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WHEN THERE'S NO HOME TO PREPARE: UNDERSTANDING NATURAL HAZARDS
VULNERABILITY AMONG THE HOMELESS IN CENTRAL FLORIDA

by

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ABSTRACT

The current study explores the social construction of natural hazards vulnerability by examining the perceptions of emergency management personnel, homeless service providers and homeless men living in Central Florida. The matrix of vulnerability is proposed as a framework for studying disaster vulnerability, wherein vulnerability is viewed as a complex process consisting of social and physical risk, human agency and time. Using the matrix as a guiding framework, this study examines the risks that natural hazards present to the homeless living in Central Florida and the strategies used by the homeless to manage these risks. This study argues that because the homeless experience increased exposure to natural hazards coupled with potential chronic medical conditions, economic hardship, and social stigma, they are more vulnerable to natural hazards than the general population. However, this study finds that homeless men in Central Florida utilize a variety of strategies that help them manage their risks to severe and inclement weather in Central Florida.

This dissertation is dedicated in memory of my Nana, Hedwig "Teta" Settembrino.

"Moja droga ja cię kocham…"

October 15, 1926 - February 24, 2013

ACKNOWLEDGMENTS

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1: INTRODUCTION

Within sociology, disaster research has traditionally examined how housed individuals and families prepare for, experience, and recover from the effects of natural hazards. While this approach is pragmatic, it has resulted in a body of literature that constructs housed people as the hegemonic disaster victims. Because of this, little is known about how unhoused people understand and manage their risks to natural hazards. Aside from Drabek's (1999) study of tourists and other transients, and passing mentions of conflicts over whether or not homeless persons should be admitted to disaster shelters or should be given relief funds (see Yelvington, 1997), existing disaster research has overlooked the homeless entirely. Thus, knowledge about how being homeless affects the perception of vulnerability to natural hazards or disasters remains modest. Similarly, it is unknown how disasters affect the daily lives of homeless individuals and families, particularly on periods immediately following a disaster when services and organizations they depend on regularly may be unable to offer them assistance.

The social vulnerability theory perspective assumes that the homeless are at an increased risk to disasters. Under the contemporary understanding of social vulnerability, the homeless would be perceived as being at a greater risk to natural hazards and resulting disasters because they lack the material and social resources to protect themselves. In this dissertation I argue that the contemporary view of vulnerability is too simplistic. Rather, I propose a *matrix of vulnerability* framework that conceptualizes vulnerability as a complex process. This matrix considers how social conditions, physical location, human agency, and time, affect vulnerability to particular hazards. From this perspective, vulnerability becomes more than a measurement of

1

acquired resources and also accounts for the perception of risk and ability to take action to mitigate (or in some cases aggravate) the perceived threat of a particular hazard.

The goals of this dissertation are threefold. First, I challenge contemporary understandings of social vulnerability and propose a more complex framework for understanding vulnerability. Second, I provide an examination of the risk that the homeless face to natural hazards in Central Florida and the steps they take to protect themselves. Third, the results will provide insightful recommendations that can be used by emergency management officials to further understand the needs of homeless residents and develop emergency plans that are more inclusive of the homeless.

This study builds on my work with an inter-disciplinary study funded by the U.S. Department of Agriculture. The project examined community disaster resilience in Central Florida, and featured four major components: (1) content analysis of local emergency plans, (2) analysis of the 2005 Central Florida Social Capital Survey (Wright & Jasinski 2005), (3) a web-based survey of individuals involved in various aspects of local emergency management, and (4) group interviews conducted with local emergency management officials and staff, members of various emergency support functions (ESFs), and community members. In this dissertation I present an in-depth analyses of the group interviews to provide a better understanding of which groups emergency management personnel identify as being most vulnerable to disasters, and how they discuss risk and vulnerability. Additionally, I have conducted group interviews with homeless services staff as well as in-depth interviews with homeless men living in three Central Florida counties. In order for local emergency managers to develop disaster plans incorporating the homeless, they must fully understand the unique experiences and needs of the homeless.

Thus, my research enhances our understanding of disaster vulnerability and also provides the opportunity to create a more inclusive emergency management system.

Chapter 2 provides a comprehensive review of the leading theoretical perspectives of disaster research. In this chapter I examine social vulnerability theory and socio-political ecology. Furthermore, Chapter 2 provides an examination of the relationship between social class and natural hazards and disaster vulnerability. In Chapter 3, I discuss my research methods and provide information about the participants included in this study. Furthermore I discuss the analytical strategies employed in this study. In Chapter 4, I examine group interviews conducted with emergency management staff in six counties. In this chapter I explore the groups identified as being "most vulnerable" to a disaster. Furthermore, I present the *matrix of vulnerability* as a new way to understand disaster risk. The matrix is informed by emergency managers perceptions of vulnerability. In Chapter 5, provides an overview of the natural hazards present in Florida and introduce the homeless as an example of a socially marginalized group that exists within the matrix of vulnerability. This chapter examines the risks that the homeless face to natural hazards in Central Florida, specifically related to exposure, health status, economics, and social stigma. I build upon these findings in Chapter 6, wherein I examine the steps taken by the homeless to protect themselves and their property from the elements. Finally, in Chapter 7, I provide a summary of my findings and a discussion of their relevance to the field of disaster research. Additionally, I provide recommendations to emergency managers on how to continue to develop plans that are inclusive of Central Florida's homeless citizens and discuss directions for future research on vulnerability, the homeless, and other marginalized groups.

Ultimately, this dissertation fills an identified gap in disaster research that emphasizes housed populations and virtually ignores unhoused, or homeless individuals and families. The

goals of my research are to understand the risks that homeless people face in terms of severe whether and natural hazards, how these phenomena affect their lives, and the steps they take to keep themselves safe in Florida's tumultuous climate. Furthermore, by examining the relationship between social conditions, location, and agency, this study challenges contemporary understandings of social vulnerability theory and reformulates this theoretical paradigm to better reflect the influences of space and time.

CHAPTER 2: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

<u>Natural Hazards and Disaster Vulnerability</u>

Social vulnerability and socio-political ecology are two frameworks for understanding disaster vulnerability. The following paragraphs outline the basic premises of these theoretical orientations and explain their relevance to the proposed research project. The discussion begins with social vulnerability theory and its foundations, and later examines socio-political ecology.

Social Vulnerability

Social vulnerability theory assumes that disasters are fundamentally human constructs that reflect the global distribution of power and human uses of our natural and built environments. From this perspective, disaster risk is partially mediated by location, but is also socially distributed in ways that reflect the social divisions that already exist in a society or a community. This has lead Morrow (2008) to describe social vulnerability as "a catchall phrase that has become part of the discussion related to how social and cultural conditions place some at higher risk to environmental impacts such as climate change or natural hazards" (p. 4).

Blaikie, Cannon, Davis and Wisner (1994) establish what they call the "Pressure and Release" (PAR) model for studying vulnerability and disasters. From their perspective, they define vulnerability as "the characteristics of a person or group in terms of their capacity to anticipate, cope with, resist, and recover from the impact of a natural hazard," (Blaikie et al., 1994, p. 9). Furthermore, they contend that vulnerability is determined by a complex combination of factors that place "life and livelihood" at risk to events in society or nature (Blaikie et al., 1994). These characteristics are typical of sociological research and include, race, ethnicity, gender, class, (dis)ability, and other sociodemographic characteristics.

At its core, the PAR model assumes that vulnerability is a condition that results from social inequality. From this position, vulnerability to disaster is determined by a combination of root causes, dynamic pressures, and unsafe conditions (Blaikie et al, 1994). The root conditions of vulnerability are explained as having limited access to power and resources, which are generally facilitated by a society's economic and political systems. They note that access to political power, depending on the society, is regulated by one's race or ethnicity, gender, or religion. Under the PAR model, these social inequalities are mediated by dynamic pressures, which Blaike et al. (1994) describe as "processes and activities that translate the effects of root causes into vulnerability of unsafe conditions" (p. 24). The authors point to rapid urbanization and population growth, foreign debt, and environmental exploitation and degradation as examples of such pressures. They argue that these processes result in individuals and families living in unsafe conditions (Blaikie et al., 1994). While unsafe conditions may refer to the physical location of households, such as on mountainsides or flood-prone areas, the PAR model incorporates social dynamics such as: inability to afford safe housing, engaging in dangerous occupations, and inadequate protection from the state which also contributes to individuals' vulnerability to natural hazards. Ultimately, Blaikie and his co-authors (1994) argue that the key to keeping people safe from natural hazards and the "disasters" associated with them is to reduce vulnerability.

Kusenbach and Christmann (2012) present an updated formulation of social vulnerability. Their work begins with a critique of previous conceptualizations of social vulnerability and call for a further development of the perspective. They argue "the socially constructed nature of vulnerability cannot be expressed entirely and sufficiently through quantifiable indicators of structural inequality plus geophysical risk" (Kusenbach & Christmann, 2012, p. 114). Rather,

they conceptualize vulnerability as a social process influenced by perceptions and interpretations of one's vulnerability (Kusenbach & Christmann, 2012). Often this process operates separately from the processes that have created and reified inequality. Specifically, Kusenbach and Christmann (2012) offer four challenges to the social vulnerability perspective: (1) insufficient attention to the social construction of vulnerability, (2) the normative view that vulnerability is always negative, (3) misunderstanding of the complexity of space, and (4) lack of consideration of the complexity of time. Each of these critiques offers a unique challenge to the social vulnerability perspective and, ultimately expands its relevance as a theoretical framework for understanding disasters.

Regarding the social construction of vulnerability, Kusenbach and Christmann (2012) argue that the current conceptualization of social vulnerability ignores the reality that there is often no link between an individual's measured vulnerability and his or her perceived vulnerability. For instance, while the determination that someone is at increased risked to natural hazards and disaster because their income is below a certain designation, such as the poverty line, he or she may not perceive themselves to be poor, or at an increased risk. This leads Kusenbach and Christmann to argue that the normative presentation of vulnerability as being "always negative" is limiting (Kusenbach & Christmann, 2012). From their perspective, those who are "vulnerable" are considered to be "lacking something important," whereas "resources are always viewed as positive" (Kusenbach & Christmann, 2012, p.115). From their perspective, this ignores other qualities, skills and assets that "vulnerable" people may possess, which may actually buffer them from some of the risks associated with disaster.

The authors also challenge social vulnerability for not adequately understanding the complexities of space and time. Kusenbach and Christmann (2012), argue that more attention

7

should be paid to the interplay of physical locations and social processes that make particular places more vulnerable than others. This assertion relates to arguments found in the environmental justice movement which claim that the least desirable land, whether it be flood-prone or contaminated by human and toxic waste, is often left for low-income and people of color (Bullard & Wright, 2009). Furthermore, de jure segregation policies such as the Jim Crow laws of the U.S. South, relegated Blacks to live in places that were less desirable to Whites (Basset, 2009). Alternatively, vulnerable places are not always the least desirable locations. Waterfront properties are highly desirable and often carry significant price tags. While they may offer impressive views, these locations are highly vulnerable to flooding, and in the case of coastal homes, hurricanes. This phenomenon leads to Enarson, Fothergill, and Peek's (2008) assertion that "the rich can, and do buy their way into harms way" (p. 133).

Regarding time, Kusenbach and Christmann (2012) argue that the meaning, or consequences of vulnerability can and do change with time. Furthermore, one's vulnerability, or risk, may change throughout the time before, during, and after a disaster event. Because of this, Kusenbach and Christmann (2012) argue that vulnerability should be viewed as a dynamic social process rather than a static social condition. Folke (2006) also maintains this position, and argues that the key to understanding both vulnerability and resilience relies on understanding the social processes that contribute to them.

Building on these critiques, Kusenbach and Christmann (2012) suggest that vulnerability should "refer to a concept that denotes a social practice in which a certain unit (a subject, a group, or any kind of system) is placed at the center of a complex analysis of injury" (Kusenbach & Christmann, 2012, p. 116) Kusenbach and Christmann (2012) identify three components to understanding, and "calculating" vulnerability: (1) the basic unit (individual or household), (2)

8

the unit's relationships and interactions with other units in the environment, and (3) the particular dimensions through which the unit in question is compared to other units. Additionally, they argue that vulnerability must be "calculated in real-time" (Kusenbach & Christmann, 2012).

Socio-Political Ecology

From the perspective of socio-political ecology, disasters are described in terms of conflict, competition, and inequality. This position assumes that there are scarce resources in a society or community, and access to these resources is unequally distributed. In times of disaster, conflict and competition becomes more acute as already scarce resources are stretched and depleted. Furthermore, a unique facet to this perspective is that socio-political ecology rejects the notion that communities are autonomous social units, and favors the view that communities are networks of individuals interacting in multiple social networks. One of the first examples of this perspective can be found in research conducted by Peacock and his colleagues (1997) after Hurricane Andrew struck Miami in 1992.

Socio-political ecology stems from the premise that communities are more than autonomous places characterized by social or political boundaries and a "common sense of identity" (Peacock & Ragsdale, 1997). Alternatively, by adopting an ecological framework, socio-political ecology conceptualizes communities as a network of interacting social systems. From this perspective, individuals, groups, and organizations are linked together not by location or sense of belonging, but rather linkages are maintained by contingent relationships through which information, resources, and members flow (Pelenda, 1989; Peacock, 1991; Peacock & Ragsdale, 1997). The perspective utilized by Peacock and his colleagues differs slightly from traditional uses of the political ecology framework. Specifically, whereas previous work was

concerned with the relationship between human systems and their bio-physical environments, Peacock and Ragsdale (1997) argue that equal attention must be paid to the relationships between individuals and other agents of the human social system (Palenda, 1989; Hannan & Freeman, 1989; Peacock, 1991; Bates 1993). Under the ecological model, groups, and organizations are considered "semi-autonomous and self-referential social systems" which are linked to each other through "relationships and member-sharing" to form "ecological networks of contingent relationships" (Peacock & Ragsdale, 1997, p.22). Individuals, groups, and organizations are not bound together by norms and role expectations, but rather they are linked by a series of contingent factors (Peacock & Ragsdale, 1997).

Dependence and interdependence of individuals within the network are key aspects of the ecological framework (Peacock & Ragsdale, 1997). In fact, the ecological network is dependent upon specialization and the division of labor within it (Bates 1993). Herein, there is a resemblance to some of the classical roots of sociological theory. Durkheim (1933/1984) proposed that advanced societies are held together by organic solidarity, which is characterized by an increased division of labor, through which individuals rely upon the work of others in order to survive. The increased specialization and division of labor characteristic of organic solidarity has important consequences for the individuals living in these societies. The division of labor requires individuals to become more reliant on others to produce goods that they cannot produce themselves. Thus, Durkheim's organic solidarity relies on social links, or networks in which individuals are highly dependent on each other.

The interdependence of groups and organizations under the political ecological model has important implications for the power, influence, and ultimately, survival within the network. Peacock and Ragsdale (1997) note that although the units of an ecological system are self-

referential and semi-autonomous, they are not equal. In the ecological network, power and resource distribution are critical components to network operations and system survival (Peacock & Ragsdale 1997). The unequal distribution of power and resources within the system leads to conflict and competition for control of resources. This conflict and competition amongst units influences the interactions and relationships of units within the ecological field (Peacock & Ragsdale 1997).

Similar to social vulnerability, socio-political ecology asserts that characteristics such as one's race, gender, age, or social class affect access to material and non-material resources. However, rather than focusing on a lack of resources and resulting vulnerability, socio-political ecology examines how these characteristics mediate one's relationships (links) with other units and ultimately create conflict and competition within a disaster setting. Herein, socio-political ecology is concerned with the dynamics of response and recovery within a system that has unequal distribution of resources, and competition for these resources (Peacock & Ragsdale, 1997).

The proposed research borrows important components from both the social vulnerability and socio-political ecology perspectives. From the social vulnerability approach, this project assumes that the homeless are more vulnerable to natural hazards and disasters because they lack adequate shelter and financial resources, and because of their marginalized status have little political power or influence. However, it is not assumed that homeless persons' vulnerability is a static condition. On the contrary, I favor Kusenbach and Christmann's (2012) formulation of vulnerability as a process dependent on time and space. From this perspective, the homeless may initially be vulnerable, however due to the actions taken by individual homeless people or the agencies that serve them, they can either mitigate or exacerbate their levels of vulnerability.

Secondly, building from a socio-political ecology perspective this project acknowledges that the homeless are just one part of a multi-dimensional community comprised of individuals and organizations. Furthermore, homeless services organizations and staff are part of the same dynamic community networks. From this perspective, homeless services organizations are vital agents with the ability to influence policy. Thus, it is crucial that this study seeks to understand organizational perspectives and policies regarding disaster vulnerability.

Social Class & Disasters

Research in the area of social class and risk perception seem to suggest that the poor consider themselves to be at greater risk to natural hazards and disasters (Fothergill & Peek, 2004). Pilisuk et al. (1987) found that Californians with lower incomes and levels of education expressed greater concern for technological hazards, such as nuclear meltdowns and toxic waste spills. Furthermore, Palm and Carroll (1998) found that low-income individuals worry more about the loss of their homes than those with higher incomes. Additionally, Flynn et al. (1994) found that individuals of lower socio-economic status (SES) have heightened perception of risk towards natural hazards. They argue this heightened perception is related to the relatively little control that the poor may have over their day-to-day lives (Flynn et al., 1994).

Low-income and low SES individuals may face financial self-sufficiency challenges in preparing for disasters. Turner et al. (1986) reported that education, income and ethnicity are related to earthquake preparedness, noting that as income increases so does one's level of preparedness. Additionally, they found that education was associated with higher feelings of self-efficacy, a feeling that one could adequately prepare for a disaster (Turner et al., 1986). Similarly, Vaughn (1995) found that families living in poverty were unable to take the necessary

steps to prepare their homes for a disaster, not only because of financial strains, but also because they had little confidence in their ability to control the outcome of a disaster. Citing the financial burdens of disaster preparedness, Palm and Carroll (1998) found that high-income families were more likely to have made structural modifications to their homes than low-income families. Finally, Fothergill (2004) found that poor residents often could not afford insurance even though they were aware of its benefits.

Although research in this area appears to be dated, low-income and low SES individuals may be less likely to find out about disaster warnings and take them seriously. Regarding earthquake warnings, the Panel on the Public Policy Implications of Earthquake Prediction concluded, "people with lower socio-economic status were especially likely not to receive, understand or believe earthquake warnings" (1975, p. 52). Similarly, Perry (1987) reported that low levels of education and income are associated with a lesser likelihood of interpreting warnings as valid.

Assuming that they get the warning, it seems that low-income and SES individuals are less able to act on the warnings. Morrow and Enarson (1997) report that although low-income women received warnings about Hurricane Andrew, they lacked money and transportation to obtain the appropriate supplies to prepare themselves and their families. Gladwin and Peacock (1997) confirmed this finding, adding that low-income families were often inhibited from evacuating because they lacked transportation. Again Morrow (1997) expressed concerns about lack of transportation, noting that after Andrew's impact, victims from low-income housing projects were left to walk or hitchhike to emergency camps. Furthermore, Fothergill (2004) reports that high income families are less likely to evacuate to mass evacuation shelters, such as

those operated by the Red Cross, and are more likely to rely on private lodging (hotels and motels) or family and friends for shelter.

Because poorer people often live in low quality, poorly constructed housing, they are at an increased risk to the physical impacts of a disaster, such as death and injury (Bolin 1986; Aptekar, 1991; Phillips, 1993). In their report on housing conditions in California, Comerio et al. (1994) found that the state's low and moderate-income housing units were more susceptible to seismic and fire damage due to poor quality construction. Similarly, mobile homes are notoriously unsafe and vulnerable to multiple natural hazards, and are often occupied by low-income residents (Bolin & Bolton, 1986; Kusenbach & Christmann, 2012). Although low-income families are often at risk due to the poor quality of their homes, wealthy families may also be at risk due to the locations of their housing (Bolin & Stafford, 1981).

Chronic poverty, especially in rural communities, can lead to complications in emergency response (Fothergill & Peek 2004). This was particularly the case in the response to Hurricane Hugo in South Carolina. Rubin and Popkin (1990) found that poor residents in rural areas were physically isolated, had high rates of illiteracy, and exhibited greater mistrusted of outsiders and the government. Similarly, Miller and Simile (1992) found that some residents were so isolated that emergency managers and first responders didn't even know they existed, thus delaying response to these communities.

The poor must also overcome significant stigma related to their work ethic and values during disaster recovery. High income Whites generally encounter few problems negotiating FEMA's policies of obtaining financial assistance. However, low-income and minority families may face additional barriers due to stereotyping of aid workers who perceive them as looking for handouts (Miller & Simile, 1992). Additionally, low-income families without transportation may

not be able to reach FEMA disaster response offices, as was the case after Hurricane Andrew hit South Florida (Dash et al., 1997).

Housing shortages after a wide spread disaster often lead to homelessness for low-income families and the poor (Fothergill & Peek, 2004). This is especially true for renters who are often unable to secure the necessary repairs to their homes after a disaster, or landlords refuse to make such repairs (Miller & Simile, 1992; Peacock et al., 1998; Bolin, 1983). Furthermore, Bolin (1983) reports that landlords may use the disasters as an opportunity to evict low-income tenants and subsequently re-renting the space at a higher rate. Furthermore, Morrow (1997) reported that after Hurricane Andrew in Miami there was a reluctance to rebuild low-income public housing, which left more than 280 families homeless for nearly two years.

The Homeless

A person is considered homeless when he/she lacks "a fixed, regular, and adequate night time residence; and… has a primary night time residence that is: (A) a supervised publicly or privately operated shelter designed to provide temporary living accommodations, (B) an institution that provides temporary residence for individuals intended to be institutionalize, or (C) a public or private place not designed for, or ordinarily used as, a regular sleeping accommodation for human beings" (42 U.S.C § 11302(c), 1994). From this definition, the National Law Center on Homelessness and Poverty (NLCHP) (2004) estimates that about 3.5 million individuals experience homelessness each year. Locally, that translates to about 3,000 individuals living in either Orange, Seminole or Osceola County that are homeless each night. Annually, there are about 10,000 individuals in the region who are currently homeless (Wright & Donely, 2011).

Of those who are homeless, roughly 39% are children under the age of 18, with adults aged 25-34 making up about 25% of the homeless population. In 2007, the U.S. Conference of Mayors estimated that about 67.5% of single homeless people are men. However, men only represent about 35% of the homeless households or families (U.S. Conferences of Mayors, 2008). Furthermore, according to the U.S. Conferences of Mayors, homeless families with children make up about 23% of the total population of homeless in the U.S. In terms of race and ethnicity, in 2006, about 42% of the homeless were Black, about 38% White, and 28% Latino. Native Americans represented 4% of the total homeless population with Asians making up only 2%.

Homeless men are more likely to have served in the military than men in the general population. Rosenheck and colleagues, (1996) reported that about 40% of homeless men have served in the military, compared to about 34% in the general population. However, the U.S. Conference of Mayors (2004) found that about 11% of urban homeless in their sample reported being veterans. The homeless are also more likely to suffer from mental illness than the general population. In 2008, roughly one-quarter of the homeless population suffers from severe mental illness compared to 6% of the general population (Department of Housing and Urban Development, 2008).

<div align="center">The Homeless and Disasters/Natural Hazards</div>

Traditionally, disaster research has examined how housed individuals and families recover after a disaster. From an emergency management perspective, the emphasis is on preparing one's home and family for a disaster. This generally includes making modifications to one's home and stockpiling supplies. Homeless people present a challenge to this paradigm. Most obviously, they are not housed. Whether they live in tent communities or rely on temporary

shelter services, homeless men, women, and families do not have a home to prepare. Homeless individuals and families may face additional discrimination and stigmatization in the aftermath of disasters. At least twice in the literature, researchers have mentioned that the presence of the homeless became issues of contention in Red Cross shelters (Bolin 1993, Yelvington 1997; Wright et al. 2007). Aside from these brief mentions to homeless people in disaster shelters, I have found just three other articles that focus specifically on the homeless.

First, Ben Wisner (1998) discusses the increased vulnerability that Tokyo's urban homeless face to the impacts of earthquakes. Wisner (1998) argues that on top of their limited access to resources and social isolation, Tokyo's homeless are at increased vulnerability to earthquakes and other natural hazards due to the community's relatively poor health condition. Overall, Wisner asserts that the Japanese government must include the homeless in their disaster planning and response programs. Second, Drabek (1999) examined differences in evacuation behavior between travelers and other types of transients, including homeless people living in Miami-Dade County, Honolulu, and Santa Monica. Thirty six percent of the homeless interviewed by Drabek (1999) indicated that they learned about evacuation warnings from the news media. In Miami-Dade, 27% of the homeless reported that they did nothing after learning about the hurricane warnings. Meanwhile 20% reported turning to others on the street to try and find shelter and 37% reported going to the beach to watch the waves (Drabek, 1999). In terms of evacuation locations, 29% of Drabek's (1999) sample reported turning to makeshift shelters such as under bridges and 48% relied on public shelters. More recently, Brodie Ramin and Tomislav Svoboda (2009) address the impacts of climate change on the homeless. They argue that the world's homeless are at an increased vulnerability to climate related hazards such as heat waves, air and environmental pollution, storms and floods.

Homeless people living in shelters or transitional housing may have very little power in determining how the facilities they live in are managed and prepared for disasters. This lack of agency over preparation has been documented in the literature in relation to people living in public housing. Morrow (1997) relates that women living in public housing before Hurricane Andrew were denied access to plywood and other supplies on property that would have allowed them to better secure their homes. This resulted in widespread loss of personal property due to the impact of the hurricane. These points raise questions as to how the homeless perceive and prepare for natural hazards and disasters. More importantly, significant questions remain such as, how those "in charge" of providing services to the homeless perceive risk to their clients? And how they prepare for or mitigate those risks?

While the homeless differ from the "general population" in the fact that they are not housed, they also differ in several other ways which may complicate their experiences in a disaster. First is the issue of stigma. As discussed earlier, the presence of homeless people in shelters has been problematic in the past. Locally in Central Florida, Wright, Dodge, and Marshall (2007) found that families seeking refuge at Red Cross shelters often complained of the presence of "real homeless" people in those shelters. Such complaints are undoubtedly related to stigma and stereotyping of homeless people. Finally, because the homeless are at best considered to be a nuisance to local governments, and in the worst cases have been the targets of ordinances and policies such as feeding restrictions in public parks and trespassing laws. Such policies and attitudes towards the homeless may present barriers to their ability to receive services before, during, and after a disaster event and the consequences of these policies should be further examined.

Additionally, homeless people may have other characteristics that make them more

18

vulnerable to disasters. The lack of a government issued identification may be one significant barrier to receiving disaster relief services. Additionally, homeless may have enhanced physical and mental health problems that may be exacerbated by a disaster event. Finally, because many homeless rely on the coordination of various social service agencies, the loss of one or more agencies after a disaster impact may have long terms effects for individuals.

Research inclusive of homeless people challenges the current paradigm of emergency management because it shifts the focus away from preparing homes. Herein the focus becomes understanding how communities and agencies work together to anticipate and mitigate risks to a vulnerable group of people. Furthermore, research examining homeless persons experiences in disaster can lead to emergency management policies that are more inclusive of the needs of homeless people and families. Ultimately, through studying the issues that the homeless face during disasters it can transform the emergency management system to have a stronger commitment to social justice and the protection of all citizens.

CHAPTER 3: METHODOLOGY

Previous Research

The Building Community Disaster Resilience and Sustainability in Central Florida study was an interdisciplinary project with the goals of understanding disaster resilience in Central Florida. The study included 11 counties in the University of Central Florida service area (Brevard, Citrus, Flagler, Lake, Levy, Marion, Orange, Osceola, Seminole, Sumter, and Volusia). Group interviews were conducted with emergency management staff and members of other agencies and organizations involved in emergency support functions in seven of these counties (Brevard, Lake, Orange, Osceola, Seminole, Sumter and Volusia). Group interviews lasted about an hour in length and have fully transcribed by Fernando Rivera and myself, producing 132 pages of verbatim transcripts. A copy of the group interview script can be found in Appendix A.

In total, 60 people participated in seven group interviews. The smallest group interview was held in Seminole County (four participants) and the largest was held in Orange County (18 participants). Participants in each group interview were assigned a participant number to protect their identity and we did not collect any identifying information on any participant. Therefore, participants are referred to "Participant X" in the following chapters.

Present Research

To understand the risks that natural hazards pose to the homeless and how the homeless manage these risks, the present study employs group interviews with homeless service providers and homeless men living in Central Florida. In the following sections I discuss the methods used to collect and analyze the data included in this study.

Group Interviews

Group interviews are group discussions organized to explore a specific set of issues (Kitzinger, 1994). Group interviews offer some benefits over traditional one-on-one interviewing because they elicit multiple perspectives around the issues (Brotherson, 1994). Furthermore, Sue Wilkinson (1994) argues that group interviews allow researchers to examine individuals within a social context. According to Bruce Berg (2009) group interviews allow the research to collect large amounts of information about a subject with a higher amount of efficiency. Additionally, group interviews allow for flexibility and can allow the research to explore unexpected topics that might arise during group conversations (Berg, 2009).

Homeless services staff can offer important insights into the issues facing homeless people in their respective counties. Therefore, considering the benefits of group interviews, I have conducted small group interviews with working in homeless services in each county. Group interviews have been conducted in Brevard and Osceola County. I recruited participants through local agencies serving the homeless. In Osceola County, I recruited participants working with the county government, Helping Others Make the Effort (H.O.M.E), and a local Presbyterian church. The Brevard County interview was conducted with staff from the Brevard Coalition for the Homeless, also know as Housing for the Homeless of Brevard. In total nine participants participated in two group interviews. The interviews lasted about 40 minutes. Additionally, I conducted one phone interview with a woman I have named "Carrie" who works in homeless services in Osceola County, but could not attend the group interview. The group interviews have been digitally recorded and fully transcribed. To remain consistent with the community disaster resilience study, I assigned participant numbers to all individuals involved in the group interviews. Thus, in the following chapters I will refer to "Participant X". Although an interview

script was prepared in advance, group interviews were semi-structured in nature. As the moderator, I allowed for deviation from the script and allowed participants to raise new questions and discussion issues they perceived to be most pressing. The group interview script is provided in Appendix C.

Individual In-depth Interviews

Robert Weiss (1995) outlines the benefits of conducting qualitative interviews. Qualitative interviews allow for detailed descriptions of events and perceptions that are often omitted through quantitative interviewing. Furthermore, qualitative interviews allow for the integration of multiple perspectives (Weiss, 1995). Additionally, qualitative interviewing enables a fuller description of processes, thus allowing the research to understand how participants interpret events or situations (Weiss, 1995). As the central focus of the proposed research is to understand how homeless people in central Florida understand and mitigate their risks to natural hazards, in-depth interviewing has several advantages over surveys. Therefore, I conducted in-depth interviews with homeless men living in Brevard, Orange, and Seminole County.

I began this project with the hopes of understanding differences between urban and suburban/rural homeless. I planned to conduct approximately 30 interviews with 10 to 15 interviews being conducted in Orange County (urban) and the remaining interviews being conducted in Brevard, Osceola, and Seminole counties. When I began my data collection at a men's shelter in downtown Orlando, I quickly learned that urban, sheltered homeless population had few concerns about severe weather, and were generally reluctant to participate in my study. Thus, I changed my focus to unsheltered homeless populations in Brevard, Osceola, and Seminole County. These counties have fewer emergency shelters and thus a larger proportion of

their homeless populations are unsheltered. Unfortunately, I was unable to make contact with homeless service providers that would allow me to interview their clients in Osceola County. Therefore, the sample was limited to Brevard, Orange, and Seminole County.

In total 11 interviews were conducted with homeless individuals living in these counties. Seven interviews were conducted in Brevard, two in Orange, and two in Seminole County. Recruitment of participants took place primarily at soup kitchens and drop-in shelters in these counties. Interviews were conducted "on the spot". The average interview lasted about 30 minutes. The shortest lasted about 12 minutes and the longest lasted nearly an hour. Interviews were semi-structured and conversational in nature, and an interview guide can be found in Appendix B. All interviews were digitally recorded and have been fully transcribed by the author of this dissertation. I assigned pseudonyms to all participants to protect their identities. Table 1 provides an overview of the sample characteristics and more detailed information can be found in Appendix D ("Cast of Characters").

Table 1: Sample Characteristics

Pseudonym	County	Race	Age	Housing Status	Time Homeless
Andrew	Brevard	White	Twenties	Unsheltered	Intermittently
Carl	Brevard	Black	Middle aged	Unsheltered	10+ years
Chuck	Brevard	White	Middle aged	Unsheltered –Car	About 3 years
Dale	Seminole	White	Middle aged	Unsheltered – Tent	About 2 years
Frank	Brevard	White	Middle aged	Unsheltered – Tent	6 months
Gary	Brevard	White	Middle aged	Temporarily sheltered	A few months
James	Orange	White	Twenties	Sheltered	About 5 years
Joe	Orange	White	Middle aged	Sheltered	About 4 years
Randy	Brevard	White	Middle aged	Unsheltered – Tent	10+ years
Sid	Brevard	White	Middle aged	Unsheltered	10+ years
Tony	Seminole	White	Middle aged	Unsheltered- Tent	About 2 years

The sample consists entirely of men. Although I had hoped to include women in my sample, my recruitment sites often served primarily male clients. For instance, James and Joe, the two sheltered homeless men included in this study were interviewed at an all-male shelter in Orange County. Furthermore, interviews in Brevard County were conducted at a day shelter and soup kitchen that has two facilities which are typically segregated by gender. I recruited participants in the shelter's main office building. This facility provides social service referrals and laundry services to all of their clients, however it also includes the men's shower facilities. Therefore, men overwhelmingly occupied the lobby in which I was allowed to recruit participants. Ultimately, the unintended exclusion of women from this study is a limitation because I am unable to examine the gendered experiences of the homeless in Central Florida.

Similarly, aside from Carl, the sample is overwhelmingly White. This is due to several factors. First, aside from the Orange County shelter, the patrons in my recruitment sites were mostly White. Second, although I approached several Black men to participate in my research, only two agreed. One is Carl, who is included in this sample and the second was an older Black man who is not included in the sample. After beginning the interview it became clear that the man was suffering from mental illness or was intoxicated. At that point I terminated the interview, as I felt the man could not consent to his participation in the study. Therefore, as I cannot examine any potentially racial differences in the experiences of my participants the lack of racial or ethnic diversity is a limitation of this study.

The majority of men I interviewed have been homeless for at least two years. Many of the men reported going between phases of being housed and unhoused. At the time of their interviews, three men were sheltered. James and Joe were sleeping at a men's shelter in Orange County, and Gary had been living with an older man that he met at a Burger King restaurant for

about a month. Prior to finding shelter, Gary had been sleeping on the streets in Brevard County. Additionally, when I met Andrew he explained that he lives on and off with his mother but spends most nights sleeping under a bridge unless the weather is bad. I'll discuss Andrew's experience later in this dissertation, however due to his on and off arrangements with his mother he can be described as unsheltered. Four of the men I interviewed were living in tents in wooded areas when I interviewed them. Additionally, at the time of his interview, Chuck was sleeping in his car.

I recruited the majority of the participants included in this study from Brevard County. I gained access to a day shelter in Melbourne that allowed me to recruit participants in their lobby. This provided me with access to roughly 20 men who were waiting to meet with counselors or take a shower, many of whom were willing to be interviewed while they waited. In contrast, my recruitment in Orange and Seminole County took place during meal times at a monthly soup kitchen (Seminole) and an emergency shelter for homeless men (Orange). Not surprisingly, most of the patrons in these locations were more interested in getting a hot meal, then speaking to a doctoral student about how the weather affects their daily lives. Thus, while I established recruitment sites in Orange and Seminole County, it was difficult to recruit potential participants in to this study. Unfortunately, I was unable to make contact with a service provider in Osceola County to conduct interviews with that county. Considering the disparity in county representations, I cannot make conclusions regarding differences in the experiences of homeless men in different counties. Thus, while the typical participant in this study is an unsheltered, middle aged, White male living in Brevard County, the sample includes a sample of men each with their own unique experiences of homelessness, particularly regarding their experiences with inclement and severe weather in the region.

Analytical Strategy

To analyze the data I utilized methods consistent with the grounded theory approach. The analysis of group interviews with emergency management officials began from two guiding questions: 1) who do participants identify as being most vulnerable? and 2) what makes one vulnerable? First, I employed open coding (Saldana, 2012; Charmaz, 2010). The process began with reading the transcripts along with line-by-line, or open coding to develop a set of initial codes (Charmaz, 2010; Strauss & Corbin 1990). These initial codes identified the groups considered most vulnerable by group interview participants as well as other factors that may increase one's vulnerability to a disaster. After developing a list of initial codes, I utilized axial coding to better understand the relationship between my initial codes and develop analytical categories (Strauss & Corbin, 1990; Saldana 2012). Axial coding refers to the process in the initial codes are compared to each other to understand how conditions and context may influence the central phenomenon and themes. Furthermore, I utilized memo writing, concept mapping, and theoretical diagraming to arrive at the findings that are presented in Chapter 4.

I used similar methods to analyze the group interviews conducted with homeless services staff and in-depth interviews with homeless individuals. However, these analyses are informed and guided by the proposed matrix of vulnerability (see Chapter 4). The emphasis in these analyses is to understand the risks that the homeless face to natural hazards in Central Florida and the steps they take to mitigate these risks. Thus, I began my analysis with two guiding questions: 1) what risks do the homeless face? and 2) how do they mitigate these risks? As in my analysis of the community resilience study group interviews, I use methods consistent with the grounded theory tradition. I began with line-by-line open coding to develop and initial set of

codes. These codes were further developed into analytical categories through axial coding and memo writing.

Limitations

There are several limitations to the current study that I would like to address. First, the sample is exclusively of men. While I did not purposefully exclude women from this study, they are nonetheless absent. This makes it impossible to identify and understand any of the underlying effects of gender on one's experience of being homeless and managing one's risks to inclement and severe weather. Similarly, with the exception of one Black participant, the sample is racially homogenous. Therefore this study is unable to understand the racial or ethnic components of natural hazards vulnerability among the homeless or the strategies used to by homeless men to mitigate their perceived risks. Furthermore, the majority of men included in this sample were interviewed in Brevard County. Thus, I am unable to make comparisons between counties in the regions.

Taken together these limitations are the result of the strategy of convenience sampling used in this study. I conducted interviews only at locations that gave me permission to interview their clients. Thus, agencies and organizations serving the homeless who did not respond to my attempts to make contact or did not allow me to speak with their clients were excluded from the list of potential research sites. This in turn limited the number of homeless men and women I had access to. Furthermore, I was only able to recruit individuals that were present at the research sites at the times I was physically present. Thus, men or women accessing services before or after I enter the field in these locations were also excluded from the sample of potential participants. Additionally, I could only interview willing participants. Therefore, the sample may

have been biased by self-selection. Finally, there were often more men willing to be interviewed then I was able to interview during my time in the field. Thus, my limited time spent at field sites also limited the ability to obtain a diverse sample of participants.

CHAPTER 4: THE MATRIX OF VULNERABILITY: EMERGENCY MANAGER'S PERCEPTIONS OF VULNERABLE POPULATIONS

In this chapter, I analyze group interviews conducted in six Central Florida counties as part of the Building Community Resilience and Sustainability in Central Florida project. Specifically, I examine the factors that emergency management personnel believe contribute to disaster vulnerability. Furthermore, I explore how participants' descriptions of vulnerability construct a complex process of vulnerability. As I will demonstrate, participants perceive vulnerability as a process mediated by social conditions (being "poor", elderly, etc.), location, and actions. I begin first by examining the social factors that are perceived to make individuals vulnerable to hazards. First, I consider the groups identified by participants as being "most vulnerable" to a disaster. Second, I examine the relationship between vulnerability and space and place, as described by group interview participants. Third, I explore how participants perceive apathy and complacency to influence vulnerability. I conclude by proposing the matrix of vulnerability. This is a new theoretical understanding of vulnerability that is informed by the perceptions of emergency managers wherein vulnerability as an intersectional process mediated not only by social factors and physical location but also human agency.

Identifying Vulnerable Populations

In the community disaster resilience study of Central Florida, group interview participants were asked who they believed were the "most vulnerable" to a disaster in their community. For the most part participants identified what I have come to call the "usual suspects". These usual suspects are the same vulnerable populations that are repeatedly discussed

29

in the disaster and hazards vulnerability literature and includes the poor, the elderly, non-English speaking residents, people with special medical needs, and people living in hazard prone areas or unsafe homes. Participants from our Orange and Seminole County focus group provided two strong examples of identifying who is perceived to be most vulnerable:

> "….for us in emergency management, we look to people that live in mobile homes, or manufactured homes. Or the elderly, the disabled, people who don't have any family and that type of thing…" Participant #5, Seminole County Focus Group

> "…I do think that the lower income, across the board. Um, and then you run into the cultural issues where, uh, there maybe communications issues, that inhibit them to understand what's being presented to them, and then too, having the capabilities to request assistance." Participant #10, Orange County Focus Group

In each of these examples, the participants describe the social factors they perceive make individuals vulnerable to a disaster. In the following paragraphs I examine four groups, the poor, the elderly, individuals with special medical needs, and immigrants. These groups represent the types of people or social conditions that were most often referred to as the "most vulnerable" to a disaster by participants in the USDA group interviews. I must emphasize that although I discuss these attributes separately they should not be considered to be mutually exclusive. Often individuals may experience any combination of conditions that ultimately affects their vulnerability to natural hazards. For example, the elderly are also more likely to economically constrained and have increased medical needs. Thus, vulnerability is intersectional, because the factors that makes one more, or in some cases, less vulnerable to a disaster, combine to create varying degrees of vulnerability.

<div align="center">The Poor</div>

Many of the group interview participants perceived "the poor" to be more vulnerable to disasters because they lacked the financial resources to prepare their homes and families for a

disaster. As one Brevard County focus group participant stated, "I was gonna say those that are challenged because, you know, they don't have the money to go out and get plywood perhaps, or something to build a door jam so that flood waters don't come in." Indeed, much of the vulnerability literature has found that low-income individuals and families are less likely to be able to purchase supplies or make structural protections to their homes (Palm & Carroll, 1998; Turner et al., 1986; Vaughn, 1995). People working low-wage jobs, struggling to make their monthly rent, and feed their families will have fewer dollars to spend on things like flashlights, weather radios, batteries, and plywood (just of the few recommended items needed to prepare for a disaster). Furthermore, it may be unreasonable to expect low-income families who may already struggling to find their next meal to acquire a stockpile food and water only to be eaten in the event of an emergency. Ultimately, if the poor have less during normal periods, we expect that they will have less during periods of stress.

Having limited financial resources often translates in to having limited housing options. Affordable housing is becoming increasingly scarce in Central Florida (Wright & Donely, 2011). In 2010, fair market rent for a two-bedroom apartment in the Orlando-Kissimmee Metropolitan Statistical area was $1,052. A one-bedroom apartment was slightly less expensive at $921 per month (Housing and Urban Development, 2010). This means that low-wage workers may struggle to find adequate housing for themselves and their families. Mobile homes may provide a cheaper alternative to traditional home or apartment rentals. While mobile homes can offer affordable shelter to low-income families, mobile homes are notoriously unsafe and vulnerable to multiple natural hazards, and are often occupied by low-income residents (Bolin & Bolton, 1986; Kusenbach & Christmann, 2012). Such concerns were expressed by many of the community resilience group interview participants

> "Anybody that lives in a mobile home or a manufactured home is the least prepared."
> Participant 2, Brevard County
>
> "The mobile homes is a different thing, and that has presented a number of issues, because it's the shelter of choice for uh, those with low and moderate incomes, and yet it's the most vulnerable"
> Participant 2, Osceola County

Thus, living in a mobile home may be a compounding factor for many of Central Florida's low-income families. Interestingly, a participant from Osceola County views living in a mobile home as the "shelter of choice" for low-income families. However, it may be the case that some families simply cannot afford traditional housing and a mobile home may be perceived as a better alternative to being homeless.

The homeless are another subgroup of the poor discussed by participants in the community resilience interviews. Participants in the Brevard, Osceola, and Seminole county interviews expressed concerns for the growing homeless populations in their communities. Often these discussions were brief, as the following excerpt for Brevard County demonstrates:

> Participant 8: I think another population that we need to plan for too that we have had to respond to some degree in the past, but we have a growing homeless population, and that growing homeless population if we have another disaster is gonna be another issue to face.
>
> Moderator: Yeah, I don't know if there is any, you know plans or you know? How the community is dealing with the homeless population?
>
> Participant 1: There is a whole separate community that works with those folks.
>
> Participant 4: And I think in the recent months, we're increasing our integration and our conversation with that.
>
> Participant 8: We're involved in the continuum of care coalition in developing some plans for how to address the homeless issues, and at some point in time if we have a disaster we'll have to address that as well.

From this example, members of Brevard County's emergency management community perceive the homeless to be vulnerable to a disaster. However, they don't fully explain why they perceive

them to be more vulnerable than the general population. Similar statements were made during

the Seminole County interview:

> Participant 2: …And with the homeless situation too, that's another animal for us to deal
> with.

> Moderator: Could you elaborate on homelessness a little?

> Participant 2:There's been a couple of segments; probably many of you have seen them,
> on 60 minutes about, specifically about Seminole County. And um, we have just
> had an increased population. Keeping in mind that some of them have shelter,
> and live in hotels, it's just not considered permanent housing. We also have a
> number of people, who, some of the by choice, a lot of the by choice, who live in
> the local woods and stuff. Um, that we're just seeing an increase in that, just
> because of the economic situation.

One participant from the Osceola County interview who works for the school distract elaborated

on her concerns for homeless children, "I know that western portion of our county has such a

large population of homeless people or, families that are living in hotels that have no

transportation and no other means of getting around or finding other, um, I'd say another area to

live so I know that its always a challenge from my area trying to deal with the children that are

out on that side of the county. If something happened, even transportation to reunification back

with the families would be difficult because they don't have a permanent address, they do not

have transportation. It just makes it much more of a challenge." While this statement focuses on

children, it touches on a major challenge that the homeless face in the aftermath of a disaster: not

having a permanent address.

Although the lack of a permanent address may make it more difficult to reunite families

after a disaster impact, not having a permanent per-disaster address may also exclude the

homeless from disaster relief services. Current Federal Emergency Management Agency

(FEMA) policies state that in order for individuals to receive financial assistance after a disaster

they must show proof of address for their pre-disaster residence (FEMA, 2008). Thus, the

homeless are routinely denied financial services after a disaster. Furthermore, researchers

examining the impact of Hurricane Andrew in South Florida, found that while the homeless were

initially allowed to stay in Red Cross camps, they were later evicted when the National Guard

took over control of the camps because they did not fit the Federal guidelines that determine who

is and is not a disaster victim (Yelvington, 1997).

<center>The Elderly</center>

Simply being "old" doesn't mean that one is more vulnerable to a disaster. From the

perspective of group interview participants it seems that many of the social realities associated

with advanced age exacerbates one's vulnerability. Specifically, participants often pointed to

issues of isolation, or economic hardship or lack of transportation as the leading factors in

causing the elderly to be vulnerable to disasters. The example below comes from the Orange

County group interview:

> Participant 7: Well, uh, just basic needs as far as food and water and stuff like that. Um, a lot of the older people, um they, including my parents even, you know their idea of what they may need in case of an emergency, gas for their cars, uh, you know get things on order, call your family up if there's a disaster coming through or anything like that.
>
> Participant 4: And a lot of them can't afford it.
> Orange County Focus Group

In this example being old is not necessarily the problem. However, economic constraints, along

with the possibility of limited transportation and social isolation can increase the vulnerability of

the elderly. Perhaps then it is the experience of being old that increases vulnerability, rather than

the condition of advanced age.

An example of the contrast between being elderly, and the experience of being "old" can

be seen in discussions referring to the Villages, a large scale, master-planned retirement

<center>34</center>

community in Sumter County. Participants in the Sumter County group interview often

contrasted the Villages with other county residents. They noted that compared to others in the

county, the residents in the Villages have more financial resources, and the support and

infrastructure of the builders involved in developing the community. It should be noted that

while the overwhelming majority of residents in the Villages are 55 and older, they do not

necessarily share the same risks that the typical retiree might face. One participant referred to

response in the Villages after a tornado touched down in the community in 2007:

> "What's interesting is when the Ground Hog Day tornadoes came through, and they hit the majority of the Villages when they went by, um, the roads were cleared so quickly and everything was handled so fast, but a lot of that was done by (Other: the corporation), well the corporation, but it was done by people who live, or work in the community and were the contractors in the community. The folks who actually resided there were not the ones that were actively involved in it." Participant #5, Sumter County

Another participant followed up explaining that by the end of the day anyone whose home was

destroyed or damaged by the tornado was able to find shelter with one of his or her neighbors.

While it should be noted that participants also expressed concerns about what will happen to the

Villages once the corporate builders leave, the Villages represent a community of elderly

Floridians who have access to financial resources and have strong social connections which, in

the past have made them more resilient in the face of a disaster.

Special Medical Needs

Group interview participants also identified people with special medical needs as being

most vulnerable to a disaster. They pointed to mobility issues, needing advanced care, and

reliance on electricity as the factors exacerbating their vulnerability. There is however, some

disagreement as to how special medical needs may influence vulnerability. In some instances, as

the example below demonstrates, interview participants felt that individuals with special medical

needs are in some cases more prepared for a disaster than the general population:

> "If I may add, from my perspective, there are, uh, clients that are registered in the county's special needs registry, that some are extremely prepared. Uh, because their life depends on being prepared. They have to have a stockpile of medications, they have to have viable alternate transportation modes, they have to have a caregiver that can actually care for them. Uh, they are very pro-active when it comes to responding to the counties query about their address, and change in conditions." Participant 1, Seminole County

On the other hand, some participants felt that individuals with special medical needs may be less

likely to reach out for help due to stigma and the fear that they might lose their independence.

For example:

> "I work with the special needs people in the community and they have, we have the same situation. People don't want to register with us, or they don't want to contact us during the time of the event for fear of being put into a residential facility, or having it known to the community that they're disabled." Participant 2, Orange County.

From these two examples we see that having special medical needs is not a universal experience.

While some are "pro-active" in preparing for the worst, others may be more reclusive and

perhaps increase their own vulnerability because of this. It is clear however, that individuals

involved in emergency management perceive those with special medical needs to be at greater

risk to potential catastrophes.

Immigrants and Non-English Speakers

Florida has a large Latina/o population, however the region also has growing Haitian and

Caribbean communities (Donato et al., 2007; Schiller & Fouron, 1998). Many of the focus group

participants expressed concern for newcomers in the region. Often participants emphasized the

difficulties that arise when residents do not speak English. Osceola County has one the largest

Latina/o population in the region, with roughly 46% of the county's population identifying as

Latina/o (U.S. Census, 2010). This led one Osceola County focus group participant to make the

following statement:

> "Much needs to be done in Spanish here, which again is a language barrier to some
> extent with certain demographics, that are becoming the majority here. And that is
> another defining factor in communication amongst the different ethnic groups that reside
> within out county and surrounding counties. So, you have to keep trying but it is a very
> frustrating thing." (Osceola County)

Participants in all of the other focus groups noted the "language barrier" as a major difficulty. In

addition to concerns about language, participants perceived migrant workers to be more

vulnerable to disasters. Participants attributed the increased risk to their perceived lifestyle of

migrant workers. The following from the Sumter County group interview is typical of other

statements made about migrant workers:

> We're getting a large migrant population. Workers just comin' in to work. There are a lot
> of the contractors who work up on the houses who are a migrant population. And there
> are a large group of them that live in south county and they are not well off. They're just
> not. They ain't makin' much. They're livin' in a trailer that's been handed down five or
> six times; and there's a bunch of 'em in it too. (Sumter County)

This excerpt provides a strong example of the intersectional nature of vulnerability. The

participant describes migrant workers as being poor and living in cramped and unsafe housing.

Indeed, many migrant farmworkers may experience these conditions, but these conditions may

not be exclusive of the farmworker lifestyle. I should clarify that not all immigrants are

farmworkers, and not all immigrant farmworkers live in cramped mobile homes. Ultimately the

experience of being a Latino/a immigrant in Central Florida is very complex. Aside from purely

economic concerns, individuals and families may experience stigma from within their

community and feel isolated, they may feel targeted by law enforcement. One immigrant woman

from the Volusia County group interview shared one of her everyday struggles:

"I'm alone with my children and I'm also afraid to go from here to there. I tell myself, if I get stopped by the police…and you have no license, either you go to jail or pay a certain amount of money, but the work I have doesn't pay enough to cover the $300 fine, thus is very difficult…" Volusia County.

Here the participant shares her fears of being pulled over while driving without a valid drivers license. She is currently living as a single parent, although it is unclear if she is married. Without a valid license her ability to travel to work, and to do shopping or other errands is limited. Her limited access to transportation may increase her and her children's vulnerability to a disaster. If a hurricane warning is issued for her community, she may not have supplies on hand to prepare her home or ride out the storm. Furthermore, she may not have the ability to evacuate her family to a local shelter. Hurricane Katrina demonstrated the importance of access to transportation when thousands of New Orleans' inner-city residents were strand without access to transportation to get them out of harms way (Litt, 2008). Thus, immigrants' vulnerability may be increased by the perceived "language barrier", but there may also be other aggravating factors such as housing conditions, poverty, and limited access to transportation that intersect to affect their overall vulnerability to hazards.

In this section I have provided examples of how social conditions are perceived to influence one's vulnerability to a disaster. I have shown how emergency management personnel perceive poverty, homelessness, advanced age, special medical conditions specifically increase one's risk in the event of a disaster. Mainly, participants perceived these conditions to limit the ability to prepare for the disaster. However, emergency management personnel also indicated that where one lives might also increase their vulnerability during a disaster event. In the following section I discuss the perceived influences of place and space on disaster vulnerability, particularly in rural communities.

<u>Vulnerability, Place and Space</u>

When asked who is most vulnerable to a disaster, group interview participants also acknowledge that place and space can contribute to vulnerability. Generally, participants pointed to the space between individuals and families in rural communities and living in flood-prone areas as influencing vulnerability. I begin by examining the role of space in understanding vulnerability, and then examine the influence of place as perceived by emergency management personnel.

Space and Rural Communities

While group interview participants in Brevard, Lake, Osceola, Seminole, and Sumter counties were unsure whether or not to describe their communities as "rural", they all acknowledged that their counties' size, and the space between municipalities and other communities posed a challenge to their response efforts. Primarily, they pointed to space as increasing vulnerability in the time after a disaster, when residents may need assistance but are unable to communicate with their neighbors or county officials. The quote below is typical of these concerns and demonstrates the challenge that space creates:

> "The space between people and the ability to notify other people that there is something wrong becomes a problem in a rural area where, you know, in a very close neighborhood in a large city, you just throw the window open and say "Charley! I need your help!" but, you know if the telephones are out and the power grid is down and everything, people can't get on the phone." Participant 4, Sumter County

Here space creates vulnerability because rural residents may not be able to access help as easily as those living in large, densely populated urban communities. But space also makes it difficult for emergency managers to respond to individuals and families living in rural communities. As one participant in Osceola County notes, "the areas [in the] the south part of the county, being so rural and even knowing that there is a problem going on with some of the people down there that

39

must be so difficult." (Osceola County). Indeed, this has been a recurring problem in disaster response. Following Hurricane Hugo's 1989 landfall in South Carolina, Rubin and Popkin (1990) found that residents in rural areas were physically isolated, had high rates of illiteracy, and exhibited greater mistrust of outsiders and the government. Similarly, Miller and Simile (1992) found that following Hurricane Hugo some residents were so isolated that emergency managers and first responders didn't even know they existed, thus delaying response to these communities. Thus, space does not influence one's vulnerability to the initial disaster event, but rather has a greater affect on their vulnerability during the response and recovery periods.

Living in Vulnerable Places

While the space between people in rural communities can be a challenge for responding to a disaster, group interview participants also explained that where certain people live can initially place them at greater risk. Generally, participants expressed concerns for individuals living in coastal communities. This was especially true for participants in Brevard County, as one participant explained, "We're 23 miles wide and 72 miles long. We've got 72 miles of coastline on the Atlantic and 60% of the population lives in a flood prone area. The population of the county is around 550,000, and 250,000 people live within three miles of water." Another participant in the same interview provided a deeper insight into the challenges that geography can cause for the county:

> "we have a tremendous amount of our population that lives on the barrier island, which are serviced by a limited number of bridges. A big disaster, like a hurricane or something like that, those bridges may be gone, or impassable until they are inspected, so one of the challenges is gonna be, if there are people still on the islands, getting to them, to get help to them. And if they're not on the islands, getting them back and getting that rebuilt is going to be a tremendous challenge." Participant 2, Brevard County

This explanation provides a more comprehensive view of the life in vulnerable places before, during, and after a disaster. Because their homes are situated on a narrow strip of land between the Atlantic Ocean and the Indian River, barrier island residents are physically vulnerable to hurricanes. However, their location on the barrier island also complicates their ability to evacuate quickly and effortlessly. Similarly, with few bridges, island residents may have to wait longer in to return home and get "back to normal" after a disaster.

While Florida's coastal residents are often the focus when discussing vulnerability, the State's inland residents are often overlooked. Participants in our inland county interviews (Lake, Orange, Osceola, Seminole, and Sumter) did express concerns about hurricanes, but appeared to be more concerned with flood risks in their counties. As one participant in Sumter County points out "a two-inch difference in elevation can make a difference in your home being flooded, and you don't see that in the mid-west and those kind of places. But here's we're flat; and if you just happen to be in a depression and you didn't notice it when you bought, we'll guess what, you're flooded." For inland counties it doesn't take a hurricane to cause a flood. Even a few days of heavy rain can cause unexpected flooding throughout the region. A participant made this clear during our Osceola County interview:

> "When you see a hurricane coming in from off shore, you know what worst case scenario could be. But when it picks up and rains for 10 days in a row, or rains for 2 full days and you can't get information of you know what's another inch of rain gonna do? How, how far are we gonna go under? What do we need to do? Cause you know the general population out there, for them, it hasn't rained in 3 days, and they think its fine. What they don't realize is that the water levels are so far up there that with a half inch of rain, we'll all be under water." Participant 3, Osceola County

Many inland participants expressed similar concerns about flooding and explained that certain parts of their communities were more or less prone to flood problems. It seems that emergency managers perceive certain locations to be more vulnerable to particular types of hazards.

Interestingly however, some participants explained that while many residents experience increased risk to certain types of hazards, that those same residents have learned how to manage these risks on their own.

Often such feelings were paired with idealized descriptions of rural communities. One participant from Seminole County pointed to residents in Geneva, a small rural town, as an example of communities that have learned to manage their own risks:

> "I certainly think of Geneva, they've had several incidents or situations our there but I think that as a community the rural population typically is pretty resilient on their own. Um, although, sometimes we have to provide some resources in there. But they're typically pretty self-sufficient because they know that they're going to have flooding. They chose to live on the water way and they know they're going to experience some of that." Participant 2, Seminole County

A participant from our Sumter County interview provides a similar example of rural self-sufficiency:

> "A lot of them actually have machinery and equipment that plays right into that… if they have a large brush fire or something of that nature, it's not uncommon for them to actually mitigate those and control it and deal with it, and help each other out. It's not uncommon to have a neighbor go to somebody else's house and say "hey let me help you with that". Uh, which is a huge asset, uh especially in a county that is rural…" Participant 5, Sumter County.

Here the relationship between vulnerability and agency is exposed. From Participant 2's perspective, Geneva's residents know that they are at risk to flooding and in most cases, are able to manage the flooding on their own. Participant 5 echoes these sentiments. These examples demonstrate that if individuals are aware of the risk that they face and have access to the appropriate tool, they may be able to effectively manage a particular hazard without much help from the outside. Thus, individuals are able to mitigate their vulnerability. On the other hand, if residents do not perceive themselves to be at risk or do not have the necessary tools they may not be able take the steps necessary to prepare themselves or their homes.

<u>Apathy</u>

In addition to asking group interview participants to identify who was most vulnerable to a disaster in their community, they were also asked what challenges they faced in creating a disaster resilient community. In other words, what challenges emergency management personnel faced in preparing their communities to prepare for and respond to a large-scale disaster. Aside from admonishing local governments for slashing emergency management budgets, participants overwhelmingly pointed to residents who are apathetic about preparing for disasters (particularly hurricanes) as the biggest problem they are facing. As one participant from Orange County points out, complacency about hurricanes is linked to the relative infrequency of large-scale impacts in the region.

> "Well right now I think its complacency because we haven't had an event since the tornadoes in 2004. We have a lot of people that are like "Okay, we did that so, that ain't gonna happen again for twenty more years so why bother to get ready and get prepared." I mean, I think that if were we going to have an event, if we had events this last year, I think we would have been in the same situation we were in back in 2004. Many people would not have been prepared, because they just get into this complacency that, you know, "it's not gonna happen again" and that was quirky thing, and so, it's gonna make it harder for us to bounce back, because uh, people, are not prepared. They don't even have the water in place and things to take care of their family for three days." Participant # 17, Orange County

Participant 1 in Seminole County echoes these concerns not that, "people get comfortable in their ways. We haven't had a hurricane since the '05 season, or Tropical Storm Faye in '08. So people get complacent, they get comfortable, you know, they have this attitude that it's not gonna happen to me." Participants in each of the six group interviews made similar claims, reflecting that individuals do not plan ahead for disasters, but rather react once warnings are issued. Here, apathy might be viewed as a general condition that prevents individuals and families from taking the necessary steps to prepare themselves and their homes for a possible

disaster. From this perspective, emergency managers perceive residents to be generally unprepared and unmotivated. For emergency managers this lack of preparation and motivation results in an increased vulnerability for residents and may ultimately complicate their response efforts, if as the participant noted they don't even have enough water for three days. Thus, when emergency managers talk about apathy or complacency they are pointing to inaction. It is this inaction that makes individuals more vulnerable to a disaster. From this, it suggests that the emergency management staff perceives action, or taking steps to prepare for a disaster, as important for reducing one's vulnerability.

Constructing a Matrix Vulnerability

In the preceding sections I presented examples of the types of people that emergency management staff considered to be "most vulnerable" to a disaster. These included the "poor", the elderly, people with special medical needs, immigrants and non-English speakers, and people living in mobile homes. These groups, or types of people, represent a collection of social factors that are believed to increases vulnerability to a disaster. More importantly, these conditions are not mutually exclusive but rather are intersectional. For example, one can be poor and elderly and have special medical needs. Thus, individuals may experience unique combinations of social characteristics that result in varying degrees of vulnerability.

Group interview participants explained that geography, mainly the place where a family lives, and the distance between that family and their neighbors or emergency responders can also influence one's vulnerability. For example, individuals living along the coast or in the flood prone regions of inland Central Florida are perceived to be at a greater risk to certain hazard events. Furthermore, in Central Florida's less densely populated interior space becomes a

concern as some emergency management personnel concede that they may not be able to reach residents quickly, or more troubling, that they may not even know that some residents need help. Finally, group interview participants lamented that residents in their counties are generally apathetic or complacent about preparing for a disaster. Here, participants believe that residents are not taking actions to protect themselves or their families. In the following pages, I take my analyses deeper and examine how the discussion of what makes someone vulnerable can be used to reconstruct our contemporary theoretical perspectives of disaster vulnerability.

Like Kusenbach and Christmann (2012), I argue that vulnerability should be viewed as a process. In my view, this process consists of four separate but interacting components: social factors, physical location, human agency, and time. Together, these components form what I have come to call the matrix of vulnerability. In the following sections I explain the components of this matrix and provide a discussion of it's the dynamic nature of vulnerability.

Social Vulnerability and Physical Vulnerability

Two axes, one representing social vulnerability and other representing physical vulnerability form the matrix of vulnerability. Social vulnerability refers to the intersecting social characteristics that affect the vulnerability to natural hazards. As demonstrated in this chapter, such social characteristics may be social economic status, age, housing condition, immigration status, and language ability to name a few. Thus, social vulnerability refers to the potential risks associated with one's social categories. Physical vulnerability refers to the risks associated with one's physical location and serves as the geographical component of one's vulnerability. I use the term "physical" in because it refers to the risks associated to one's physical environment, rather than an implied threat to one's physical wellbeing.

In Figure 1 below, social vulnerability serves as the Y-axis and location to serve as the X-axis. Each axis ranges from very low vulnerability to very high vulnerability and intersect at a point of moderate vulnerability. These axes form four quadrants: (1) low social and low physical vulnerability, (2) low social vulnerability with high physical vulnerability, (3) high social vulnerability with low physical vulnerability, and (4) high social vulnerability with high physical vulnerability.
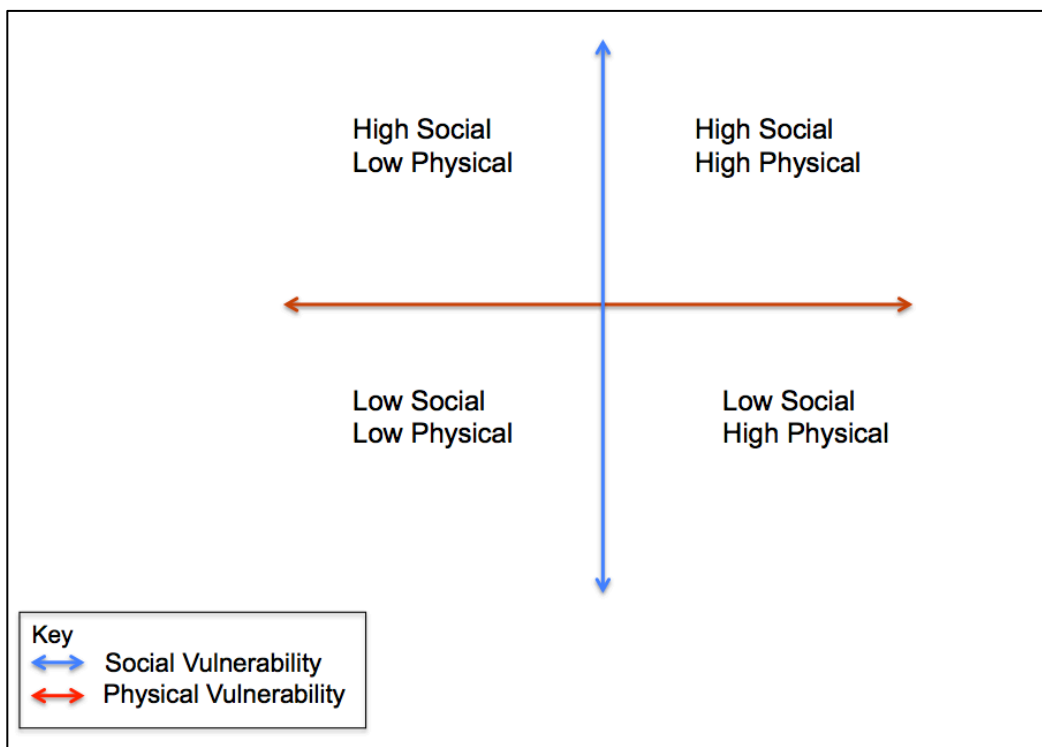
Figure 1: Social and Physical Vulnerability

To estimate one's starting position in the matrix we must consider various measures of human, social, and cultural capital and the risks associated wither where one lives. For example, consider the immigrant woman living in Volusia County (page 33). We know that she is a single mother, she is economically constrained, has limited English language abilities, and does not have a driver's license. From these few variables she has relatively high social vulnerability

compared to a middle-class married woman who speaks English fluently. For the purpose of this

example, assume that she lives near the coast in Volusia County. I have demonstrated that

emergency managers perceive individuals living in coastal regions to be at greater risk to

hurricanes, thus she (and her children) experience high physical vulnerability relative to a similar

family living inland. Figure 2 below depicts this woman as having high social and high physical

vulnerability.

Figure 2: Example High Social and High Physical Vulnerability

Agency

Within the matrix of vulnerability, agency refers to one's ability to take actions that she

or he perceives will reduce her or his risks to a particular hazard. This is derived from Kusenbach

and Christmann's (2012) premise that vulnerability as a process and acknowledges that the

perceptions of and decisions made by individuals can increase or decrease one's vulnerability.

However, before one can take actions to reduce their perceived risk, she or he must first perceive oneself to be at risk. I have demonstrated that emergency managers are concerned that residents do not take risks seriously and generally fail to prepare for them. Thus the first step in exercising one's agency is acknowledging that he or she is at risk to a particular hazard.

For instance, take the earlier example of the immigrant woman with high social and high physical vulnerability and assume that a hurricane has been forecast to impact Volusia County. If the woman learns of the event and perceives her self to be at risk she can then take steps to prepare for the storm. There may be many possible courses of action for this particular family. For instance, they may board up the windows of their home, gather food and medical supplies and choose to ride out the storm in their home. On the other hand, the woman may decide that her family would be safe in an emergency shelter or staying with family or friends in another county. These examples depicted below by Figure 3, which demonstrates an individual taking protective actions, and Figure 4, which demonstrates evacuation.
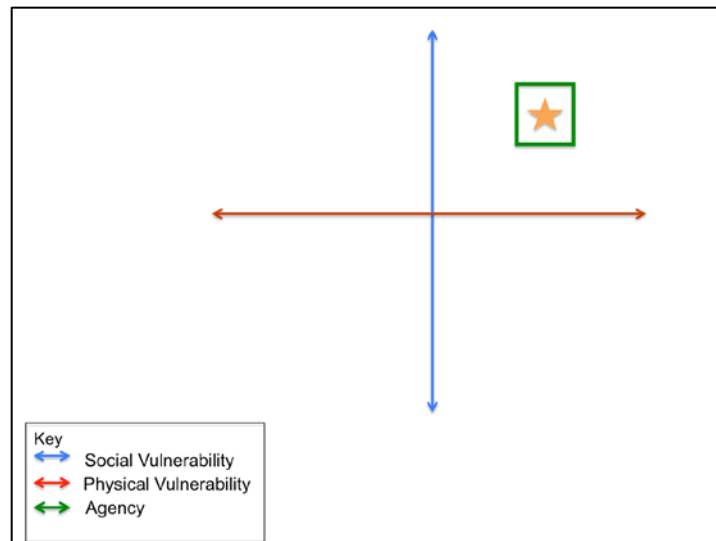
Figure 3: Agency – Taking steps to prepare one's home
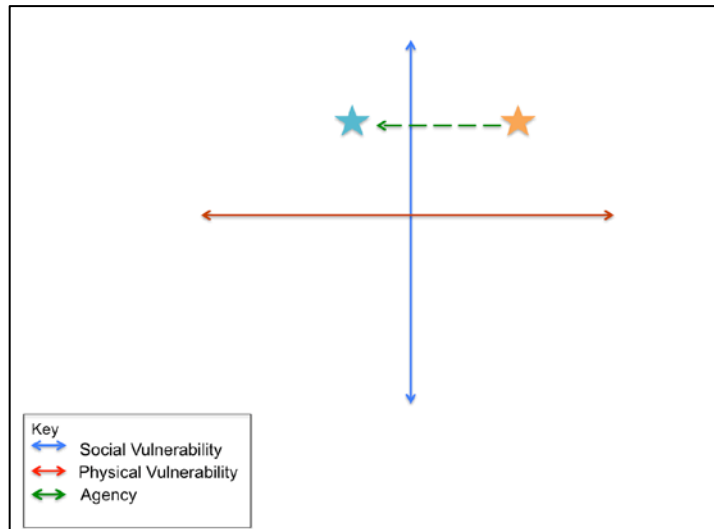
Figure 4: Agency – Evacuating to a safer location

While the available courses of action may seem infinite, not all courses of action may be available to or perceived by everyone. Here the field of available courses of action and possible outcomes narrows. This narrowing may be the result of inexperience or lack of education in how to prepare for a particular hazard, or may be the result of previous failures in attempting this course of action before. Moreover, social barriers may also limit an individual or family's available courses of action. At this juncture, agency is also linked to social conditions in a particular area. For instance, the immigrant mother depicted before may choose not to evacuate to an emergency shelter for fear that she and her children may face discrimination by other evacuees or volunteers (Figure 5). This is an example of a structural barrier which limit's one's available courses of action.
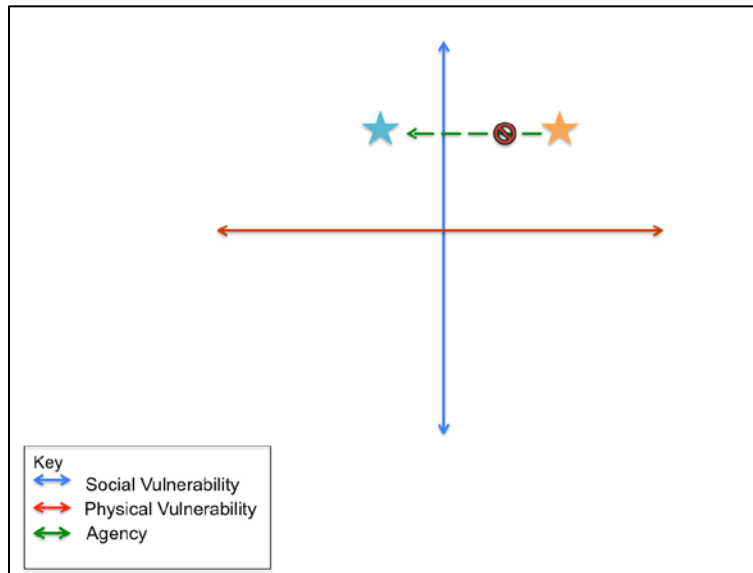
Figure 5: Structural Barriers to Agency

I should emphasize that agency cannot change the social dimensions of vulnerability. As depicted in the preceding figures, individuals may take protective actions such as securing their homes or they may evacuate to safer location. Thus, agency cannot necessarily change the vulnerability resulting from various measures of human, social, or cultural capital. However, through agency individuals can change their physical location within the matrix of vulnerability. In order to do so, individuals must first perceive themselves to be at risk to a particular hazard. Second they must recognize available courses of action that they perceive will reduce their vulnerability. And finally, they must have the ability to execute a particular course of action.

Time

The fourth component of the matrix of vulnerability is time. Time's role within the matrix is extremely complex as it is both and an external force that is exerted on the matrix, but also exists within the matrix. To understand the role of time both outside and within the matrix, it may help to imagine the matrix as three-dimensional. For example, if we visualize the matrix as

a sphere we can imagine that the sphere to have an external surface. Below the surface we can imagine the "space" wherein the axes of social and physical vulnerability are located. Beginning inside the sphere, time is refers the period between two events. Outside of the sphere time has the ability to change the nature of the threat. Essentially, as time passes outside of the matrix the sphere may rotate along one or both of the matrix's axes. This rotation reflects the dynamic nature of natural hazards. For example, a hurricane's forecasted landfall and/or intensity may change over time. Therefore external affect of time is that it changes the nature of the threat at hand and may require individuals to modify their planned courses of action accordingly (Figure 4.7).
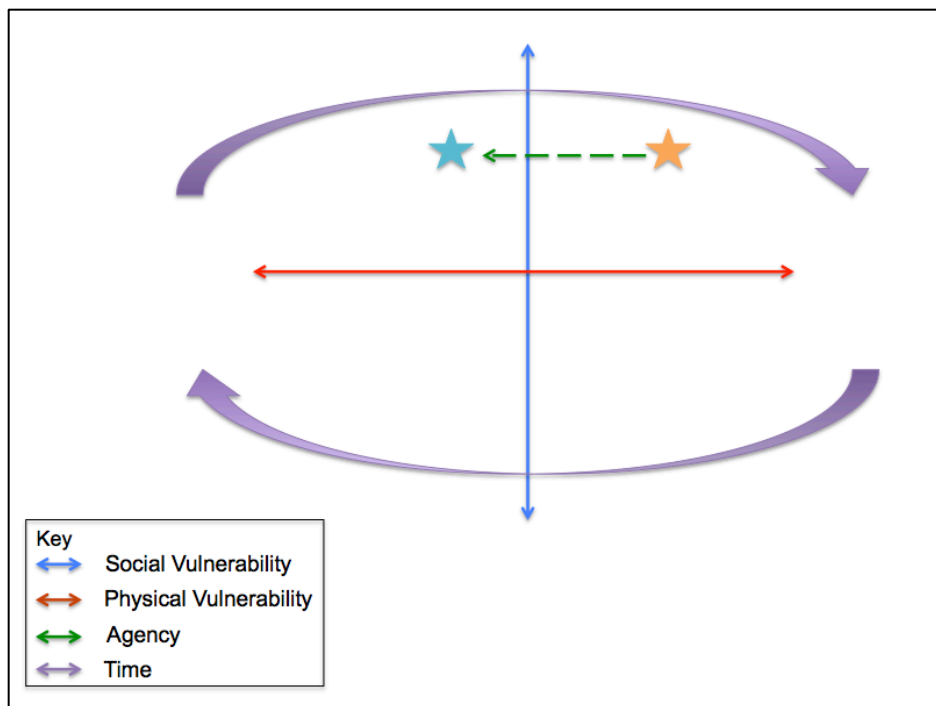
Figure 6: Time as an External Force

Time's ability to change the nature of a particular threat is extremely important aspect of the matrix to understand. For example, consider again the immigrant family used throughout this chapter and assume that the family decides to evacuate their home and stay with family members

in a neighboring county until after the storm passes. From this decision, the family has seemingly reduced their immediate physical vulnerability to the encroaching hurricane. Their physical vulnerability has been reduced because they perceived their home to be unsafe and have chosen to evacuate to what they consider to be a safer location. Here, they have exercised agency and may assume that they have reduced their risks. However, although forecasting has improved greatly in recent decades, hurricanes remain unpredictable phenomena and may intensify or change course seemingly at random. It may be the case that the storm changes course and has a larger impact on the location to which the family evacuated. Herein, although the family has evacuated time has changed the nature of the threat. This example demonstrates that we cannot assume that all actions taken to reduce one's vulnerability will always have the anticipated affect.

The effects of time are also present within the matrix. Internally, time refers to the period between two events. Within the matrix time's effect is primarily on one's agency. Essentially, as time elapses one's available courses of action may be altered or limited. For instance, evacuation orders often have deadlines. This is especially true for barrier island communities that are connected to the "mainland" by bridges. Generally, these bridges will be closed prior to a storms forecasted landfall, and once the bridges are closed, it is impossible for anyone who has stayed behind to evacuate. Herein, time has limited the available courses of action, and ultimately one's agency. Thus, individuals must perceive themselves to be at risk and take action early. It is important to clarify that although time has the ability to limit or alter one's available courses of action, it should not necessarily be considered a structural barrier.

<center>Conclusions</center>

In the preceding pages I have described what I have come to call the matrix of vulnerability. I have constructed this matrix from emergency managers perceptions about who is most vulnerable to disasters and incorporated components of Kusenbach and Christmann's (2012) critique of social vulnerability theory. To summarize, the matrix of vulnerability consists of four separate but interacting parts: 1) social characteristics, 2) the risks associated with where one lives, 3) human agency, and 4) time. Social characteristics combine to create varying degrees of social vulnerability. Similarly, the risks associated with where one lives can be used to estimate one's physical vulnerability to particular hazards. The consideration of one's social and physical vulnerability may estimate their overall vulnerability. This estimation serves as a starting point within the matrix. However, if vulnerability is viewed as a process rather than a condition, it is possible that individuals are able to take steps to protect themselves from a perceived threat. I refer to the steps one takes to prepare him or herself as agency. It is important to remember that not all courses of action are available to all people and structural barriers limit that agency. Finally, time is a force that is external to the matrix and changes the nature of the threat at hand. Additionally, as time passes within the matrix, individuals may have fewer available courses of action to protect themselves.

The matrix of vulnerability is reflective of Patricia Hill Collins' (2000) matrix of domination, wherein individuals experience oppression by the overlapping of social characteristics such as race, class, gender, and sexuality. The intersections of such characteristics create unique experiences of varying degrees of oppression within matrix of domination. I argue that vulnerability must be understood in the same manner. Emergency management staff listed among others the poor, elderly, immigrants, and people with special medical as being the "most

vulnerable" to a disaster. Thus, vulnerability is the nexus of multiple social variables. More importantly, the groups identified by emergency management staff are marginalized populations, or groups that have little relatively power within a society. Thus, the matrix suggests that having low human, social, and cultural capital results in higher social vulnerability. From this I conclude that vulnerability is simply another manifestation of social inequality and oppression, and should be discussed as such.

Physical vulnerability also provides support to my claim that vulnerability is a manifestation of oppression. Often the cheapest land is the least desirable land. This includes flood-prone land or land contaminated by human and toxic waste (Bullard and Wright, 2009). Historically, de jure segregation policies such as the Jim Crow laws of the U.S. South relegated Blacks to live in places that were less desirable to Whites (Basset, 2009). Although, du jure segregation in the U.S. has ended, de facto segregation remains, with many poor Black neighborhoods of the Jim Crow era simply remaining as poor Black neighborhoods of the Post-Jim Crow Era (Massey & Denton, 1993). Additionally, Bolin and Bolton (1986) explain that racial and ethnic minorities are more likely to live in older homes that were poorly constructed and under maintained. From this perspective one's physical vulnerability may reflect the social divisions, which exist in a particular community. I do concede that vulnerable places are not always the least desirable locations. Waterfront properties are highly desirable and often carry significant price tags, especially in Florida. While they offer impressive views, these locations are highly vulnerable to flooding, and the case of coastal homes, hurricanes. Thus, as Enarson, Fothergill, and Peek (2008) assert "the rich can, and do buy their way into harms way" (p. 133).

The structural barriers to agency provide further evidence of the link between vulnerability and marginalization or oppression. From the black feminist perspective "being

54

oppressed means the absence of choices" (bell hooks, 1994, p. 5). As I have previously explained, not all courses of action are available to all individuals. Therefore, agency may be limited by various obstacles rooted in the socio-political organization of one's community. For instance, there may not be adequate shelter space, or one might not have transportation to get to a shelter. Moreover, even if there is an available shelter and one has the ability to get to it, he or she may perceive the shelter to be an unsafe place. Herein agency has been limited by social factors outside of the individuals control and the option to evacuate to a shelter has been removed from the list of courses of action available to the individual. Therefore, we may conclude that one experiences oppression if one's "choices" of how to prepare for an approaching hazard is limited by factors beyond one's control.

If vulnerability is oppression then the only chance at reducing vulnerability is to reduce and eliminate oppression. This is perhaps a lofty task for emergency managers, but nonetheless a necessary one. In recent years *resiliency*, or the ability of a community to more or less function during and after a stress, has become a favored term in the disaster literature. While much as been written on the concept of resiliency one of the most influential reports has come from the National Research Council (NRC). The NRC (2010) report identifies resilient communities as being committed to social justice. From this perspective, communities are resilient if they are actively working to reduce vulnerability and social inequality among traditionally marginalized populations. In order to accomplish this more needs to be done than identifying the populations whom perceived to be vulnerable, but rather understand their needs. The engagement of marginalized populations in research and planning is necessary. Doing this will allow the creation of a more inclusive and socially just emergency management system.

In the following chapters I examine the homeless as a socially marginalized population.

Specifically, I explore their position within the matrix of vulnerability and attempt to understand

the risks they face to natural hazards in Central Florida. Furthermore, I present an examination of

the steps unsheltered homeless men take to keep themselves safe from rain and extreme

temperatures.

CHAPTER 5: NATURAL HAZARDS VULNERABILITY AMONG THE HOMELESS

In this chapter, I analyze group interviews with homeless services providers and homeless men living in Central Florida within the context of the matrix of vulnerability. Specifically, I examine the aspects of physical and social vulnerability that place the homeless at an increased risk to natural hazards. Furthermore, I argue that the homeless experience increased exposure to severe and inclement weather. This exposure results in high physical vulnerability to potential hazards. Moreover, the homeless may also have special medical needs and economic constraints, and experience social stigma which intersect causing the homeless to experience high social vulnerability to natural hazards.

Factors Influencing Vulnerability Among the Homeless

In the previous chapter I argued that vulnerability must be viewed as a process. This process begins by examining how combinations of social characteristics and risks associated with where one lives intersect to establish one's vulnerability to natural hazards. Furthermore, I argue that vulnerability is often the result of pre-existing social inequalities and is therefore another manifestation of oppression. In this section I examine some of the factors that may influence natural hazards vulnerability among the homeless. I begin by discussing the physical components of vulnerability among the homeless. Mainly, I discuss how the homeless experience greater exposure to natural hazards, and thus face greater physical risks. Secondly, I examine social components including: health, economics, and social stigma, which may increase natural hazards vulnerability among the homeless.

Physical Vulnerability

The essence of the matrix of vulnerability consists of two axes: one representing social vulnerability and the other representing physical vulnerability. Physical vulnerability is defined as the risks associated with where one lives. These risks can be related to the natural hazards present, population density, or housing type. To consider the physical vulnerability of the homeless, we must begin with their housing status. The very nature of being "homeless" means that one does not have adequate shelter. Thus, the homeless experience an increased exposure to the weather. Before discussing how this increased exposure increases natural hazards vulnerability for the homeless, we must fist consider the of hazards present in the region.

Natural Hazards in Florida

Florida's sub-tropical climate and 1,197 miles of coastline creates significant risk for severe weather related hazards. Although Florida is widely known to be at risk to powerful hurricanes during the Atlantic Hurricane Season, the state and its residents and visitors are at risk to severe weather and natural hazards year-round. On average, Floridians experience thunderstorms between 75 and 105 days per year, with about 1 in 10 thunderstorms becoming "severe;" unlike the hurricane season, Floridians can experience thunderstorms throughout the year (Division of Emergency Management (DEM), 2012).

Severe thunderstorms expose residents to risks from lightning, gusting winds, tornadoes, and flooding. Florida's unique geography and climate causes the state to experience more lightning strikes annually than any other region in the United States (U.S.). Lightning presents significant risks to both property and individuals. On average, lightning injures 39 people each year in Florida, and roughly six of these individuals die from their injuries. Furthermore, in

Florida, lightning strikes cause an average of $6 million in damages to property each year (DEM, 2012). In addition to lightning risks, thunderstorms also have the potential to produce strong winds and tornadoes. While the Plains States are generally considered to be tornado hot spots in the U.S., between 1990 and 2011 Florida experienced 1,420 tornadoes, making it the third most active state for tornadoes in the U.S. (DEM, 2012). On February 22 through 23, 1998, Florida experienced its worst tornado outbreak on record. In the early morning hours severe thunderstorms produced deadly tornados in Orange, Osceola, Seminole, and Volusia counties. In total, the tornadoes injured 250 people and killed 36 (CNN, 1998).

While Florida experiences significant rainfall each year, the state is also at risk for severe droughts. During dry years, extreme summer heat and lightning strikes spark devastating wildfires. In 2011 alone, the state experienced over 1,480 wildfires burning over 300,000 acres of land (DEM, 2012). In 1998 fires burned about a half a million acres, destroyed 342 homes, 34 businesses and forced evacuations for thousands of residents in Volusia and Flagler Counties (Word, 2006). Many Floridians living in the state during the time confess that it seemed as though the entire state was on fire.

Finally and most notably, Florida is vulnerable to hurricane landfalls on its Atlantic and Gulf coasts. With hurricanes come many of the risks associated with severe thunderstorms: lightning, heavy rain, and high winds, and tornadoes; only on a larger scale and higher intensity. The official Atlantic Hurricane Season runs from June 1 through November 30, with the months of August and September being the most active. While recent hurricane seasons have been relatively inactive, the state has a long history of experiencing powerful and destructive hurricanes. In 1992, Hurricane Andrew struck southeast Dade County. The Category 4 hurricane caused an estimated $52-billion in damage (Malmstadt, Cheitlin, & Elsner, 2009), killed 15

59

people, and left about 250,000 residents homeless (St. Petersburg Times, 2002). During the 2004 hurricane season, Florida experienced landfalls from four hurricanes within a period of six weeks causing an estimated 49-billion dollars in property damage (Malmstadt, Cheitlin, & Elsner, 2009). While coastal communities may experience the strongest winds and coastal flooding due to storm surge, inland counties are not immune to the affects of powerful hurricanes, which generate destructive tornadoes and high winds.

Regardless of where Floridians live, they are vulnerable to a variety of natural hazards. As I have discussed in the previous paragraphs, thunderstorms and hurricanes have the potential to inflect millions of dollars in damages annually. Furthermore, lightning, flooding, and tornadoes present significant risks to lives as well as property. In the following section I examine how these hazards affect the daily lives of homeless men living in Central Florida within the context of the matrix of vulnerability.

Exposure

Considering the various weather related hazards present in Florida, it may be safe to assume that the homeless are more vulnerable to inclement and severe nature simply because they do not have a home in which to seek shelter. This is especially true for the majority of the men in this study who are unsheltered. This means that they are not currently utilizing homeless shelter services. Instead, many of the men I have interviewed sleep in tents in the woods, in their cars, or any "safe" place they can find.

Furthermore, *all* of the men included in this study report that they rely on buses, bicycles and walking to travel from place to place. Even Chuck, who at the time I interviewed him was living in his car, admitted that he does not drive his car because he cannot afford the gas. Thus,

without access to their own vehicle, the homeless men in this study spend even more time

outdoors, walking, riding bikes, and waiting on buses than perhaps the average housed person.

Indeed, even homeless service providers identify lack of transportation as a major

obstacle for many of their clients. As one case manager in Osceola County explained:

> … I know we were running into this problem this week was transportation for the
> homeless. We try to get bus passes through Lynx bus. Unfortunately Lynx won't donate
> bus passes. A lot of these residents are like "it takes me one single day just to get one
> thing done because I have to walk two hours to this place."

A two hour walk is inconvenient enough on it's own, however, when the context of that walk is

examined it is clear how exposure coupled with lack of transportation can become problematic

for the homeless.

Frank is a middle-aged homeless man living in a tent in a wooded area in Brevard

County. While interviewing him, he explained that his primary mode of transportation is the

county bus. However, he noted that bus service is limited on Sunday's. Therefore, in order to

catch a bus to the day shelter he has to walk about two and a half hours to reach the nearest stop.

I interviewed Frank in mid-March, and he expressed concern that increasing temperatures may

limit his ability to get around, stating, "now that it's startin' to get warmer I might not even do it

that often. Comin' in the morning is not that bad but going back in the afternoon would be hot

enough, and uh, you start sweatin' like a racehorse." The day shelter in Brevard County offers a

hot breakfast to homeless and low-income residents, as well as laundry services and a place to

take a shower. Should the weather get too hot and Frank decides not to make the two and a half

hour walk to the nearest bus stop, he would forego a hot meal and a shower for the day. Heat

however, isn't the only obstacle which may limit one's ability to travel and access services.

For homeless men who travel by foot or by bicycle rain is another barrier to contend with. As Tony explains, "and when it's raining out, you can't move around as much, ya'knaw mean? You might have to not eat that day or whatever." Furthermore, rainy nights may make it difficult for some men to find a safe place to sleep wherein they will not be noticed by the police. According to Carl, "Sometimes you can't even sleep at night. Sometimes you're up all day because you can't find a place to stay and stay dry. I've been up a couple days [before] trying to stay dry".

Exposure may also have adverse effects on one's health. As one homeless service provider in Brevard County notes, "there's a particular homeless man that's always on the corner. He's darker than I am and he's a Caucasian because of the sun." Aside from having a really good tan, this homeless man may also be at risk of developing skin cancer. While increased exposure to the sun may increase one's risk to skin cancer, prolonged exposure to the cold and rain may also have negative effects on one's health. Andrew is a 20 year-old unsheltered homeless man living Brevard County. He might best be described as intermittently homeless, as at times he is allowed to stay at his mother's house; especially on cold or rainy nights. On nights that he isn't able to stay with his mother he typically sleeps under a bridge. I asked him to describe his experiences of sleeping out in the cold or the rain. He described it as: "Terrible, sleeping out in the rain - waking up sick. Sleeping out in the cold - waking up cold." Thus, for Andrew prolonged exposure to the cold or sleeping in the rain has direct effects on his physical wellbeing. Carl also expressed concerns about the effects of getting wet. During my interview, he explained that getting caught in the rain or sweating excessively can cause pungent and unpleasant odors, which he tries to avoid.

In the terms of the matrix of vulnerability, exposure represents the physical vulnerability of the homeless. As I have demonstrated, the homeless most negotiate the weather more often than housed individuals. This is directly related to their housing status that requires the homeless to spend most of their time outdoors. As I have demonstrated, the increased exposure experienced by the homeless may be detrimental to their physical health and wellbeing. This is especially true in instances where heat and rain may prevent some homeless men from accessing services, eating, and even sleeping. Physical vulnerability however, is just one dimension of the matrix of vulnerability. In the following section I examine how health status, economic standing, and social stigma intersect to increase the homeless' social vulnerability to natural hazards.

<div align="center">Social Vulnerability Among the Homeless</div>

According to the matrix of vulnerability, various social characteristics intersect to create varying degrees of social vulnerability. This means that social categories (age, race, gender, and socio-economic status, etc.) combine with other measures of social and cultural capital and can provide us with an estimate of one's "overall" social vulnerability. In the following paragraphs I discuss how health, economic standing, and social stigma increase the social vulnerability of homeless men living in Central Florida.

<u>Health</u>

As established in Chapter 4, emergency managers perceive individuals with special medical conditions to be more vulnerable to a disaster. Some homeless men may also suffer from chronic medical conditions, and thus may also be more vulnerable to particular hazards and disasters. As one case manager from Osceola County explained:

> Most of the literally homeless that I've dealt with are not well. They have health issues. And some are disabled. Sometimes it's very hard for them. It's a harsh life anyway to live

outside and then you combine that with health issues and that's probably the number one priority.

In Chapter 4, I demonstrated that emergency managers perceive individuals with special medical conditions to be more vulnerable to a disaster than healthy individuals. Therefore, homeless men and women with chronic medical conditions or who are generally in poor health may also experience an increased vulnerability to natural hazards.

I interviewed three men who disclosed having chronic medical conditions. Gary has heart disease, is on oxygen therapy, and has arthritis in his spine and ankles, and both Sid and Frank are diabetic. Each of these men medical conditions can become an added burden for the men I interviewed. Gary's arthritis was a motivating factor for him to relocate to Central Florida. Previously he had been staying at a homeless shelter in Maine. However, he explained that Maine's harsh winters and extreme cold often caused him to experience extreme joint pain. According to Gary, Maine's weather affected his ability to travel:

> In Maine I can't walk because the arthritis in my ankles but down here it's no big deal. They hurt at night but I soak my feet at night and it brings the swelling down.

When I interviewed Gary he was renting a room from an older man who invited him into his home on a cold night. However, he disclosed that he was exploring other living arrangements because he was not satisfied with the location. Gary's temporary living situation may allow him to better manage his chronic medical conditions. As he explained in the above example, he is able to soak his feet to relive swelling in his ankles cause by arthritis. Furthermore, Gary described his nightly routine as follows:

> …I can't sleep with the TV on or any kind of light. I've had insomnia for almost 20 years. [Explains that he's on sleeping pills] So at night I take 200mg and I smoke a cigarette and [then] turn on my oxygen.

Clearly, being housed allows Gary the opportunity to treat his chronic illnesses. It is interesting that he continues to smoke while undergoing oxygen therapy, which my exacerbate his heart problems, however on the street he would most likely be unable to soak his feet at night to relive swelling and pain related to arthritis. Furthermore, his ability store, transport, and use oxygen on a regular basis would undoubtedly be limited.

Such is the case for Sid and Frank who are both diabetic and currently unsheltered. While Frank was only diagnosed with diabetes a few months before I spoke with him, Sid has been trying to manage his since the 1980's:

> I'm a diabetic and I don't have the funds. Since 1980 I haven't had no funds to get no shots or nothin' 'cause you gotta keep all that stuff refrigerated.

For Sid it is apparent that being homeless has prevented him from properly monitoring and controlling his diabetes. Aside from the financial constraints of managing diabetes, living on the streets also precludes Sid from storing insulin, which must be refrigerated. Therefore it isn't surprising that Sid disclosed that he sometimes has to be taken to the hospital because he has had complications from his untreated diabetes.

Managing a chronic illness while living on the street may create daily complications for some homeless, however, these conditions may be exacerbated by natural hazards and prolonged disasters. Taking into account the limiting effect that inclement or severe weather has on the ability of homeless men to travel, provides a better understanding of this relationship. For example, in the previous section I established that rain and extreme heat may prevent some homeless men from leaving their camps or temporary shelters. In fact, some of the men I have interviewed claim that in the past they have had to skip meals or stay awake for extended periods of time because the rain prevented them from traveling. For homeless men with chronic diseases

such as diabetes, skipping meals may potentially become a serious medical event. Thus, homeless men living with such conditions may ultimately be more vulnerable to natural hazards than otherwise healthy homeless men. Health however, is just one component of social vulnerability. Many homeless men also struggle financial, thus it is important to understand how the relationship between economics and natural hazards vulnerability among the homeless.

Economics

Nearly all of the men I interviewed were unemployed at the time. Joe, a sheltered homeless man from Orange County, was the only participant who was employed when I interviewed him. However, he described his employment as "part-part-time" or three half-days per week. While a handful of the men received disability or food stamp benefits, most relied on working odd jobs or day labor to make a few bucks when they can.

Gary is a temporarily sheltered man living in Brevard County, who currently receives disability benefits from the federal government. However, Gary also works odd jobs to make extra money. During the interview he explains:

> So yeah I work a few odd jobs for cash. Yesterday I was at a church for lunch and some guy came up and said he needed a few guys to do some work and I said I'm one of 'em…. He took me and another guy and … when he dropped me off he gave me $10 an hour and he said "I want you, just you from now on". And he's gonna pick me up at 12:30 today. He's got a lot of stuff so we're gonna get a trailer and we're gonna load that stuff up, we're gonna bring it to the flea market.

Gary's experience seems typical of the types of odd jobs that homeless men might find. Such work, although temporary provides homeless men with a meager income that may allow them to purchase food or other goods they might need. However, the weather may affect their ability to find work. As discussed earlier in this chapter, rain prevents some homeless men from being able to travel freely. Those with tents or camps might stay put throughout the day, and unsheltered

66

men living on the streets well try to find a dry place to take cover. As a few men claimed, they may skip meals or not be able to sleep on wet and rainy days. However, these rainy days may also prevent them from finding odd jobs or looking for full time work.

Furthermore, Carl, an unsheltered homeless man living on the streets of Brevard County explained that he make money by selling drawings. As he explains the weather can also affect his work, "take me for example. I paint and I draw. And you have to keep paintings and drawings in their best condition when you have to sell them. You have to keep them dry." Although Carl admits that he doesn't sell much of his artwork, inclement weather requires Carl to not only protect himself but also his fragile artwork. Thus, the weather has a direct effect on the incomes of some homeless men.

Whether they receive benefits, are working "part-part-time" or odd jobs, or selling artwork on the street, it's clear that the men I have interviewed have very meager incomes. Furthermore, their ability to earn money appears to be unstable at best, and in some cases (such as Gary) are dependent on being in the right place at the right time. Such unstable, low-incomes maybe keeps many homeless men from finding permanent housing. In the aftermath of Florida's housing collapse, low-income rental properties have become scarce. As one service provider in Osceola County explains, this has created a challenge for her to place clients in permanent housing:

> Yeah, Osceola County was hit very hard with foreclosures so as all those people moved out of their homes into rental properties [and with] supply and demand and … I have to tell my clients "well you don't make enough money for me to help." And they're like, "well wait a minute, don't you help low income?" Yes, but you have to be self-sustainable.

Ultimately, their infrequent and limited incomes of some homeless men may be what prevent them from finding permanent housing. Thus, they remain on the streets and must continue to manage their risks to various natural hazards.

Interesting though is relationship between their incomes, the weather and their ability to find permanent housing. Rain is one weather related obstacle that the homeless must negotiate. However, rain may also affect their ability to earn money through working odd jobs or selling artwork. Therefore, inclement weather may also keep some men from finding permanent housing because it prevents them from finding work. While it may be a stretch to assume that one could earn enough money working odd jobs and selling art work to afford an apartment of their own. Such incomes might provide them with the ability to rent a room from a homeowner or find a hotel for the night. However, if the weather prevents them from earning money, it will also prevent them from finding adequate shelter. Thus far I have demonstrated how health and economics can increase social vulnerability among the homeless. However, social stigma may be the most influential component to understanding how the homeless face greater risks to natural hazards than the general population. In Chapter 4, I argued that the matrix of vulnerability is most valuable for understanding vulnerability among marginalized populations. As I will demonstrate in the following paragraphs, social stigma establish the homeless as a marginalized population, and thus increase their risks to natural hazards.

Social Stigma

As mentioned in Chapter 2, the presence of homeless men and women in emergency shelters following a disaster can be at times problematic (Yelvington, 1998; Wright et al. 2007). However, social stigma is something that affects the homeless on a day-to-day basis and may prevent them from being able to access temporary shelters.

Both the homeless men I have interviewed and homeless services providers provided

examples of how social stigma affects the daily lives of the homeless. Generally, service

providers discussed concerns the housed public might have about homeless men. For example,

during my group interview in Osceola County, one participant suggested that the homeless might

use libraries as temporary shelter during the day.

> Interviewer: … are the libraries here welcoming?
> Participant 1: No.
> Interviewer: No?
> Participant 1: No, because it scares their patrons away.
> Interviewer: So…
> Participant 1: I think a lot of public places are not very welcoming at least to the literally
> homeless population.
> Participant2: Yeah, because you know the one that we've been working with who knows
> when he's bathed the last time. I mean these are rough individuals.

Indeed, life on the streets is not pretty. While most of the men I interviewed appeared to be clean

and well groomed, others were not as well kempt. A Brevard County service provider also

described the stereotypically dirty and perhaps drunken homeless man, "…when you mention

like in [in audible] and I've been over there recently, they're saying there's a homeless man

there. He's drunk. He' got a paper bag with a bottle and he's got a blanket over him and he's

sleeping on a bench." This same participant also describes a public park where several homeless

men gather, and how it causes some citizens to avoid that park:

> Every single night I drive home from work they're at the parks along – those ones in
> Titusville right next to McDonalds that has a big cover and picnic tables and there's huge
> group that live there along the water. But they're all congregated at those picnic tables.
> That public just doesn't want to pull in there. People just – even with young mothers, and
> my daughter is a young mother, and with her group of parents they'll say, well, don't go
> to that park with your child because there's a lot of homeless.

Thus, the homeless, either due to their presentation, or the publics' perceptions of them are a

stigmatized group. Often it appears that fear leads members of the housed public to avoid places

where homeless men and women gather. However, the socially marginalized status of being "homeless" may also put some homeless at risk of violence.

Recently attention has turned to the phenomenon of "bum fights", wherein groups, often consisting of young men, hunt down, beat up, and rob the homeless. In recent years there have been several high-profile bum-fighting incidents in Central Florida. This includes a 2006, incident during which a group of teenagers beat a homeless man to death in Orange County. Of the homeless men I interviewed, Randy is the only participant who described an incident of violence against the homeless. Interestingly, the victim of the attack was not even homeless but was perceived to be homeless by the attackers. As Randy explained:

> A lot of times people think that you're homeless because you've got a backpack and you're on a bicycle but that's not always the case either. Uh, for instance a friend of mine that lives on the beach he carries a backpack and carries his laptop in it. And he's a very successful businessman. Well he had some kids jump on 'em and started a fight with him at Wal-Mart last year over on the beach. Thank God that they had cameras on because it showed the two kids jumpin' on him... and when he went to court the judge looked at the video and seen the two kids jumped on him. So, they got what they deserved.

The incident described by Randy as well as the bum-fighting phenomenon further reinforces the argument that the homeless are a socially stigmatized group. This finding alone is nothing new. Sociologists have been writing about the issues of stigma and homelessness for decades (See: Anderson, Snow & Cress, 1994; Phelan et al., 1997; Wasserman, Clair & Platt, 2012). However, we do not yet fully understand the ways in which stigma effects how the homeless manage their risks to natural hazards vulnerability. Schnieder and Ingram (1993) write that socially marginalized groups generally have little social power. Furthermore, they argue that marginalized groups with little social power are often bear the burdens of social policy. As I will discuss in the following chapter, some homeless men struggle to find a safe place to sleep at night because they do not want to be arrested for trespassing. Such incidents are an example of

how social stigma and marginalization affect the homeless. Ultimately, for some homeless men public perceptions of homelessness may limit their ability to seek shelter and protect themselves from the inclement or severe weather.

Conclusions

In this chapter I outlined the various natural hazards present in Florida. These include severe thunderstorms and hurricanes that are often accompanied by high winds, torrential rains, and deadly lighting. Furthermore, I argue that exposure to the elements, chronic illness, economic standing, and social stigma intersect to place the homeless at a greater risk to natural hazards compared to housed individuals. First, being homeless means that many of the men I interviewed spend most of their time outdoors. Thus, they have greater exposure to the sun and it's heat, as well as the cold and rain. Prolonger exposure to these elements may have long-term health effects for homeless men. This is certainly the case for men who may have chronic illnesses such as arthritis, heart disease, or diabetes. Rainy or hot summer days may prevent some homeless men from traveling by foot or bicycle. This may require them to skip meals further compromising their health. Additionally, they may lose opportunities to work or sell goods further limiting their already meager incomes. Finally, the homeless experience social stigma and therefore can be described as a marginalized population. Within the framework of the matrix of vulnerability, marginalized groups experience greater vulnerability because vulnerability is inherently linked to social inequalities and is therefore a manifestation of oppression.

Ultimately, as a marginalized group the homeless face greater risks to natural hazards than the general population. First, the homeless are vulnerable to typical or mundane weather

events, such as rain, heat and cold. While a rainy day might be an inconvenience for a housed person, such events may require a homeless man to skip meals and may therefore compromise his health. Furthermore, the homeless are also at a greater risk to severe weather events such as hurricanes during which they may not be able to leave their camps or temporary shelters for several days.

While the framework of the matrix of vulnerability might indicate that the homeless are extremely vulnerable to natural hazards, it also allows for individuals to exercise agency to mitigate their risks. In the following chapter, I examine the strategies used by homeless men in Central Florida to mitigate their risks to natural hazards.

CHAPTER 6: EXERCISING AGENCY: HOW THE HOMELESS KEEP THEMSELVES AND THEIR PROPERTY SAFE

In Chapter 5, using the framework of the matrix of vulnerability, I established that the homeless are a marginalized population and that they experience an increased risk to natural hazards compared to housed people. In this chapter I examine the ways in which my participants exercise agency. In other words, I explore the steps the homeless take to protect themselves and their property during inclement and severe weather. Specifically, I report findings from interviews conducted with primarily unsheltered homeless men living in Brevard, Orange, and Seminole County. I have found that the homeless exercise agency to protect themselves from various hazards. First, I discuss the ways in which the homeless get information about the weather. Second, I examine the strategies they use to seek shelter from the rain and extreme temperatures. Third, I examine the methods some homeless men use to find and maintain a campsite. Finally, I explore how my participants perspectives on managing their risks during hurricanes.

Staying Informed

Before one can effectively manage his or her risk to a particular hazard, he or she must first be aware of that hazard. Therefore it is important to understand the methods used by the homeless to learn about the forecasted conditions in their area. My participants use a variety of strategies to stay informed about the weather. These range from "looking up" to listening to the radio, and accessing weather forecasts on the Internet at public libraries and on personal cellphones. Sid and Tony are two homeless men who claim to rely on "looking up" to learn about the weather:

> Interviewer: … where do you get your information about the weather?
> Sid: Where?

Interviewer: Yeah

Sid: You just gotta be out here, you can see it, you can smell it

Interviewer: So not from the paper or radio or?

Sid: Uh, see, I don't read or write and they don't have no place in Melbourne that will take the homeless to get no education.

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Interviewer: … So how do you usually find out about the weather?

Tony: Just look up.

Interviewer: Just look up huh? (Tony laughs) Not from the radio or Internet, or a cell phone or anything like that?

Tony: Nah, I'm trying to get a SafePhone[1] going on, right? And I got an address where I can mail it to, right? I'm just waiting for that to come in ya'knaw mean? Hopefully I'll get that soon.

Looking at the sky is perhaps the most primitive form of weather forecasting, especially in Florida where the weather can change dramatically throughout the day. However, looking up provides one with an immediate, although temporary, idea of whether or not it might rain soon. This strategy is severely limited however, and is only as reliable as one's ability to make conclusions from patterns in the clouds. For some homeless however, reading the clouds may be their only option. As Sid confesses, he is unable to read or write; therefore accessing the Internet or reading the newspaper to get the local forecast would be impossible. Therefore, word of mouth and his own observations are his only means of accessing information about the weather. Other homeless men however appear to use a variety of methods and media to learn about weather forecasts.

For example, Frank regularly accesses the Internet to learn about the weather. As he explains, "Well, I'll normally go over to the library, there's a website where you can click on and it'll give you a 5 day weather forecast. A lot of times I'll just write it down and keep it in my backpack here." While he is able to gather information through the Internet, Frank's strategy

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[1] SafePhone refers to SafeLink a free cellular phone service for to low-income residents subsidized by the State of Florida.

may also be limited. Five-day forecasts typically provide an overview of the expected weather, which may change from one day to the next. Therefore, Frank may not have access to the most current weather information, especially in the event of severe thunderstorms or tornado warnings.

Homeless men with access to a radio or cell phone seem to have the most current information about the weather. This can be seen in excerpts from my interviews with Dale and James:

> Interviewer: So where do you get your information about the weather?
> Dale: Radio
> Interviewer: Oh okay, so you do have a radio, and it sounds like you do use the Internet as well?
> Dale: Yep
> Interviewer: Is that something that you look into regularly or?
> Dale: Well I don't use the Internet for weather regularly but I do, I hear weather reports all the time on the radio.
> Interviewer: Alright um --
> Dale: I probably listen to the radio 5 or 6 hours a day
> Interviewer: Okay so it seems like you're constantly getting information then?
> Dale: Yes
>
> - - -
>
> Interviewer: … how do you find out about the weather?
> James: My cell phone
> Interviewer: Your cell phone, so you do have one?
> James: Yeah
> Interviewer: You said you try and keep it charged, so that's a good way for you to get information?
> James: Yeah, which right now it's clearly dead.

Herein, we find that Dale's listening habits may keep him aware of local weather conditions. Similarly, James may use his cellphone to keep track of developing weather forecasts. However, cell phones and radios rely on battery power, and as James admits, batteries can die. This means that although radios and cell phones may provide the homeless with up to date weather forecasts, the ability to access this information is entirely dependent on one being able to power the device. Ultimately, all of the homeless men I spoke to appear to have at least *some* access to information

about the weather. Thus, the men included in my study are at least superficially aware of the hazards that they may be facing in the near future. Furthermore, many of the men appear to be ready to act on the information they receive. In the following section I discuss the ways in which the homeless take shelter from the rain or heat when traveling during the day, and sleeping on the streets at night.

<u>Finding Shelter</u>

As discussed in the previous chapter, inclement weather limits the ability of some homeless to travel throughout the day. The homeless men I interviewed often need to seek shelter from the rain or extreme heat in the summer. Most often my participants report finding temporary shelter in libraries and other public places, such as malls and fast food restaurants, to stay dry on rainy days and cool during the summer. Additionally, participants described their experiences finding places to find shelter and sleep at night.

Libraries and Public Places

Nearly all of the men I spoke to identified libraries as places where then can find temporary shelter from the rain and extreme heat and cold temperatures. Others indicated that they might also go to the mall or fast food restaurants. While it is important to know where the homeless find shelter it is more important to understand the experiences the homeless have while seeking shelter in public places. If a homeless person has a negative experience while seeking shelter, it may eliminate that location as a safe place. Generally, my participants provided mixed descriptions of their experiences seeking shelter public places. Some, like Dale and Gary, reported very positive experiences. According to Dale he has developed friendships with some of the library staff and concludes "they probably treat me better than they treat other people because

76

I mean, I've had librarians takes me out to dinner before [laughs]." Here, Dale appears to have

benefited from his time spent at the public library by establishing friendships with library staff.

Similarly, Gary claims to find have found a stable housing after meeting an older man at a

Burger King:

> In fact when I got trespassed from where I was sleeping it was still daylight and I went over to Burger King for a cup of coffee the old man saw me and he said "It's gonna be cold come to my house." And we talked the next day and I've been there since. Two months now.

Dale and Gary's experiences however seem to be the exception, not the rule. Most of the men I

spoke to described their experiences at libraries and other public places as mundane or typical.

They do not receive special treatment from staff or find saviors willing to provide them with

shelter. Similarly, they did not describe any negative interactions with staff or management in

public places. As my participants describe them, such "typical" experiences rely on their ability

to follow ascribed rules and fit into the environment. As Randy explains:

> Interviewer: Okay, do you ever go to like a library or someplace like that?
> Randy: Oh yeah, yeah. The library, the mall, according to how bad it's gonna get.
> Interviewer: Okay, what have your experiences been like when you, you know, got to the library or the mall?
> Randy: Normal, everyday. People don't know that you're homeless according to the way that you carry yourself and dress. Most of the people, most of the people don't actually look homeless that are homeless. It's kind of hard to distinguish a homeless person from somebody that's dirty and has been out working. You know, you really can't judge anybody just by lookin' at 'em.

Here Randy's experiences may be accredited to his ability to pass as a housed person. As he

believes, it's hard to tell the difference between a homeless person and someone who is dirty

from a working. It's important to note that I when I met Randy he was waiting to take a shower

at the day shelter. His appearance was clean and other than his well-groomed beard and long

hair, he did not "look" like the hegemonic homeless person. Furthermore, during our interview

he was lucid and communicated his thoughts, opinions, and experiences clearly. Thus, homeless men like Randy who is well-groomed, wears clean clothes, and does not appear to suffer from mental illness, may be able to pass as housed, or "normal", in public places. They do not look "suspicious" and do not act out of the ordinary. Ultimately, the ability to pass allows the homeless to continue accessing public places, especially businesses such as the mall, as temporary shelters.

Perhaps the most important aspect of passing is one's ability to follow the ascribed rules for a particular place. As the men I spoke to described the libraries as a safe place to go, they noted that continued utilization of these temporary shelters is contingent on following the rules, as James explained:

> James: I'd probably go to the library or something, somewhere indoors.
> Interviewer: I spoke with someone else tonight and he mentioned that you know the library has some rules, have you ever been at the library for an extended period of time?
> James: Yes, uh, they do, you gotta make sure you watch your stuff at all times, don't fall asleep, don't do anything that's out of the ordinary.
> Interviewer: What happens if you fall asleep or?
> James: You get trespassed for one year.
> Interviewer: One year, so you're not allowed to go back?
> James: No

None of the men I spoke to reported having any difficulties with management at the libraries or businesses in which they have sought shelter. I attribute this to the fact that the men I spoke with had no obvious signs of mental illness, and that at least during our brief conversations managed to conduct themselves "ordinarily" and in accordance with the rules. However, the threat of being trespassed from places like the library is very real, and has real consequences. A homeless person who is trespassed from the library loses access to that temporary shelter for at least one year. This means that they would need to seek out other forms of shelter in the event of

inclement weather. However, aside from seeking shelter in public places, some of the homeless men I spoke to rely on friends and family to provide them with temporary shelter.

Friends and Family

Being homeless does not limit one from having friends or family. In deed, many homeless may have extended networks of housed friends and family. Often, these friends and family may offer them temporary refuge, especially during bad weather. This is true for some of the men I spoke with. During my interview with Andrew a 20 year-old intermittently homeless man in Brevard County, explained, "I am staying off and on with my mom, when cold and rain comes around. But usually I'd be under the bridge. So I hang out under the bridge, I sleep under the bridge. I usually don't go anywhere else." For Andrew however, "home" might not always be a safe place, later in my interview he disclosed:

> My mom is very, she a conceited, conniving – yeah, well I'm not gonna go to far into that 'cause they make us watch out language around here. But my brother likes to beat me and pick me up and just pull me back down and he's very mean about shit. I left for that reason. I was tired of the abuse [and] the neglect. So I choose to be homeless.

Considering Andrew's description of his family life, he may experience greater risks at home than he does on the street. Especially in terms of physical violence and abuse. For other homeless men however, seeking shelter with friends and family is an option that they have considered, and some have used in the past.

Most often however, my participants considered friends and family to be an option during hurricanes or other major weather events, rather than during occasional rainstorms and cold nights. Consider Chuck, a middle-aged man in Brevard County who currently sleeps in his car. During my interview he recounted his experience while staying in his car during a hurricane, "I was in West Melbourne in an apartment complex that my friend lives in and he let me park there.

79

And he came over and parked on my windshield and told me to come inside." Similarly, Dale an unsheltered homeless man living in a tent in Seminole County, reflected, "I know some people that, you know, are not homeless and I could go to somebody's house if I had to." Therefore, in addition to finding temporary shelter in public places, the homeless may be able to seek refuge with friends and family. This implies that some homeless men may have more social capital than others, and may be able to utilize their social networks to find shelter during severe weather events. According the matrix of vulnerability, such men may experience less social vulnerability than others who may not have robust social networks. It is important to remember however, that these arrangements however are temporary and, excluding severe circumstances, the men I spoke to spend their nights on the street or camping in tents.

Sleeping on the Streets

While homeless men may utilize public places as temporary shelters during the day many are left with nowhere to go at night. In Orlando, Joe explained that he stays at the shelter so he "doesn't get caught in the rain at night". Indeed, on any given night homeless shelters provide a safe place for thousands of homeless men and women to sleep. Shelter space however, is limited. Moreover, as I discuss more thoroughly later in this chapter, shelter policies may deter some homeless men from using their services. For the homeless limited shelter space or an aversion to shelters in general means that they are left to find shelter on the streets at night. I spoke with three men, Andrew, Sid, and Carl who are currently unsheltered and spend most nights sleeping on the streets. In the following paragraphs I detail their experiences living on the streets and in particular examine their strategies for finding shelter at night.

Sleeping on the streets comes with many risks, however for the men I spoke to they seemed most concerned with the possibility of being trespassed or arrested. During my interview with Sid I asked him where he usually stays at night. He was adamant that he does not sleep in the streets because of this fear. As he explains:

> I refuse to lay down in the street. I will walk. I will walk until 6 o'clock in the morning. Because if, if you go anywhere that's like downtown, they don't mind you if it's late at night and you're sitting on the benches but if you go anywhere else they're saying that you're trespassing and you're going to jail.

Taking Sid's assertion at face value, it might be assumed that he does not sleep at night because he is afraid of being arrested or trespassed. While this may be the case, it also seems unlikely. He may not have wanted to tell me where he stays at night or may not have a "regular" spot. However, Carl, another unsheltered homeless man living on the streets in Brevard County expressed similar concerns about being trespassed, especially on rainy nights:

> Like I said I get up under the bridge I go under the awning and when the rain stops I think about where am I gonna sleep tonight? And sometimes I find a place that looks like a dry place and 9 times out of 10 somebody calls the police and they say you can't come over here anymore. They trespass you and if you go back then you're gonna get arrested. So, if you been trespassed from all over Melbourne where are you gonna go? ... Sometimes you can't even sleep at night. Sometimes you're up all day because you can't find a place to stay and stay dry. I've been up a couple days [before] trying to stay dry.

Sid and Carl's experiences indicate that there are structural barriers that prevent homeless men and women living on the street from protecting themselves from inclement weather. While the threat of being trespassed may be a nuisance, but on rainy nights it may become more problematic when homeless men need not only a place to sleep but also a place to stay dry. Here the dichotomy between public and private property, and even the rules that regulate the times during which "public" spaces may legally be occupied become a structural barrier which prevent some unsheltered homeless men from find a place to sleep at night. Ultimately, such policies

may cause some homeless men to lose sleep and potentially suffer from sleep deprivation, which may aggravate underlying medical conditions. However, homeless men are able to find places to sleep on street at night without being hassled by property owners or the police.

Although Carl expressed concerns about being trespassed, he also explained that in the past he has been able to find places where he's been able to stay for extended periods of time without being discovered. One such place was a doctor's office. He explains:

> It was just a little cubbyhole on the backside of this doctor's office and I stayed there for about a month, a month and a half. And then one day I guess somebody called the police, they must have seen me going toward that way. And, I had been sleeping for a few hours and the next thing I knew the police was there and "Hey! You can't stay sleep here! You gotta go!" But I've been here two months. Actually the doctor had seen me there and never complained because I clean up when I leave. If they would have been complaining it would have been something else. But a single person across the street complaining about someone sleeping somewhere. It would have been something else if I had tried to break in or destroying the property you know? But actually I cleaned up the whole property. You know what I'm saying?

Carl demonstrates that he is able to long-term shelter in unconventional places. However, after being discovered he was eventually told to leave his temporary shelter. Carl claims that the property owner had seen him before and never asked him to leave. While there is no way to verify his claim, it seems as though unsheltered men like Carl are able to establish long-term shelter in as they can remain undetected and the property owners tolerate their presence. In a similar example, during my interview Carrie, a homeless services provider in Osceola County, explained that she currently allows two unsheltered homeless men to sleep on the porch of her facility. But, they're continued presence is contingent upon their ability to follow her rules. As Carrie explained:

> I have folks that are sleeping on my front porch. Which I don't mind because I'm a social service provider. But what I do mind is that some of my folks are urinating on my front porch and that causes a problem. That makes my facility unsafe, and it makes it unfit, and so, I think, as long as we have a mutual relationship of respect of what's going on then

it's not a big deal… I [had] a conversation with them saying "hey guys, guess what? let's not do that, okay? Lets show a little respect and move over a little bit. I won't throw your things away if you don't pee on my porch, and we'll be good!" [laughs]

As Carrie admits, her perspective as a social service provider may make her more sympathetic to the homeless men, who at the time of my interview, were sleeping on her front porch. Although she is sympathetic, she also expects the men to keep the space clean and safe for others to work in and visit. Ultimately however, front porches and cubbyholes behind doctor's offices are not the type of long-term housing we would like to see the homeless find. However, these unconventional locations at least provide temporary shelter to homeless men and women who would otherwise be living on the streets. This is especially true during inclement weather when the homeless may need added protection from rain or freezing cold temperatures. These examples demonstrate however, that although the homeless have limited shelter options, they are resourceful. Perhaps the most resourceful men I met are those who have set up semi-permanent camps in wooded areas.

<div align="center">"Camping Out"</div>

While some of the men I spoke to sleep on the streets, others have set up semi-permanent campsites. Often theses men take several precautions when setting up their camps to keep themselves and their property safe. Generally, this involves finding an isolated place in a wooded area to set up camp. Moreover, they try to find land that will not flood during heavy rains. Furthermore, for added protection the men I spoke with often use tarps to re-direct rain from their tents. In the following sections I explain how homeless men exercise agency and mitigate their perceived risks to both social and natural hazards.

Finding a Campsite

My participants prefer secluded camps in wooded areas. Tony, an unsheltered homeless man living in Seminole County explained that he looks for "any place that's like secluded, where I don't gotta be around a bunch of people." He went on to explain that he chooses to be secluded because he does not trust other homeless people. As he explains, "if you got anything in your tent, a blanket or something like that, they'll take if off you if they need it, you know? So it's kinda like, you know, you try to seclude yourself away from everybody." Tony was not the only participant to express a desire to be secluded. Randy, also explained that "you gotta find a good, safe spot. A place where nobody goes, you know? [So that] when you leave ain't nobody gonna take your stuff." It's important to note however, that the participants I interviewed don't choose isolated locations just to avoid other homeless. They also want to stay out of the public's view. When I interviewed Dale he was living in a tent in a wooded area in Seminole County. He described his campsite as "the best spot I could find". He explained that he considers a location safe if "nobody can see me".

> Interviewer: Why is it that you don't want to be seen?
>
> Dale: Well, number one the cops will harass you. And number two, the other homeless people. If they know where you're staying at they will come and steal everything you've got.
>
> Interviewer: Have you had experiences with that?
>
> Dale: Um, no, I haven't because I don't tell anybody where I'm at.
>
> Interviewer: Okay, so you haven't had –
>
> Dale: I know other people that have. I mean, I know some people that were around here about a couple of months ago. Somebody went and took everything out of their tent, tore the tent down and set the whole deal on fire; everything they owned.

The selection of a campsite begins with finding an isolated area. For many of the men I spoke to this is a necessity. In order to protect themselves and their property from theft or destruction, the homeless believe they must live in isolation, away from other homeless people and out of view

84

from the housed public. While seclusion may offer some protection from social threats such as vandalism or theft, their isolation may in fact make the homeless more vulnerable to natural hazards. As discussed in Chapter 4, individuals living in isolated places may be more vulnerable in the time fowling a disaster. Emergency responders may not know where they are or if they need assistance. Therefore, the selection of a secluded campsite may bring limited protection to the homeless. On one hand they perceive themselves to be safe from the threats posed by other homeless and the police or public. On the other hand, however, they may be at increased risk during a disaster event when rescue workers may be unaware of their location and cannot offer them assistance.

Finding an isolated campsite is only on criteria used by homeless campers. As participants explained, they attempt to find campsites they perceive will be safe from flooding and heavy winds. As Tony and Randy explain:

> Tony: You don't wanna be down a hill. ya'knaw mean? You wanna be higher up. You know? You don't wanna be in a ravine or anything like that… I've been doin' this for about three years now so I'm a little bit smart about it…you gotta just pick the right spots ya'knaw mean?
> Randy: You just gotta make sure it's dry and out of the weather you know. You gotta try and get out of the wind as much as possible and the rain. Which, uh, that's the spot I'm in. I'm in real high brush. You got big oak trees around me so I'm pretty much covered by the wind.

These examples demonstrate that although some homeless may choose to camp in isolated places, they also seek locations they perceive will protect them from the elements. Herein they assess the perceived risks associated with potential campsites. From these assessments, my participants are able to setup camp in locations they perceive will provide them with the most protection from being discovered and keep them safe during thunderstorms that may produce heavy winds and rain. Thus, the homeless campers I've spoken to exercise agency in their

selection of a campsite. Moreover, campers take additional steps to protect themselves after establishing a campsite.

<center>Preparing One's Campsite</center>

Although most of the men I spoke to choose campsites they perceive to be in safe places, they also took additional steps to keep themselves dry. Most often homeless men explained that they use tarps to direct water away from their tents and provide added protection against the rain. Tony explained, "I take the tarp and I drape it over the top of the tent and kinda put it on an angle so the rain goes in a certain direction…when it hits and it." Frank was the only "camper" I spoke to that was concerned that his tent might be in a low-laying area. He explained that he's heard that the area he's in is prone to flooding but noted, "this is not the first time I've been camping. I know a little bit about how to handle things like that". Intrigued, I asked him what sort of things he would do to prevent his tent from flooding:

> …You can do what's called "ditching your tent" you just … take your camp shovel which you have to have, or around here you can just dig with your hands and get most of the sand. But, I don't know, you dig a small ditch along the side of your tent and you pile up what you took from the inside. That'll protect from a lot of incoming water.

Here Tony and Frank demonstrate a greater degree of agency. Not only do they select campsites they perceive will provide them with protection from strangers and elements, they also take additional steps to prepare their camps for severe weather. Furthermore, during my interview Frank explained that he has used the Internet to learn about ways to manage one's risks to severe weather while camping:

> You can go on the Internet and find out anything you need to know about camping or weather awareness or stuff like that. You just have to be willing to look. You, you can put a term in on Google and that will get you started. It may take you several hours and you know anyone who can walk, just plain walking you can get access to a library.

<center>86</center>

Frank further demonstrates that the homeless perceive risks associated with their living situations and take action to mitigate those perceived risks.

Ultimately, my conversations with the campers indicate that they are able to mitigate some of the risks associated with homeless life. They are able to find secluded campsites that they perceive will protect them from being victimized by other homeless or prevent them from being hassled by the police. However, from a disaster vulnerability perspective this may actually increase their vulnerability as they will be isolated during a major storm and emergency responders may not be able to help them. The men I spoke to however, feel confident that their camps are located in locations that will provide them protection from wind and rain, and in some cases hurricanes. The men I spoke to also take extra precautions to prepare their camps. Mainly, this involves draping tarps over their tents to provide extra protection from the rain. In some cases, such as with Frank, they may even dig small ditches around their tent to redirect rain water away from their belongs. Furthermore, Frank also uses the Internet to learn about ways to manage one's risk to the weather while camping. Thus, although these men are homeless, they acknowledge that being homeless places them at risk to natural hazards and are work to mitigate these perceived risk.

"Ditching" or placing a tarp over one's tent may provide added protection from occasional thunderstorms. However, I was also interested in learning how the homeless men I spoke to managed their risks during hurricanes. In the following section I examine my participants' perceptions of being at risk to hurricanes and the strategies they use to keep themselves safe during these severe weather events.

<u>Riding out Hurricanes</u>

Thus far in this chapter I have demonstrated that homeless men are able to manage their

risks during rain showers and extreme temperatures. In this section I focus my attention the

strategies homeless men use to protect themselves during hurricanes. Overwhelmingly however,

the unsheltered homeless men I spoke to claim they would attempt to "ride out" a hurricane on

their own. As I will show, these men believe that their tents, cars, or other shelters can provide

them adequate protection from the rain and wind during hurricanes and are reluctant to evacuate

to formal shelters.

Many of my participants explain that they would most likely stay in their tents or find

some other makeshift shelter if a hurricane were forecasted to make landfall in their area. Most

often they explained that they felt safe in their tents or that they could manage on their own, and

did not want to go to a shelter. Others claimed that they have had experience with hurricanes in

the past and are confident in their ability to ride one out again. Additionally, some men told me

that they had previously rode out hurricanes and tropical storms in their tents or makeshift and

claim to be confident in their ability to do so. Tony was one of the first men I interviewed, and

the first to tell me that he would stay in his tent during a hurricane:

> Interviewer: … if we did have a serious weather event, like a hurricane or something like
> that where do you think you'd go or what do you think you'd do?
> Tony: I'd probably stay wherever I'm at.
> Interviewer: Okay
> Tony: I'd probably just ride it out
> Interviewer: Ride it out? In your tent?
> Tony: Yeah

Tony however was not the only participant who indicated that he would ride out a hurricane in

his tent, Dale, Randy, and Frank also told me they would most likely stay in their tents. To be

clear, however, not all of the men I spoke to are completely confident in their ability to ride out a

hurricane in their tent. Of the "campers" I spoke with, Frank has been homeless for the shortest

amount of time. According to Frank he's been living in his tent for about six months, the others

have been "camping" for several years. Thus, during my interview, Frank appeared to be unsure

of whether or not he could safely ride out a storm in his tent:

> Interviewer: Now do you think if there was a hurricane coming you'd stay in your tent?
> Frank: Well, (pause) I'm not certain. I don't really know. I can't answer that with
>   certainty.
> Interviewer: Oh, okay, would you say more yes or more no?
> Frank: Well, I would want to at least, uh, make an attempt to stay but if the weather, I
>   could tell was getting' bad enough I'd leave. I'm not sure where I'd go but – cause
>   down here hurricanes don't, don't tend to change real fast. Once they get started,
>   they will change, they'll get stronger or weaker but they don't do it like that (snaps
>   fingers). You have to be aware of things like that when, you have to be able to tell
>   when they're going to affect you. For me that's just a matter of common sense,
>   which come people don't have. But you know.
> Interviewer: So, then it sounds like maybe if it was a stronger hurricane you might
>   decide?
> Frank: Yeah, um, um, like I say it would depend on the conditions at that moment. I
>   might have to make a split decision because, uh, like I said I haven't been out in
>   one before, I've always been inside, in an apartment usually. Before I became
>   homeless I always living in a one bedroom apartment.

Frank's uncertainty may be related to his inexperience with managing his personal safety as a

homeless person. In deed, earlier in my interview he confessed, "…when I started out, I had

some problems, but I know better now." Thus, it may be the case that more experienced

homeless men are more confident in their ability to ride out a hurricane. For example, Randy and

Dale have been homeless campers for several years and both cited previous experiences with

severe weather and tropical storm to support their confidence in riding out a storm in their tent:

> Randy: I lived on the beach two years ago during the hurricane at Lou's Blues.
> Interviewer: Oh okay, tell me a little bit about that
> Randy: It was uh, it was, uh, you know a little windy but I stayed warm. I kept the tarps
>   over me. It's all-good. It worked out good.
> Interviewer: So you stayed in your tent?

Randy: Yeah

- - -

Dale: Well I mean it affects your ability to get around, you know. Also, where my tent is, when that hurricane came through here, I forget what month it was, all the rain

Interviewer: Yeah, it was like three days of rain.

Dale: Yeah, I had a lake front property [laughs]. Yeah, but uh, it didn't get in my tent. It stayed dry and everything.

From my perspective of a housed person, riding out a hurricane in a tent does not seem like the safest option. On one hand, a tent might keep one dry during torrential rain, but on the other, it seems unimaginable that a thin layer of canvas would keep one safe during high winds associated with hurricanes; especially in wooded areas with fallen branches and other projectiles that could easily pierce through a tent's canvas walls. Therefore, I asked my participants if they knew of any safe places they could go during a hurricane. Some participants, especially those living in tents expressed negative perceptions of homeless shelters and clearly stated that they would not utilize their services because of these perceptions. Consider the following excerpt from my interview with Tony:

Interviewer: Do you know of any safe places where you could go?

Tony: Oh yeah, there's shelters and stuff like that.

Interviewer: Have you been to them before?

Tony: (coughs) No…I don't like being in the shelters because they want you to abide by a certain, you know, uh, restriction, what they want you to do, an-and, I'm not, I'm my own person, you know, and stuff like that, and I like to do what I do, you know? ya'knaw mean? No body likes to be told what to do, you know?

Interviewer: Is that specifically the homeless shelters or?

Tony: Yeah, uh, basically, yeah.

Interviewer: What sort of things do they ask you to do?

Tony: One, they want you to be in by a certain time ya'knaw mean? And they want you to uh, uh, not to be, you can't smoke, or you can't drink or something like that, ya'knaw mean?

90

Dale also has negative perceptions about homeless shelters that prevent him from using their services. When I asked if he would consider going to an emergency shelter during a hurricane, he responded:

> I don't want to get involved with that shelter down there on 13th Street. Number one because of the location, and number two because, you know they do charge you $60 a week and I've heard that it went up. And uh, I've had too many people that they've told me, that they've stayed there for two or three months and then when they finally found a job, they would take their entire pay checks and pay off what they owed. So I have nothing to do with those people.

Some of the men I spoke to in Brevard County also had similar concerns about the local shelter. Gary, was particularly dissatisfied with the shelter services and cites what he believes are unreasonable requirements:

> …Down here they don't really have homeless shelters. The CITA mission is supposed to be "Christ is the answer" but it's really "cash is the answer". I'm disabled. I went to stay there and that's why I stayed outdoors for three weeks. They wanted me to go out and fill out twenty applications and day and get 10 signatures. And then you only get 3 weeks. Now other guys that have unemployment they let them stay longer, they want them to better themselves. But I get a social security check. I told them I'll give them the $10 but not they say "we want you to be an achiever. We want you to leave at six in morning and go look for work." Excuse me but what don't you understand about disability insurance?

Taken together we see that some homeless men have an aversion to homeless shelters because of policies they perceive will limit their freedom or treat them unfairly, or will cost them too much money. In any case, it becomes clear that the unsheltered men I spoke to do not consider homeless shelters to be an option for them.

In terms of the matrix of vulnerability, this reluctance to utilize shelter services may be viewed as a structural barrier. Because these men disagree with the policies at the shelters, they choose not to use them. Alternatively, however, shelter policies can also be viewed as *preventing* these men from using their services. This is especially true for Gary, who although he is disabled

91

was still expected to look for work. To Gary this policy is illogical because if he found a job he would most likely lose his social security disability benefits due to Federal requirements which prevent the "disabled" from working and receiving benefits. Ultimately, homeless men like Gary, Dale, and Tony have little influence over shelter policies and when shelter policies clash with their own needs, these men are prevented from utilizing shelter services. Thus, while homeless shelters are meant to serve as a safe haven for men living on the streets, their policies at times deter some homeless men from taking advantage of these services.

Clearly however, these men are able to survive without assistance from local homeless shelters. The aversion to shelter services may become more problematic during severe weather events such as hurricanes. As I have demonstrated, the homeless men I spoke to are more likely to ride out a storm in their tent, in part because they do not agree with the policies of the local homeless shelters. Therefore, homeless shelter policies act as structural barriers that dissuade some homeless from accessing their services even during extreme weather events. Ultimately, this structural barrier may increase the vulnerability of some homeless men during hurricanes.

Homeless shelters, however, are not the only emergency shelter available during hurricanes. I also asked my participants if they would consider going to a county run emergency shelter during a hurricane. The most frequent response was generally along the lines of "I'd think about". In most cases, such as Tony and Carl (below), participants explained that they would prefer to remain by themselves, or feel as though their previous experiences with hurricanes has prepared them to ride out a hurricane:

> Interviewer: … if a hurricane comes they usually open up, you know, disaster shelters, places for people to go. Would you consider going some places like that?
> Tony: I might consider it, yeah. But I doubt it.
> Interviewer: Why wouldn't you go there?

Tony: Because, uh, (pauses) I figure, uh, I dunno, I just like being by myself ya'knaw mean?

Interviewer: Okay, alright, do you think that the people that might be there might be rude to you or treat you badly or something?

Tony: Uh, no, no no no.

Interviewer: You're not worried about that?

Tony: No, no, no. It's just like you know, I just don't, you know, like all the restrictions they want, ya'knaw mean? And I really don't, I've been through hurricanes before. I've been here 25 years, ya'knaw mean? So you know, I'm pretty much, I can handle it.

Carl also provides a similar example:

Interviewer: So thinking about if we had a hurricane where do you think you'd go or what do you think you do?

Carl: Try to find a place that's closed in or find an empty parking garage or something like that. You might get harassed by the police but you need to be out of it.

Interviewer: What about one of the emergency shelters that they open? Like the county shelters?

Carl: Usually you go to that shelter if you like being around people. But if you don't like being around people then you know you try to stay on your own. Like I said you got a lot of people that don't like being around peoples.

Interviewer: So would you consider going to one of those shelters?

Carl: Yeah. I'd consider it. Then if I get there and if they aint got no room for me then I'd go back outside. I'm being serious. But I think I might be better by myself. You might see somebody there that you can't stand 'cause they run their mouths. You don't want to be around that kind of stuff, you want to try and avoid confrontation... Another thing is you don't have freedom in the shelters...I mean I survived a lot of storms, I survived a lot of hurricanes. I've survived a lot of things that most peoples haven't experienced yet.

Intrigued by both Tony and Carl's confidence in their ability to safely ride out a hurricane in his tent, so I probed deeper:

Interviewer: Have you been through a hurricane while you were living in the streets or?

Tony: I been in a hurricane where, you know, when I was in North Carolina, before right? Where it took my whole trailer, uh, and I had my steps they were this big [points to his mid-thigh area] you know, three steps goin' into the trailer right?

And it took my whole trailer right? Pulled it over right? And covered the whole first step.

Interviewer: Wow - were you in the trailer when that happened?

Tony: Yeah I was in the trailer.

Interviewer: Oh wow -

Tony: Me and my girlfriend were in the trailer, yeah, so I been through 'em. The water was this high [again points to about mid-thigh] in the trailer park and you know.

Interviewer: So even after having that experience you think you'd still stay in a tent in the woods?

Tony: Oh yeah. I figure I can handle it. I been through a couple so ya'knaw mean?

- - -

Interviewer: Have you experienced a hurricane while you've been homeless?

Carl: Sure

Interviewer: Can you tell me about that?

Carl: I crawled up in a pipe. In a gutter, whatever you wanna call that. I had a tarp at the time. I put it on one end of the cylinder that I was in, I put all my stuff down on that end so it wouldn't get wet and I stayed down there where the tarp was and watched the rain fall.

Here, Tony provides evidence to support his confidence through recounting a rather dramatic experience with a hurricane while living in a mobile home. Interestingly however, is the fact that although the trailer park flooded and his home essentially shifted from its foundation, Tony remains confidant that he could safely "handle" a hurricane in his tent. For these men, it seems as though their confidence is buoyed by their desire to remain alone and their previous experiences with hurricanes.

However, as demonstrated earlier in this chapter most campers appear confident and ready to ride out a hurricane alone in their tents. Again as a housed person, this seems rather unreasonable to me, and I often pushed my participants further to try and understand under what conditions they might consider evacuation. Consider the excerpts below:

Interviewer: So what about like and emergency shelter? Like if a hurricane is coming I know the county opens shelters for the public, would you consider -

Dale: If it was going to be something really, really bad, of course I'd want to get undercover yeah.

Interviewer: What would you consider then to be bad enough for you to go?

Dale: If were gonna get a Category 5 hurricane, you know, I'd probably consider it [laughs].

Interviewer: Well you know, I'm just asking, I'm trying to figure out what you mean by bad.

Dale: I personally will stay out in the woods through stuff that most people wouldn't. You know, but --

Interviewer: So wind, rain, lightning, it doesn't really bother you?

Dale: Nope.

Interviewer: Do you think there would be, you know, any potential storm or hurricane that would make you decide to go to a shelter?

Randy: Uh, yeah Category 5 or bigger.

Interviewer: So it's gotta be pretty big?

Randy: I'd say I might go, I'm not saying that I would. I might got. I'm very outdoorsy so I can handle myself out in the woods. I know how to secure myself.

To provide better context for Dale and Randy's assertions the Saffir-Simpson Hurricane Scale is

provided below.

Table 2: The Saffir-Simpson Hurricane Scale

Category	Sustained Winds	Damage Due to Hurricane Winds
1	74-95 mph	**Very dangerous winds will produce some damage:** Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap and shallowly rooted trees may be toppled.
2	96-110 mph	**Extremely dangerous winds will cause extensive damage:** Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads.
3 (major)	111-129 mph	**Devastating damage will occur:** Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads.
4 (major)	130-156 mph	**Catastrophic damage will occur:** Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed.
5 (major)	157 mph or higher	**Catastrophic damage will occur:** A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area

Category	Sustained Winds	Damage Due to Hurricane Winds
		will be uninhabitable for weeks or months.

Source: National Hurricane Center (2013); http://www.nhc.noaa.gov/aboutsshws.php

According to Dale and Randy, in order for them to evacuate and leave their tents behind, a hurricane would need to be a Category 5, or higher. As Table 2 demonstrates, this catastrophic storm would bring with it a minimum of 157 miles-per-hour sustained winds. These winds would be capable of destroying a "high percentage" of framed and lead to fallen trees and power poles that would leave the area "uninhabitable" for weeks or months. From my perspective as a housed person and disaster researcher, it is troubling that these men might consider riding out a Category 4 storm, which has the potential to pack an equally catastrophic punch.

Putting my perspective aside however, there may be several explanations for Dale and Randy's claims. First, they might simply be joking. In fact, Dale laughed after telling me that he would only consider evacuation in the event of a Category 5 storm. Either the claim is his attempt at a joke, or he acknowledges that riding out a major hurricane in a tent might in fact be dangerous. A second explanation might be that the homeless are living in a state of "crisis". In addition to not having a regular place to stay, many of the men I spoke to are unemployed and rely food panties and soup kitchens for daily meals. Although a few are lucky enough to be taken out to dinner by librarians or receive food stamps or disability insurance, most however are dependent on the charity of others to meet their basic needs. It may be the case that this state of crisis requires them to live in the moment rather than the foreseeable future. Perhaps the men I spoke are more concerned with daily survival rather than long term "what if" scenarios.

A third possible explanation for the men's claims that they would ride out anything up to a Category 5 is that Central Florida has not had a direct impact from a major hurricane since

2005. Although we have had tropical storms and minor impacts, in recent history Central Florida's hurricane seasons have been relatively inactive. It may be the case then that the men I spoke to consider an impact from a major storm to be unlikely and therefore have not given the possible outcomes much consideration. From this perspective then, the homeless men I spoke to are engaging in the same complacency that emergency managers cite as the biggest problem facing the housed population.

A fourth possibility may be that I did not speak to enough homeless men, or that I am giving too much weight to the claims of a handful of men. However, in the context of Drabek's (1999) study of the homeless during Hurricane Andrew it seems that my findings are consistent. Drabek (1999) found that in advance of Hurricane Andrew's landfall in Miami-Dade County, 27% of the homeless he surveyed did nothing after learning about the hurricane warnings. Furthermore, 29% of Drabek's (1999) sample reported turning to makeshift shelters such as under bridges or overpasses whereas an additional 48% relied on public shelters. To be clear, not all of the men I spoke to claimed they would ride out a hurricane on their own. My participants who do not live in tents seemed more likely to seek safety at local emergency and hospitals during a hurricane. In the following section I describe the strategies and experiences of unsheltered men living on the streets managing their vulnerability to hurricanes.

While most of the men I spoke to explain that they would most likely ride out a hurricane in their tents, men living on the street were more inclined to seek a more hardened for of shelter. As Sid noted, "well, if somethin' comes you better find someplace to go. Layin' out in the woods someplace in a tent you really aint getting what you're supposed to have." So what makes a good shelter option? Sid prefers going to the local hospital:

Sid: well, something like that you'd have to uh, the hospitals stay open the whole time so you'd have to go there, go to the waitin' room and stay there until you think the weather is gonna stop.

Interviewer: Have you done that before?

Sid: Yeah, they're not gonna stop you from goin in the hospital.

Interestingly, although Sid acknowledges the need to seek shelter during a hurricane, he prefers to go to a hospital rather than an emergency shelter. Again it appears that unsheltered homeless men have a strong aversion to "shelters" and would much rather find alternatives. Whether they hunker down in their tents, seek refuge with friends or family, or in make shift shelters such as storm drains, the homeless men in this study appear to be ready to ride out hurricanes on their own without assistance from shelters.

Conclusions

This chapter examined the ways that unsheltered homeless men exercise agency and reduce their vulnerability to natural hazards. I began by examining the methods unsheltered homeless men use get information about the weather. These methods ranged from simply looking up at the sky and making predictions to accessing weather forecasts on the Internet and cell phones, and listening to the radio. These media allow homeless men to get information about the weather and allow them to take the necessary precautions to protect themselves.

The second section of this chapter explored the places used by homeless men to seek shelter from the elements. Many participants explained that they often use public places such as libraries, malls and fast food restaurants as temporary daytime shelters from inclement weather. They described their interactions and experiences as ordinary experiences, which can be attributed to their ability to follows the ascribed rules in these locations. Other participants explained that they are able to use their social networks and find shelter with friends and/or family during inclement weather. Most often however, it appears that the men I spoke to

consider utilizing the resources in their social networks during major weather events, such as hurricanes. At night, most of the men I spoke to sleep on the streets or in tents in wooded areas. Men sleeping on the streets at night report that they sleep under bridges or any place they can find. For these men getting trespassed is a major concern.

Several of the men I spoke to have been able to find shelter in tents. These men exercise a high degree of agency when selecting and preparing their campsites. First, they look for a campsite they perceive is isolated enough to prevent the police from harassing them or other homeless people from robbing them. Second, homeless campers look for campsites they perceive to be protected from high winds and will not flood during heavy rains. Furthermore, in preparing their camps, many campers explained that they use tarps to direct the rain safely away from their tents. Herein, the campers demonstrate that they recognize the threats of natural hazards to their property and their person wellbeing and are able to take steps they perceive will mitigate their vulnerability. Unfortunately however, their desire to be isolated may in fact increase their vulnerability during severe weather events when rescues workers may not know if they need assistance or where to find them.

Overwhelmingly, the men I have interviewed explain that they would most likely ride out a hurricane in their tents or in makeshift shelters. They supported this claim by telling stories of their previous experiences surviving hurricanes in a tent. These previous experiences appear to empower campers and provide them with the confidence to manage their vulnerability during severe weather events. Furthermore, many of the campers expressed frustration and dissatisfaction with their local homeless shelters. These men claim that the shelters have unfair or unreasonable policies regarding work requirements or paying for one's stay. Such policies deter some campers from utilizing shelter services, and represent a structural barrier, which may

prevent some homeless men from seeking formal shelter during hurricanes. The men in this study however are able to survive on their own without the assistance of homeless shelters. Combined with their previous experiences managing severe weather in their tents, this ability to manage on their own may lead some homeless campers to believe they can survive even major hurricanes in their tents.

Ultimately, some homeless men appear to be acutely aware of their vulnerability to natural hazards. In many ways the homeless are no different from a housed people. When it rains, gets too hot or too cold, they seek shelter. They do not stand out in the rain and wonder, "what is this stuff? When will it stop?" On the contrary, they find secure locations to keep themselves and their property dry. Furthermore, they setup camp or choose locations to sleep at night in places they perceive will keep them safe from the weather and victimization. While the homeless may experience a higher degree of vulnerability to natural hazards when compared to a housed person, they also appear to be aware of these risks and able to manage them accordingly.

CHAPTER 7: CONCLUSION

In this chapter I provide a summary of my research findings and explain their policy implications. Furthermore, I provide recommendations for assisting the homeless in understanding their risks and preparing for them to emergency managers and homeless services staff.

Major Findings

The Matrix of Vulnerability

In Chapter 4 I introduced the matrix of vulnerability. The matrix is constructed from the perceptions of emergency managers about who is most vulnerable to disasters in their respective communities. The matrix of vulnerability consists of four separate but interacting parts: 1) social characteristics, 2) the risks associated with where one lives, 3) human agency, and 4) time. In the matrix, one's social characteristics can be combined to create varying degrees of social vulnerability. Similarly, the risks associated with where one lives can be used to estimate one's physical vulnerability to particular hazards. Considering one's social and physical vulnerability allows us to estimate their overall vulnerability to a particular hazard. This estimation serves as a starting point within the matrix. However, if vulnerability is view as a process rather than a condition, individuals are able to take steps to protect themselves from a perceived threat. I refer to the steps one takes to prepare him or herself as agency. It is important to remember that not all courses of action are available to all people and structural barriers limit that agency. Finally, time is a force that is external to the matrix and changes the nature of the threat at hand. Furthermore, as time passes within the matrix, individuals may have fewer available courses of action to protect themselves.

The matrix of vulnerability provides an innovative approach to studying and disaster vulnerability. Although social vulnerability theory has allowed us to understand how social divisions within society influences disaster vulnerability among marginalized populations, vulnerability is often presented as a static condition. However, the matrix presents vulnerability as a dynamic process that is influences both by social divisions but also by human agency. From this perspective it becomes possible to help individuals recognize their vulnerability and take steps to reduce their own risk. In so doing, the matrix moves beyond traditionally macro-level approaches to understanding disaster risk and vulnerability and allows us to understand vulnerability at the individual or micro-level. Herein, it becomes possible to empower vulnerable populations to reduce their vulnerability through their own means. However, because vulnerability is also linked to social divisions within a society, we must also acknowledge that in order to reduce disaster vulnerability we must reduce also social inequalities.

Life Inside the Matrix: Understanding Natural Hazards Vulnerability Among the Homeless

This dissertation examines the homeless as a marginalized population that experiences increased risk to natural hazards and disasters. Specifically, I have examined the risks that homeless men face to natural hazards in Central Florida and the steps they take to reduce these risks. Guided by the matrix of vulnerability, Chapter 6 examined the factors that make the homeless vulnerable to natural hazards and resulting disasters.

In Chapter 6, I argued that being homeless requires homeless men to experience greater exposure to natural hazards than housed individuals. This increased exposure means that homeless men must manage their daily lives around seemingly mundane weather events such as extremely hot days, cold nights, and afternoon thunderstorms. While such occurrences may be an

inconvenience to housed Central Floridians, they may require homeless men to skip meals and stay awake for extended periods of time while seeking shelter from the elements. Ultimately, their increased exposure to the elements may disrupt the daily routines of homeless men and may in fact have negative effects on their health. Furthermore, some homeless men, like the general population, may have chronic medical conditions, such as diabetes, which may increase their vulnerability to natural hazards. Additionally, inclement and severe weather events may prevent some homeless men from earning money through working odd jobs or selling artwork. Thus, natural hazards can also impact the already unstable finances of homeless men. Finally, in Chapter 6, I argue that the social stigma experienced by homeless men places them at increased risk to disasters. Although multiple factors may intersect and place the homeless at an increased risk to natural hazards, the homeless men I interviewed are far from helpless. On the contrary, as I have demonstrated they are rather effective at managing their risks to natural hazards. Thus, Chapter 7 takes a deeper look at the daily lives of my participants and examines the strategies they use to keep themselves and their property safe during inclement weather.

In terms of the matrix of vulnerability, Chapter 7 demonstrates the how my participants exercise agency in an attempt to reduce their vulnerability to natural hazards. First, I found that participants use a variety of means to get information of about the weather. While some confess they primary strategy is to "look up", others explained that they regularly listen to the radio or use the Internet or their cell phones to keep current on weather forecasts. Second, I found that the homeless utilize public spaces, such as libraries, malls, and fast food restaurants as temporary shelters. As participants report, these public places offer refuge from extreme temperatures and rainy days. Although these places have rules that the homeless must follow, none of the men interviewed reported having negative interactions with staff or management at public libraries.

In addition to discussing the ways in which homeless men get information about the weather and seek temporary shelter from inclement weather, I also provided a thorough examination of the strategies homeless men use to find and maintain safe campsites. Although these men chose campsites they perceive will keep them safe from victimization, the secluded nature of such sites may in fact increase their vulnerability during a hurricane. Furthermore, although the men take care to select campsite they perceive will be safe from the elements and uses tarps to keep out the rain, nearly all of the men included in this study claim that they would ride out a hurricane in their tents or some other makeshift shelter. This is due in part to their aversion to homeless shelters and desire to remain alone and independent. While the men I have interviewed appear to be capable of managing their risks to natural hazards, there may be ways in which policy makers can assist the homeless. In the following section I provide policy recommendations and propose strategies that will help reduce natural hazards vulnerability among the homeless.

Policy Recommendations

As I have demonstrated, the homeless face unique challenges to natural hazards in Central Florida. Although many of the men I have spoken with assert that they are able to manage their risks on their own with little assistance from the outside, more can be done to protect the homeless, such strategies include establishing day shelters and establishing communication with the homeless through outreach and inclusion.

Need for More Day Shelters

Although many of my participants felt confident and comfortable relying on libraries and other public places to get temporary refuge from inclement weather, others felt that more could

be done to provide safe places for the homeless on a day-to-day basis. Most often, the homeless

men I met thought that having more day and drop-in shelters would benefit the homeless. Day

shelters can provide a safe and welcoming place during inclement weather and also provide

social services referrals. I conducted many of the interviews included in this study at a day

shelter in Brevard County. The shelter provides hot meals, showers and laundry service as well

as social service referrals to the homeless in Brevard County. Many of the men I interviewed

appreciated the services provided to them, however they regretted that the shelter closes at 2

o'clock in the afternoon. Thus, on bad weather days, the men must find alternative shelter after

the facility closes. Unfortunately the shelter only serves a fraction of the county's homeless

population. Due to the size and length of Brevard County, it is difficult for homeless men and

women in the county's northern and southern regions to reach the shelter on a regular basis.

Although the financial costs of establishing and maintaining drop-in shelters for the homeless

may be high, they offer many benefits to the clients that utilize their services, especially during

periods of inclement or severe weather. Furthermore, drop-in shelters can serve as a portal to

provide information to the homeless about how to keep themselves safe during severe weather

events.

<p style="text-align:center">Outreach</p>

As I outlined in Chapter 6, many of my participants are hesitant to utilize emergency

shelters. Although it is not entirely clear weather this hesitance is related to their assumption that

their experience in emergency shelters would be similar to those in homeless shelters, more

should be done to allow shelters to be a more viable option to the homeless. This can be done

through existing homeless service and outreach organizations. Staff in such organizations often

have a rapport with their clients and may be able to emphasize the importance of finding secure shelter during a hurricane. Furthermore, outreach staff and volunteers may have access to the isolated campsites established by their clients. Thus it may be possible to check in on homeless campers before and after a major storm to ensure their continued safety. Furthermore, outreach workers can open communications between the homeless and emergency managers to further understand the needs of the homeless during hurricanes and other severe weather events.

Including Marginalized Voices

In order to create an emergency management services that can meet the needs of the homeless, homeless voices must be included in emergency planning. Thus, local emergency managers should consult with homeless services staff and individual homeless men and women when developing emergency plans. This dissertation provides an overview of the risks the homeless in Central Florida face and the strategies they use to mitigate their perceived risks. Thus, this dissertation may serve as a guide to creating a more inclusive emergency management system. Ultimately however, local emergency managers must consult with local homeless agencies to better understand the needs of their local population. More importantly, emergency managers should work directly with the homeless to fully understand their needs. While case managers and outreach workers may be familiar with their clients lives, their perspectives as housed social workers may lead them to overlook certain concerns their clients may have. Furthermore, by working directly with homeless men and women, emergency managers may be legitimize emergency shelters for homeless men and women who might otherwise choose to avoid the emergency shelter system.

The later two recommendations, engaging outreach and including marginalized voices reflect the principles of FEMA's "whole community" approach (FEMA. Under this paradigm, emergency management officials are encouraged to integrate the public and private sectors in the emergency planning process. The goal of this integration is to create strong partnerships between federal, state, and local governments and private businesses and non-profit organizations. It is believed that the establishment these partnerships will ultimately develop communities with higher degrees of disaster resiliency.

APPENDIX A: BUILDING DISASTER RESILIENCE AND SUSTAINABILITY IN RURAL COMMUNITIES IN CENTRAL FLORIDA

Group Interviews Script

A. *Opening*
1) Introduction of interviewer and purpose of interview. Conversational by-play.
2) Explanation of informed consent procedures and consent form. Give copy of consent.

B. *Interview Content*

1) *Resiliency*

What is your (or your organization's) definition of disaster resilience?

How does your organization's mission, resources, and goals impact disaster resilience, particularly in rural communities?

Discuss some of the challenges your organization is currently facing. How do these challenges affect disaster resilience?

What is the biggest challenge facing your community right now? How do you think this issue will affect disaster resilience?

Probe for:
Economy
Miscommunication or lack of communication
Diverse populations and needs
Others

What is the strongest asset your community has? Do you think that this benefits disaster resilience? How so?

2) *Mitigation/Preparedness/Response/Recovery*

Who in your community is most vulnerable to a disaster? What can be done to make them less vulnerable?

Who in your community is the most prepared for a disaster? What can be learned from them that could help other community members?

What role should government have in disaster response?

What can nonprofit organizations / local faith-based community organizations do to help members of your community prepare for/recover from a disaster?

What can the local business community do to help members of your community prepare for/recover from a disaster?

3) Community Vulnerability & Disaster Resilience

Thinking about "natural disasters," (Give examples of natural disasters: flooding, wildfires, tornadoes, hurricanes, etc.) what do you think is the greatest threat to your community? Do you think the community is prepared for this type of natural disaster threat? What can be done to help?

What threats do disasters pose to the business community? What can be done to help business prepare for disasters?

What threats do disasters pose to the faith-based community? What can be done to help the faith-based community prepare for disasters?

What threats do disasters pose to the non-profit organizations? What can be done to help non-profit organizations prepare for disasters?

What threats do disasters pose to neighborhoods? What can be done to help neighborhoods prepare for disasters?

4) Community Relations and Adaptation

Can you tell us a little about how communities (residents, government and non-government organizations) have survived, reconstituted, and adapted in the response and rebuilding stages of disaster recovery?

Please tell us about personal ties among individuals in the context of disasters. In what ways have interpersonal relations improved the capacity to withstand a disaster?

What features of the community have you seen adapt in response to the threats from disasters?

Can you characterize for us how tangible assets of communities and organizations (financial, labor) are shared across communities and organizations to improve resiliency? What can be improved to strengthen these relations?

What about assets that is less tangible, such as trust and shared goals, in the ability of communities to withstand disasters? How do these features of relations improve the ability of communities to adapt in response to the potential threats from disasters?

5) Social Media/News Media

What should be the role of local news media before, during, and after a disaster? In what way do media reports on disasters impact your preparedness?

Do you use social media? What role do you think that social media can have before, during, and after a disaster?

Does your organization use social media? What has been your social media strategy? Have you noticed any benefits or difficulties of using social media?

How would you describe your organization's relationship with local news media?

Probe for: Do they feel they can "easily" get their message/image across?

Would they like to communicate better but do not have the resources to do so?

6) Politics and Government Action

Are there any political stresses in your community that could affect disaster resilience? How do you think this can be mitigated?

What policies should be pursued by local government to improve resiliency? In your assessment, what makes these policies difficult to implement?

7) Special Need Populations (Tourism) (Asked if appropriate for county)

What role does tourism play in your community? How would maintaining tourism be a part of your disaster resiliency plans?

How do you work/plan for with visitors and/or tourists, as compared to community members?

What threats do disasters pose for tourism? What can be done to help tourist industries prepare for disasters?

Do use any media outlets specifically for visitors or tourists?

Probe for how often? Which media outlets? And probe for further discussions of their experiences.

C. Conclusion

Are there any additional comments you would like to make?

APPENDIX B: INTERVIEW GUIDE FOR HOMELESS PERSONS

A. Opening
1) Introduction of interviewer and purpose of interview. Conversational.
2) Explanation of informed consent procedures and consent form. Give copy of consent.

B. Background

Could you tell me a little bit about where you are currently living? How long have you lived there? How long do you plan to live there?

Can you tell me about your daily routine? What are some of the challenges you face in your day-to-day life? How do you manage them?

D. Hazards, Risk, and Mitigation

How do you get news or information about the weather?

Could you tell me a little bit about how the weather affects your daily life?

Where do you go when there are severe storms? What do you do? What do you do with your property?

Are you aware of safe places where you can go during severe weather? Where are they? Have you gone to them? What has your experience been?

If a hurricane were to come, where would you go? How would you prepare?

What do you think can be done to insure the safety of homeless people during severe weather?

APPENDIX C: GROUP INTERVIEW SCRIPT FOR HOMELESS SERVICES STAFF

A. Opening
1) Introduction of interviewer and purpose of interview. Conversational.
2) Explanation of informed consent procedures and consent form. Give copy of consent.

B. General Issues

Could you tell me a little bit about the homeless population in your county? Where do they tend to live/stay?

What needs do they have?

What services are provided? Are there differences for families and single individuals?

How many shelters are there? How many people can be housed?

What challenges do homeless people in your community face?

C. Hazards, Risk, and Mitigation

Thinking about natural hazards, like severe weather or extreme temperatures, what are some of the challenges that your clients face?

How do your clients manage these challenges?

Are there additional shelters available in case of severe weather?

What information do you provide to your clients about severe weather and safety?

What is your relationship with county emergency management?

Do you have emergency plans in place for your shelter? What are the plans?

What more do you think can be done to insure the safety of homeless persons during severe weather?

D. Conclusion

Is there anything else you think I should know about the homeless population in your community?

APPENDIX D: CAST OF CHARACTERS

Andrew is a White male in his twenties who has been living on the streets in Brevard County for the last few years. He explained that he came from a broken and at times abusive family and thus he "chooses" to live on the streets. He describes himself as a "punk" and has a shaved head and wore baggy clothes. During my interview with Andrew at a day shelter in Brevard County, a train passed by blowing its horn. "That train is taunting me again," Andrew pointed out. He explained that he dreams of hoping on a train to get out of Melbourne, and hopes to one day live in New York City, where he hopes to join the punk community.

Carl is a middle-aged Black male who was living on the streets in Melbourne when I met him at the local day shelter. He claims to have been living on the streets for most of his adult life, mostly in Florida and California. He carries a large backpack with him to hold extra clothing, food, and his artwork that he tries to sell for extra money. Although he didn't disclose suffering from any health conditions during the interview, he was visibly suffering from advance gum disease and had several missing teeth.

Chuck is a middle aged White male. I met Chuck at the day shelter in Brevard County, he told me that he had been sleeping in his car regularly for about the last year and has alternated between periods of renting rooms and being homeless for the last several years. He moved to the area about three years ago to work as a call center phone interviewer at a local survey research firm. He explained that while he's still employed with the firm he isn't given enough hours to make enough money to have a regular place. He's currently looking for a new job. Chuck is a middle aged White male.

Dale is a middle aged White male, currently sleeping in a tent in the woods in Seminole County. Dale explained that he became homeless after loosing his job and subsequently losing his home. He has been homeless for about two years. Dale spends most of his time trying to find employment or at a local library where he has developed friendships with the librarians. Dale appeared to be well groomed and in good health when I met him at a local soup kitchen.

Frank is a middle aged White male who had been homeless for about six months when I interviewed him. He explained that he was currently "camping" in a wooded area in Brevard County. Prior to becoming homeless Frank was renting a room from a friend but he explained that it "didn't work out". During the interview, Frank explained that he never learned how to ride a bike, so he relies on walking and riding the local bus to get around. He explained that he used to have a car, but lost it. Frank disclosed that he has recently been diagnosed with diabetes.

Gary relocated to Brevard County this winter after spending several months staying at a homeless shelter in Maine. He explained that he had visited the area in the past and that the climate was better for his arthritis. Gary is currently renting a room from a man that he met at a fast food restaurant on a cold night and although he is disabled works odd jobs to make extra money. Gary described himself as a comedian, and explained that he sometimes does stand-up comedy at local open mic nights. Gary is a middle-aged White male.

James is a White male who relocated to Orlando this winter from Kentucky. He has been homeless for roughly five years and came to Florida in hopes of finding work and a better

climate. He has been staying at an emergency shelter since arriving in Florida. He spends his days walking around downtown Orlando applying to jobs.

Joe is a middle age White male who was also staying at an emergency shelter in Orlando when I interviewed him. He explained that he came to Florida from Nevada, about four years ago after his mother passed away. He stayed with an aunt in North Florida for a few months before coming to Central Florida in hopes of finding work. Unfortunately, he hasn't been able to find regular work and is currently working a few days a week detailing cars for a local auction company. "I shoulda stayed in Nevada," he claims.

Randy is a life long resident of Central Florida and has been homeless for about the last ten years. He was living in a tent in the woods in Brevard County when I interviewed him. Randy is a middle aged White male and described himself as "outdoorsy".

Sid is a middle aged White male who was living on the streets in Brevard County when I met him. He claims to have been either homeless or in jail for the last years. In the 1980's he was diagnosed with diabetes, which has been an added burden for him while living on the streets. Sid explained that he cannot read or write and wishes that there were more services available to the homeless to help them get a better education.

Tony is a middle aged White male living in a tent in Seminole County. He has live in Florida for the last 25 year and has been homeless for roughly two years. He prefers to stay by himself than at a homeless shelter. He claims that he would rather follow his own schedule than negotiate the policies at the local shelter.

APPENDIX E: HUMAN SUBJECTS APPROVAL

University of
Central Florida

Approval of Exempt Human Research

From: **UCF Institutional Review Board #1**
          FWA00000351, IRB00001138

To: **Marc R. Settembrino**

Date: **January 09, 2013**

Dear Researcher:

On 1/9/2013, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review:	Exempt Determination
Project Title:	Understanding Natural Hazards Vulnerability Among Central Florida's Homeless
Investigator:	Marc R Settembrino
IRB Number:	SBE-12-08988
Funding Agency:	
Grant Title:	
Research ID:	N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 01/09/2013 12:10:05 PM EST

IRB Coordinator

Page 1 of 1

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