

TERRORISM AS DISASTER: SELECTED COMMONALITIES AND LONG-TERM RECOVERY FOR 9/11 SURVIVORS

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ABSTRACT

The purpose of this article is to apply what social scientists have learned from decades of research on natural and technological disasters to better understand the short-term and potential long-term human impacts of the 9/11 attacks. The short-term response to the 9/11 attacks was similar to how people and communities typically respond to natural disasters. One year after the attacks, news reports suggest that factors identified in technological disaster research as causing collective trauma, rather than recovery, are beginning to surface. We identify three patterns typically present in (but not restricted to) the aftermath of technological disasters that contribute to slow recovery and ongoing collective trauma and evaluate the likelihood that these factors will impact the recovery process for those impacted by the 9/11 attacks. We conclude that due to perceptions of governmental failure, the likelihood of protracted litigation, and uncertainty regarding the mental and physical health of victims, the social and psychological impacts of the 9/11 attacks will likely be severe and long-term. As such, the concluding section recommends the implementation of a long-term clinical intervention program for mitigating these potential chronic impacts and facilitating the timely recovery of survivors.

INTRODUCTION

It is increasingly apparent that large-scale disasters will be central features of the 21st century. These events pose significant problems for vulnerable populations and challenges for organizations responsible for disaster management. The 2002 *World Disasters Report* reveals that the impact of disasters has changed considerably over the last three decades, with the number of deaths decreasing and the number of those affected increasing (IFRC/RCS, 2002). For example, one million people died from disasters during the decade of 1982–1991, while there were 620,000 deaths from 1992 to 2001. This decline was largely due to an enormous drop in famine deaths in Africa. During the same two decades, the number of people affected by disasters increased from 1.7 to 2 billion. During 2001 alone, 170 million people were affected by disasters. People who are affected by disasters require “immediate assistance during a period of emergency, i.e. requiring basic survival needs such as food, water, shelter sanitation and immediate medical assistance” (IFRC/RCS, 2002, p. 181).

The United States has been substantially impacted by disasters over the last two decades. During the decades of 1982–1991 and 1992–2001, the total number of disaster fatalities increased slightly from 4,961 to 5,401, whereas the total number of people affected by disasters increased substantially from 229 thousand to 2.8 million. Compared to the 1970s, the direct economic loss due to all disasters increased dramatically to 629 billion U.S. dollars in the 1990s. Natural disasters such as the Northridge earthquake in California (1994) and Hurricane Andrew in South Florida and Louisiana (1992) were estimated to incur losses of \$30 billion each. The U.S. has also experienced several large-scale technological disasters (e.g. Three Mile Island, *Exxon Valdez* Oil Spill), as well as chronically polluted areas (e.g. Love Canal (NY), Cancer Alley (LA)).

More recently, a third type of large-scale disaster has impacted the U.S. in ways that we as a nation and as individuals are still struggling to comprehend. Waugh, one of the first social scientists to address terrorism from an emergency management perspective, proclaimed seventeen years ago that “[n]o industrialized nation has to deal with actual acts of large-scale destruction outside of war. However, notwithstanding that good fortune, no one doubts that contemporary terrorists possess the technological capacities to commit such acts” (1986, p. 287). Unfortunately, Waugh’s statement has proved prophetic. The bombing of the Alfred P. Murrah Federal Building in Oklahoma City in 1995 and the attacks on the Pentagon and World Trade Center (WTC) on September 11, 2001 have profoundly affected the American public. Given the gravity of these attacks and how little is known about the social impacts of terrorism, scholars and practitioners alike are challenged to better understand terrorism and its consequences.

The main purpose of this article is to apply what social scientists have learned from decades of research on natural and technological disasters to better understand the short-term and potential long-term human impacts of the 9/11 attacks. This article is divided into three sections. In the first section, we provide a brief historical sketch of disaster research in the United States. In the second section, we agree with existing research that the short-term response to the 9/11 attacks was similar to how people and communities typically respond to natural disasters. We then identify three patterns typically present in (but not restricted to) the aftermath of technological disasters that contribute to slow recovery and ongoing collective trauma and evaluate the likelihood that these factors will impact the recovery process for those impacted by the 9/11 attacks. Based on this evaluation, we conclude that due to perceptions of governmental failure, the likelihood of protracted litigation, and uncertainty regarding the mental and physical health of victims, the social and psychological impacts of the 9/11 attacks will likely be severe and long-term. As such, the concluding section presents a long-term clinical intervention program for mitigating these potential chronic impacts and facilitating the timely recovery of survivors.

DISASTER RESEARCH

The systematic study of disasters began in the late 1940s with researchers distinguishing between types of disasters mostly in physical terms (see, e.g. Lemons, 1957). Subsequent researchers defined an event as a disaster based on the physical consequences of the disaster, the way in which the impact of the disaster is evaluated, and the social effects of the disaster (Dynes, 1974). Reflecting this latter conception, Fritz (1961) defined a disaster as an event in which the "social structure is disrupted and the fulfillment of all or some of the essential functions of the society is prevented" (1961, p. 655). Much of the sociological research on disasters in the 1960s and 1970s studied the short-term, immediate social response to natural disasters (Fritz, 1961; Kreps, 1984; Quarantelli & Dynes, 1977).

These natural disaster researchers, based on a social constructionist perspective, argue that the consequences of any crisis situation can be viewed in terms of social structural vulnerabilities and the social definitions provided by people, organizations and communities (Kreps, 1989, 1998; Quarantelli, 1998). Thus, disaster characteristics are meaningless; an oil spill, tornado, earthquake and radiation release can all be appropriately labeled as a disaster, if the behavioral patterns of those impacted fit certain criteria defined by the research team. According to this perspective, the task of the researcher is to study victim response in the aftermath of each disaster *as if* the specific

characteristics of the disaster does not affect the immediate impact and long-term response.

Early researchers noted the distinction between natural disasters as “acts of God” and technological disasters as “human-caused” (Barkun, 1974; Fritz, 1961). However, it was not until the emergence of large-scale, human-caused disasters in the late 1960s and 1970s that the social and psychological relevance of this distinction became a point of contention and the source of much debate among disaster researchers. Technological disaster researchers have found consistent empirical evidence that technological disasters create a far more exacting and enduring pattern of social, psychological, economic, and cultural impacts than do natural disasters (for a review, see Freudenburg, 1997). Natural disaster researchers have suggested that this distinction has been overemphasized and has little relevance to understanding disaster consequences (Alexander, 1993; Quarantelli, 1991, 1992, 1998).

We contend that research efforts to understand disaster impacts based solely on their physical properties (causes) or on the social responses (effects) underspecifies the critical relationship between specific causes and effects. People do not exist independently of their physical environment and disasters do not exist independently of subjective interpretation (Kroll-Smith & Couch, 1991). In other words, between the individual and the disaster is a “social process set in motion by the physical attributes of the agent itself and the symbolic capacities of humans” (Kroll-Smith & Couch, 1991, p. 361). The task of the researcher is to identify and distinguish between post-disaster factors that produce consensus-type crises and therapeutic processes and those factors that bring about conflict and corrosive processes. Only by more fully specifying these cause-effect relationships can we develop a long-term clinical intervention program that simultaneously sustains therapeutic processes while attenuating corrosive processes.

Although the natural and technological disaster research traditions are important and structure our efforts to assess the impacts of the 9/11 attacks, we make the broader claim that disaster researchers should shed the baggage of the natural-technological disaster debate and employ less encumbered approaches. The rigid conceptual and methodological distinction between natural and technological disasters, perhaps cogent when technological disasters first emerged, appears to be increasingly less meaningful. Although people may perceive some disasters as an act of God or nature, the severity and duration of disaster impacts may be ascribed to anthropogenic factors (see, e.g. Blocker & Sherkat, 1992; Erikson, 1976). Further, we assume there are post-disaster patterns unique to terrorist attacks that will have lasting social and psychological impacts that will be difficult to understand, let alone predict, from a natural or technological disaster perspective. For instance, terrorism is defined as a “. . . political, goal-directed action, involving

the use or threat of extraordinary violence, performed for psychological rather than material effect, and the victims of which are symbolic rather than instrumental” (Waugh, 1986, p. 289). From this definition, it is clear terrorism is qualitatively different from natural and technological disasters. Another unique factor specific to the 9/11 attacks is the sheer number of fatalities, ranking it as one of the worst single-day death tolls in American history (WABF, 2002).

In short, we suggest that an a priori categorization of an event as either a natural or technological disaster is possible analytically, but increasingly difficult in the real world and is counterproductive. Therapeutic factors identified by natural disaster researchers and corrosive factors identified by technological disaster researchers may be present in the aftermath of any disaster situation. In the next section, we pose the following question: What post-disaster factors are present and emergent in the aftermath of the 9/11 attacks and will this mix of factors impede and/or enable long-term recovery?

THE 9/11 ATTACKS AS DISASTER

With the exception of fatalities, most of the damage stemming from a natural disaster is the destruction of built and modified environments, while technological disasters primarily damage the biophysical environment (e.g. the health of humans, animals, plants, and ecosystems) (Erikson, 1994). The impact of the 9/11 attacks on the built environment was devastating, both symbolically and materially. Rubble from the collapse of the WTC towers covered 16 acres, with an estimated weight of 1.2 million tons (WABF, 2002). Webb (2002) states that the “outpouring of support in response to large-scale [natural] disasters is often so great that the convergence of volunteers, supplies, and excessive donations on the scene of the disaster creates management problems” (p. 88). More broadly, Americans were “shocked into collective solidarity” due to televised images of “physical devastation, human misery, and heroic acts by civil servants and civilians” (Turkel, 2002, p. 73). Responses by New Yorkers, volunteers from within and outside the city, and the government seem to warrant the comparison to a natural disaster and it appears that something akin to a therapeutic community did emerge in lower Manhattan, and across America. However, this response may have been fleeting and the therapeutic community may be dissipating. One year after the attacks, news reports suggested that factors identified in technological disaster research as causing collective trauma, rather than recovery, were beginning to surface.

Research indicates that certain factors, typically present in the aftermath of technological disasters, have been found to produce a “corrosive community,” one that impedes recovery (Freudenburg, 1993, 1997, 2000). The term “corrosive”

implies that the negative impacts of some disasters damage a community and individuals over an extended period of time (Freudenburg, 1997). Victims do not follow the four-phase temporal trajectory of recovery identified by natural disaster researchers, but become arrested at an earlier corrosive stage (Couch, 1996). The question that should be addressed is what are the characteristics of technological disasters that preclude timely recovery and are such characteristics present in the post-9/11 attacks? For the sake of parsimony, we focus on three interrelated characteristics of the technological disasters: (1) the role of government and recreancy; (2) the consequences of litigation; and (3) mental and physical health problems. An overview of these factors will inform our discussion of the potential long-term impacts of the 9/11 attacks and highlight the necessity of developing a long-term clinical intervention program.

The Role of Government

In the aftermath of any disaster, the government's role and response are partially determined by disaster characteristics that influence the timeliness of recovery and whether or not collective trauma ensues. Governments in liberal democratic nations, such as the United States, "must fulfill two basic and often conflicting functions – accumulation and legitimization" (O'Connor, 1973, p. 6). Conditions conducive to economic growth are promoted via the accumulation function of the state because failure to do so undermines "the source of its own power, the taxes drawn from the economy's surplus production" (O'Connor, 1973, p. 6). Conversely, governmental actions (or inactions) that enable one class to accumulate wealth at the expense of other classes attenuate the legitimacy of the state, undermining the basis of its democratic support (O'Connor, 1973). Pressure on the state to fulfill its accumulation, not its legitimacy function, is pervasive, especially considering that with globalization, the power of governments has been decreasing relative to the increasing power of transnational corporations (Marshall, 1999, 2001; Robinson, 1996).

Given this power shift, governments have been pressured to adopt neoliberal policies, such as providing corporate subsidies and tax breaks and dismantling or not enforcing environmental regulations (Marshall, 1999, 2001). As certain segments of the population disproportionately face material deprivation and environmental degradation, and are increasingly vulnerable to disasters, the government's failure to fulfill its legitimacy function is revealed (Marshall, 2001). This revelation by an already apathetic citizenry further erodes confidence and trust in government. Citizens come to view particular governmental agencies as "recreant" – that is, they perceive institutional actors as failing to "carry out

their responsibilities with the vigor necessary to merit the societal trust they enjoy" (Freudenburg, 2000, p. 108). Recreant behavior leads people "to believe that some portion of our increasingly complex and interdependent societal system can no longer be counted on" (Freudenburg, 1993, p. 927). Litigation further exposes experts, specialized organizations, and responsible parties for being irresponsible, incompetent and untrustworthy. Litigation exposes recreant behavior, thus contributing to the persistence of chronic disaster impacts through the loss of trust in traditional institutional support systems (Freudenburg, 1997).

In the aftermath of a disaster, victims will likely perceive government as recreant and untrustworthy if it fulfills its accumulation function, but not its legitimacy function. In turn, perceived recreancy and the loss of trust in government, often intensified by litigation, are likely to lead to collective trauma. If a disaster is viewed as an "act of God" or nature, then government's response is immediate and unequivocal. If the President declares an emergency, the Federal Emergency Management Agency (FEMA) quickly responds by providing temporary housing, emergency medical care, food supplies, clothes and other items essential for survival. While expanding its scope over years to include technological disasters and now terrorism, FEMA clearly has more experience with natural disasters. Government fulfills its legitimacy function by addressing the needs of the victims and, in some cases, fulfills its accumulation function by rebuilding an economically damaged area.

However, when disaster impacts are perceived as human-caused, the role of government becomes much more complicated and ambiguous. In these contested situations, the contradictory dual role of government, stimulating economic growth (corporate support) and maintaining legitimacy by meeting the needs of the people (victims), is magnified. The public may hold government responsible for ineffective disaster mitigation, an inadequate post-disaster response, and lackluster efforts to penalize the responsible party. Such public response is reflected in grassroots environmental movements (see, e.g. Cable & Cable, 1995) and the environmental justice movement (see, e.g. Bullard, 1990). Research on both movements provide evidence of government failure to fulfill its legitimacy function by not meeting the needs of victims of technological disasters, who are disproportionately the poor and people of color. Researchers have found that recreancy and mistrust of government are related to high levels of psychological distrust (Couch, 1996), perceived community damage (Picou et al., 2004), and heightened risk perceptions (Freudenburg, 1993; Marshall, 1995).

The role of government is even more complex when it comes to terrorism. Terrorism can be categorized as domestic or international depending on the origin of responsible parties. The 1995 bombing of the Murrah Federal Building in Oklahoma City was an act of domestic terrorism, but the attacks of 9/11 were

international in origin. At least in one respect, the role of government is clear. The public expects the Federal government to protect citizens from external threats. Thus, unlike with technological disasters, government does not need to justify spending whatever resources are necessary to identify and capture the principle responsible party – the terrorists responsible for the disaster. As some proclaim, the 9/11 attacks were not just attacks on American soil, but more poignantly a symbolic attack on freedom writ large.

After the 9/11 attacks, many observers were puzzled that trust in government increased for the first time in three decades (Palmer & Samples, 2002). However, it appears that the National Election Studies scale may be too broad to capture how citizens view the complex role of government. In a recent ABC poll of the American public, it was found that “68% said they trust the government to do what is right when it comes to handling national security and the war on terrorism, compared to 38% who indicated the same level of trust when it comes to handling social issues . . .” (Palmer & Samples, 2002, p. 11). This finding is counterintuitive given that the public could have blamed the Federal government for not preventing the terrorist attack. Trust in government will likely decrease unless there is unequivocal proof that the terrorists, especially Osama bin Laden, have been brought to justice.

Clearly, government responded swiftly to fulfill its accumulation function. The WTC was the pinnacle of neoliberalism, symbolizing the virtues of private property, the accumulation of wealth, and the ascendancy of global capitalism (Turkel, 2002). The financial and political elite have not experienced such devastation and trauma since the sinking of the *Titanic* (Flynn, 2002). Flynn observed that “[w]hile the working class of America dug out bodies and mobilized for war, the wealthy class received what may become the largest financial bailout the world has ever seen” (2002, p. 105). Within two days of the 9/11 attacks, the Federal Reserve moved quickly to prevent a financial crisis, infusing an unprecedented \$200 billion into the economy (Flynn, 2002). Furthermore, the Economic Security and Recovery Act of 2001 (HR 3090) was passed by the House of Representatives on October 24, 2001. While this bill only provided temporary tax relief to low-income households, massive tax cuts were given to the largest corporations, the minimum tax on corporations was eliminated, and income rates for high-income earners were permanently reduced (Turkel, 2002). The total financial aid package designed during the first week topped \$300 billion, a public debt ultimately paid for by American taxpayers (Flynn, 2002).

Trust in government will likely decline as two potential sources of perceived recreant behavior by government are increasingly presented in the news. The first source concerns whether or not the intelligence community – the Central Intelligence Agency, the Federal Bureau of Investigation, and the National Security

Agency – is culpable for misreading warning signs and thus not preventing the 9/11 attacks. Further, the “appearance of guilt” may increase as the Bush administration stonewalls Congressional efforts to investigate governmental decision-making leading up to the 9/11 attacks. For example, the Administration prevented Secretary of State Colin Powell and Secretary of Defense Donald Rumsfeld from testifying in public before the committee (Risen, 2002). Some lawmakers accused the Bush administration of “secretly trying to derail creation of an independent commission to investigate the Sept. 11 terrorist attacks while professing to support the idea” (Dewar, 2002, p. 1). This defiance underscores the strain between Congress and the President over the September 11 investigation, which may potentially embarrass the administration over its failure to prevent the attacks (Alden, 2002).

Another source of perceived recreancy is the role FEMA has played since the attacks. FEMA is a governmental agency which typically fills a positive rebuilding role after a natural disaster, but its role since 9/11 has been controversial. Due to numerous complaints, the agency revamped its programs in June 2002 by easing eligibility criteria for qualifying for the Mortgage and Rental Assistance Program, producing brochures in several languages, and speeding up the process of granting money to eligible applicants (Chen, 2002a). Many are complaining that FEMA is not distributing aid fairly. Recently, hundreds of people and community groups protested in Washington to demand that FEMA provide better treatment for low-income workers (Chen, 2002a). Since the attack, most of the federal aid has been used to cleanup and rebuild Ground Zero and assist major corporations displaced by the devastation (Gonzalez, 2002). A disproportionate amount of FEMA aid has gone to more affluent neighborhoods rather than poor neighborhoods, such as Chinatown and the Lower East Side (Chen, 2002c; Gonzalez, 2002). Carolyn B. Maloney, the Democratic Representative of Manhattan, summed up the feelings of many of her constituents stating that “[t]housands of people have lost trust in the agency because of the prior rejections and false promises the first time around” (as quoted in Chen, 2002a, p. 1). Compounding FEMA’s ineffective response, the financial assistance program in New York State, known as the Individual and Family Grant Program, has also failed as a safety net (Chen, 2002b).

Emerging patterns suggest that the government may be viewed as not fulfilling its legitimacy function when it attempts to block lawsuits against numerous parties deemed indirectly responsible for the impacts of the 9/11 attacks. Further, if governmental toxicologists and epidemiologists continue to deny health claims made by lower Manhattan residents and volunteer workers, trust in government will likely decline. Although the government moved quickly to fulfill its accumulation function, literally within days of the attack, its efforts to fulfill its legitimacy function have taken more than a year and are perceived as inadequate by many victims.

Litigation

Litigation rarely ensues in the aftermath of natural disasters. However, as we have argued, if people come to perceive the severity and duration of disaster impacts as directly or indirectly rooted in anthropogenic forces, then litigation may become a more salient feature of the natural disaster recovery processes. To date, litigation typically has been a feature of technological disasters, the impacts of which have rarely been studied in the sociological literature. After a technological disaster occurs, victims of toxic contamination struggle to draw attention to their affliction, to attribute responsibility to an unresponsive government and/or evasive corporations, and ultimately to receive adequate redress in the legal system (Gill & Picou, 1991; Picou, 1996a, b; Picou & Rosebrook, 1993). Citizens today face a paradoxical situation:

... at the very time when threats and hazards seem to become more dangerous and more obvious, they simultaneously slip through the net of proofs, attributions and compensation that the legal and political systems attempt to capture them with ... [T]he responsibility to demonstrate proof, [Ulrich] Beck argues, currently lies overwhelmingly with the afflicted rather than potential polluters. The legacy of industrial society's faith in progress is that the legal system assumes that industrial production will be benign unless demonstrated otherwise (Goldblatt, 1996, pp. 166-167).

Once litigation begins, the principal responsible party has an inherent advantage because the legal system "demands proofs of post hoc toxicity rather than pre hoc non-toxicity or safety" and victims who must prove toxicity are inevitably less endowed with the resources necessary to make a convincing case (Goldblatt, 1996, p. 167). The public generally does not wield the appropriate scientific discourse to establish adequate proof in demonstrating the cause-effect linkage necessary for legal redress. The linkage between a single substance and a particular set of pathological effects may be difficult to establish given the likelihood that symptoms of the afflicted are a function of the synergistic affect of exposure to multiple chemicals. Further, the public typically does not have the resources to employ a cadre of legal experts that lobby for corporate liability in the legal system. Information overload, although cooperative in a legal sense, seeks to obfuscate and bury officials with information that is irrelevant as evidence of code violations. Corporate claims that victims lack scientific knowledge undercut the legitimacy of the victims' criticism, thus maintaining technical hegemony and institutional legitimacy.

Furthermore, given the private nature of the discovery phase of litigation, as well as sealed legal settlements, systematic data on the consequences of litigation have rarely been collected and reported. Research has found that individuals and communities chronically impacted by technological disasters experience

additional significant impacts from the litigation process. Impacts include conflict over equitable damage payments, stress from protracted legal procedures and the overall uncertainty of litigation outcomes. In short, litigation contributes to the inability of individuals and communities impacted by technological disasters to embark on a timely recovery process, resulting in long-term collective trauma (Picou et al., 2004).

Although litigation primarily has been a feature of technological disasters in the United States, we suggest that a protracted litigation process will have similar corrosive effects for post-disaster recovery in any disaster situation. Although it is too early to tell if litigation will emerge as a long-term outcome of the 9/11 attacks, news reports indicate that trial lawyers are preparing for lawsuits. It should be noted that, unlike the situation in technological disasters, it would be rare if the principal party directly responsible for the disaster (the terrorists) will be sued. However, those perceived as indirectly responsible for the impacts of the 9/11 attacks will likely bear the burden of litigation. For instance, the air transportation industry, particularly airport security, received most of the blame for the terrorist attacks. National polls conducted days after the attacks found that 78% of Americans blamed airport security for the terrorists attacks, two-thirds believed that the attacks could have been prevented with tighter airport security (CBS News/*New York Times*, 2001), and 82% thought that airports in the United States were doing too little to secure the safety of passengers (*LA Times*, 2001).

The government also received blame by Americans just days after September 11, especially the U.S. intelligence community for allowing the attacks to occur. For instance, 56% of Americans felt that U.S. intelligence should have known about the attacks in advance (CBS News/*New York Times*, 2001), 51% agreed that government intelligence agencies should have done more to prevent the attacks, and 58% directly linked the attacks with U.S. policies in the Middle East (*LA Times*, 2001). Specifically, the CNN/USA Today/Gallup (2001) poll conducted September 14–15 found that 59% blamed the CIA and 52% blamed the FBI for not preventing the attacks. Incongruous with the statistics above, the Ipsos-Reid (2001) poll reported that 88% had confidence in U.S. military defense and 62% expressed confidence in the FBI. The September 11th CBS News/*New York Times* (2001) poll found that two-thirds expressed confidence in the ability of the U.S. government to prevent further terrorist attacks against America and more than 90% expressed confidence in the ability of the U.S. government to find and punish the people responsible for the attacks.

How do we explain the above findings indicating that the American public partially blames the U.S. intelligence agencies for not preventing the terrorist attacks, but conversely expressed confidence in the U.S. government to find and punish terrorists and prevent future attacks? One explanation, unique to issues

of national security, is the “rally effect.” Although blame was placed on U.S. intelligence agencies, confidence in government improved as citizens rallied behind political leaders in this time of crisis. President Bush’s approval rating soared after the attacks. Three polls indicated that a large majority (64–78%) of Americans expressed confidence in and approval of the president’s ability to handle the crisis (CBS News/*New York Times*, 2001; CNN/USA Today/Gallup, 2001; Ipsos-Reid, 2001). Another poll found that the president’s approval rating jumped 35 percentage points from 51 to 86% (highest ever recorded by Gallup). Furthermore, 91% approved of the way the president was handling the events surrounding the terrorist attacks and the approval of Congress increased from 42% prior to the attacks to 75% (CNN/USA Today/Gallup, 2001). This is the highest approval rating ever reported by a national poll for Congress. The rally effect and time needed to grieve may have delayed widespread litigation.

Although litigation has not been a central feature in the aftermath of the 9/11 attacks, lawsuits are currently being filed and there is evidence that more lawsuits will follow. This delay is due, in part, to active steps taken by Congress and the Bush administration to avoid a “class-action free-for-all” (Carney & Walczak, 2001, p. 114). By capping liability at \$6 billion (the amount the airlines were insured for), the Administration was able to protect United Airlines and American Airlines from immediate bankruptcy. The White House has introduced legislation to protect other companies, such as WTC property manager Larry Silverstein and the Boeing Company (Carney & Walczak, 2001).

Congress also acted by creating the government-supported Victims Compensation Fund (VCF) to prevent litigation and provide reliable and expeditious compensation to victims’ families in order to spare them the uncertainties of drawn-out litigation (“Warily Circling,” 2002). Kenneth Feinberg (the director of the VCF appointed by the Bush administration) has announced criteria for estimating each compensation package. The family of “each survivor will receive \$250,000 for pain and suffering, plus \$50,000 per child, plus an amount based on the victim’s age and income” (Weinbaum & Page, 2002, p. 1). Low-income families, high-income families, uniformed rescue workers, and other groups contend that, for different reasons, they will not receive the compensation package they deserve (Paulson, 2002). Even though Feinberg estimates the average payout will be \$1.5 million, only 10 families out of 3,200 claimants have forfeited the right to sue by filing completed applications (“Warily Circling,” 2002). At the same time, trial lawyers and clients are organizing, preparing, and filing lawsuits.

Nearly 3,000 relatives of 9/11 victims have filed lawsuits against three Saudi princes, seven international banks (mainly in the Middle East), eight Islamic foundations and charities, and the government of Sudan for allegedly funding Osama bin Laden and Al Qaeda (“Sept. 11 Survivors,” 2002). In response to

reports that the Bush administration may block or delay their lawsuit, many relatives held a protest rally at the U.S. Capitol (Mintz, 2002). In addition, more than 1,000 families have filed legal papers preserving their right to sue the Port Authority of New York and New Jersey for lapses in safety and poor evacuation strategies at the WTC (Weiser, 2002). Approximately 1,050 firefighters, afraid they won't be eligible for the VCF, have filed a notice of intention to sue New York City, most likely for not providing the proper equipment to protect against toxic substances at the disaster site (Purnick, 2001). These firefighters and other rescue workers claim that breathing toxic substances thrown in the air by the collapse and cleanup of the WTC have made them ill (Van Voris, 2002). Lawyers predict that lawsuits filed thus far are the tip of the iceberg.

The critical question is what happens after the "rally effect" subsides and it is no longer unpatriotic for people to question the government's culpability in not preventing the disaster, or to sue those indirectly responsible for loss of life and emotional damages. It appears that widespread litigation is on the horizon. As such, it is likely that those directly affected by the 9/11 attacks will be facing an adversarial, protracted, litigation process which leads to chronic psychosocial stress rather than recovery.

Mental and Physical Health Issues

Disaster survivors are potentially faced with two types of health issues – mental and physical. Evidence of Posttraumatic Stress Disorder (PTSD), although not officially recognized as a psychiatric disorder until 1980 (APA, 1980), was found in studies of Vietnam war veterans. PTSD is an anxiety disorder that can develop after exposure to a traumatic event or ordeal – such as, violent personal assaults, natural or human-caused disasters, accidents, or military combat – in which grave physical harm occurred or was threatened (NIMH, 2002). Other psychological problems that often accompany PTSD include emotional numbness, sleep disturbances, depression, anxiety, irritability, outbursts of anger, and feelings of intense guilt. Natural disasters, technological disasters, and terrorism can cause PTSD and other psychological problems. Nonetheless, PTSD symptoms have been highly characteristic of victims of technological disasters (Arata et al., 2000; Baum & Fleming, 1993; Green, 1996; Picou & Gill, 1996, 2000).

In a comprehensive review of disaster studies, Norris et al. (2001) evaluated 177 articles which analyzed the psychological effects of natural and human-caused disasters on 130 distinct samples of victims. Of the disasters studied, 62% were natural disasters, 29% technological disasters, and 9% mass violence. Specific psychological problems and PTSD were found in 74% and 65% of the 130 distinct samples

of victims, respectively. These researchers found that, in the U.S., technological disasters were more psychologically stressful than natural disasters. However, disasters of mass violence were the most stressful of all three types. Despite the apparent relationship between disaster type and psychological stress, evidence indicates that extremely damaging natural disasters (e.g. Hurricane Andrew in 1992), technological disasters (e.g. the 1972 dam collapse in Buffalo Creek, WV and the 1989 *Exxon Valdez* oil spill in Alaska), and disasters of mass violence (e.g. the 1995 bombing in Oklahoma City and, undoubtedly, the 9/11 attacks) can cause severe to very severe psychological impairment (Norris et al., 2001). The authors conclude that psychological impacts were severe, lasting and pervasive when at least two of the following factors were present: (1) extreme and widespread damage to property; (2) serious and ongoing financial problems for the community; (3) human carelessness or, especially, human intent; and (4) high prevalence of trauma in the form of injuries, threats to life, and loss of life. Given that all four of the factors are present in the aftermath of the 9/11 attacks, a long-term clinical intervention program is needed to minimize the severity and duration of the psychological impacts on victims of 9/11.

As noted, disasters of mass violence, such as terrorism, cause more severe psychological impairment than other types of disasters (Norris et al., 2001). For instance, six months after the Oklahoma City bombing, 34% of the survivors were suffering from PTSD (North et al., 1999). Two years later, 16% of children and youth living up to 100 miles from Oklahoma City exhibited symptoms of PTSD in relation to the bombing (Pfefferbaum et al., 1999). Initial studies on the 9/11 attacks seem to support this pattern. In a survey of adults living south of 110th Street in Manhattan five to eight weeks after September 11, researchers found that 7.5% and 9.7% of the respondents reported symptoms consistent with the diagnosis of current PTSD and depression, respectively (Galea et al., 2002). Based on comparisons to national studies, Galea et al. (2002) suggest that the prevalence of PTSD and depression in lower Manhattan were twice as high as expected. The researchers found significant relationships between low levels of social support and symptoms of PTSD and depression (Galea et al., 2002). This pattern is consistent with long-term studies of victims of the Three Mile Island radiation release (Baum & Fleming, 1993) and the *Exxon Valdez* oil spill (Arata et al., 2000).

What is unique about the 9/11 attacks, and perhaps terrorism more generally, is the degree of trauma experienced nationally by those not directly impacted by the disaster. For example, Schuster et al. (2001) conducted a national telephone survey of 560 adults three to five days after the 9/11 attacks. They found that 44% reported one or more symptoms of stress, including PTSD, and 90% had one or more symptoms to at least some degree. Compared to others parts of the U.S., the incidence of stress was greater in the Northeast region (55% reported substantial

stress) and within a 100 mile radius of the WTC (61% reported substantial stress) (Schuster et al., 2001). In a national telephone survey of adults conducted three months after the 9/11 attacks, Gill et al. (2002) found that 30% reported one or more substantial symptoms of stress, including PTSD. Further, almost 40% in the Northeast region of the U.S. reported substantial symptoms of stress (Gill et al., 2002). In a 3-panel Web-based design of the U.S. population outside of New York City, Silver et al. (2002) found that 17% of the population reported PTSD two months after the attacks. Although stress levels had declined six months later, 6% were still elevated and higher than normal. This study belies the unwarranted assumption "that subjective responses to trauma are proportional to the degree of objective loss experienced" (Silver et al., 2002, p. 1235).

Assessing the long-term effects of the 9/11 attacks is premature, especially considering that many victims may exhibit "serious symptoms of distress without qualifying for a clinical diagnosis of PTSD but later move into this diagnostic category, sometimes with a delayed onset of nearly 10 years" (Kaspar, 2002, p. 100). Another reason why it is premature is that secondary stress producing factors, such as recreancy, litigation, and physical health problems may prolong and exacerbate existing levels of psychological stress.

The physical health problems stemming from hurricanes and earthquakes typically result in fatalities and injuries to many victims in high impact areas. However, when people and communities are exposed to toxic chemicals in the aftermath of a disaster, the most troubling outcomes has to do not with direct loss of life, but the potential for long-term health problems and damage to the community. More specifically, toxic chemicals are often imperceptible to the senses and victims are uncertain about the nature and extent of their exposure to toxins (Erikson, 1994). The effects of toxic pollution are usually chronic and accumulative, not acute. It is very difficult to identify the point(s) of contamination and impossible to predict whether the effects will abate. The physical symptoms of toxic contamination often mimic those of other ailments, which result in delayed diagnosis (Erikson, 1994). Further, the medical community is unable to estimate the immediate and future damage caused by exposure to toxins, obscuring the identification of victims from non-victims and producing a "contested" discourse concerning health impacts (Brown, 1997; Couch & Kroll-Smith, 1985; Kroll-Smith et al., 2002).

The Environmental Protection Agency's Christine Todd Whitman, seven days after the 9/11 attacks, stated, "[T]he public in these areas is not being exposed to excessive levels of asbestos or other harmful substances," and that "New Yorkers need not be concerned about environmental issues as they return to their homes and workplaces" (as quoted in Scelfo & Smalley, 2002, p. 4). Such assurances were based on an air-monitoring system, set up after the attack, designed to measure long-term exposures associated with normal air pollution or workplace

air quality (Johnson, 2002a). However, no existing monitoring system could have accurately measured the impacts after the attacks, given that “[t]he blast of dust and smoke – and the toxic substances, fibers and ash that blew through New York in the days afterward – is without precedent in medical literature . . .” (Johnson, 2002a, p. 1). The potentially harmful substances in the air and dust in the neighborhood of the WTC include asbestos, lead, fiberglass, PCBs, mercury and other potentially harmful particulates (Van Voris, 2002). Six months after the 9/11 attacks, approximately 12% of the firefighters at ground zero developed the “World Trade Center cough,” a severe respiratory problem requiring medical leave for at least four weeks (Prezant et al., 2002).

Uncertainties regarding health abound. For instance “some compounds that were created in the fires of the trade center . . . have never been seen in nature or in the laboratory” (Johnson, 2002b, p. 2). Even with reliable tests, health impacts are uncertain “because the government has not established standards for the amount of asbestos allowable in residential air” (Johnson, 2002b, p. 3). Much of the problem of assessing the impacts of the WTC collapse on air quality and respiratory illnesses is that baseline data are practically non-existent, especially in particular neighborhoods like Chinatown (Johnson, 2002b). Nearly 30 times the federally acceptable level of lead has been found at a downtown Manhattan high school, presumably contaminated by debris from the ground zero cleanup being transported past the school (Hortocollis, 2002).

Again, it is too early to tell if and to what degree the residents of lower Manhattan and volunteer workers will suffer long-term health problems due to exposure to airborne toxic substances. As indicated, journalists and residents are deeply concerned and uncertainty exacerbates the situation. Evidence from the technological disaster literature suggests that if people in lower Manhattan are sick (real or perceived) due to exposure to toxic chemicals, and scientists continue to deny the legitimacy of these claims, perceptions of recreancy are likely to increase, toxic lawsuits will ensue, and psychosocial stress levels will increase and be prolonged.

CONCLUSIONS AND IMPLICATIONS

In this article we have identified characteristics of catastrophic natural and technological disasters that are relevant to understanding the potential long-term social and psychological consequences of the 9/11 attacks. Initial responses to the 9/11 attacks have followed the traditional natural disaster model. That is, volunteers from within and outside the impact areas rushed to ground zero to lend a helping hand. Many firefighters and police officers went above and

beyond the call of duty and countless heroic acts by ordinary people were highlighted on the nightly news. The survivors and the American public provided high-levels of support for government and expressed trust regarding the ability of the government to catch and punish the terrorists. The approval ratings of both Congress and the President jumped to record levels. However, this seemingly therapeutic response may be less reflective of the initial similarities between the 9/11 attacks and natural disasters per se, but more reflective of the rally effect that tends to accompany any threat to national security. Nearly 14 months later, the rally effect for victims of the 9/11 attacks seems to be dissipating.

Serious contested issues are being raised about: (1) the responsibility of the intelligence community for the 9/11 attacks; (2) the Bush administration's reluctance to cooperate with the Congressional 9/11 investigation; (3) governmental efforts to forestall the filing of class-action lawsuits against those deemed indirectly responsible for the attacks; (4) complaints regarding the perceived class-biased distribution of aid by FEMA; (5) the purpose and fairness of the proposed compensation package for survivors offered by Congress; (6) the potentially chronic respiratory illnesses experienced by rescue workers and residents of lower Manhattan; and (7) potential mental health problems. Distilled from this contested discourse, we have identified the issues of recreancy, litigation, and mental and physical health as having potentially long-term negative psychosocial impacts for survivors. As such, we argue for an expanded disaster framework that will allow an understanding of the future consequences of the 9/11 attacks. Over time, continuing social structural impacts may result in ineffective coping responses by survivors, which include, but are not limited to, loss of trust in government, litigation and the emergence of an ongoing, adversarial corrosive community (Freudenburg, 1997; Picou, 1996b; Picou & Gill, 2000).

Given that litigation and corrosive communities are most often associated with the chronic impacts of technological disasters, we briefly reviewed trends in the technological disaster literature regarding long-term social and psychological impacts. This literature clearly indicates that survivors experience anger, fear, uncertainty and psychological stress from exposure to toxic chemicals. Often such claims are denied legitimacy to survivors, further exacerbating their concerns and fears. Over time, chronic psychosocial problems emerge, including depression, anger, PTSD and anxiety (Arata et al., 2000; Baum & Fleming, 1993; Couch & Kroll-Smith, 1985; Green, 1996), placing survivors in a continuous "warning/threat/impact" cycle which is characteristic of technological disasters (Couch, 1996).

The relevance of the technological disaster literature for understanding the impacts on survivors of the 9/11 attacks relates specifically to the time dimension. Over time, victims of technological disasters often form groups based on common

interests. Each group may define the situation differently, producing the seeds of intense and corrosive intracommunity conflict and making long-term recovery difficult (Couch, 1996). Indeed, "recovery and emergency response must take place simultaneously," making any clinical intervention strategy problematic (Couch, 1996, p. 74). Intracommunity conflict tends to be more socially and psychologically damaging when group definitional differences are vast and if outside interest groups get involved (Couch, 1996). We have presented preliminary evidence that such a conflict-based legal scenario may yet result from the 9/11 attacks. The "contested nature" of damage claims of survivors and the reaction of defendants may result in a legal disclosure that will be a daily reminder of the trauma experienced from the 9/11 attacks. This outcome will only add to the long-term negative impacts of survivors, reinforcing chronic psychological impacts, relational disorders, and ineffective coping strategies among victims (Arata et al., 2000; Picou et al., 2004).

Given the similarities between technological disasters and the 9/11 attacks, it is apparent that a long-term clinical intervention program should be developed and provided to survivors of the 9/11 attacks. There have been limited efforts to develop such programs, and several researchers have recently proposed concepts and methods for implementing mitigation strategies for communities and individuals chronically impacted by technological disasters (Couch, 1996, 1999; Picou, 2000; Picou et al., 2003; PWSRCAC, 1999). These efforts, when applied to the WTC attacks, provide one basis to establish a long-term clinical infrastructure to respond to the most prominent goal of international terrorism, i.e. the destruction of social support and the undermining of existing government legitimacy.

A Long-Term Clinical Program

At the most general level, a federally-funded task force should monitor the recovery of victims and provide ongoing recommendations for program characteristics and treatment options. Such a program could be developed under the guidance of the National Academy of Sciences, or a similar agency, and serve as an objective, independent advisor for the treatment of survivors (Couch, 1996). The management of survivor recovery should be centralized, with one agency (such as the National Institute of Mental Health) being responsible for programmatic intervention. Clear lines of authority should be established and the designated agency should be responsive to the independent task force identified above. The long-term clinical intervention program should, first and foremost, utilize a participatory methodology to empower survivors to transform themselves.

Participatory empowerment is a recognized strategy in the treatment of PTSD and has been successfully employed in a clinical intervention for mitigating the chronic (six years) social impact of a technological disaster, the *Exxon Valdez* Oil Spill (Picou, 2000; Picou et al., 2003; PWSRCAC, 1999). This program developed culturally sensitive treatment programs (Picou, 2000), utilized a participatory methodology, employed outreach strategies, focused on empirically diagnosed psychological symptoms and relational disorders (Arata et al., 2000), included educational training for lay peer-listeners, and provided extensive programmatic educational materials on coping strategies to victims (Picou et al., 2003; PWSRCAC, 1999). These programmatic efforts provide the foundation for the development of an effective counter-terrorism intervention model for survivors of the WTC attacks. More importantly, establishment of effective victim intervention programs provide a measure of counter-terrorism. Intervention programs can help reassure potential victims that they will be cared for, thus reasserting a level of security. Given the predicted increase in the number of terrorist acts in the 21st century, it is important that our society take a proactive stance at this level.

In conclusion, we are aware of the complexity and detail involved in developing a long-term clinical intervention program for mitigating the potential mental health consequences of the WTC attacks. Nonetheless, the literature on other human-caused disasters provides strong empirical evidence that long-term psychological and relational disorders may characterize the survivors of 9/11. The knowledge and understanding of such chronic disaster impacts are well-understood by clinical and applied psychologists, sociologists and anthropologists who have studied a wide-variety of disasters over the last forty years (Norris et al., 2001). We also suggest that rather than waiting for chronic symptomologies to emerge among 9/11 survivors, serious consideration be given by Federal authorities to initiate the discussion, development and implementation of a comprehensive long-term clinical intervention program based on the basic and applied social science literature on technological disaster impacts. Since the 9/11 attacks, Americans have been repeatedly reminded that the war on terrorism will be a long, drawn-out battle for the United States. In this article, we have attempted to point out that evidence from the social science literature on the chronic social impacts of technological disasters portends a similar long, drawn-out battle for social and psychological recovery for the survivors of this catastrophic act of terrorism.

NOTES

1. The technological disaster category includes transport accidents, miscellaneous accidents, and industrial accidents (IFRC/RCS, 2002). Environmental sociologists studying

the impact of technological disasters typically focus on industrial accidents. The impact of transport accidents is an understudied area in the social sciences.

2. Survivors will be used in this article in a broad manner to refer to individuals injured, families and friends of fatalities, rescue workers, and others who may have resided in the impact area of the WTC attacks.

Pl. provide the citation of Notes 1 and 2 in text.

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