Items needed during the first response (i.e. drugs, food, water, and shelter) may prove different compared to the items needed as the situation evolves. For instance, needs may become centered on infrastructure and building reconstruction during the long-term recovery phase (Ergun, Karakus, Kessinocak, Swann, and Villareal, 2010). Alternatively, as noted by Ergun et al. (2010), consumables can arrive too quickly in too large of quantities and be rendered useles when adequate storage is not yet available. Organizations, be they large or grassroots, may not have access to the inventory of goods already available in the disaster area or regions of that area. This lack of situational awarness can lead to an imbalance between supplies and needs throughout the affected area (Ergun et al. 2010).

As time passes following a disaster event, the medical needs and health risks to the survivors change (Kunii, Akagi and Kita 1995). Disasters themselves may cause injury, yet extended exposure to conditions that are the result of a disaster event can also exacerbate chronic illnesses or lead to new illnesses (Mensah et al. 2005). Following an earthquake in Japan in the 1990s, medical aid arrived late as a result of

beaucratic impediments. This delay created a large stockpile of items that survivors had already aquired elsewhere or through other avenues (Kunii et al.,1995).

It is difficult to establish a specific logistical framework for humanitarian aid because of the unknown variables associated with each situation: the origin of the supplies; the nature of the transportation of the goods; the content or nature of the supplies; the quantity of the supplies; the length of time of supply availibility; the intersections of supply and demand; (Whybark, 2007; Van Wassenhove, 2006). In commercial supply chains, knowledge of these variables is essential to setting up an effective supply chain, and lack of knowledge creates challenges in humanitarian supply chains.

While each disaster or emergency event is unique, there are common factors that one can expect with regards to which items will be needed by survivors. Beamon and Blanik (2008) designate supplies into tiers based on the general necessity following a disaster. Tier 1 supplies are critical and include sheltering items, hygiene supplies, and blankets to name a few. Tier 2 supplies are not as critical immediately following the event. While these tiers can structure the the flow of supplies, it is important that the flow remains flexible (Beamon and Blacik, 2008) as the recovery period could last anywhere from weeks to years (Thomas, 2002).

Sheu (2007b) argues that a timeline of supply need is not logistically possible in emergency situations. Sheu argues this is particularly so within 3 days after the event, a critical time period for rescue operations, when there is a delay understanding what supplies are immediately needed in the area. Furthermore, information about whether the areas are accessible for supply transport is usually unreliable during this time.

Real-time access to the demands of the survivors is challenging for any effort to establish a structured timeline for donations. Survivors are not always readily accessible and the messages they convey regarding their needs may not always prove consistent with those conveyed to the donors in surrounding areas.

Timely arrival of supplies is critical following a disaster event, which was made apparent following Hurricane Katrina in 2005 (Holguin-Veras and Jaller, 2012). The lack of supplies in the area made national news, and in some situations were delayed by 2 to 3 weeks following the appeal (Holguin-Veras et al., 2007). Some of the delays, specifically those attributed to purchasing delays, could have been avoided had officials more adequately prepositioned and stocked distribution centers before Hurricane Katrina made landfall (Holguin-Veras and Jaller, 2012).

Prepositioned Supplies

Like this example by Holguin-Veras and Jaller (2012) suggests, creating a more agile and timely supply chain requires establishing pre-positioned areas where donations can be stored in preparation for a disaster event (Duran, Ergun, Keskinocak, and Swann, 2013; Apte, 2010). This strategy is successful with slow-onset disaster events when there is a lead time for organizations may to move supplies into the area in prepartion for the event's aftermath. The strategy for sudden onset events would demand pre-positioned supply storage in disaster prone areas that several communities could access, since prediction of the precise location would not prove possible (Duran et al. 2013; Van Wassenhove, 2006). This strategy would help contend with insufficient supplies, supplies availability, and instant access following an event (Duran et al. 2013). Moreover, the response effort would begin earlier and the supplies would reach the survivors within a shorter time period (Van Wassenhove, 2006). Studies on

prepositioning could result in an estimation of needs that would help to determine the amount of supplies and which supplies would be called for (Duran et al., 2013). An expansion of this research would prove benefial, particularly a focus on an estimation of what resources are immediately needed in an affected area (Holguin-Veras and Jaller, 2012) marking those estimations along a structured timeline.

This method of preparation will work better in predictable disasters, and localized disasters. If the disaster covers a large geographic area and is a sudden-onset event, then advanced preparation of supplies in quantities necessary for all affected populations could prove more difficult to achieve (Apte, 2010). However, this method can be utilized for seasonal disasters as well, such as hurricanes and tornadoes. While there is not a specific way to predict when and where they will occur, it is possible to predict based on history and season that such an event may occur.

A limitation to prepositioning supplies in advance of disasters is the cost associated with a large stock of basic supplies. Holguin-Veras and Jaller (2012) assume that not every survivor will need every items, and consequently suggest that logisticians could meeting needs at lower costs by not keeping every item in stock but rather stocking the top 50 supplies.

Media Influence

Successful fundraising and response following a disaster event is tied to the amount of news coverage (Massey 1994). The mass influx of goods and funds at one time is tied to the number and length of media reports on the disaster event and the aftermath (Apte, 2010; Massey 1994). These media reports can lead to a flood of "unsolicited donations", the result of which is that the supply chain can become clogged and priority items are then delayed (Van Wassenhove, 2006).

The media may focus on some events and not on others, depending on what they deem newsworthy (Bennett and Kottasz 2000); this coverage can affect how resources are allocated in these disaster situations (Hawkins 2002). Sudden onset disasters, such as tsunamis and earthquakes, may receive increased attention from the media, further leading to over financed disasters due to earmarks placed on the funds by donors. This is in comparison to slower onset events such as the humanitarian crisis in Darfur, which was under financed (Van Wassenhove, 2006). Media reports can begin before local response efforts, thereby setting the tone for how the event will be perceived (Bennett and Kottasz 2000; Wachtendorf et al., 2015).

There is a relationship between fatality rates, media coverage, and the amount of donations made. As the number of deaths increase, the media coverage increases, and private donations increase as well (Simon 1997). However, this is only true with sudden onset disasters. For example, according to Van Wassenhove (2006), while the media covered the 2004 Indian Ocean Tsunami, more children had died of starvation from slow-onset disasters than the 300,000-tsunami victims. Victims of a sudden onset event are more likely to garner media interest than victims of ongoing chronic events (Van Wassenhove, 2006).

While humanitarian aid differs from disaster relief in that it generally has longer lead times and organizations are present in the affected areas for longer periods of time, there are similarities in how the media can affect donations as the problems persist. The media becomes fatigued with regards to humanitarian aid and the subject of the plight of that particular population (Apte, 2010), having an impact on donation flow. In comparison, as disaster relief continues on in an area, the media and its audience are subjected to the same "exposure fatigue" resulting in fewer donations into the affected

area. Donations come into disaster areas within a short time frame, organization must contend with them. Given the short issue attention cycle, the donations overwhelm the system and community rather than sustaining a graduate response with attention to the timing of need.

Methods

There is evidence in previous research that shows the need for agility in supply chains and an overall awareness regarding when specific donations are coming into the disaster affected area. This chapter investigates if individuals who give donations, run donation drives, and work in distribution centers agree in their social construction of donations that agility is a necessary component for a successful relief effort.

The data used in this research was collected following Hurricane Sandy and the May 2013 tornadoes in Oklahoma, and includes both interviews and observations. The analysis of this data seeks to answer the following research question, in an effort to further the knowledge of disaster donation supply chains:

RQ: Do individuals involved in disaster donation operations view agility as necessary to the effectiveness of the supply chain? If so, how?

Agility was addressed in the interview data by focusing on the themes of how individuals viewed cash versus goods donations, timing and changing needs of survivors, and logistics management in relation to the timeline of donations. A detailed description of the methods for this study is highlighted in Chapter 4.

Findings

Among the interviewees, agility in the supply chain was constructed within three themes: (1) conflicting philosophies of survivor cash and supply needs; (2) timing and

dynamic nature of specific needs; and (3) logistics management. Overall, agility was characterized as the timing of donations, and how the lack of a structured timeline can result in the challenges that excess or inappropriate donations can cause following a disaster event.

Interviewees, overall, recognized that a timeline would promote success in the donations supply chain, however they did not construct that timeline in a consistent way across interviews nor were they clear on who would provide the structure for the timeline. This disconnect among the interviewees was most apparent when characterizing when cash donations versus goods donations was more effective to the relief effort.

Conflicting Philosophies of Survivor Cash and Supply Needs

The understandings of when cash was more effective than supplies, and vice versa, varied across our sample of interviewees, as did the reasoning behind their justification for only donating or collecting supplies or cash.

Within the construction of timing, cash was viewed as both more efficient and effective by some, and by others as not being nearly fast enough and not getting to the individual survivors who need it the most. Interviewees (with more experience in a variety of disasters) who were employed by larger and established organizations constructed monetary donations as the most effective method of donation and the best way to contribute to the relief effort.

One interviewee who participated in the relief effort following Hurricane Sandy was employed by a state agency that collected, organized, and disseminated donations in the months following the event. Both the organization and the interviewee had previous experience with disaster relief and donations. While recognizing the cash

donations can be the most effective type of donation in the relief effort, this interviewee constructed materiel donations as useful, provided they enter into the supply chain at the proper time. Specifically, he called for cash donations first in the relief effort while information about specific needs is gathered: "Cash works best, and then you hear input from your counties, like what's going on, what do we need, and then we'll say, 'Ok. We need bleach. We need cleanup kits.'" This interviewee's experience and their understanding of standard operating procedure following an event led to their construction that cash could meet the immediate needs of the survivors while they try to determine how to organize materiel donations.

An interviewee in Oklahoma following the tornadoes contradicted this perspective. He was a Baptist youth minister who had experience with one prior relief effort for tornado victims. He constructed money as a more useful donation later in the relief effort. He believed that money could then be used in the rebuilding, whereas the immediate needs of the affected community could be met by materiel donations.

Two organizations that are well established, have government status as non-profits, and experience with disaster events participated in our study. One of the organizations was a local chapter of a national group, while the other was a regional chapter of a large NGO.

The individual that we interviewed from the NGO constructed cash as the ultimate donation from private donors and largely discouraged the donation of any goods. Her construction of cash as more useful was based on the understanding that it is more flexible, posed fewer logistical concerns, and can help the organization prepare for the event before it happens. Preparation was a major theme that this interviewee highlighted throughout her interview, stating that as their NGO receives their goods

from companies, they do not have to sort through the donations. Instead, they can deploy the goods quickly. A major difference in her construction of goods versus cash donations was the origin of the donations. In terms of private donors, there was no question that her organization recognized cash as the preferred method of donation. Monetary donations from private donors were agile; required less logistical support, helped the survivors more quickly, and helped to fund the overall relief effort that the organization engaged in. She did, however, see the donation of materiel items as useful, but only when they came directly from large companies with whom they had existing relationships. These donations would come to the organization sorted and inventoried, were new condition, and could be deployed to the survivors quickly. But this construction was not consistent among established organizations.

The interviewee from the local chapter of a larger, national organization, constructed cash as too slow and something that they tried to avoid collecting. While she recognized the flexibility of cash donations – "I understand cash is so important because cash can turn into anything" – she was not interested in collecting it as donations because of the extra logistics required in transforming the cash into goods. Her conclusion that cash was too slow was reached based on her perception of how the survivors in need would think:

> If I don't have a home, if I don't have anything… I don't want to call in somewhere and say we just got a donation today but we have to process it… I want to know that I can go somewhere and get what I need immediately.

While cash is a more flexible resource, she constructed it as considerably slower in getting to the survivors, and therefore a less desirable donation.

An emergent donation drive among fraternity members at a university in the Mid-Atlantic region decided to exclusively collect cash donations from students

following Hurricane Sandy. This decision was based on their construction of cash being more effective due to their lack of experience in disaster relief. "We assumed the fact that cash donations would be the most effective because the individuals who are doing the collecting [have] a better idea than we do of what is actually needed. They can use that money as needed." For this interviewee, cash is a more agile resource that allows those in the affected area to make the decision of what is needed and purchase those needs.

The speed of cash was not only recognized as an obstacle by established organizations, but also by emergent drives led by individuals who had minimal experience in collecting donations for disaster relief. Materiel donations were understood as immediate; they were collected and sent into the area to meet the needs of the survivors. The same money that might be donated directly to an organization would have to be processed and possibly never make it to the survivors, while spending that same amount on necessities and sending it into the area, those items would make it into the hands of someone in need. This construction of how money is a slower assistance option is seen among interviewees regardless of their previous experience in disaster relief, their affiliation with organized or emergent organizations, and their geographical distance to the affected area. Groups within the area echoed this construction as well as those hundreds of miles away.

An interesting conclusion that was reached in order to bridge the divide between cash and goods was the donation of gift cards. Following the Oklahoma tornadoes several interviewees illustrated how gift cards alleviated the fears of donors that their donations would not reach the survivors while also allowing for the flexibility of cash donations. Gift cards could be the ideal donation; however, there was concern over the

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capability of survivors to transport themselves to buy the goods that they needed. Some distribution centers used the gift cards to fill the needs that they knew were present in the community, taking it upon themselves to go to stores and buy the goods.

There was no clear consensus among stakeholders on the construction of cash versus goods and which leads to a more agile supply chain. While some interviewees conclude that cash is a more efficient donation, others see it as too slow and requiring too many logistical hoops to jump through. The deciding factor may very well be that some organizations have the capability to accept monetary donations because they are structured to handle the money while others are more comfortable with goods.

Timing and Dynamic Nature of Specific Needs

Among the interviewees following Hurricane Sandy and the Oklahoma tornadoes, a common construction was that the needs of the affected communities change as the relief effort evolves. The ability to change supply based on demand is constructed as a necessary component in the disaster relief supply chain.

An interviewee from an established, national non-profit constructed the evolution of needs within the affected area:

> In the beginning, it was the immediate human needs, which is your hygiene items… anything that you would use on a daily basis that you take for grated and don't even realize it… After that, it went more or less to the cleaning supplies, cleaning buckets, masks, Tyvek suits, work gloves, things like that. And then it transitioned into a little bit more heavy-duty things such as your screwdrivers… equipment to actually do the rebuild… And now we're full circle back to needing the basic items again.

Among emergent drive coordinators following the Oklahoma tornadoes, furniture donations were actively avoided within the first few weeks following the event. Interviewees who had collected donations from outside the affected area, even in

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neighboring states, had to turn away donors who were intent on sending in furniture that might be needed by the survivors. Interviewees expressed concern about how survivors or donation distribution centers would store furniture donations until they were needed.

Among the interviewees and organizations in our study, the first sign of a change in survivor needs was evident in messaging from the affected area. The coordinator of an emergent drive following Hurricane Sandy characterized how the messaging evolved: "At first they were looking for anything [and] then slowly started moving towards, 'We have enough clothing. We have so much clothing we don't need anymore, now we need specific items like food items." With the messaging and needs changing, the donation drives faced obstacles with items that they had already collected and had not yet sent to the affected area.

Drives that were located farther from the affected area had difficulty stopping donations that had already entered the supply chain. The entry point seemed to be the point of donation. Many organizations did not stop the donations at that point, even if the messaging coming out of the affected area asked them to stop sending in specific items. In South Carolina, an elementary school decided to collect donations for survivors of Hurricane Sandy. Their drive asked for primarily school supplies and they collected clothing as well. The interviewee recognized that some of the donations may have exceeded the needs of the area: "They needed a lot of school supplies, clothes, [but] by the time our clothes got there [they] were probably not the most wanted things in the world. But they got them." The interviewee recognized that the need for clothing had probably been met at this point, but sent the items to the affected areas anyway.

A priest in Oklahoma who was distributing donations illustrated how timing of donations created challenges, particularly with reference to changes in messaging. He

recalled that there was a need for work gloves in a neighboring community and a local news station put out messaging asking for donations of work gloves. However, even after the need was met and messaging was put out to that effect, they continued getting gloves, more than they could possibly use at that time.

A volunteer in an Oklahoma donations distribution center had come up with her own solution for how to handle timing of donations. She wanted a structured timeline that was broken into weeks that would highlight what donations to send in at what time. She saw this as necessary to effectively organize distribution centers. The donations could be spaced out based on the needs of the community. Several interviewees concluded that a structured timeline would create a more effective supply chain; however, many did not know what that timeline would look like. One interviewee who coordinated an emergent drive recognized that a timeline could help with the long-term effort, several months on in the recovery effort when donations had subsided. He stated that he would have continued collecting and storing long term items that would be sent up in stages as the needs evolved, but he did not have the logistical capability for that type of donations drive at that time.

Pre-positioning supplies was a popular idea, both among those responding to Hurricane Sandy and the Oklahoma tornadoes. Larger, established organizations were able to engage in pre-positioning supplies, especially with events such as hurricanes or slower-onset floods where there is more warning time. Prior to Hurricane Sandy, a New Jersey state agency opened up a donations warehouse, started fueling up generators, and constructing staging areas that would be able to respond quickly after the storm. Leading up to the tornado season in Oklahoma, a large and established NGO began

stocking their warehouses in preparation for tornado season in that area. By pre-stocking goods they anticipated the needs and could immediately meet them.

A coordinator of an emergent donation drive following Hurricane Sandy expressed a desire to organize a group of individuals who would prepare and stock goods such as hygiene items that would meet the immediate needs of survivors. His plan was to do this prior to any storm season so they could be ready to mobilize and deploy items immediately after the event.

Pre-positioning of supplies could alleviate the immediate needs. Still, the construction of a timeline and the evolution of needs would be an issue beyond that solution. Experience and prior research indicates that influx of donations does not follow a timeline, or at least does not recognizing the evolution of needs can lead directly to logistical problems with excessive donations, inappropriate donations, and storage issues. One volunteer in Oklahoma, who traveled from New York City, was intent on using her experience from Hurricane Sandy to help communities after the tornadoes. She characterized the need for a timeline, as well as the challenges that result: "It's going to be a slow process to getting to furniture… The thing is, how do you give stuff to people when they have nowhere to put it?" Storage issues do not just plague distribution centers, but are also an issue for the survivors themselves. This will be further explored in the Logistics Management theme.

Logistics Management

Two themes emerged from the data regarding how agility in the supply chain, or lack thereof, could affect logistics management in the affected area following a disaster event. These themes were (1) excessive and inappropriate donations; and (2) storage issues.

Excessive and inappropriate donations

The material donation that was most recognized as creating major challenges was clothing. The majority of individuals who participated in our study recognized that while clothing was needed, the donations of clothing exceeded the need. One interviewee in Oklahoma characterized clothing as, "a disaster within a disaster." However, even with this recognition, many groups still collected and sent clothing donations to the affected area.

The interviewee from the New Jersey State agency illustrated how these inappropriate or excessive donations could be unsolicited, and how they could not be stopped.

> The main thing was to get a message out 'cash donations first', then specific needs… and that went out. It didn't stop all that kind of stuff with unsolicited donations. Of course you can't stop that. People just [want to] drop stuff off at a church and that ends up being a problem. Now they [have] got all these piles of clothes and junk just laying there, the rain comes, it gets wet and useless.

This characterization of unsolicited donations arriving, even when messaging is not specifying them as an immediate need, again highlights the question of when is the point of no return?

Several interviewees did not turn away donations and collected everything that they could during their donations drives. In some cases this was in an effort to avoid alienating donors by turning them away, but in others they initially constructed the needs of the survivors as anything and everything. While there may have been recognition that these items were not needed at that time, the interviewees believed that the items would be used eventually.

> I basically was asking for everything all the time… In my mind, the most important thing was not necessity, asking for certain items or not asking

for certain items. It was 'Let's take in as many items as we can, get them up there, and we'll let them figure out if they need it.' I would rather send it up and then end up not needing it…than say, 'No we don't want to take that now' and then find out that someone could've used it.

This interviewee emphasized the collection and transporting of the items. He did not conceptualize what would happen once the items entered the affected area and the challenges that the donations might cause. This decision to send any and all donations into the affected area can directly contribute to logistical issues associated with excessive and inappropriate donations.

Donations that are not cleaned and are not sorted caused problems as well, as illustrated by an interviewee with an emergent donation distribution center in Oklahoma.

I would say brand new clothing would be fine… I have seen semis full of bags of clothes, not sorted, not washed…. People have to spend days and days going through it, throwing half of it away, washing…. They don't need to [spend] their time doing that.

A volunteer in Oklahoma, who traveled from New York City to help with the effort, was similarly challenged by unsorted and excessive clothing donations and food donations. When asked if they were sorting out expired food she stated, "No, we're not, we can't… I'm not going to lie to you. I'm not going to make it look better than it is. We're just overwhelmed."

Storage

A consequence of the lack of a timeline, as well as an influx of inappropriate and excessive goods, is a lack of storage space. Lack of storage space was not only characterized as an issue for distribution centers but also for the survivors themselves. Many survivors were incapable of collecting donations that would fulfill more than their immediate needs because they had nowhere to put them. The fact that survivors did not

take more donations caused further storage issues for the distribution centers because donations were still arriving but they were not being distributed at the same pace.

A donation center in Oklahoma that worked specifically with American Indian survivors was facing this challenge because they were being inundated with clothing donations. A volunteer at the center stated that they wouldn't need that volume of clothing for two to three weeks because the survivors had nowhere to put the donations, and therefore they would only come in and take a few things at a time. The fact that survivors were only taking the bare minimum of donations was echoed at another Oklahoma distribution center located in a Baptist Church. A volunteer stated that survivors would come in with dirty clothing that they had probably been wearing for days, change into some clothing from the donations, and then leave. They did not have space for anymore clothing than what they were wearing.

As a solution for this problem, a rural Oklahoma middle school planned to set aside some space for each family in their community that was affected to store donations that they would need in the future. However, this became impossible with the influx of excessive donations, including clothing, food, and hygiene items.

The storage of items at distribution centers, and the excess of the donations can lead to waste as well. When space in limited, clothing might be left outdoors and ruined by rain. An interviewee from a large national NGO stated,

> All you have to do is drive through Moore, [Oklahoma] and you can see there's every corner with a tent with stuff. That's going to end up being ruined. Last week there was a rainstorm and a lot of stuff got ruined already. We're never going to process that stuff.

A particular issue in Oklahoma was the storage of bottled water in the early summer heat. "We try to have them inside… but we don't get to control what everyone's doing. I would prefer that people not store it outside, and not [under] a tent." Distribution

centers lacked storage space, which led to the improper storage of donations and in some cases those donations being ruined.

Overall, the construction of storage as a challenge to affected communities was primarily confined to interviewees that were either directly involved in the distribution of the donations or were present in the area during the influx of donations. They exhibited frustration that they could not stop the donations from coming in and recognized that the donation process would be more successful if they did not have to deal with the excessive and inappropriate donations, as well as storage concerns.

Discussion

Agility is constructed as necessary to disaster donation supply chains overall, however, there is no clear consensus of what that means and how to achieve agility. Interviewees agreed that a structured timeline could offer a solution towards excessive or inappropriate donations, yet, there was no clear idea presented of who would create or implement the timeline. The conflict over the benefits of cash over goods donations or vice versa is central to this discussion. Larger, more experienced NGOs understand cash to be better in disasters, creating a more flexible and efficient supply chain. Still, as it is evident in the data, this is not a universal opinion in disaster relief.

The bulk of the smaller, grassroots, and/or emergent organizations expressed beliefs that cash donations were less desirable that goods donations overall, or at the very least they should be donated later in the process. These opinions were in direct conflict with the opinions of larger more established organizations.

A solution to the lack of agility in the supply chain, specifically focusing on meeting the needs of survivors immediately after the event was that of pre-positioning supplies. While this practice is utilized by larger, more established organizations in

advance in disaster prone areas, an emergent group expressed an interest in engaging in prepositioning supplies. While the idea was well-meant, the interviewee and others who proposed prepositioning supplies on a smaller scale did not demonstrate that they had considered the costs that would be incurred by the venture. The cost of a storage space, pre-buying supplies with the assumption that they would be needed, and then waiting until the next event occurred (within a specific geographical area) would not be a realistic undertaking for emergent and/or grassroots organizations to follow through on.

The lack of agility in the supply chain contributes directly to the challenges experienced in logistics management following a disaster event. The larger/established organizations viewed goods donations, specifically clothing as non-priority donations, given their experience with clothing as an excessive donation. However, as smaller, grassroots and/or emergent organizations specified that they preferred goods donations over cash, they did not necessarily make this connection.

Therefore, these smaller groups were more likely to accept goods donations, which would directly contribute to the excess of those donations, an influx of inappropriate donations, and storage concerned both within distribution centers and for the survivors themselves.

In a disaster relief supply chain, if the time-to-market, time-to-serve, and time-to-react are too slow (which denotes a lack of agility in the chain) then this directly contributes to the logistical management issues listed above. At the same time, if the items take too long to become available to the survivors, take too long to be delivered to the survivors, or too much is delivered at once (lack of reaction in the chain) then challenges will also materialize. Time-to-market and time-to-serve may also prove to be too quick, as too many items enter the area too quickly, in excess of the needs of

survivors. Time-to-react appears to be the dominant component in disaster relief supply

chains and slowing the excessive and inappropriate donations from entering the area.

The issue at hand is the fundamental difference in opinion regarding when good

donations and when cash donations better serve the survivor population.

Current disaster messaging focuses on the need for cash donations over goods

donations. This is evident in messaging put out by the American Red Cross, USAID,

and other larger, established disaster relief organizations (American Red Cross, 2015).

Interview data presented in this chapter challenges the effectiveness these techniques.

While these larger organizations are trying to encourage "buy in" by all donors to their

understanding of disaster relief, this messaging does not account for the fundamental

differences in stakeholder opinions and constructions of relief presented in this research.

Monetary donations are constructed as generally more useful following disasters

(Harvey, 2007). Goods donations can undercut local suppliers and can also include

items that are not useful within that culture or environment. In addition, food donations

can prove to be problematic if there are specific dietary restrictions, and clothing may

not be useful given cultural restrictions, traditions, or climate (Harvey, 2007; Kelman

and Dodds, 2009).

Organizations may not have the infrastructure or capability to accept monetary

donations, which is one reason why they might shy away from monetary donations but

accept goods donations. Other organizations actively avoid monetary donations,

viewing goods donations as getting to the survivor population faster than cash, as well

as the perception that goods are more useful immediately after the event. Given their

strong views and issue-framing on this matter, communication and educational

strategies that solely rely on conveying recommended practices, thereby approaching

the problem from a top-down perspective, is unlikely to generate more than mild to moderate changes in donation and donation drive behavior.

Adopting a cash-donations-only policy might not prove to be an innovation or policy change that these smaller groups are interested in. If individuals who are involved in the disaster relief supply chain do not buy into the idea that cash is more agile and effective, then they will not adopt new policies to enact changes in how they function and what donations they will solicit and accept. Previous research is consistent with this statement, showing that organizations will not implement new innovations if they are not convinced that they are needed (Damanpour and Schneider, 2006). As such, it is important to understand the individual perspectives and needs among those involved in the donations supply chain, as they are the individuals and coordinators of donations drives and organizations that must accept these innovations. If they are not convinced that monetary donations create a more agile supply chain (which is the standpoint of larger and more established organizations) then they will not change their policies.

In some cases, technological advances could supplement social solutions. Ozeguven and Ozbay (2013) suggest utilizing current technologies in Radio Frequency Identification Devices as a method of tracking goods donations as they are transported to the disaster affected community. This could ostensibly quicken the time-to-react and slow or stop non or low-priority items from entering into the disaster area. This strategy could change the "point of no return", at which point donations will continue on to the affected community unimpeded. However, this suggestion would still require grassroots and emergent organizations to accept the rationale for the change in order to to adopt

these innovations. Again, if the fundamental view of what donations are useful and when is not approached then the success of new technologies would be limited.

Aidmatrix was mentioned by one interviewee as a solution for communicating the needs of a community directly to the donors, thereby decreasing the time-to-market and the time-to-serve. In addition, as needs changed they can be communicated quickly, decreasing the time-to-react. Aidmatrix is an online network that "directly links you to relief organizations responding to crises" (Aidmatrix, 2016). These organizations communicate their needs, whether it is for goods or volunteers, as well as the need for transportation services. While this online network could serve as an effective solution to problems with agility in the supply chain, this technology was only mentioned and used directly by one interviewee: a government employee. Many smaller organizations were not aware of the network, and therefore were not using the technology.

The research presented here points to a fundamental difference between smaller organizations and larger/established organizations in how they view disaster donations and how they view each other in the disaster relief endeavor. Given that communication efforts directing all donors to cash donations rather than to goods donations is not widely accepted by many organizations that enter the relief milieu, further advances in innovations that support the cash-preference assumption may not be welcomed by those holding opposing views. As I will address in the following chapter, donors and donation drive coordinators construct their control over their donations as an important component in what they decide to donate. This desire for control, as well as some distrust in the larger/established organizations, suggests it is unlikely that they will change their view about goods-as relief or easily support technology that may slow or stop their donations from reaching the affected community.

Conclusions

While there was recognition among our respondents that a timeline for donations collection and delivery may be valuable, there was lack of agreement regarding what that timeline should be. Agility was constructed as necessary for a successful relief supply chain in all but one instance, and that was in how cash was constructed as an agile resource.

Research as show that cash is needed through the entire response and is an effective method of donation. Interviewees did not universally agree with this view, highlighting how those involved with the donations supply chain come into conflict with the overall messaging of larger organizations. Further research must address in more detail why some organizations and individuals involved in the supply chain value cash over goods donations, while others do not.

While the majority of interviewees recognized the need for a structured timeline, there was an inability among them to characterize exactly what that timeline should be. Since the interviewees were unable to relay a consensus in when monetary donations were more effective than materiel donations, it is unlikely that such organization-based views could easily generate a consensus on how to build such a timeline. A structured timeline would not lend itself to agility; however, a semi-structured timeline that could slow the excessive donations and spread them over a longer influx period could benefit the success of the supply chain.

Future research should investigate this issue further and seek to understand how the agility of relief supply chains is constructed among more stakeholders in the disaster relief supply chain. Donations following disasters create a difficult problem that does not have a quick solution. Donors want to help and contribute to those who have survived a disaster. It is not easy to stop communities from collecting donations in the

spirit of giving, nor is it easy to prevent them from sending those donations into the area after the need is met. However, there may be some ways in which to help to alleviate the problems that are found in disaster zones, such as an influx of unnecessary items. A timeline could provide a better idea of what may be needed initially, give people the ability to slow down their drives and realize that the basic needs will not only be needed immediately after the event, but also several months down the line. The use of a timeline may help with the structure of the supply chain and the ability for the supply chain to change with the demand for goods.

Chapter 6

SOCIAL CONSTRUCTION OF ALIGNMENT IN DISASTER RELIEF SUPPLIES

Introduction

Whether donor needs align with survivor needs is an important topic in disaster donations. While donors are generally engaged in giving in an effort to help survivors of a disaster event, their help and generosity can cause further challenges to the affected community. As mentioned in the review of convergence literature, disasters are plagued by an influx of excessive and inappropriate donations. Therefore, a greater understanding of how donors construct the needs of the survivors as well as their own needs is an important aspect of convergence behavior.

Prosocial giving behavior has been a subject of study for decades (see Rosenhan and White, 1967; Piff, Kraus, Cote, Cheng, and Keltner, 2010) with motivations and influences to give as a primary area of interest. Why do individuals self sacrifice to meet the needs of strangers? Is this giving purely altruistic or is the self -interest of the donor involved?

This chapter seeks to understand how donor interest may or may not align with survivor interests following a disaster event.

Convergence

Disaster events can lead to both a large loss of life and a loss of supplies that are necessary to meet the needs of survivors, yet these needs are not always clear and

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known immediately after the event. The phenomenon of the convergence of disaster donations and other goods has been a subject of research for a half century (see Fritz and Mathewson, 1957). This area of research is important in not only understanding, but also alleviating the challenges that the influx of materiel donations can cause for an affected community. These challenges have been characterized as a "second disaster" (Fessler, 2013; Islam, Dolan, Heggestuen, Nordenson, and Vate, 2013; CBS News, 2016).

This chapter will focus on disasters as defined by Quarantelli (2000), a founding scholar in the social dimensions of disasters:

> Disasters are relatively sudden occasions when, because of perceived threats, the routines of collective social units are seriously disrupted and when unplanned courses of action have to be undertaken to cope with the crisis (p. 682).

The third feature, which calls for adopting courses of action that were not preplanned and adjusting to the disruption of the event are of particular interest to this research into disaster donations.

The donation of goods can create, "a huge quantity of items, an extremely heterogenous flow, arriving within a short timespan to an area with limited space, resources, and personnel to process and distribute them to their intended recipients, people in great need" (Holguin-Veras Jaller, Van Wassenhove, Perez, and Wachtendorf, 2014a, p. 6). As highlighted in the quote above, donations require extensive logistics in order to reach the survivors in a timely manner, and this can be affected by inappropriate donations coming in when there is little need.

While disaster donations can meet the immediate needs of survivors by bringing critical and necessary items, high priority items are often accompanied by an influx of low priority items. Low priority items can lead to a congested supply chain, leading to

logistical challenges and thereby causing delays in necessary items reaching the survivors (Destro and Holguin-Veras, 2011).

Goods or Cash

Larger organizations, such as the Center for International Disaster Information and the American Red Cross, recommend monetary that donations over materiel donations to alleviate logistical challenges for disaster relief provision (Center for International Disaster Information, 2015; American Red Cross, 2015). While the benefits of monetary donations is a well-established concept among large NGOS (American Red Cross, 2015), materiel donations still flood into disaster areas (Wachtendorf, Penta and Nelan, 2015).

Excessive and Inappropriate Donations

Excessive and inappropriate donations are a challenging consequence of materiel convergence. Commercial supply chains do not generally result in excessive or inappropriate goods, as they are structured and the origin of the supplies is know; they are predictable, long-term, and quantity and quality of the supplies can be controlled. Humanitarian supply chains, in comparison, are urgent, they are unpredictable, and origin of donations, quality, and quantity of those donations are unknown (Van Wassenhove, 2006).

Given these factors, completely controlling the supply chain and what donations arrive in the affected area is challenging, if not impossible. The donors may have access to messaging or a list of needs that have been identified for the survivors. Yet they may not know list originated with the survivors or reflect actual needs. Moreover, donors may lack awareness regarding quantity needed. In the post-disaster

environment, there is never a single, overall inventory of all donations and supplies converging on the affected area (Apte, 2010).

While these challenges have been well documented, there is a disconnection with how potential donors understand the needs of survivors (Holguin-Veras et al., 2014a). It is this disconnection that prompts the need for this study into how stakeholders in the donations process view donors interests and survivors interests, and where they intersect if at all.

Alignment

The objective for alignment in a supply chain is to "create incentives for better performance" (Lee, 2004). Alignment is central to a successful supply chain, all companies work for their own self-interest, and by aligning the interests of all those within the supply chain it increases the potential for success.

In commercial supply chains, alignment between firms is apparent in their inventory concerns, which generally involve supplying a firm with the necessary components to create their product. If the inventory needs and the availability are not aligned then this causes problems in the supply chain. Information sharing among those involved in the supply chain is vital. If the risks, costs and rewards are spread equitably across those involved in the chain, then their interests would be aligned and the supply chain is more likely to function successfully (Lee, 2004; Whitten, Green, and Zelbst, 2012).

Commercial supply chains require alignment with regards to the differential interests of all those concerned (i.e. firms and companies involved in the supply chain). By aligning those interests, there is an increased likelihood for success (Lee, 2004). Alignment within humanitarian supply chains is similar, in that it deals with the

coordination of interests for the multiple groups involved (Van Wassenhove, 2006).

This is incredibly difficult following a disaster event because organizations may be in competition for limited resources, including organizations on the ground that are competing for donations of cash and goods to help the population. In addition to organizations competing for limited resources, there are "uncoordinated and disparate donors" (Van Wassenhove, 2006, p. 477) and grassroots organizations, among others. All of these groups and individuals are competing for media attention and donor attention. Compounding the challenges of fostering cooperation among different organizations are potential differences in political ideologies and religious missions (Van Wassenhove, 2006). Aligning these groups with one another is a difficult proposal, and these groups are not the only ones involved. Donors and organizations from other communities and geographic areas that take an interest in helping those affected. Alignment of all of these groups to have a common interest and understanding of the needs is a difficult task.

Donor Interests and Needs

To understand the alignment on donor interests and needs with survivor interest and needs, we must look at why donors make donations and what those donations mean to them.

Donors can receive monetary incentives to make charitable contributions. In the United States, donations have become incentivized with tax breaks and the end of year increase in giving is potential evidence that these tax breaks do provide motivation for donors (Ariely, Bracha, and Meier, 2009; Small and Cryder, 2016). In addition to incentivized motivations, donors give to achieve social status or appear generous in society (Small and Cryder, 2016). Social norms may determine the appropriate level of

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giving, based on how much others visibly give, and therefore each donor may adjust to the perceived "correct amount" of the donation to meet with the other donors (Shang and Croson, 2009; Jung, Nelson, Gneezy, and Gneezy, 2014).

Pro-social giving behavior is an area of research for several areas of study. Studies into the psychology of pro-social giving behavior found a connection between charitable behavior and activity in the pleasure centers of the brain and one's happiness (Dunn, Aknin, and Norton, 2008; Baumann, Cialdini, and Kenrick, 1981; Harbaugh, Mayr, and Burghart, 2007). Economic theories have sought to explain altruism and persuasion as a motivation towards donations for charity (Margolis, 1982). While I touch on the feelings of being helpful, this chapter investigates how the individual donors themselves articulate their reasoning for donating goods or cash following a disaster event.

The media can also influence donor interests. Indeed, the amount of time that the media covers an event before the next event, or the "issue attention cycle" (Downs 1972, p.38), is directly related to the amount of donations coming into a disaster zone, which in turn affects the agility of the supply chain. Therefore, the length of coverage time will determine when the donations will slow. In this way, the media defines which events are significant, thereby influencing the opinions and actions of the public (Hall 2002).

The issue attention cycle describes when a problem "suddenly leaps into prominence, remains there for a short time, and then – though still largely unresolved - gradually fades from the center of public attention" (Downs 1972, p.58). This cycle mimics human interest in these crises; specifically it highlights a peak of interest followed by increased boredom when the reports on the problem continue.

Downs (1972) presents 5 stages which the issue attention cycle follows: (1) the pre-problem stage, (2) alarmed discovery and euphoric enthusiasm, (3) realizing the cost of significant progress, (4) gradual decline in intense public interest, (5) the post problem stage (Downs 1972).

During the pre-problem stage, the event has occurred but the public is not yet aware of it. The second stage begins when the public becomes aware of the event, and they are alarmed at the discovery and experience euphoric enthusiasm to help (Downs 1972). It is in this second stage where donations would be collected and transported to the affected area. The public puts effort towards solving the problem (Downs 1972), which in the case of a disaster would be alleviating the suffering of survivors. The third stage is where there is a general realization of how much it will actually cost to solve the problem completely. The fourth stage begins as interest in the event declines, and donations would decline as a result. Finally, we enter the post problem stage, where another problem had taken over and the cycle begins again (Downs 1972). Since research has shown that the media can affect donor interest, then donor interest may follow this "issue attention cycle".

Control

Donors have a desire to control their donations, be it through who they donate to or how they might earmark their donations when they give (Van Wassenhove, 2006). In this section we will explore research into how donors seek to control their donations.

Administrative Costs

Donors may target their donations based on the ratio of private donations going to an organizations overhead costs. There is relationship between donations and reported administrative costs; specifically, as reported administrative costs (overhead

costs) increase then donations to that organizations decrease (Tinkelman and Mankaney, 2007; Gneezy, Keenan, and Gneezy, 2014). Donors have a preference for organizations that demonstrate low overhead costs, even if these leads to a decrease in cost effectiveness (Gneezy et al., 2014).

Earmarked Donations

Earmarked donations are an increasing challenge for charitable organizations (Barman, 2008). In the case of disaster giving, donors may specify a fund for a disaster event when they contribute and all money earmarked towards that fund must be directed to only that event. The earmarking of donations is a method that donors use to control where their donation goes and how it is used (Thomas and Kopczak, 2005). The practice of earmarking donations causes challenges for charitable organizations and due to these challenges, organizations avoid allowing donations to be earmarked (Strom, 2008; Martinez, Stapleton, and Van Wassenhove, 2011). Specific challenges include instances when too much money is earmarked for one event and not enough is earmarked for another (Tomasini and Van Wassenhove, 2009; Jahre and Heigh, 2008). Research has found that donations may decrease if organizations do not allow earmarked funds. Yet, disallowing earmarking may be beneficial in the long run, especially following disaster events that have a lot of media attention (Toyasaki and Wakolbinger, 2014) and therefore generate more funds overall.

Methods

Evidence in previous research supports the need for alignment in supply chains and an overall awareness regarding when specific donations come into the disaster affected area. This chapter explores stakeholders who give donations, run donation

drives, and work in distribution centers view alignment is a necessary component for a successful relief effort.

The data used in this research was collected following Hurricane Sandy and the May 2013 tornadoes in Oklahoma, and includes both interviews and observations. The analysis of this data seeks to answer the following research question, in an effort to further the knowledge of disaster donation supply chains:

RQ: Do individuals involved in disaster donation operations view alignment as necessary to the effectiveness of the supply chain? If so, how?

Alignment was identified in the interview data by focusing on the themes of how individuals viewed donor interest in relation to the interests of survivors. Were those interests aligned, and if not, what was the reason for that lack of alignment.

A detailed description of the methods for this study is highlighted in Chapter 4.

Findings

The alignment of donor and survivor needs is divided into four categories. They are as follows: (1) Control over the donations; (2) Time constraints and purging; (3) Disconnection between donors and survivors; and (4) Donors feelings over survivor needs. Each of the individuals who were interviewed expressed their desire to help and get involved; however, at times the desire to help and their understanding of the needs of the survivors were not aligned.

<u>Control Over Donations</u>

Donors exhibited their need for control in their donations by differentiating between the uses of cash versus materiel donations following a disaster event. Following both Hurricane Sandy and the Oklahoma tornadoes, donors and drive coordinators were concerned about the effectiveness of monetary donations and how

they would be used. Two concerns that were raised by interviewees when addressing their control over their donations: (1) Unknown uses; and (2) connections with the survivors.

Unknown uses

Overwhelmingly, monetary donations were constructed as out of the donor's control, as opposed to materiel donations. While donors could choose which organization to donate money to, they had little to no control over how their donation was spent. Individual donors and coordinators of donation drives expressed concern about where their money was going, and they were especially discouraged by the idea that it could be spent on administrative costs or overhead costs instead of going directly into the hands of the survivors. The possibility that donations could go towards salaries and hotel rooms motivated donors to avoid monetary donations and drive coordinators to ask for materiel goods and avoid collecting cash. This was especially poignant in some cases when donors and coordinators recognized that cash could be more effective if sent directly to survivors. A volunteer in Oklahoma, who had traveled to the area from New York City, illustrated that point: "I personally would like to see any money that goes to the relief effort go completely to the people who need help as much as possible… without all the other overhead they pay."

A constant theme that emerged throughout our data collection was that individuals did not have a clear idea of exactly where money was going and how it was being spent.. An interviewee who coordinated an emergent donation drive following Hurricane Sandy stated the following:

> You donate money, you have no idea where it's going, who it's
> affecting, what's happening. You just know you donated money for a
> cause. But when you donate items, especially when you can see the

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delivery of those items, you know that you've had an impact on those people's lives in that community.

The sense was that monetary donations were completely out of the control of the donors, and therefore they were constructed as having less of an impact, or rather an unknown impact on the survivors. The impact was more apparent and useful to the donor when they could imagine their donations in the hands of the recipient, which they could not do with their money. By donating a blanket during a cold season, they could imagine somebody using that blanket. Donors and donation drive coordinators viewed materiel donations as having a higher likelihood of reaching the survivor population compared to monetary donations.

That factor of the unknown was a deterrent not only to donors contributing money to more established organizations, but also for coordinators of donation drives who did not ask for money. Having the forethought to know that donors might be less likely to contribute money due to the unknown factor, one person we interviewed in Oklahoma decided not to advertise for it. He stated that people wanted to know where their money was going, "I think [with] giving water and diapers, they knew that somebody was gonna drink that, somebody was gonna use those diapers."

Several organizations, both asking for donations outside of the affected area and organizations distributing donations within the affected area, expressed a disinterest in cash donations. One reason that was repeated was that they did not have the capacity in place to handle cash donations. The responsibility of handling cash donations was expressed as a deterrent for coordinators of emergent drives. By asking for cash donations, interviewees expressed concern over how to explain to their donors how the cash was spent. With goods donations there was less concern, because the dominant

view was that it would go into the affected area and "eventually" be used by the survivors.

> … I don' t want there to be an opportunity for someone to say, 'You know, what did you do with the money,' you know? 'Did you spend it on yourself? Did you give it to somebody else, or did it go to where you said it was going?'

According to one interviewee, donors were particularly wary of donating to the American Red Cross because their funds might not be used for the Oklahoma tornadoes.

> I know that at first people were a little leery about… giving specifically to the Red Cross because I know a lot of it is going in to, they're giving it for Oklahoma, but it was going to just a big fund for tornadoes all over the country that had been hit…. You know maybe if you're a little worried about, well, 'I want it to go to Oklahoma,' you may want to give it to specific organizations in Oklahoma City.

This individual constructed a lack of control over donations to bigger nationwide organizations. The solution they advocated for was to donate to smaller, local organizations, but illustrated how their decision to donate money to any organization would be dependent on size and where the money might go.

A method that donors use to contend with not knowing how their donation is used is through earmarking their funds. A member of a national religious disaster relief organization (that had established relief practices) illustrated the challenges of earmarked donations:

> Do not make a designated capture or [earmarked] monetary contribution because that creates a whole 'nother problem. Because then we have the obligation, if you say, 'This is for Haiti' then we have to spend it on Haiti, [but] we have already met the needs in Haiti. And then we sometimes find ourselves trying to figure out who gave that money so we can go back and ask them, 'Can you release us from that obligation?'

While earmarked contributions allow for donors to feel like they are in control of their donations, they create restrictions on how the organization can spend the money, which

leads to challenges when the needs for a specific event have been met but survivors of a separate event are still in need.

Connections with the survivors

Interviewees further characterized the control over the donations as important because they needed to feel a connection to the survivors, and that connection gave them the feeling of usefulness and that they helped. Overall, individual donors and drive coordinators viewed goods donations as more helpful because they understood goods as their method of connection to the survivors.

> You donate money, you have no idea where it's going, who it's affecting, what's happening. You just know you donated money for the cause… But when you donate items, especially when you can see the delivery of those items, you know that you've had an impact on those people's lives in that community.

Some interviewees went so far as to take the donations that they had collected directly to the affected area in order to build that connection. This interviewee described the contradiction though: knowing cash donations are easy to give and preferred by survivors while simultaneously still wanting to give items.

> It's better to do the material things, because we want to be connected… but most of the donors, they don't worry about being connected, they go by [the] easy method basically. So, they'll prefer to donate by cash… I like to go and see the victim and donate by my hand.

The act of having the material donation in your hand was characterized as "that true feeling of giving back."

The donation of goods is not only constructed as a way to avoid cash going towards administrative costs, but also as a way to make the donor feel directly connected to the survivors and therefore feel like they have actually helped in the relief effort. One interviewee in Oklahoma who coordinated an emergent drive and described

how cash would not give a person as much of a connection as goods, especially when donor income is accounted for: "It might have been a lot cheaper for them to spend $20 on, you know, 5 or 6 cases of water or something… $20 bucks may not look like a lot if you're donating it I guess." In this case, he asserts that donating $20 worth of bottled water – as opposed to $20 cash to an organization – allows the donor to feel more helpful.

Among the interviewees, cash was less personal and therefore created less of both an impact and a connection between themselves and the survivors. By constructing materiel donations as more likely to mean something to the survivors, it then becomes the desired method of donation, even when accounting for cash being more efficient.

Time Constraints and Purging

Issues of timing and deadlines were a major theme with regards to donor interests. In Chapter 5, I suggested the necessity for a timeline and flexibility in the donation supply chain. Donation drive coordinators experienced time constraints on their donation drive efforts, and they believed they needed to send the donations on to the affected community to move on. In schools that participated in donation drives, they needed to free up their facilities for other uses and, as a result, could not store the donations indefinitely. Following Hurricane Sandy, one school needed to get all the donations that they had collected out of their building by winter break. At a school in Oklahoma that was acting as a distribution center for the community, they needed to have everything cleared out within a few weeks of the event, but they were inundated with goods.

The desire to clean out one's home, purging one's belongings, was viewed as a donor interest as well. In several interviews following Hurricane Sandy and the

Oklahoma tornadoes, the people we spoke with used the phrase "getting rid of" goods through the donation process. In some cases, the disaster event and subsequent donation drive provided an opportunity to purge items that were no longer of use or donors no longer wanted. As one person noted, "It was stuff that I had been wanting to get rid of for awhile and just didn't know what to do with it, and when this came along it sounded like a good thing to do. It would've gone somewhere eventually, probably." While purging the items was a motivator, donors are also motivated by the idea of donating the items instead of throwing them away.

A coordinator for a school donation drive was thanked by parents for "giving them the opportunity to clean out their closets, something they've been looking to do and just never got around to doing it because [there] was never a need or an immediate need to do it." In this way, the donors may perceived their needs aligning with the survivor needs, they needed to clean out their closets and purge old clothing, while survivors would need access to clothing.

The majority of interviewees collecting donations or volunteering in distribution centers stated that if they received items that were more than gently used, expired food, unclean clothes, or simply things that they themselves would not use, they threw them away. Here, the views of the organizers in distribution center did not always align with the views of the previously mentioned donors or donation drive organizers.

One volunteer characterized some of the donations arriving at a distribution center in Oklahoma as a "yard sale dump." He believed that people were cleaning out their closets to send the clothes, and had encountered food that had expired years ago that had to be sorted out of the donations. Speaking on food donations, an employee at a food pantry that contributed to the Hurricane Sandy relief effort stated the following:

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Sometimes people will go through their cabinets and just kind of take what they're not using. And the reality is if that is a two year old jar of olives [that] might be rusting on the top, that you don't really want it, the reality is that we probably don't [want it] either.

The concept that if the donor doesn't want it, then the donation drive, distribution center, and/or the survivor may not want it was a common statement, "If they don't want them, we don't either." Volunteers and drive coordinators stated that if they wouldn't use it themselves they would throw it in the trash as opposed to sending it down the supply chain.

Disconnect between Donors and Survivors

Donors were interested in a connection with the survivors and the area that they were helping, though in some cases there was a complete disconnect between the donors and the survivors. Several interviewees stated that they did not know exactly where their donations were going, either because their initial connection had stopped taking donations or they entrusted the donations to another organization or person. Organizers of a school drive turned over responsibility of where the donations went to another individual (not knowing the name of the town where the donations ended up), relying on someone from the area, "[We] left it up to her, figuring she knew the area and that stuff, so we got out of that part completely… and we said, 'Just give it to whoever you want to give it to, we don't care at this point.'" Characterizing their feelings towards the donations as not caring where they go, and also not knowing the name of the town where they were sent signals a complete disconnection between the donors and the survivors.

One, somewhat harsh, way to characterize the lack of connection between donors and survivors is unceremoniously offloading donations without accounting for the needs of the community. A small mobile home community in rural Oklahoma was

destroyed by the tornadoes, and it became a drop off point when donations started to arrive. Those individuals delivering the donations just left what they had, without asking what the community might need or did not need. Consequently, the community was overloaded with diapers and hygiene items, but lacking other supplies.

A volunteer for an emergent donation distribution center, focused on the need of the American Indian community, was frustrated with how donors would not listen to the needs of the community.

> … They said, 'What would be best, cash or gift cards?' I said, 'Cash.'
> Well, when I met him, he gave me gift cards… [People] don't listen.
> Even when you tell them, 'Here's our need,' they don't listen [and] they
> do what they want to do anyway.

Donor Feelings

Donor feelings can pose a problem when donation drive coordinators fail to turn away inappropriate donations out of concern they will o alienate donors or hurt their feelings. Challenges can ensue if those donations are not stopped before they enter the affected area. Both drive coordinators and distribution center volunteers expressed their hesitancy in refusing donations. One emergent drive coordinator in Oklahoma even characterized turning donations and donors away as "ugly." She felt sympathy for those who had traveled from far distances to bring donations to the survivors of the tornadoes and felt that it was unkind and not Christian to turn them away when they were only trying to do good.

A senior center in Delaware collected donations following Hurricane Sandy, and they did not turn any donations away. "If someone had brought it in to donate you certainly don't want to turn around and say, 'No, we can't use it.' So we brought it all with us." The interviewee from that senior center characterized the drive as an event

that made members of that community feel good about their effort and coming together to help others. She stated that, "even if we brought the stuff down there and they couldn't use one iota of it, I still felt it was good that we got together as a community, as a center, and did this." The feelings of the donors and the community were characterized as a positive outcome regardless of the needs of the survivors or the challenges that low or non-priority donations might bring.

An emergent drive coordinator from the Mid-Atlantic, who collected donations to help survivors of Hurricane Sandy, took all donations that were brought in but he would not take them into the affected areas.

> It all worked, except for the little bit of clothes and stuff that we had to get rid of and food that was expired…. Some people just want to help and they don't have much, and I don't blame anybody for what they donated. It's just I wouldn't feel right taking some of the things that people donated up there.

This solution would alleviate the strain on the affected community; he accounted for donor feelings by not alienating them, but also discarded inappropriate goods before they entered the affected area.

Discussion

Alignment in the disaster relief supply chain is constructed as important, but donors and donation drive coordinators constructed this concept differently than those who were present in the disaster area. Individuals involved with disaster donation distribution centers had differing views on the alignment of donor needs with survivor needs, or rather the lack of alignment. Overall, the data suggests that while donors and donation drive coordinators are intent on helping, their immediate concerns trend towards their own needs over the survivors.

Previous research into giving behaviors has focused on prosocial behaviors and how they are motivated by altruistic and egoistic benefits, as well as the differences between the two. Prosocial giving is "voluntary, intentional behavior that results in benefits for another person" (Lay and Hoppmann, 2015). Prosocial behaviors can be altruistic if they are conducted with the sole intention of benefiting another person, and there is no expectation that one will experience benefits themselves (Lay and Hoppmann, 2015). Therefore, not all prosocial behavior is carried out with the sole intention of helping others, in some cases there are motivations that benefit the individual helping as well, which denotes egoistic benefits to the donor.

In this chapter, it is evident that the behaviors of many donors and donation drive coordinators fall under prosocial behavior, but they are also not entirely selfless. Donors expressed gratitude to donation drive coordinators for organizing donation drives. This gratitude, however, was not only for the potential impact the drive would have for disaster survivors. Donors also thanked donation drive coordinators for giving them the ability to clean out their closets and homes of unwanted goods (that they then donated). Specifically, they appreciated the opportunity to purge unwanted items and do something good with them. It was thereby apparent that they are not only trying to help others but benefitted by clearing out unwanted items. While they were prosocial in their behavior, their motivations suggest egoistic, as opposed to altruistic, motivations. Egoistic motivations can include purging items that are no longer wanted and wanting to feel good about oneself by donating to those in need (Feigin, Owens, and Goodyear-Smith, 2014).

Egoistic motivations are not only apparent in motivations to purge one's items, but also among donors who focus on the positive impacts that collecting donations have

on their community. Interviewees expressed the positive impacts that collecting donations had on their community interactions. They were proud of their community for coming together and supporting others. While I am not suggesting that their motives were purely egoistic (their initial motivations were to help others in need), this desire to connect as a community was a simultaneous motivation while collecting donations.

In fact, sometimes these egoistic motivations arguably overtook the prosocial focus of the donations. In several cases, donations were sent in when the interviewees understood that they were no longer needed. Interviewees stated that they sent the items in with the understanding that contending with them was now the responsibility of those in the affected areas.

Additionally, donors expressed a desire to build a connection to the survivors. They constructed their goods donations as going from their hand to that of the survivors, and the importance of that connection and knowing where those items are going. This corresponds with the conditional generosity that Korf (2006) illustrated, or in other words the desire for private donors to see a tangible change in the community based on their donations. These donations are made with the understanding that donors get something in return – satisfaction – which again demonstrates a partial egoistic motive.

Overall, there appears to be a mix between altruistic and egoistic reasoning behind their donations to disaster relief. Egoistic motivations become dominant when accounting for their need to purge their unwanted items, a need for a connection to the survivor, as well as their interest in controlling their donations. As discussed in Chapter 5 on agility in the disaster relief supply chain, there is a fundamental difference within organizations regarding which donations are more useful: monetary or goods donations.

In this chapter on alignment, the data shows that donors construct goods donations as better, perhaps as a way to serve their interests (purging, connection to the survivors, and control over the donations).

Following the 9/11 terrorist attacks, research showed that donors were most commonly donating money, blood, and praying following the event (Piferi, Jobe, and Jones, 2006). Two of the motivations behind these donations were characterized as relieving the distress of the donor themselves, and relieving the distress of others. Motivations were mixed, and as such there was not necessarily a pure egoistic or a pure altruistic motivation. In the same study, they also highlighted how donations slowed down as time passed, with a decrease in donations 1 year after the event (Piferi et al., 2006).

The data for this research showed that while donation drive coordinators were committed to collecting donations, as time continued other concerns became more dominant, such as utilizing the space used for storage of the donations for other needs. In addition, while coordinators may have expressed interest is continuing to collect donations as the needs evolved, in many cases those future drives did not happen as the attention of their communities shifted to other, more current, events. Downs (1972) described this phenomenon as the issue-attention cycle. Immediately after an event people are interested in the story and are more likely to help and donate, however as time continues their interest wanes and other events are likely to occur and they shift entirely.

The immediate interest of donors and their desire to help can contribute to the excess of certain items and of inappropriate donations. The egoistic motivations of

donors, such as purging, making a connection to survivors, and controlling their donations further contribute to an excess of goods donations.

Additionally, there is a gap in the literature when accounting for how materialism might directly affect charitable donations. While previous literature has focused on if materialism and charitable behavior can exist in the same person (Manthur 2013), I found no research linking materialistic behaviors to charitable donations as a method of purging oneself of unwanted items. The data presented in this chapter suggests that there is a connection between materialism and charitable donations, when accounting for the fact that donors were purging their unwanted goods that may have been purchased with materialistic motivations. While it is beyond the scope of this dissertation to make a definite connection between materialism, consumerism, and charitable donations of goods, it is an important avenue for future research.

When donor needs and interests become dominant, then does their behavior remain prosocial? If so, their actions of donating excessive or inappropriate goods can actually cause further challenges in disaster-affected communities. Therefore, we must assess effective methods through which to communicate the negative affects that these donations are actually having. If motivations are prosocial, then donors and donation drive coordinators would not want to have negative affects on already devastated communities.

Disaster tourism is an area where the alignment of donor interests and survivor interests should be further researched. It is not uncommon to see individuals converge into disaster affected areas as tourists or as "the curious" and are included in Fritz and Mathewson's (1957) types of convergence under personnel. Fritz and Mathewson's categories are not mutually exclusive, however, and the curious can simultaneously

occupy other categories with the motivations more closely aligned with returnees, anxious, helpers, and exploiters. Disaster tourists play an important role in donations. (Kelman and Dodds, 2009). Kelman and Dodds (2009) advise that any donations made to the survivors are "considered within local context" (pg. 284).

A limitation of the data presented in this chapter is that it does not address the alignment of corporate donor interests with survivor interests. "Product philanthropy" is a practice among corporate companies, where they receive twice the normal tax deduction for donations if they donate goods instead of throwing them out (Stecklow, 2005). Therefore, these companies are able to save money by donating items, particularly if the goods are part of excessive of inventory, close to expiration, comprised of irregular sizes of clothing, or related reasons. The example of Hewlett-Packard Company illustrates how companies take advantage of this tax provision. In 2004, they donated $45 million of their products, and $16 million in monetary donations (Stecklow, 2005). The research presented in this dissertation focuses specifically on the type of emergent donation drives that attract the participation of community based groups and individual households. Future research should address this additional facet of alignment in the donation relief supply chain.

Motivations for donations are largely recorded as a mixture of egoistic and altruistic motivations. This coincides with the data presented in this chapter. Donors and donation drive coordinators construct their work and donations as useful and necessary for survivors, they are generally trying to help. However, in their donations they are also experiences self serving motivations, such as purging, feeling good about connecting with the survivors, and having some perceived control over their donations.

Conclusion

The alignment of donor interests and survivor interests is an important piece of understanding not only larger set of issues around disaster donations, but also how to construct a successful disaster donations supply chain. The findings demonstrate that donor interests are a driving force for how and what individuals donate to disasters.

Overall, while alignment was viewed as an important component to disaster relief supply chains, it was not seen as necessary. Donor interests were typically constructed as primary, while survivor interests were constructed as secondary among the donors, drive coordinator, and distribution center volunteers.

Donation drive coordinators seemed to privilege donor interests over survivor interests by accepting items that were no longer needed, and privilege their own interests by purging their donations inventory and sending it into communities with a clear idea of where those donations would end up. This is particularly striking given that donors viewed control over their donations as a necessary component of their contribution. Cash was viewed as out of the control of the donor, while goods are within their control. Donors viewed goods donations as something that will be put directly in the hands of the survivors, however, if drive coordinators begin to experience fatigue and are up against a deadline, then the donations may not end up where the donors intended. Donors value their control over the donations at a higher level than the survivor interests, and therefore, from this perspective, the supply chain is not aligned.

Those who were engaged in the distribution of donations or were volunteering in the area expressed frustration and wanted more forethought among donors about what survivors need and what their immediate interests were. As such, they view alignment as a necessary component to a successful supply chain, although considerable effort is still required if this goal is to be achieved.

<u>Future Research</u>

Previous research has presented evidence that donor behavior varies based on the type of disaster event (natural disaster versus technological disaster) (see Zagefka et al., 2011). Given that this study focused on two natural disaster events, it would be prudent to further the research in the future by examining if the alignment between donor interests and survivor interests might change in following technological disasters.

This area of alignment between donors and survivors is very important in our journey to understanding how the disaster donation supply chain functions and what we can do to alleviate the challenges cause by materiel convergence. Subsequent work would benefit from gathering information more information on survivor interests.

Chapter 7

SOCIAL CONSTRUCTION OF ADAPTABILITY IN DISASTER RELIEF SUPPLIES

Introduction

In the aftermath of a disaster event, we often see people generously donating goods and cash to the survivors and communities affected by the event. While this is commendable, the influx of goods into a disaster-affected area, which might have been devastated by the event, can cause further problems for the survivors. As research has shown (Holguin-Veras et al. 2014a; Washtendorf, Penta, and Nelan, 2015) drawing specific examples from previous disaster events, these challenges can pose significant hardship on communities (Fessler, 2013; Islam, Dolan, Heggestuen, Nordenson, and Vate, 2013).

Research into commercial supply chains has yielded the Triple-A model, which focuses on the agility, adaptability, and alignment of a supply chain as determinants of success. In this paper, we will examine the concept of adaptability to determine the extent to which stakeholders view it as necessary to the success of a disaster relief supply chain.

The approach that we take studies how individuals who are involved in the supply chain construct adaptability as a component of the relief supply chain. These individuals are donors, donation drive coordinators, transporters of donations, and those working in donation distribution centers in the affected communities. Interviews were conducted in New York, New Jersey, and Delaware following the 2012 Hurricane

Sandy event, as well as in Oklahoma following the 2013 tornadoes around Oklahoma City. The following literature will highlight previous research into disaster donations as well as research done into the adaptability of supply chains.

Convergence

Following disaster events, both technological and natural disasters, there is a documented convergence of materiel, personnel, and information (Fritz and Mathewson, 1957). Over half a century ago, Fritz and Mathewson identified these three types of convergence that create logistical challenges for the affected community. This chapter focuses on materiel convergence, the convergence of goods and donations that enter a disaster area after an event.

Donations of goods are a response to an immediate need for critical supplies in a disaster-affected area, but the exact needs are not always immediately known (Apte, 2010). Without understanding exactly what the needs of the survivors are, donors risk sending unauthorized, unsolicited, and inappropriate goods into a potentially devastated area. Given the challenges that the disaster has already caused in that area, this influx of goods may cause further problems for the community (Fritz and Mathewson, 1957).

Fritz and Mathewson identified 6 challenges that can occur as a result of materiel convergence:

> … these supplies: (1) normally arrive in volumes far in excess of the actual needs; (2) in large proportion, are comprised of unneeded and unusable materials; (3) require the service of large numbers of personnel and facilities which could be used for more essential tasks and functions; (4) often cause conflict relations among relief agencies or among various segments of the population; (5) materially add to the problem of congestion in or near the disaster area; and (6) in some cases, may be disruptive to the local economy (Fritz and Mathewson, 1957, pp. 22-23).

These challenges were not confined to disasters in the late 1950s, they continue to impact post-disaster communities today (see Holguin-Veras et al., 2014a). As identified by Fritz and Mathewson (1957), an issue that occurs is the convergence of unneeded or unusable materials. These donations can cause conflicts between organizations working towards alleviating the suffering of the survivors. Unneeded or unusable donations can arrive in excessive amounts and prove inappropriate to the relief effort. The Pan American Health Organization categorizes inappropriate donations as low-priority items. These are items that do not have an immediate use and must be stored somewhere before they can be distributed (Destro and Holguin-Veras, 2011).

Challenges associated with materiel convergence continue despite decades of contending with the influx, necessitating a new approach to understanding of the materiel convergence phenomenon. This chapter approaches the problem by examining individual perspectives on the supply chain and how views on adapting to changes during the relief effort.

Adaptability

Adaptability is one of the main tenets of the Triple-A model for commercial supply chains; the others are agility and alignment. The objectives for the adaptability of a supply chain are to "adjust supply chain's design to meet structural shifts in markets" and to "modify supply network to strategies, products, and technologies." (Lee, 2004) In addition to a supply chain's need for flexibility when there are changes in supply and demand, a supply chain must demonstrate an ability to adjust when there is are "near-permanent changes in markets" (Lee, 2004). These changes in markets are usually attributed to "economic progress, political and social change, demographic trends, and technological advances" (Lee, 2004). In anticipation of or in reaction to

these structural shifts, supply chains may need to relocate their facilities, change their suppliers, and potentially outsource the manufacturing of goods (Lee, 2004).

Lee (2004) outlines two requirements for a successfully adaptable supply chain: "the ability to spot trends and the capability to change supply networks." The supply chains must be dynamic in nature (Lee, 2004). In humanitarian relief, adaptability is better described as the alliances and joint forces that are present among organizations (Van Wassenhove, 2006). These alliances allow for coordination between humanitarian organizations and the industry that can provide goods and cash (Van Wassenhove, 2006).

In humanitarian relief efforts, a lack of communication and coordination between organizations can lead to organizations duplicating the efforts of others, a waste of resources, and a decrease in the speed of relief efforts (Thevenaz and Resodihardjo, 2010).

Methods

There is evidence in previous research suggests the need for adaptability in commercial supply chains. This chapter examines whether those who collect, transport, and distribute donations to the survivors of the event view adaptability as a necessary component of disaster relief supply chains.

The data used in this research was collected following Hurricane Sandy and the May 2013 tornadoes in Oklahoma, and includes both interviews and observations. The analysis of this data seeks to answer the following research question, in an effort to further the knowledge of disaster donation supply chains:

RQ: Do individuals involved in disaster donation operations view adaptability as necessary to the effectiveness of the supply chain? If so, how?

Adaptability was addressed in the interview data by focusing on the themes of predictability, partnerships between organizations, and changing tactics. To account for changes in the structure of the supply chain, I focused on how stakeholders who work with disaster donations construct their understanding of predictability and what challenges this causes in the supply chain. This analysis included the lack of predictability in donors, in donations, and in the needs of the survivors. Partnerships between organizations served as an important component in how the supply chain was constructed as adaptable to changes, given the communication between organizations before donations were brought into the area. Lastly, adaptability of the supply chain was examined through how organizations change their tactics in response to changes in the structure of the supply chain.

A detailed description of the methods for this study is highlighted in Chapter 4.

Findings

The data analysis revealed three themes that highlighted how interviewees constructed adaptability in the humanitarian supply chain. These themes are: (1) lack of predictability, (2) partnerships between organizations, (3) changing tactics. Below we will explore each of these themes and how interviewees related to them.

Predictability

Disasters are not always predictable. Even when anticipated, we do not know exactly what outcome they will bring. Adaptability in the supply chain would help to adjust the flow of goods in an uncertain and complex situation. Within this tenet, those involved must manage the supply chain effectively and work strategically its responses to changes in the structure of the supply chain (Cozzoloino, 2012). Events that are

unforeseen, , particularly sudden-onset events, provide even less predictability in what methods will prove most effective in the response and recovery effort. Unpredictability is further present in how the process is affected by "the political environment and post-disaster funding levels" (Balcik B. , Beamon, Krejci, Muramatsu, and Ramirez, 2010, p. 24).

As donors provide the supply of the donations, and the quality and quantity is unknown until it arrives, the circumstances ripe for inappropriate and excessive donations to enter into the affected area. An imbalance develops between supply and demand, one that remains difficult to resolves as unpredictability persists.

The lack of predictability in humanitarian supply chains is sometimes characterized as the "fast changing nature of aid components (product/service demand)." (Caroll and Neu, 2009, p. 1025) The focus here is on changes in what the survivor needs. This is in contrast to how businesses would describe unpredictability in product/service demand, which deals instead with how customer demand – what, precisely, the consumer wants – can quickly change (Caroll and Neu, 2009). The humanitarian supply chain's purpose is not to generate profit, but rather to alleviate the suffering of survivors. To achieve such a goal, the humanitarian supply chain relies on the emotions of donors (Caroll and Neu, 2009), which are also difficult to predict.

The interviewees in this study generally perceived a lack of predictability in what donations will be, where they will come from, and what the quantity and quality of those donations will be. Respondents characterized this lack of predictability as a major issue with the logistics of the humanitarian supply chain, and due to this lack of predictability, individuals found adaptation necessary.

Following Hurricane Sandy, one religious community center not only opened their doors to incoming donations, but also to survivors who needed shelter following the storm. The lack of predictability in both the donations and the number of survivors who would shelter at this location compounded their logistical challenges. In one instance, the center was told they could expect 30 people who needed to be sheltered and would need donations. Circumstances quickly changed. As this interviewee described, "… I look outside and there's nine buses pulling up. I didn't know they were coming…. We went from 30 [people] to 260 in about 5 hours." The coordinator was quick to state that after some time passes the system comes together. Said another way, it finds equilibrium. The coordinator elaborated, indicating that while not perfect, the system does function.

At the same community center, the unpredictability of donations proved to be an exacerbating issue. Donors sometimes arrived with their donations without calling ahead for information about what was needed. Even if the donors called in with details about what would was arriving, the center had no guarantee that what was revealed was coming was in fact what would arrive.

> I had one person… claiming to be from Duke University. They were
> bringing [a] tractor-trailer load of Duke paraphernalia up…. It was
> coming to wintertime; we needed sweatshirts, sweatpants. It ended up
> being a trunk of a car.

Unneeded items continued to arrive. The coordinator stated that he wondered if they were just being used as a depository for older items that people were trying to get rid of, like older televisions.

The exact needs of the survivors can prove difficult to gauge, and miscommunication between organizations and donors can magnify challenges that occur. For example, one group offered to donate and prepare food for survivors and

volunteers following the Oklahoma tornadoes. They were open in their communication with a local church and asked how much food to prepare so that they could avoid wasting food. They were told to bring 200 sandwiches, and responded by bringing 200 pork sandwiches, 200 hot dogs, and 200 pork barbeque sandwiches, totaling 600 sandwiches. According to those interviewed this instance of an organization over-preparing sandwiches resulted in significant food waste.

When collecting donations, the lack of predictability can cause frustration regarding the imbalance between incoming donations versus needed donations. Following Hurricane Sandy, a school in Delaware engaged in an emergent donation drive and found that they had difficulty fulfilling survivor need. As this interviewee stated: "The downside of the supply effort is you don't get what you need, or you get so much of something you can't use it all. And then what are you going to do with it?" A lack of storage compounded the challenges of this particular drive. Another emergent drive coordinator, associated with an education technology organization, suggested their effort would have benefited from someone in control of the supply and demand, but admitted that there was a gap in how people understood supply and demand in disaster situations.

While quantity and quality of donations are unpredictable, according to interviewees, the sources of donations are also unpredictable. An emergent church drive after Hurricane Sandy recorded donors from across the country.

> Things were sent from Alaska, out west. I would almost say over half the
> states in the country sent some form of clothing, food. I had a company
> out of, maybe it was… North Carolina. They sent a tractor-trailer load of
> stuff, and it was brand new.… All over the country responded.

The lack of predictability was not only characterized as a challenge with incoming donations, but also in the dynamic nature of the needs and how to adapt their

messaging quickly. A television station in Oklahoma City had a strategy for messaging that seemed particularly successful. This station coordinated a donations drive and recognized the need to put out information quickly when certain needs were met. At these time periods, they immediately send out messaging over the television and radio that the station was no longer collecting certain items. According to the interviewee, this strategy worked. When they put out messaging that they were no longer collecting bottled water, those donations stopped.

Of course, messaging is not always successful in stopping donations before they enter the supply chain. Some interviewees, indeed, stated that social media and other types of media are not always successful in stopping donations. The difference in the example provided above was that the organization collecting the donations (the station) had instant access to radio and television, as well as to the audience that had initially heard their call for items. This instantaneous and regular connection with those who would be providing goods created a more effective way to communicate what is and what is no longer needed for donations.

Partnerships between Organizations

Coordination or partnership between organizations is important following a disaster event, especially for finding a way to "efficiently coordinate inter-organizational performance, eliminate redundancy, and maximize efficiency along the entire emergency supply chain" (Cozzoloino, 2012, p. 6). Without coordination among organizations involved in the relief effort there is an increase to inventory costs, delivery times are lengthened, and costumer service suffers (Simatupang, Wright, and Srifharan, 2002). Logistics in relief supply chains is a significant component of the

operations (Van Wassenhove, 2006); therefore, coordination is an important component in the success of disaster relief supply chains.

Several different types of organizations can converge on an area following a disaster, and this can cause coordination challenges between those organizations. These organizations may have the same mission, to help the survivors and ease their suffering. At the same time, their methods and missions to achieve this end may differ, as well as their policies informed by location and culture (Van Wassenhove, 2006). Post-disaster settings have a large number of individuals and organizations trying to help survivors, in many cases with insufficient resources to do so. These realities make it difficult for organizations to coordinate with each other, and in some cases the organizations fail to even try (Fenton, 2003).

A lack of coordination between organizations can be traced to donors as a source of competition and lack of partnership. Charitable organizations reach out to donors and persuade them to give to them for their mission, and donors tend to distribute money to their favored groups. This competition and donations going to one group more than others does not promote a collaborative environment for organizations (Fenton, 2003). This competition can foster distrust, as organizations may not share information. The motivation behind this strategy is to retain a competitive advantage over other in attaining media and donor attention (Stephenson, 2005; Kovacs and Spens, 2009). In addition, donors may attach restrictions to their donations, which could further inhibit coordination between organizations (Stephenson and Schnitzer, 2006).

It is important for relief organizations to coordinate messages and work together towards an effective relief effort (Apte, 2010). Relief organizations may find difficulties adapting to one another, and partnering in their efforts due to differing levels of

experience and differences in their missions. Non-profit organizations, for-profit businesses, and government agencies would have challenges given their different approaches and the outcomes that they desire (Apte, 2010).

The 2004 Indian Ocean tsunami provides an excellent illustration of the sheer number of organizations that can converge on a disaster-affected. In the aftermath, approximately 700 non-governmental organizations (NGOs) in addition to 40 countries responded the event (Chia, 2007). Coordinating this number of organizations can present a significant challenge, with tension potentially rising as a result of differences between civilian and military organizations (Chia, 2007).

Communication between organizations is critical following disaster events. In the aftermath of Hurricane Katrina, organizations did not always communicate with other groups or with governmental entities in the area. This lack of communication limited the ability to confirm whether or not donations in transport actually reached the area. Those individuals transporting goods were not always informed of the necessity of obtaining or details regarding curfews. Both obstacles delayed the delivery of donations to the area (Wachtendorf, Brown, and Holguin-Veras, 2013).

In the study, organizations worked together both following Hurricane Sandy and the Oklahoma tornadoes in a number of ways. They collaborated at the front end of the disaster donation supply chain, working on what donations were needed, as well as towards the back end when excessive donations were sent to charitable organizations outside of the disaster effort. One interviewee expressed that "disaster recoveries [are] really a joint effort…. It goes grassroots from the person who lives down the street to the Red Cross." Adaptation through these partnerships or using these partnerships in an effort to adapt was evident in the data.

New Jersey State facilitated partnerships between organizations and corporations as a way to eliminate excess and inappropriate donations in their collections. They used this strategy in an effort to avoid storing donations that weren't needed, as well as partnering with businesses and getting discounts as a result.

> …[W]hy have a place where you store it. You don't need it? Let's order it and get a discount because you're associated with a long-term recovery group and that's what a lot of our groups have done. They've partnered with Lowes or Home Depot, and they get like a 40% discount when they're doing the rebuilding effort…. They've partnered with Lowes or Home Depot, just go directly there… Home Depot will drop it off and they'll start.

These partnerships between organizations and corporations were constructed as necessary in order to adapt to the changing needs of the survivors. An interviewee from the American Red Cross highlighted how they use organizations as needs change:

> Some of those donors have materials that we need, so sometimes we will go to them with a specific request… Whenever something significant happens we can reach out to Kimberly Clark [a mostly paper-based personal care product corporation] and they have a whole list of items that we can ask for and they will give us. It's everything [from] paper towels to toilet paper, diapers (children and adult). They palletize them and drop-ship them to us, on a truck semi, and in they come.

The relationships between the American Red Cross and organizations or corporations is not always established before the event, but can be built after the event as new needs emerge.

Partnerships were illustrated as necessary to adapt and further organize the relief effort. Following Hurricane Sandy, AmeriCorps volunteers were utilized and tasked with trying to head off incoming donations by manning phones at a call center where potential donors were calling in for information. In an effort to redirect inappropriate donations, the volunteers instructed callers to take their donations to Goodwill, the

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Salvation Army, or a local food bank instead of exacerbating the problem of excessive or inappropriate donations that they were already encountering.

Interviewees mentioned using relationships with other organizations as an avenue of adaptation to excessive donations. Groups mentioned that once they recognized that the donations they collected were in excess of what they could send into the area, they turned to local charities and organizations that might need those goods. Following Hurricane Sandy, one organization turned to local groups to offload their donations, "Well, we have relationships with other organizations that are ongoing; you know, you just make a couple [of] phone calls to, like to Trenton Rescue Mission, Atlantic City Rescue Mission, some of the shelters needed stuff." They also identified domestic violence shelters as locations that could use supplies. "There's a full range of social issues out there, the needs that different organizations that we try to supply."

While there was mention of sending donations to other local groups that addressed other social issues not related to the disaster, many organizations did not adapt in this way, instead just sending donations into the area. They did not change their tactics, instead continuing with their initial mission to get donations into the affected area.

One interviewee from a senior center who coordinated a drive for survivors of Hurricane Sandy stated that she would partner with someone in the area to understand what was needed.

> I wouldn't just bring anything down, I would definitely check with them
> as to what they needed. That's why the minister from the church told me
> that, you know, just be careful what you bring down, because there
> might be things that they really don't need.

Changing Tactics

The task of stopping donations once a need has been met is not an easy achievement. For example, following the 2011 tsunami in northern Japan, there was an immediate need for cold weather items (including blankets and winter clothing), and a message was sent out to donors to obtain these items. The need was quickly met, however even after they had enough items the cold weather gear continued to flow into the area, even once the weather had warmed (Wachtendorf, Penta, and Nelan, 2015).

The inability to say no to donors is not uncommon among charitable organizations, they may accept non-priority or low-priority items to please their donors and retain them for future relief efforts (Apte, 2010). Following the Indian Ocean Tsunami in 2004 Medecins Sans Frontieres (known in English as Doctors Without Borders) made a decision to stop taking donations directed towards their aid efforts. They concluded that the funds that were already donated to their organization exceeded their needs. In fact, at the time they made that decision, they were already seeking permission from donors to distribute 60% of the donations to other emergencies (Flint and Goyder, 2006). This move generated criticism that the organization was taking money away from the Indonesians, money that "belonged" to them (Flint and Goyder, 2006). When donors start to refuse donations, donors may not understand how they can possibly have "too much" or how they could refuse donations (Older, 2015).

When groups do not change their tactics and stop inappropriate or excessive donations before they enter the affected area then they are not adapting to the changes in the supply chain. In these instances, the supply and demand has become unbalanced, but they do not adapt to reintroduce balance. In the previous section, utilizing local charitable organizations that focus on social issues outside of the disaster was a method of adaptation following a disaster event. However, that was not the general illustration

of how organizations handled the donations. The following quotes from our interviewees illustrate what the situation was following these events:

> When I was in Moore yesterday, I saw signs that said, ' we're not taking any more contributions.' They're just overdone. They were just inundated, everyone was. That's a positive thing… but it's hard to shut off those spontaneous gifts. Really hard.

> Very few clothing items that we received were in good condition. Sort of like the clothes that I got when I was a little kid, all the hand me down stuff that was never in good condition since I was the runt.

We met one individual from a church in Tennessee who had traveled to the area to offer help. This person offered disturbing insight into how some were adapting to being turned away from donations centers that could not take in more donations. He had witnessed people traveling to the area leaving their collected donations on the side of the roads and highways near the affected communities. While these donors who were leaving their donations on the side of the roads were adapting to a situation where they could not offload their donations, they were doing it in a way that had a negative impact on the survivor community. Now these items would have to be picked up and, if there had been any weather that had impacted these donations, probably thrown away.

One way in which many organizations and individuals adapted to the influx of good was changing their approach to inappropriate or unwanted donations. For some, this was learning how to say no to donors. For one United Way employee, this was an important lesson.

> The is what I have learned is the best, most precious gift in the world, you need to say 'no' to some donations…. You need to rule with an iron fist a little bit…. It needs to be a very organized event. You need to actually sit and go through the donation with them because a lot of times you would see those brand new clothes on top of all the old clothes.

Saying no to donors was a difficult reality to come to terms with for some individuals, with some refusing to adapt by issuing refusals. Another interview described who, after Hurricane Sandy, they tried to be as respectful as possible to donors when they turned them away:

> Sometimes we had to respectfully thank them for their efforts, but at this time this is not our need and we had to tell them to donate it to the local [organizations].… We usually gave out numbers or contacts for people that had collected clothes [and] where to bring it so it didn't go to waste. [So they would] not just leave it on a street course.

Some organizations did not adapt to the changing needs by saying no. Rather, they collected whatever was donated and took it upon themselves to sort through the items. These organizations would not send in inappropriate or unwanted items. A fire department in Delaware collected donations following Hurricane Sandy and would not send in items that they found to be "dirty, and old, and ratty." Their community was less fortunate and they collected whatever people donated to help the survivors. They thanked them for their donations, but would not send it into the affected area. Another group refused to send in clothing that smelled like cigarettes or flip-flops (given the season that Hurricane Sandy made landfall). A group out of Georgia, who drove to Oklahoma after the tornadoes. had collected clothing, but sorted out and left behind anything that they would not wear themselves and threw those other donations in the trash.

While some groups would adapt to excessive or inappropriate donations by saying no, or sorting through the donations before they entered the affected area, some groups would not say no and were convinced that all the donations would be needed. One coordinator of an emergent distribution center in Oklahoma stated that turning away potential donors was "ugly," especially given the distance that some of these

donors had traveled. This sentiment was shared by other organizations, particularly

given the distance traveled by the donors to the affected area. A volunteer who had

worked with Occupy Sandy in New York traveled to Oklahoma to help in a local

community center, and they were not saying no yet.

> We haven't [turned people away], because how do you tell a truck that
> came in from Georgia, 'Like, no.' You don't, and there [are] no other
> areas, there's no other place in the area that they're taking things, so no,
> we haven't done that yet.

For one interviewee, it was not the quantity or quality of the donations that

mattered, but that people wanted to help, and unless there was somewhere to direct

them then they would take whatever donations they had.

> They're willing to help people; that's what it's all about. You can't be
> selective. If someone comes in and is from wherever, the problem is
> we'd love to turn it away, but where would we tell them to take it?
> Another place just closed down today.

These groups that did not change their tactics when there were excessive or

inappropriate donations did not see adaptability as important in the supply chain. Their

focus was on the donor's feelings and on the best way to respond to generosity. This

could be due to an underlying value that these individuals and groups place on

generosity over need.

The generosity of the donor is given a higher value than the challenges that these

unneeded donations will cause once they are accepted. By turning the donations away

and being "ugly" to donors that have traveled a great distance, then they are not fulfill

what they construct as their role in the process, being thankful to individual generosity.

These individuals and groups do not adapt their strategies for the collection of donations

because it would violate that core value. Therefore, fore these individuals, adaptability

in this sense is not an important component of the donation supply chain.

Discussion

Adaptability was constructed as necessary in a successful supply chain by some, but it was not universally seen as necessary. Partnerships between organizations were seen as important among organizations. Partnerships were primarily utilized as a method of communicating needs more effectively, redirecting donations away from the disaster affected community, and bringing in donations from corporations that were new, sorted, and inventoried. Yet previous research highlights additional reasons for partnerships between organizations. Coordination and sharing of information between organizations can increase productivity and effectively in the relief effort (Altay and Pal, 2014; Lee et al., 1997). In addition, through communication and coordination, the interests of key members in the supply chain become aligned (Simatupang, Wright, and Sridharan, 2002), thereby fulfilling another component of the Triple-A model.

Companies have incentives to work with humanitarian organizations because they recognize the losses that they can incur when "disasters interrupt the flow of business" (Thomas and Fritz, 2006 p. 116). Organizations, both corporate and non-profit, must coordinate their efforts following disaster events. If they do not, the relief effort can prove inefficient and ineffective. There are many different systems used to compile information and reach donors, thereby preventing a more effective event-wide data compilation that can help each organization understand the overall impact of the disaster and the relief effort. This challenge is significant because individuals move on after disaster events, resulting in an approximate 80% turn-over of individuals working within the disaster relief field (Thomas and Fritz, 2006). Partnerships can also lead to a sharing of knowledge, experience, and technological resources. Specifically, by partnering with corporate companies, humanitarian organizations can tap into their

understanding of supply chain management, and innovative technology (Thomas and Fritz, 2006).

This chapter presents data that shows organizations redirecting donations to local charities that are not involved in the disaster relief effort when the need has been met. This is an important component of partnerships between organizations, given that disaster events can disrupt or take away charitable donations from established organizations that are working on missions outside of the event. Following the 9/11 terrorist attacks, charitable organizations around the country struggled as donations and efforts were focused on the event in New York City. In particular, the event was difficult because organizations could not appear unsympathetic when they solicited donations to keep their organizations and services running (Orecklin, 2001).

Following the May 2013 Oklahoma tornadoes, some volunteers and coordinators in donations distribution centers were focused on identifying individuals collecting donations who might not have been directly affected by the disaster. Several individuals at various distribution centers reported that Walmart had directed them to black out UPC codes on diapers: they had identified that people were returning them for cash (we were not able to triangulate the accuracy of this claim). However, since organizations that are not involved in the disaster relief mission may cease receiving their own donations, it is possible that individuals who usually rely on these organizations services turn to donations made to disaster survivors. The appropriation of disaster donations (for direct use or returning for cash) by those not directly affected by the disaster could represent exploitive behavior, but it could also represent community members routinely in need of assistance or those indirectly affected by the disasters given the redirection of charitable giving. This is an area ripe for future research.

A further issue that directly contributed to excessive or inappropriate donations in the disaster-affected community was the refusal to say no to donations by donation drive coordinators or distribution centers. These organizations did not change their tactics in accepting donations, even when the need had been met. As stated in Chapter 5, excessive and inappropriate donations converge on disaster areas and can result in a "second disaster." By not adapting and stopping these donations before they enter into the affected area, they then compound and cause further challenges.

Donors and drive coordinators did not necessarily understand that once the need was met they should no longer collect those donations. In fact, in some cases they expressed their desire to continue collecting, even when distribution centers turned them away. It appeared that their definition of success in collecting donations was getting as many donations as possible, regardless of the current need within the affected area. Therefore, by not changing tactics and adapting to the change in need, they were directly contributing to a lack of alignment in the supply chain and corresponded with egoistic motivations among donors and drive coordinators.

Beyond the idea that more donations were better, individuals collecting donations also demonstrated incongruity in how they valued donor generosity over the survivor needs. Some placed donor generosity at a higher value than survivor needs. Generosity is defined as the "giving away of money, time, and other possessions" (Manthur, 2013 p. 151). Within the data presented in this chapter, it is apparent that the generosity of donors is important to donation drives, and it is a donor-trait easily valued. Several individuals expressed amazement at how generous individuals were, how far they traveled, and how much they cared about the survivor community. However, by not refusing their donations (once the need had been met and exceeded in the affected

community) and valuing the donor interests and feelings over that of the survivors needs, these donations directly contribute to the challenges that are caused by excessive and inappropriate donations.

Generosity is an important overall aspect of donations following disaster events, and respondents who participated in this study construct it as important. At the same time, organizations need to find a way to harness this generosity without placing a higher value on that generosity over survivor interests. It is beyond the scope of this work to suggest specific projects that might allow for this, but findings from this study indicate this is an important endeavor that demands a more concentrated effort.

Conclusion

Adaptability describes how organizations can meet with structural changes. In this chapter we identified three themes that emerged from the data, illustrating how individuals involved in the relief supply chain construct their adaptation or lack of adaption to changes. These themes were predictability, partnership between organizations, and changing tactics.

The interviewees highlighted a lack of predictability in the disaster relief chain. They did not know what donations were coming, where they were coming from, or the quality of the goods. They had to adapt their management of the donations based on the lack of predictability.

The fact that they could not predict the goods (neither quality or quantity) before they arrived caused complications, especially when there was a breakdown in communication. The lack of predictability connected to a lack of partnerships and clear communication between organizations.

Just as predictability is connected to partnership and communication between organizations, they are also both connected to changing tactics in the donations process. If organizations say no to donors once a need is filled, and effectively communicate with organizations in the affected area, then the whole supply chain will adapt to the supply and demand more effectively.

When focusing on the challenges that donation can cause and the obstacles that individuals involved in donations faced, adaptability was constructed as a necessary component in a disaster supply chain. Interviewees highlighted partnerships between organizations as important in their functions, with one emergent group learning that they needed to be involved with groups of the ground in order to understand the real and immediate needs of the survivors.

There were some interviewees whose construction of adaptability was at odds with the others. These interviewees would not refuse donations, even if the need had been met. They focused less on the challenges that these excessive or inappropriate donations might cause and more on the importance of generosity. Accepting the generosity of others was constructed as having a higher value than the logistical concerns of the donations.

Overall, interviewees understood that adapting to changes in the supply chain was necessary, if they were focused on the needs of the community and the survivors of the event. If their focus was on the donors needs, then adaptability was not a concern. As a result, the issue appears to be shifting focus from donor needs to the needs of survivors and the affected community. More on aligning donors needs and survivors needs can be seen in Chapter 6.

Future Research

This research was taken from a data set that did not include specific questions about social construction of donations, or questions directed towards the adaptability of relief supply chains. Future research should include fieldwork in both domestic and international disaster settings. Moreover, additional research to explore these assertions should include interviews with individuals involved in all steps of the donation supply chain and their understanding and constructions of how adaptability is incorporated into the supply chain and if it is a necessary component for a successful supply chain.

A focus of future research into the adaptability of humanitarian supply chains must include a better understanding the donors themselves. While this study included donors who coordinated donation drives for the survivors, we were not able to gain access to a broader donor base to gain a better understanding of how they construct disaster donations and why they respond in the ways that they do. An important focus should include whether or not donors or coordinators speak to organizations located in the affected area before they donate, as well as where they get their messaging on what is needed by the survivors. Future studies should also gain additional insight into how donors would respond if they told that the need has been met and that no more donations are being accepted.

Chapter 8

CONCLUSION

This dissertation focuses on the applicability of the Triple-A model in humanitarian supply chains. While previous research into the Triple-A model (for both commercial and humanitarian supply chains) has addressed the management, or top down approach, in implementing the model into supply chains, this research takes a different approach. This research considers the model from the perspective of individuals who are involved in the donations supply chain directly, and how they construct their meanings of the supply chain and the challenges caused by donations.

Although the three aspects of the Triple-A supply chain model are seen as beneficial and necessary in routine supply chains, emergent, ephemeral, and spontaneous relief efforts operate as supply chains as well as formal supply chains during disaster response. This observation presents us with several questions: Do the participants in those emergent supply chains understand the importance of those three characteristics as equally valuable and important? Is that value and important constructed in the same was as routine supply chains? This research shows that in many ways they do, with some qualifiers.

I have divided this dissertation into three substantive chapters, with each addressing one component of the Triple-A model: Agility in Chapter 5, Alignment in Chapter 6, and Adaptability in Chapter 7. While each of these components have unique characteristics in the supply chain, it is important to understand how the social constructions of these components interact with one another, and what affect this

interaction has on the donations supply chain as a whole. This chapter will address how these components relate to each other and the overall conclusions of this research. To begin, I will reintroduce the conclusions from each substantive chapter in this dissertation.

Agility

Among our interviewees, agility was generally understood to be an important component in a successful supply chain. Several conflicting constructions of agility arose in the interview data over what was the best type of donation, monetary or goods donations. These conflicting perspectives dealt with the overall usefulness of goods versus money, but also at what time in the response and recovery process these donations would be best utilized. Among their asserted views were consideration of how to time donations effectively, the challenge of storing donations emerged and the realities of how much any survivor could take at a given time. Agility, overall, was constructed as the flexibility and timing of a donations supply chain, and the resulting attempt to cope in the absence of a structured donation supply chain timeline.

Alignment

Within the donation supply chain, our analysis of alignment focused on the coordination of donor needs with survivor needs. A major theme that emerged in this chapter was control; the donor organizations expressed a need to control their donations and where they go. While they are in effect giving away money or goods, they are directing it towards a specific population and/or need. Donor organizations saw alignment as building a connection with the survivor population through their donations, and many interviewees used this necessity-for-a-connection as the driving

motivation behind soliciting and providing materiel rather than monetary donations. Money was valued less than materiel in how people viewed the usefulness of their donations.

Beyond the initial motivation of what to donate and why – whether it was for control or connection to the survivor population – lack of storage space or time limitations on their donor organization storage space generated a strong motivator for purging the materiel donations entirely. "Cleaning out one's closet" emerged within this theme as well, and donating to survivors of a disaster event provided an opportunity to purge oneself of one's personal items.

Alignment was universally constructed as a necessary component in successful donation supply chains. While overall interviewees viewed donor feelings and donor needs as important to the supply chain's function, those who were involved in distributing donations within the affected area where less likely to put much importance on the donor's feelings. These donation distributors concerns were for the survivors, and they saw the challenges that inappropriate and excessive donations caused once they entered the affected area.

Adaptability

Three themes emerged from the data in relation to the adaptability of the donations supply chain: predictability, partnerships between organizations, and changing tactics. In general, interviewees recognized the importance of adaptability in a successful supply chain, highlighting their own adaptability in the supply chain or the need for adaptability. The lack of predictability was evident and expected due to the immediate nature of the events, and the unknown factors for what the survivors needed and what the donors contributed. A facet of unpredictability in donation supply chains

relies on the emotions of donors in their motivations to give, and this fact also relates to the organizations changing tactics as the response effort evolves. The emotions of donors influenced how organizations react to unneeded donations, and may impact their ability to say no to donors. While the interest in donor emotions does overlap with donor needs in alignment, adaptability deals more with how individuals and organizations in the supply chain adapt to structural changes and how donor emotions may influence their ability to do so. Alignment is focused more on how donor interests align with survivor interests, and therefore who are the organizations giving preference to in accepting donations that are not needed, as well as how organizations place their own needs to clean out their storage spaces over survivors by sending low or non-priority items into the affected area.

Interviewees highlighted the importance of organizations coordinating their efforts following a disaster event. By coordinating with outside organizations with differing missions, donations could be directed away from the affected area to alleviate the stress caused by excessive or inappropriate donations. These partnerships could serve as a way to communicate the needs in a more effective way, stopping unneeded items from coming into the area.

Within these three components of the Triple-A model, an apparent theme that emerges is how individuals construct the cost versus reward of their donations and how they function in the supply chain. There are clearly aspects of the donations process that hold more value for some of our interviewees than for others.

Construction of Value

Overall, throughout our interviews and fieldwork, people were in awe of the generosity of those who made donations towards their community. In the aftermath of a

disaster, a community of survivors can be a jarring sight, but the influx of help from volunteers and donations can make one thankful for the generosity of human beings. This sentiment was apparent in our interviews, and the intent to help in whatever way they could was a common theme. However, at what point are we valuing generosity over the challenges that excessive generosity can cause?

Adaptability and alignment both highlight the emotions, feelings, and needs of donors as part of the overall construction of the donations supply chain. Donors are an important part of how the supply chain functions, they are the source of the donations, and the entire supply chain is reliant on their generosity.

In Chapter 6, which focuses on the alignment of the supply chain, the focus on donors needs is addressed in deciding if they align with survivor needs effectively. However, as we can see from the interviews, at the beginning of the supply chain there is a disproportionate value placed on donor interests over survivor interests. Donors explained that they used this opportunity to clean out their closets or get rid of certain items. The drive coordinators placed a higher value on their storage constraints than those of the affected community, purging the items from their spaces and sending them into an already inundated community. A disturbing aspect also took place when donors and donation drive coordinators admitted that they did not always know where their donations were going, or what population they would serve. These groups again placed a higher value on getting rid of the items than the challenges that the items could cause the survivor community. This illustrated the fact that these many of these donors and groups did not have direct contact with groups within the affected community.

The lack of coordination with other organizations involved in the relief effort was a theme addressed in Chapter 7 on adaptability. Partnerships between organizations

was constructed as an important part of the donations process, not only to connect outside groups with those involved in the affected community, but also groups with different missions who could take donations and alleviate the pressures of inappropriate and excessive donations. The consequence of organizations not working together was evident in one interview, where a volunteer explained how people transporting donations into the area were just leaving them on the side of the roads after they were turned away from distribution centers. By communicating with organizations within the affected community beforehand, these groups decided to leave the donations on the side of the road rather than take them back with them. Additionally, this connects to the earlier point of donors and drive coordinators not knowing to whom the donations eventually go.

Adaptability and alignment further relate to each other when addressing donor interests in relation to survivor interests. Some interviewees were absolutely against refusing donations once they were no longer needed, and the justification provided was because they appeared to value the needs and feelings of the donors over those of the survivors. Their unwillingness to turn away donations can result in a further influx of unneeded donations.

In these instances, the cost versus reward of the donations is complex. Individuals who are on the receiving end of the donations before they reach survivors – primarily distribution centers – encounter challenges associated with storage, sorting, and discarding items that are inappropriate or expired. The influx of excessive and inappropriate items comes with a high cost and not very much reward since the affected community cannot generally use all of the items coming into the area. However, for those donating and collecting donations, collecting more items than are needed comes at

little cost (aside from transportation to the affected area) and the reward is highly valued: retaining donors and acknowledging the generosity of strangers.

Value can also be assigned to donations based on their constructed usefulness. In Chapter 5's focus on agility, we saw conflicting views regarding what was more useful following an event: cash or goods. Large and established non-governmental organizations (NGOs) such as the American Red Cross have held media campaigns in the past to promote the efficiency and effectiveness of donating cash over goods. In their estimation, cash is better in terms of transportation and storage. In addition, their view is that individuals and groups in the affected area can assess needs and better make a selection of what goods to purchase with cash, and it can help the local economy. However, monetary donations are not universally valued as more useful following disaster situations. Several interviewees constructed materiel donations as more valuable to those in the affected areas. They recognized goods as more useful to individuals who needed items immediately instead of traveling to the store with cash or gift cards. For some, goods were more effective than cash immediately after the event, yet for others the value of goods increased as the response effort evolved.

In Chapter 7, focusing on alignment in the supply chain, interviewees highlighted the value of control over their goods donations rather that cash. Cash could be used for salaries and hotel rooms, rather than going directly to the survivors of the event. By donating goods, donors and donation coordinators felt that the survivors would eventually use their donations, whereas with cash it might never reach them. In Chapter 6, a concern raised had to do with how long it would take for the donated money to reach the survivors. According to this view, goods could reach the community much more quickly. Goods were constructed as having a higher value than money in

these instances because donors felt more confidence that their items would be used and directed towards the survivors, as opposed to the money being spent on overhead costs by organizations. Overall, among the interviewees from grassroots or emergent organizations, there were conflicting perspectives on whether cash or goods were more highly valued as donations.

A final theme that emerged from the three substantive chapters was discussion surrounding at what point is enough help enough. As stated in Chapter 7, it was not unusual for donors to leave donations by the side of the road when they could not find a place that would take them. In Chapter 5, interviewees explained that they went ahead and sent in their donations while recognizing that they were no longer needed in the area. The justification they provided was that the survivors would either eventually use the donations or they could get rid of them themselves. Value was placed on the notion that more donations are better, even if the need has already been met. This value links directly to interviewees in Chapter 7 who refused to change tactics and continued to accept donations despite knowing the need was met.

By concentrating on the how donors assign value to their actions and to their donations, we can see the consequences of excessive or inappropriate donations begin to unfold. The Triple-A model has served as an effective model to help structure how individuals understand the supply chain and function within. Agility was constructed as necessary for a donations supply chain, however there were conflicting views on what facilitated agility (specifically cash or goods donations). Those who are involved directly with the survivor community construct alignment of donor needs and survivor needs as necessary; however, it is not utilized effectively at the beginning of the supply chain when donations are collected. Adaptability is constructed as necessary by some

and not by others. This difference in construction is based on what the interviewees understood as important, the emotions, needs, and interests of the donors, or that of the survivors. If the interviewees placed a high value on generosity, then they might put the needs of the donors over those of the survivors.

The constructions of agility, alignment, and adaptability do not fully explain how individuals involved in disaster donations construct their meanings associated with the donations supply chain. But by using the Triple-A model, individual constructions on the value of donations and donors provides valuable insight that should lead to additional research.

This dissertation research has found that the value placed on donors' interests is sometimes higher than that of survivors when donations are being made and collected. In addition, donation drives often place a high value on clearing out their own spaces and transporting the goods into the area without concern for the challenges that these donations might cause in the affected community. Donors also place a high value on having control over their donations, where they go, and whom they help. If they construct materiel donations as giving them control, then they will donate goods.

Therefore, future research must address the Triple-A model with regards to how individuals involved in donations (especially donors) construct their donations. In addition, future research should focus on how donors, donation drive coordinators, donation distribution volunteers and coordinators, and survivors place value on donations and the supply chain. Organizations of different levels should be interviewed to further understand their constructions of the supply chain and value systems for donations.

Policy Implications

Current methods to stifle the influx of donations following disaster are not effective. While established NGOs work to disseminate messaging that cash is a better donation than goods, the message either isn't getting through to those giving or, alternatively, donors believe they know different. By furthering our knowledge base into how donors and those involved in the donation supply chain construct and value donations we can seek to institute better messaging and education in the future.

Given the individuals that we encountered in the field while conducting this research, an effective channel of messaging could be reaching out to religious leaders, education centers, and fire departments in disaster prone areas to try and explain the implications of excessive and inappropriate donations. Currently, messaging from established NGOs is primarily accessed through their webpage or by contacting them directly. By contacting community leaders, the information could be disseminated to a broader community.

Scholarly Contributions

This dissertation seeks to further understand supply chain management and the Triple-A model by advancing knowledge into these areas through a focus on the social construction of the donations supply chain by individuals involved on a base level. This is in contrast to the more-often-used approach that takes a top-down management perspective. By understanding individual perspective we can further the knowledge of donations supply chains and gain better insight into how to more effectively manage donations.

Research into the logistics of humanitarian supply chain management fails to adequately recognize the influence that donors, donation drive coordinators, and

distribution centers have on the whole of the supply chain. As a result, the actions and decisions of these individuals are not accounted for in the overall study of the supply chain. This research accounts for such factors and acknowledges the impact that they can have on the donations process following an event. By addressing these individuals, this dissertation has distinguished the importance of value and the effect that assignment of value can have on the overall donations supply chain.

In recognizing the importance of social construction in disaster donations, it will be important to draw that paradigm further into future convergence research. Social construction is an effective tool to apply to personnel convergence, specifically disaster volunteers. By understanding the decision making process behind helping following a disaster, as well as the overall identity of the disaster volunteer in an affected community, the impacts volunteers have on these communities can be further addressed.

In conclusion, this study has provided insight into how social construction is a necessary avenue of research for disaster donations. We must understand the people involved in the process if we are going to understand how to solve the problems that the research community has identified following disaster for over a half century.

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INTERVIEW GUIDE

Post-Disaster Donation Efforts

Interviewee Name:
Organization:
Donation Drive Name (if any):
Location of Drive:

Date of Interview:
Location of Interview:
Interviewer:
> Please administer informed consent and check: _____

Donation collectors/organizers/volunteers

My first set of questions is really to just give me a little bit of background about you and the organization you are associated with.

1. What is the full name of your organization?
2. How old is the organization?
3. What is the primary mission of your organization on a routine basis?
4. Tell me a little bit more about the organization, including how many workers are employed with the organization routinely. (Probe also for how many volunteers involved or clients served, and type of client, if appropriate)
5. What is your routine role with the organization?
6. How long have you been involved with it?

Thanks so much. I now want to transition to the organization's involvement, as well as your involvement, with relief efforts after [insert disaster name - IDN). Sometimes we've been able to identify some information about the efforts from other sources, or we might have talked about it earlier when setting up the appointment, but I want to be sure that we go through everything so I'm sure I get it right from your perspective.

7. We understand that you were involved in the relief efforts following IDN. Is that correct?

   (If no, probe to see if their organization was involved – in case they are speaking as an organizational representative even if not personally involved, if they might be defining relief efforts differently but really were involved, or determine again why we have them in our sample).

8. Have you ever contributed to post-disaster relief in the past?
    a. If yes, which disasters?
    b. If yes, tell me about your role in each of those efforts (If having given supplies, probe for which supplies).
    c. Probe for if involved with this same organization or others, and if so, which ones
    d. Probe for how they became involved in those instances

9. Tell me about how you personally became involved in the efforts during IDN. Walk me through it.
   (Probe for the following)

    a. How did you hear about it (e.g. friend, posting, someone in their organization, they started it)?
    b. When did you hear about it? Try to get as specific as possible.
    c. What was the source of the information to get involved? (e.g. phone call, news reports, personal request, idea of a member – be as specific as possible)
    d. Follow up on specifics of how they got involved. (For example, if it was a news report, who was talking, when the person saw it, what did the person say, and what was it that prompted action).
    e. What was the overall message conveyed?
    f. Did you become involved on their own or with others (probe for who and circumstances around involvement)?
    g. What motivated you to become involved in *this* particular effort? (Probe for more than "I just wanted to help." Why *this* event compared to other disasters?)

10. We are also interested in the overall efforts of this relief effort, not only individual involvement. Tell me about how the organization's relief effort for IDN got started, as it extends beyond your own work here.
    a. What prompted the organization to become involved? (e.g. phone call, news reports, personal request, idea of a member – be as specific as possible)
    b. Follow up on specifics of how the organization got involved. (For example, if it was a news report, who was talking, when it appeared, what did the person say, and what was it that prompted action.)
    c. When did the organization's efforts start? Even though you just talked about your personal involvement, we ask this because we know that sometimes individuals might become involved later than others within the organization.

d. What originally motivated the organization to become involved in *this* particular effort? (Probe for more than "We just wanted to help." Why this compared to other disasters?)

11. What did the organization decide to ask for, with respect to the relief efforts for IDN?
    a. Probe for cash, food, blankets, sheets, batteries, cell phones or chargers, clothes, gloves, working clothes, equipment, generators, cleaning supplies, school supplies, medical supplies, services, other.

12. How did the organization decide what to ask for?
    a. Probe for who was involved in decision, who ultimately made the decision, and external factors that influenced the decision (e.g. specific request from organization in impact zone; identified need from news coverage).
    b. What did you see as reliable sources of information regarding what was needed? Explain to me why that seemed to be a reliable source?
    c. What sources, if any, did you trust less to give you information about what was and what wasn't needed at the time? Explain to me why you did not see these sources as reliable.

13. Tell me about how the effort promoted the relief effort?
    a. Where did it advertise? (e.g. set up a new facebook page, use an existing facebook page, organization website, community bulletin, posters on bulletin boards in stores, announcement to organization's members via email)
    b. What outreach efforts do you think were most successful in actually generating contributions? What leads you to that conclusion?
    c. Was the information about what was needed presented in the same way regardless of where it was promoted or did it differ somewhat? If so, how?

14. Did the effort receive items that were not asked for specifically?
    a. If so: Tell me about those items? What were they? What did you do with these items?

15. At the start of the effort, was there anything that the organization decided it did not want to collect or would refuse to accept?
    a. If so: Probe in detail for what items and why they did not want to collect them.
    b. If not, ask: We know that some groups restrict what they will accept while others do not. Can you help us understand why this particular effort was willing to take anything provided?

16. As the effort evolved, were there any changes in what was asked for, in terms of donations? What about in terms of what was refused or no longer accepted?
    a. Probe for things they originally asked for but later decided they did not want or need?
    b. What specifically brought about this change?
    c. When did this change occur?
    d. What was the result? (for example, did people keep bringing those supplies despite request not to, and if so, what did they do?)
17. What there a specific individual, group, or community this effort was hoping to help? If so, can you tell me about that individual/group/community and how they became part of the relief effort's goals?
    a. For example, if it is a town, was there a connection to the town through a member of the organization. Or if it was a school, why a school in general and why that specific school? Spend time exploring the connection and desire to help here.
18. Please go through the different types of donations you received. For each can you tell me about the condition they were in?
    a. Go through each they previously mentioned and probe:
    b. For example, for clothing: age range for clothing, new or used, dirty or clean, tags or no tags, on hangers or in bags, sorted or unsorted
    c. For example for supplies: new or used, sorted or unsorted, on pallets or in bags/boxes
    d. For example, for food: specific types; any expired (or did they check); sorted or unsorted; pallets (or warehouse packed boxes) or random bags/boxes
    e. Go through each type
19. Did you personally donate any money or material goods?
    a. If not: What influenced that decision?
    b. If so: What did you donate?
    c. If so: What motivated you to give in general?
    d. If so: What motivated you to give specifically what you gave?

    Some relief agencies state that certain types of material donations can generate challenges for post disaster relief efforts. I have a few questions about that topic.

20. Prior to the IDN relief effort had you heard information about directing donation efforts to certain kinds of giving and avoiding soliciting other types of donations?
    a. If so, probe for from where, when, and what the message consisted of. Note to probe for multiple sources and answers.

21. While your IDN relief effort was underway, did you hear information about directing donation efforts to certain kinds of giving and avoiding soliciting other types of donations?
   a. If so, probe for from where, when, and what the message consisted of. Note to probe for multiple sources and answers.

22. IF THE PARTCIPANTS RECALLS HEARING SUCH INFORMATION: How did that information you just noted affect the types of goods you and this organization solicited for IDN?
   a. Probe for specific information on what they did and why.

23. Do you think that certain kinds of donations or relief efforts are more helpful after a disaster than others?
   a. If so, probe in detail for why and how. Examples to illustrate are helpful.
   b. If not, probe in detail for why and how. Examples to illustrate are helpful.

24. Some organizations discourage the donation of anything but cash.
   a. For organizations that received other things:
      i. Tell me how you consider this approach?
      ii. What are the advantages or positive reasons for soliciting material goods?
      iii. What are the disadvantages with asking for material goods?
   b. For organizations that just received cash: Tell me about how you consider efforts that solicit material goods?

      Thank you. The next set of questions moves into the operational or logistics of the donation drive itself.

25. Can you tell me about where donated goods were received? The more detail you can provide, the better we can understand the process. Probe for the following
   a. Did they have a location planned out ahead of time?
   b. Was the site emergent and then they started officially collecting at that point? Describe process if so.
   c. Were there multiple sites that collected? If so, was it eventually consolidated and if so, how and where?
26. How did you inventory what came in, or determine what you had? [Probe for the level of detail in the inventory; e.g. spreadsheets, eyeball counts, etc)

   a. Do you have a record of what came in? If so, can we get a copy?

27. Please describe the process of sorting through the donations. [Probe for how they sorted, number of people involved, and how was packaged up, and if it was labeled in a particular way; what software they used, if they gave up inventorying at some point and why.]

28. How and where were the goods stored, and for how long?

29. Describe for me some of the challenges experience in the process until that point.

30. How were the goods transported to where they eventually went?

   a. Probe for how they acquired or paid for vehicles, number and types (tractor tailors, cars, moving vans) of vehicles needed.
   b. Probe for other costs such as gas and tolls and drivers.

31. When were the goods transported from this operation? Were there multiple trips?
   a. If so, probe for when each occurred, what went out when, and if everything went to the same place or different places.

32. Where did the donations end up after they left the initial location you were involved with?

33. I asked a related question earlier, but how did the organization determine where donations would go to from here?

34. Do you have the contact name/information for the organization that you sent the donations to? If so, can I get that information from you?

35. Did you reach out to other groups, communities or organizations?
   a. If so, can you tell me about how you reached out to them? (e.g. email, cold-call, personal contact, social media, etc. Get specifics)
   b. If so, probe about the responses they received and why

36. What did you learn about the donations to support disaster relief, and the donation of goods specifically, following your work after IDN?

37. If you were soliciting donations for the relief effort today, what would you differently?
    a. Are there goods that you would ask for that you did not ask for?
    b. Are there items that you would refuse to accept now that you did not refuse then?
38. Is there anything else that you want to add or think it's important for us to know?

Donors

My first set of questions is really to just give me a little bit of background.

1. What community do you live in?
2. How long have you lived there?
3. How old are you? Decade range is fine.
4. How many people live in your household?
5. Can you tell me your relationship to each person?

    a. Probe parent, spouse, roommate, daughter to dependent father, etc

6. How would you describe your primary occupation, whether it is paid or unpaid?
7. Would you describe yourself or anyone in your household as having a particular connection to the communities impacted by IDN?
    a. If so, probe for what and how?

Thank you. I now have a few questions about the organizations you donated to or connected with during the donation process.

8. What is the full name of the organization(s) that you donated to? If you donated to more than one organization, please let me know. (List all the organizations. If an organization is named that we do not have information on, get a contact name and contact information if possible)

9. [For each organization listed above]:
    a. Did you have a connection or relationship with that organization prior to IDN?
    b. If so, tell me about that connection or relationship?
    c. For how long did you have that connection?
    d. What did you donate to that organization? This could be money, goods, or services (probe all item types and amounts?)
    e. Had you donated to any post-disaster relief efforts through that organization prior to IDN?

  f. Had you donated money or items or services to that organization for any other reasons? Efforts that were not related to a disaster event?

10. [For each organization listed above]: What is the primary mission of the organization is on a routine basis?
  a. Does the organization routinely or frequently work in the area of disaster relief? If so, how?

I now want to transition to your involvement, with relief efforts after [insert disaster name - IDN). Sometimes we've been able to identify some information about the efforts from other sources, or we might have talked about it earlier when setting up the appointment, but I want to be sure that we go through everything so I'm sure I get it right from your perspective.

11. Have you ever contributed to post-disaster relief for events other than IDN?
  a. If yes, which disasters?
  b. If yes, tell me about your role in each of those efforts (If having given supplies, probe for which supplies).
  c. Probe for if involved with this same organization or others, and if so, which ones
  d. Probe for how they became involved in those instances

12. We understand that you were involved in the relief efforts following IDN. Is that correct?

13. Please tell me about your involvement?
  a. Probe for when they become involve and their activities, including what might extend beyond donation efforts.
  b. Did you volunteer following the event?
  c. If yes, what organization did you work with?
  d. What were your duties with that organization?
  e. How long after the event did you volunteer, and for how long?
I have several questions about how you personally became involved in the efforts during IDN.

14. How did you hear about the efforts (e.g. friend, posting, someone in their organization, you started it)?
15. When did you hear about it? Try to get as specific as possible.
16. What was the source of the information to get involved? (e.g. phone call, news reports, personal request, idea of a member – be as specific as possible)

a. Follow up on specifics of how they got involved. (For example, if it was a news report, who was talking, when the person saw it, what did the person say, and what was it that prompted action).

17. What was the overall message conveyed (probe from each source)?
18. Did you become involved on your own or with others (probe for who and circumstances around involvement).
19. What motivated you to become involved in *this* particular effort? (Probe for more than "I just wanted to help." Why *this* event compared to other disasters?)
20. How did you hear about the organization(s) that you donated to?
21. Was your donation individually driven or was it a community activity (e.g. done with others in school, through work, etc)?
    a. If it was a group effort, please describe how the group effort came about and what it involved.

22. What there a specific individual, group, or community the organization you hoped your donation would help?
    a. [If not clear on what we mean]: That is, did you just want to help anyone affected or did you hope to help a particular group or community?
    b. For example, if it is a town, was there a connection to the town through a member of the organization. Or if it was a school, why a school in general and why that specific school? **Spend time exploring the connection and desire to help here.**

23. You mentioned above the goods you donated.
    a. [List for them what they donated] Is there anything else that you gave, either in the form of money, goods, or services?
24. What motivated you to give in after this particular event, after IDN?

25. How did you decide to give what you ended up giving?

    a. Probe if told to give specific items by organization; by those affected; if had material on hand; if thought that would be what they would need; etc. If not: What influenced that decision?

[If the only donated money]

26. Tell me about the reasons you chose to donate money instead of goods?

[If they donated goods instead of or in addition to money]

27. Did you encounter any advertising telling you to donate?
    a. If so, what type of advertising?
    b. Did the advertising suggest particular items to give and if so, what?

      c.   Where did you see the advertisements? (Probe social media, tv, newspapers)
28. Tell me the reasons you decided to give goods instead of or in addition to cash?
      a.   Probe: Do you think that either donated money or goods are more effective in the disaster area? If so, what do you think the difference is?
      b.   Do you have trust organizations to use donated cash effectively? [Once they respond] Can you explain further?

29. Were the goods that you donated used or items that you already owned, or did you go out and purchase items to donate?
      a.   What influenced your decision to give [new/already owned] goods?
30. Did you avoid donating any specific items to the relief effort?
      a.   Which items did you avoid giving?
      b.   Tell me why you did not want to give these items?

31. Did you avoid donating to specific groups?
      a.   To which groups did you avoid giving?
      b.   Tell me why you decided to avoid giving to these groups?

Thank you. I have a few more questions about the process.

32. How did you get your donations to where you sent them?
      a.   Probe: Drive it there in personal car, bring as a group in a large vehicle, order by mail for direct shipping, personally mailed it, etc.

33. What was the specific location you sent the donations to? If so, where was it?

34. Do you know where the donations went from there?

      a.   Probe for specifics if they know it.
      b.   How it was transported?
      c.   Who accompanied the goods?
      d.   If it went directly to the population affected or to an interim organization first?
      e.   How it was stored?
      f.   How it was distributed?
      g.   Where it was distributed?
      h.   To whom, specifically or generally, it was distributed?
      i.   Acquire information about interim organizations and receiving populations for follow up, if they know it.
35. Where there any challenges that you faced when making your donations? What were these challenges?
36. Did you experience any refusals for any of the items that you tried to donate?

a. If so, what reason was given for the refusal?
b. Did you make further attempts to donate that item? If so, explain to me the reasons you felt it was important to keep trying to donate that item?
c. Did you find another organization that would take the donations?
d. If so, have we already talked about that organization? If not, what are the full name of the organization and a contact name?

I would now like to talk about information about donations that you encountered after the disaster.

37. Where did you seek out information about where and how to donate? (e.g. news media, social media)

38. Did you do any research to see what items were needed the most in the area?

 a. If yes, where did you search for your information?
 b. Who, would you say, was focused on more greatly in the information that you found?

Some relief agencies state that certain types of material donations can generate challenges for post disaster relief efforts. I have a few questions about that topic.

39. Prior to the IDN relief effort had you heard information stating that post-disaster relief should involve certain kinds of giving and that donors should avoid giving other items? Again, this is prior to IDN.
 a. If so, probe for from where, when, and what the message consisted of. Note to probe for multiple sources and answers.

40. After IDN, did you hear information stating that people should give in certain ways and avoid giving other items?
 a. If so, probe for from where, when, and what the message consisted of. Note to probe for multiple sources and answers.

41. IF THE PARTCIPANTS RECALLS HEARING SUCH INFORMATION: How did that information you just noted affect the types of goods or the way you gave following IDN?
 a. Probe for specific information on what they did and why.
42. Do you think that certain kinds of donations or relief efforts are more helpful after a disaster than others?
 a. If so, probe in detail for why and how. Examples to illustrate are helpful.

 b. If not, probe in detail for why and how. Examples to illustrate are helpful.

43. Some organizations discourage the donation of anything but cash.
   a. For people who gave items:
      i. Tell me how you consider this approach?
      ii. What are the advantages or positive reasons for giving material goods?
      iii. What are the disadvantages with giving material goods?
   b. For people who just gave cash: Tell me about how you consider efforts that solicit material goods?

44. If you had heard this kind of messaged during the relief effort, would it have affected the way you gave?
   a. If so, how?
   b. If no, tell me about your reason for still donating the way you did
45. If you were donating items for another relief effort today, would you do anything differently?
   c. Are there goods that you would donate that you did not at the time? If so, what are they?
   d. Are there items that you would not donate that you did donate at the time? If so, what are they?

Is there anything else that you want to add or think it's important for us to know?

Appendix B

STATEMENT OF INFORMED CONSENT

Study on Post-Disaster Relief Efforts

This study, conducted by the Disaster Research Center at the University of Delaware, examines post-disaster donation effort. The study is funded by the National Science Foundation. The goal of the study is to learn about how disaster donations are gathered and shared. The study will involve face-to-face and telephone interviews with approximately 30-100 people directly or indirectly involved in post-disaster relief efforts. Interviews will last up to 2 hours.

Your participation is not confidential, although you may indicate if there is information wish to not have attributed to you by name. Organization names and position titles may be used. Pseudonyms for individuals may sometimes be used. In some cases, the names of public officials may be used when other information related to the effort would reveal their identity. The interview will be audio recorded and transcribed. Recordings and transcriptions will be stored at the Disaster Research Center on a secured server. They may be used for future educational or research purposes with the approval of the Principal Investigator, Tricia Wachtendorf, or the director of the Disaster Research Center. Transcripts and other data may eventually be shared with collaborating researchers, provided they human subjects protocol in place at their institution.

This research will help researchers better understand how donations are collected and shared. The research may also yield information that may help people better organize relief efforts. We do not anticipate any risks from participating in the study.

Your participation is completely voluntary and without compensation. You may choose to not answer any question during the interview. You can choose to end the interview at any time or withdraw from the study at any time during the interview. If you do not take part in the study, it will not affect your relationship with the researchers or the University of Delaware.

If you have any questions, you may contact the principle investigator, Dr. Tricia Wachtendorf at the Disaster Research Center, University of Delaware (302-831-6618). If you have any questions about your rights as a participant in this study, you may contact the University of Delaware's Chairperson of the Human Subject's Review Board (302-831-2137).

By signing below, you agree that you,
- understand your rights as a research subject
- understand what the study is about
- voluntarily consent to participate in this study
- agree to be audio recorded for the study

Participant Signature:_____ Date:_____

Interviewer Signature: _____ Date: _____

Appendix C

IRB APPROVAL LETTER

UNIVERSITY OF DELAWARE **RESEARCH OFFICE**

DATE: March 22, 2013

TO: Tricia Wachtendorf, PhD
FROM: University of Delaware IRB

STUDY TITLE: [438774-1] CDI Donations

SUBMISSION TYPE: New Project

ACTION: APPROVED
APPROVAL DATE: March 22, 2013
EXPIRATION DATE: March 21, 2014
REVIEW TYPE: Expedited Review

REVIEW CATEGORY: Expedited review category # 7

Thank you for your submission of New Project materials for this research study. The University of Delaware IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on the applicable federal regulation.

Please remember that <u>informed consent</u> is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

Please note that any revision to previously approved materials must be approved by this office prior to initiation. Please use the appropriate revision forms for this procedure.

All SERIOUS and UNEXPECTED adverse events must be reported to this office. Please use the appropriate adverse event forms for this procedure. All sponsor reporting requirements should also be followed.

Please report all NON-COMPLIANCE issues or COMPLAINTS regarding this study to this office.

Please note that all research records must be retained for a minimum of three years.

Based on the risks, this project requires Continuing Review by this office on an annual basis. Please use the appropriate renewal forms for this procedure.

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