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SECONDARY TRAUMA OR SECONDARY DISASTER? INSIGHTS FROM HURRICANE KATRINA

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Hurricane Katrina is destined to become one of the most studied disasters in U.S. history. This manuscript offers a sociology of disaster framework in which to situate past, on-going, and future research on this event. By examining Katrina on a continuum of natural and technological disasters, we are able to gain insights into the different paths of impact and recovery taken by New Orleans and the rest of the disaster-stricken region. Specifically, this disaster has produced a series of secondary traumas that continue to thwart recovery efforts. Understanding these secondary traumas can lead to amelioration of their effects and development of responses to diminish their occurrence in future disasters.

PREFACE

Prior to Hurricane Katrina, I had determined to focus my Mid-South Sociological Association (MSSA) Presidential Address on some aspect of disaster. I have been a disaster researcher since 1982 when Steve Picou and I became involved in a study of a train derailment and chemical spill in Livingston, Louisiana (Gill and Picou 1991; Picou and Rosebrook 1993). In 1989 Steve and I began a study of the Exxon Valdez oil spill (EVOS) and its effects on the renewable

resource community of Cordova, Alaska (see Dyer, Gill, and Picou 1992; Gill 1994; Gill and Picou 1998, 2001; Picou and Gill 1997, 2000; Picou, Gill, and Cohen 1997; Picou, Marshall, and Gill 2004). Since that time, annual MSSA meetings have provided an important forum for presenting findings from our EVOS research and I considered it appropriate to offer an overview of my primary area of interest—sociology of disaster. Of course, Hurricane Katrina made my topic extremely relevant.

Shortly after the hurricane, researchers at the Social Science Research Center (SSRC) at Mississippi State University met to discuss ways in which their research expertise could be applied to practical issues facing the Mississippi Gulf Coast in particular and the region in general. It became apparent that the group could more effectively apply their expertise to the disaster if they had a better understanding of the subfield of disaster research. Fortuitously, Liesel Ritchie and I had just returned from Dutch Harbor/Unalaska where we were keynote speakers at the Aleutian Life Forum (ALF). The focus of the ALF was the 2004 Selendang Ayu shipwreck and oil spill and our keynote address situated our study of the incident in technological disaster research (Gill and Ritchie 2006; Ritchie and Gill 2006). We modified our ALF presentation and shared it with our SSRC colleagues. These efforts provided a foundation and point of departure for my MSSA address.

INTRODUCTION

Hurricane Katrina caused widespread disruption to the built environment and social fabric of communities and neighborhoods along the Mississippi/Louisiana Gulf Coast. New Orleans was hit particularly hard by the storm when the levee system failed resulting in a devastating flood that indefinitely prolonged the evacuation of many residents and left chaotic situations among those residents who did not evacuate—either by choice or circumstance. In New Orleans, Katrina broadly exposed poverty, racism, inequality, vulnerable infrastructures, poor response planning, and a host of other problems. Katrina also revealed the generosity of people throughout the nation who opened their pocketbooks and, in some cases, their homes and communities for displaced residents.

While the disaster captured the attention of the general public, social scientists were among several groups with particular interests in understanding this historic event. There was plenty of room at the proverbial table for sociologists interested in poverty, race, inequality, gender, gerontology, family, deviance, social organization,

social institutions, community, public policy, social capital, and collective behavior, just to name a few areas of inquiry. A perusal of programs for meetings of professional societies reveal numerous sessions devoted to Hurricane Katrina—the Southern Sociological Society had more than twenty-five Katrina-sessions at its March 2006 annual meeting in New Orleans. Further, there have been numerous special issue journals and anthologies devoted to publishing research and editorial comments on social aspects of the disaster. Given projections that recovery may take ten years or more, Katrina is destined to become the most studied disaster in the U.S.

Scholarly presentations and published articles devoted to Katrina increase our understanding of the event and demonstrate how social scientists can interject knowledge from their respective areas of expertise. Once considered by some as an opportunistic arena of sociology akin to "ambulance chasing," the subfield of disaster research has become increasingly palatable to sociologists since 9/11, the Indian Ocean Tsunami, and Hurricane Katrina. Indeed, the emergent cottage industry of Katrina research has already produced substantial insights and knowledge about society. For example, disaster scholars are revising ideas about hazards, risk, and disasters and investigating ways to increase community resilience. Not all Katrina scholars specialized in disaster research, however, and without familiarity with various disaster paradigms some may have missed opportunities to more fully advance this area of study.

The first objective of this article is to provide a brief "sociology of disaster" that has evolved from my research experiences, presentations, publications, workshops, and associations with other disaster researchers. This sociology of disaster is designed to address basic definitions of disasters and introduce concepts that help frame disaster research. Moreover, my approach is necessarily applied in its orientation, with purposes to help survivors better understand what has happened to their communities and themselves, provide information and insights to practitioners and decision-makers, and facilitate broader appreciation of disasters among other social scientists and the general public.

The second objective is to examine "secondary trauma" and "secondary disaster" as concepts in my sociology of disaster framework. Secondary disaster is a concept that focuses on events that prolong the disaster experience. The term is often associated with Kai Erikson's 1976 work on the Buffalo Creek, West Virginia disaster and I have used the term in my own research. When pressed to find a definition, however, the literature offers implicit views rather than explicit meanings. A cursory reading of Erikson's book followed

by an intensive rereading yielded a brief discussion of "secondary trauma" but no mention of "secondary disaster." My examination is meant to more clearly articulate meanings embedded in these concepts and to explore the value of their application to disasters in general and Katrina in particular.

A SOCIOLOGY OF DISASTER

Much of the early literature on disaster research addresses the basic issue of what constitutes a disaster. Disaster definitions have evolved from "event-specific" orientations that characterized work prior to WWII, to a more unified perspective that focused on the commonalities of events (Quarantelli 1981). Conceptualizations have broadened to include how people respond to disasters (collective behavior) and how communities and society respond to and become better prepared for them (social organization) (see Barton 1969; Dynes 1970, 1974; Quarantelli and Dynes 1978). Beginning in the late 1970s, debates about the value and validity of distinguishing natural from technological disasters emerged (Couch and Kroll-Smith 1985, 1991; Kroll-Smith and Couch 1991, 1993a; Quarantelli 1985, 1992, 1998) and more recently, acts of terrorism have been added to the mix (see Marshall, Picou and Gill 2003; Ritchie 2004).

In the following section I will address the question, "What is a disaster?" and offer some comparative distinctions between natural and technological disasters that introduce some fundamental ways of approaching the subject. In doing so, I will draw upon a rich body of social science literature concentrating on theoretical, conceptual, and applied research on disasters. In presenting this sociology of disaster, however, we should recognize that it is not intended to offer a comprehensive framework for all disaster research. Certainly, not all research being conducted on the Katrina disaster fits into this framework, nor should it.

What Is a Disaster?

From a sociological perspective, what makes an event a disaster is not just physical destruction of a built environment or damage to a natural environment. Disasters are defined by people's experiences with and reactions to an event. That is, disasters are socially defined and their physical effects cannot be understood apart from their social context. For example, as a disaster, Katrina was more than the winds, rain, storm surge, and flooding that caused untold physical damage. Katrina was a disaster because of the event's effects on the social

fabric of the region—how people and communities experienced it, its effect on peoples' lives, resulting loss of resources, and various responses (or failures to respond) by survivors and formal and informal responders.

"Official" declarations of events as disasters are part of the social context and play a fundamental role in mobilizing government responses. For example, the Department of Homeland Security (DHS) declared Hurricane Katrina an Incident of National Significance—"a major disaster or emergency that overwhelms the resources of state and local authorities, requiring significant coordination across the Federal Government" (DHS 2005). Further, determining whether or not a place is declared a disaster affects the level of outside assistance and can have significant economic implications. If pressed for a formal definition, I would begin with Fritz (1961, p. 655), who defined a disaster as "an event, concentrated in time and space, in which a society, or a relatively self-sufficient subdivision of society, undergoes severe danger and incurs such losses to its members and physical appurtenances that the social structure is disrupted and the fulfillment of all or some of the essential functions of the society is prevented."

Natural and Technological Disasters

There is ongoing debate among disaster researchers on distinguishing technological from natural disasters. The central argument surrounds the extent to which events "triggered" by natural occurrences or defined as "acts of God" elicit substantially different social responses and disruptions than events triggered by failures in human technology and complex organizations. Comparisons between the two often focus on five characteristics: etiology, physical damage characteristics, disaster phases, community impacts, and individual impacts (Gill and Picou 1998).

Etiology refers to root causes. Freudenburg (1997) focuses on the "triggering event" to distinguish natural from technological disasters. If the triggering event is independent from humans, it is a natural disaster; if not, it is a technological disaster. Natural disasters result from meteorological, hydrological, or geological processes that are considered to be beyond human control. Technological disasters result from a loss of control over industrial, economic, and/or political processes. Examples include mechanical and technological malfunctions, human error, organizational failure, inadequate response, and the like. Technological disasters are considered to be preventable and someone or some organization is held responsible for causing the

event (see Baum and Fleming 1993; Baum, Fleming, and Singer 1983). Although natural disasters are not preventable, there are measures that can be taken to reduce vulnerabilities to natural hazards and improve resilience.

Natural disasters cause visible and assessable *damage* to the built environment. For example, after a hurricane, tornado, or earthquake, there is little doubt that buildings, bridges, and other structures have been damaged or destroyed. As further evidence, contemporary society has developed procedures for assessing dollar amounts of such damages. On the other hand, technological disasters are characterized by an ambiguity of harm (Freudenburg and Jones 1991). There is uncertainty and a lack of consensus about the nature and extent of damages. In such cases, ambiguity is fueled by claims and counterclaims of stakeholders, particularly the responsible party, government, and community groups. Disasters involving biosphere contamination or toxic exposure (e.g., Love Canal in New York and Three Mile Island in Pennsylvania) illustrate these issues (see Baum et al. 1992; Brown 1979; Brown and Mikkelsen 1990 [1997]; Fowlkes and Miller 1987; Levine 1982; Shrivastava 1987; Vyner 1988).

Natural disasters unfold through different *phases* beginning with warning and proceeding to threat, impact, inventory, rescue, remedy, recovery, and rehabilitation (Drabek 1986). Although progression through these phases is not always smooth, there is a sense of movement toward the goal of recovery and rehabilitation. Technological disasters, particularly those involving environmental contamination or toxic exposure, tend to follow a nonlinear pattern. In such cases, it may be difficult to pinpoint the beginning of a disaster and they often lack closure or finality. Communities caught in the grip of a technological disaster often experience a warning-threat-impact cycle as new information and interpretations fuel additional warnings, threats, and impacts (Kroll-Smith and Couch 1990). The uncertainty inherent in technological disasters inhibits rescue—who needs rescuing and from what? Inventories of damage and remedies to distress are contested or denied altogether. In this milieu, recovery and rehabilitation remain elusive for communities experiencing technological disasters (see Kroll-Smith and Couch 1993b). Moreover, survivors of technological disasters often respond to the disaster as if it were a sprint rather than a marathon and as a result, may experience additional overloads and burnout.

Communities respond differently to technological disasters than is typical for reactions to natural disasters. Natural disasters evoke an emergence of a "therapeutic" or "altruistic" community, which is

rich in social capital as people come together to reaffirm social bonds and support each other in a time of crisis (Drabek 1986; Drabek and Key 1984). There is a collective agreement that the event and damages were real and a community-wide pledge to rebuild and recover. Conversely, the uncertainty and contested meanings that characterize technological disasters tend to produce a "corrosive community" (Freudenburg 1997; see also Cutherbertson and Nigg 1987, 1991; Gill 1994) that is exacerbated by the warning-threat-impact cycle. Competing group and individual definitions of technological disaster situations replace collective definitions common in natural disasters. These conflicting viewpoints combine with uncertainty to wear on a community's social fabric and potentially diminish its social capital (Ritchie 2004). All communities have group conflict and social fissures (e.g., class, race, ethnicity, gender, etc.) that can cause friction, heat up, and fuel divisiveness in response to a technological disaster (Gill 1994). As a result, outsiders generally do not understand what communities and survivors of technological disasters are experiencing and—particularly over time—they become less empathetic (Edelstein 2000).

Finally, *individuals* tend to respond differently to a natural disaster than they do to a technological disaster (see Ahearn and Cohen 1984; Baum and Fleming 1993; Baum et al. 1992; Edelstein [1988] 2004; Freedy, Kilpatrick, and Resnick 1993; Freudenburg and Jones 1991; Gleser, Green, and Winget 1981; Grace, Green, Lindy, and Leonard 1993; Green et al. 1990; Green and Lindy 1994; Picou and Gill 1997; Ritchie and Gill 2007; Smith and North 1993; Smith, Robbins, Pryzbeck, Goldring, and Solomon 1986; Vyner 1988). For example, research shows that natural disasters typically lead to short-term social disruption and psychological stress. Hobfoll's (1988, 1989, 1991) Conservation of Resource (COR) stress model posits that stress is related to resources that are lost, under threat of loss, or invested without gain. Emergence of altruism within a community, combined with financial assistance, works to restore resources or ameliorate losses after a natural disaster. Technological disasters, however, are characterized by prolonged social disruption, chronic psychological stress, and long-term negative health outcomes primarily because resources remain under stress for prolonged periods (Gill 2007). Recreancy, defined as "the failure of experts or specialized organizations to execute properly responsibilities to the broader collectivity with which they have been implicitly or explicitly entrusted" (Freudenburg 2000, p. 116, see also Freudenburg 1993), results in a loss of social capital (Ritchie 2004) and heightens feelings of anger, frustration, and betrayal. These collective and individual

responses threaten ontological security and contribute to psychological and emotional trauma. Such long-term outcomes for technological disasters make sense given prolonged disruption of resources, a fixture of blame, lack of consensus, emergence of a corrosive community, demise of social capital, and lack of event closure that typifies such events.

Synthesis of Perspectives in the Context of Katrina

Rather than reify these differences into rigid distinctions, it is useful to consider disasters—natural and technological—on a continuum, with overlapping qualities, characteristics, and social impacts (Gill and Ritchie 2006). Considering Katrina on this continuum contributes to our understanding of initial as well as ongoing impacts of this disaster. Visualizing the geography of the Mississippi/Louisiana Gulf Coast, from east to west, Katrina was experienced more as a natural disaster in Mississippi and parts of coastal Louisiana and as more of a technological disaster in New Orleans.[1] This was apparent to the public as well as disaster experts.

In terms of etiology, Hurricane Katrina displayed elements of both types of disaster. The hurricane was a natural meteorological event (perhaps supercharged by human-induced global warming) and there were poignant examples of altruism and therapeutic communities. But the failure of the levee system in New Orleans, resulting in "toxic gumbo" flood waters, revealed inadequate emergency response systems, decades of neglect and policies that created highly vulnerable groups, and a host of other societal processes that generated social responses consistent with those of technological disasters. For example, one study found that New Orleans university students tended to experience the disaster as a human/technological failure, more so than a natural disaster (Gill, Ladd, and Marszalek 2007).

Physical damages caused by Katrina largely mirror what would be expected from a natural disaster with the exception that there was a relatively high number of deaths—more than 1,850. Across the Mississippi/Louisiana Gulf Coast, the built environment was hard hit. Estimates of total damages generally exceed $156 billion with damaged residential structures ($49.7 billion) and residential

[1]Throughout the remainder of this manuscript I will focus on distinctions between the Mississippi Gulf Coast and New Orleans. This is not intended to negate or minimize disaster experiences of Louisiana communities such as Slidell and Venice, or Alabama communities such as Mobile and Gulf Shores, but to date less is known about these communities from a social science research perspective.

content damages ($24.4 billion) accounting for almost one half of the total amount and commercial business receiving over sixty-two billion dollars in damages and losses (Burton and Hicks 2005). More than eighty thousand housing units were destroyed or severely damaged and another 130,000 sustained major damage. Bridges collapsed, some roads and highways were temporarily impassable, and utilities and other lifelines were disrupted. New Orleans, however, also experienced damages often associated with technological disasters with the "toxic gumbo" (Frickel 2006) and oil spills (Pine 2006). These less visible damages created ambiguity in how they may affect human health and the environment, particularly in the long term.

Initially, Hurricane Katrina followed phases one would anticipate for a natural disaster. There was a threat followed by impact, inventory, and rescue. At the remedy stage, however, the linear process began to break down. Remedy requires various forms of capital, particularly financial, human, and social. Remedy in Mississippi and parts of Louisiana was delayed because insurance companies claimed their policies did not cover damage caused by the storm surge. This decision left thousands of citizens without adequate financial capital and, although the case went to court and was ultimately settled in favor of the citizens (see Vaughn 2007), recovery and rehabilitation have been delayed. Likewise, the "Road Home" program intended to rebuild neighborhoods in New Orleans has been a dismal failure—as of May 2007, money had been distributed to less than one hundred out of more than 130,000 homeowner applicants (Kromm 2007).

New Orleans has experienced other events that continue to delay remedy and set in motion new threat-impact-inventory cycles. For example, threats of a weakened or inadequately constructed levee system evoke new economic and social impacts as residents and businesses reassess risks of returning and rebuilding. Similarly, delays in restoring basic lifeline infrastructures (e.g., utilities, transportation, communication, etc.) and social institutions (e.g., law enforcement, judicial system, medical services, etc.) create new threats that prolong or create additional impacts. In this respect, the Katrina disaster in New Orleans is following a path characteristic of technological disasters and remedy, recovery, and rehabilitation remain elusive.

Consistent with expected responses following a natural disaster, a therapeutic community emerged in most afflicted communities and neighborhoods along the coast. In New Orleans, however, prolonged evacuation from some neighborhoods inhibited, if not prevented, the reaffirmation of local social networks and support that a therapeutic community provides. The insurance crisis has hindered community recovery along the Mississippi Gulf Coast and there have been issues

regarding redevelopment impacts on communities and neighborhoods. Certainly, there are competing approaches or strategies for redevelopment, but they do not appear to be divisive and the Mississippi Gulf Coast seems to be on course for an amplified rebound.

New Orleans may not be following a corrosive community pattern typically expected in a technological disaster, but nor is it on course for an amplified rebound. Social and geographic vulnerabilities (Laska 2005) combined with prolonged social disruption and uncertainty influence community/neighborhood responses. Widespread physical destruction, extended evacuation, socioeconomic factors, and ineffective assistance programs inhibit neighborhood recovery. Throughout the city, basic physical and social infrastructures have been slow to recover. In short, the city and its neighborhoods have lost precious social, human, economic, and natural capital and—in part because these are diminished—have generally been unable to develop effective strategies to restore them.

Disasters are traumatic, stressful events that may have short-term or long-term effects on individuals. Despite delays caused by insurance disputes and redevelopment debates, individuals along the Mississippi Gulf Coast, although initially stressed, are responding in a manner typical of natural disasters. Following Hobfoll's COR model, resource losses are being ameliorated and conditions for investing resources with gain (or strong potential for gain) are improving. Thus, the region should experience a reduction in individual stress as we would anticipate in the aftermath of a natural disaster. In New Orleans, however, prolonged social disruption and uncertainty combined with loss of resources, threats of resource loss, and a lack of return on resource investment have produced chronic individual stress characteristic of communities following technological disasters. Diminished social capital can increase individual stress, particularly when the fabric of social support that normally buffers individual stress is tattered (Ritchie 2004; Ritchie and Gill 2007). Furthermore, the threat-response-impact cycle delays recovery and closure making chronic individual stress the norm.

Regardless of location along the Mississippi/Louisiana Gulf Coast, survivors of Hurricane Katrina have not followed the path of recovery that survivors of natural disasters tend to follow. Insurance disputes, bureaucratic red tape, litigation, and other actions/inactions can prolong the suffering of survivors and contribute to what has been identified as secondary or spin-off effects. A broad array of events continues to prolong the Katrina disaster and our sociology of disaster framework needs to better account for this phenomenon. This begs the questions: How can we more

clearly identify impacts beyond the immediate aftermath of the disaster event? Do they represent "secondary traumas" or "secondary disasters"? Do these concepts have value in advancing our understanding of social impacts of disasters?

SECONDARY TRAUMA OR SECONDARY DISASTER?

Clear definition of terms and accurate concepts facilitate effective communication of ideas between researchers, practitioners, decision-makers, and the public. Researchers play an important role in identifying and classifying prolonged social disruption caused by spin-offs from an original hazard event. Clarifying distinctions between "secondary trauma" and "secondary disaster" not only advances science, it provides better understanding to stakeholders interested in ameliorating chronic impacts and improving responses to future hazard events.

Natural scientists who study disasters focus on natural processes that produce hazards. From this perspective, a natural hazard event triggers a disaster when "communities cannot cope with impacts using their own resources, thus necessitating a call for national or international assistance" (Gregg and Houghton 2006, p. 22). Subsequently, "secondary hazards" can emerge from an initial natural hazard event (e.g., an earthquake may release toxic substances). Secondary hazards are akin to secondary trauma in social science approaches to disaster. As our natural science colleagues have observed, however, secondary hazards are not necessarily disastrous.

Kai Erikson's (1976) classic work on the Buffalo Creek disaster provides a point of departure for defining secondary trauma and more clearly articulating its characteristics. First, I describe the disaster and Erikson's observations of initial and secondary trauma. Next, I examine how secondary trauma can be distinguished from secondary disaster.

Buffalo Creek, West Virginia

On February 26, 1972, a makeshift dam built as part of coal mining operations collapsed, sending a black wall of water pouring down a hollow named Buffalo Creek. The flood killed 125 people and destroyed sixteen communities. Survivors experienced individual trauma in the form of psychological stress, numbness, death anxiety, survivor guilt, anomie, loss of ontological security, and perceptions of recreancy. Recreancy issues emerged as the coal company, Pittson, attempted to define the disaster as an "act of God," while survivors blamed Pittson for not adequately constructing and maintaining the

dam and the government, whose inspectors allowed an unsafe dam to exist. As Erikson (1976, p. 180) writes, "[Pittson] was a proprietor, a patron, and it had obligations. Pittson violated those obligations, first, by building an unworthy dam, and, second, by reacting to the disaster in the manner of a remote bureaucracy with holdings to protect rather than in the manner of a concerned patron with constituents to care for."

Trauma was exacerbated by the disaster response. Little or no "therapeutic community" emerged after the flood because outsiders (i.e., Pittson and State and Federal governments) assumed command of rescue, cleanup, and recovery activities. Survivors were temporarily relocated to large trailer parks and assigned trailers without regard to pre-existing neighborhood residential patterns and social networks. The resulting feeling was "that the people of the hollow had lost control of their home territory, and this could only add to the perception that the immediate community had disappeared" (Erikson 1976, p. 202).

Survivors also experienced collective trauma or, as Erikson writes, "the experience of the disaster and its aftermath was generally shared by all the survivors" (1976, p. 202). The event and official responses to it resulted in demoralization, disorientation, loss of connection with community, family, and self, increased medical problems, and a heightened sense of vulnerability. Taken together, these experiences amounted to a loss of "communality," a term introduced by Erikson "to underscore the point that people are not referring to particular village territories when they lament the loss of community but to the network of relationships that make up their general human surround" (1976, p. 187). Communality emphasizes the importance of social networks, neighbor relationships, and other elements of social capital.

Trauma and Secondary Trauma

Erikson (1976, 1994) argues that the conceptual distinction between trauma and stress has become blurred, but both terms apply to the psychological and the social. In the classical sense, trauma refers to the actual "blow" to tissues of the body or to structures of the mind, not to the injury inflicted by it. This definition has shifted to include not only the blow, but the stress caused by it. It is peoples' response(s) to the event (or blow) that gives events their traumatic quality. "[T]rauma has to be understood as resulting from a *constellation of life experiences* as well as from a discrete happening, from a *persisting condition*, as well as from an acute event" (Erikson 1994, p. 229, italics in the original).

Like stress, trauma has a social dimension that can either create community or destroy it. *Individual trauma*—the focal point of psychological studies of stress—refers to "a blow to the psyche that breaks through one's defenses so suddenly and with such brutal force that once cannot react to it effectively" (Erikson 1976, p. 153). Collective trauma—the focus of sociological studies—is "a blow to the basic tissues of social life that damages the bonds attaching people together and impairs the prevailing sense of communality" (Erikson 1976, p. 154).

Erikson introduced the loss of communality as a "second trauma" (1976, p. 185). More precisely, he proposed that "most of the traumatic symptoms experienced by the Buffalo Creek survivors are a reaction to the loss of communality as well as a reaction to the disaster itself, ... the fear and apathy and demoralization one encounters along the entire length of the hollow are derived from the shock of being ripped out of a meaningful community setting as well as the shock of meeting that cruel black water" (1976, p. 194).

Secondary trauma can be defined as a blow to the social fabric of a community caused by inadequate responses to an initial hazard event and/or inadequate responses to secondary hazards. Events, occasions, or public perceptions that inhibit timely community recovery and prolong stress and disruption are examples of secondary trauma. Secondary trauma is embedded in threat-impact-inventory cycles and is often associated with issues of blame and recreancy. Impacts of secondary trauma are related to diminished social capital, a corrosive community, chronic stress and negative lifescape changes among individuals, and prolonged social disruption in communities.

Because it is difficult for those not directly affected by a disaster to fully comprehend the long-term impacts on communities and individuals, empathy and assistance tend to wane over time. Outsiders may express sentiments such as, "Why don't they (disaster survivors) just get over it?" because they do not understand how secondary trauma prolongs the disaster and impedes recovery. This is particularly problematic when these outsiders include government officials and decision makers. Further, because responsible parties are identified, technological disasters (at least in the U.S.) typically involve the judicial system where claims of damages and injury are litigated. For example, a lack of resolution of litigation associated with the *Exxon Valdez* oil spill—yet unresolved thirteen years after the 1994 jury trial and verdict in favor of the plaintiffs—is a secondary trauma being experienced by individuals, groups, and communities in the wake of this disaster.

Compared with natural disasters, technological disasters are a "new species of trouble" (Erikson 1994). Most communities assigned obligations to public and civic organizations for disaster response (e.g., law enforcement, fire fighters, medical staff, utility crews, local government, churches, and relief organizations). These organizations have experience and formal training in responding to natural disasters and they tend to coordinate their efforts to better plan for and address natural hazard events; thus, few natural disasters produce secondary trauma except in cases where response is perceived as lacking or inadequate (e.g., FEMA's inadequate response to Hurricane Katrina probably caused a high degree of secondary trauma). In contrast, response planning and coordination for technological disasters are less developed and actual responses to technological hazards are often poorly executed. Consequently, secondary trauma is more likely to occur as part of a technological disaster.

As previously noted, the Mississippi/Louisiana Gulf Coast in general and New Orleans in particular have experienced various secondary traumas. Perceptions of inadequate responses by FEMA, President Bush, and state and local authorities were an initial secondary trauma. Insurance disputes and litigation to resolve them were secondary traumas experienced by many, particularly in Mississippi. In New Orleans, massive and prolonged relocation of residents, failure of the "Road Home" recovery program, delays in restoring basic physical and social infrastructures, social and human capital loss spirals, and increased crime and death rates are secondary traumas that continue to plague the city and its neighborhoods. Undoubtedly, former and current residents, as well as researchers and other observers can identify additional secondary traumas.

Secondary Disasters

According to conceptualizations from natural science, secondary hazards can lead to secondary disasters if a different population or community is devastated by spin-offs from the original hazard and disaster. That is, secondary disasters are more than prolonged disaster conditions or cumulative impacts of an original hazard event. From a sociological perspective, a disaster may generate secondary traumas—where trauma is defined as impaired communality or damaged social bonds—that may or may not result in a secondary disaster. In my view, in order for an event to be defined as a secondary disaster, the effects of secondary trauma must satisfy Fritz's (1961, p. 655) definition of disaster previously provided: "an event, concentrated in time and space, in which a society, or a relatively

self-sufficient subdivision of society, undergoes severe danger and incurs such losses...that the social structure is disrupted and the fulfillment of all or some of the essential functions of the society is prevented" (p. 655). For example, refugees from natural disasters or sociopolitical conflicts may inundate their host communities and cause outbreaks of disease, malnutrition, and starvation.

Communities and neighborhoods hosting large numbers of Katrina evacuees provide a context for examining this phenomenon. Immediately after the hurricane, many communities welcomed evacuees with open arms and generous assistance. Most communities and evacuees believed the stay would be short and evacuees would soon return to their own communities. In several instances, however, evacuees have not returned and continue to live in these host communities. In some instances, there have been increases in rates of crime and poverty, and other drains on local resources. Residents of many host communities complain about evacuees who have worn out their welcome and have become frustrated by the prolonged inconveniences caused by a boomtown-like population growth and accompanying social disruption. These secondary traumas to the host communities, however frustrating to the locals, would not be considered a disaster based on the definition provided by Fritz.

CONCLUSIONS

Drawing an analogy from a famous work by Charles Dickens, Hurricane Katrina can be thought of as a tale of two disasters—a nightmare along the Mississippi and Louisiana Gulf Coast and a "nightmare within a nightmare"[2] in the city of New Orleans. Understanding differences in the initial impacts of Katrina, as well as what is happening as the region struggles to rebuild and recover can be enhanced by situating the event within a sociology of disaster framework. Distinctions between natural and technological disasters remain important because they represent two points on a continuum—not because they reify a socially constructed typology. These distinctions are useful in illuminating how survivors experience a particular disaster and how communities and the larger society can better respond to and prepare for disasters and other crisis situations.

As the impacts of Hurricane Katrina unfold, it is important for social scientists to continue researching this historic disaster.

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[2]The "nightmare within a nightmare" reference came from a New Orleans resident interviewed on *NBC Nightly News* a few days after Hurricane Katrina struck and New Orleans flooded.

Recognizing, articulating, and communicating secondary traumas and their impacts can help survivors more clearly understand what is happening to them and their community and provides a framework for outsiders to gain insights into local conditions and improve efforts to assist recovery efforts. In this sense, developing the secondary trauma concept is valuable. Moreover, as we continue to discover more about the impacts of Katrina, we need to apply the lessons learned about this disaster to enhance community resilience throughout the nation. After all, it is not a question of if another catastrophic disaster or incident of national significance will occur, it is a question of when.

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