

Sociology, Disasters and Emergency Management: History, Contributions, and Future Agenda*

Thomas E. Drabek, Ph.D.
John Evans Professor, Emeritus
Department of Sociology and Criminology
University of Denver
Denver, CO 80208-2948
zted@dd-do.com

Abstract

This chapter will summarize the contributions of sociologists to the study of disasters and the profession of emergency management. While some non-U.S.A. references will be made, most of the analysis will be limited to studies conducted within the U.S.A. by American scholars. The essay is divided into five sections: 1) history, including key literature reviews, definitions and issues of controversy; 2) major contributions to the knowledge base; 3) key points of overlap with other disciplines; 4) recommendations for emergency managers; and 5) future research agenda.

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Introduction

Disasters have long been objects of study by sociologists. Indeed, prior to the 1980s the research literature was dominated by sociologically oriented analyses, followed by that of social geographers, e.g., Burton, Kates and White (1993). Given this rich and expansive legacy, this chapter will be limited to highlights, not detail. Readers desiring additional depth are advised to review the works referenced throughout. It should be noted that many important sociological contributions have been made by scholars researching disasters that occurred outside the U.S.A. Some of special importance are noted in this chapter, but most are not. The chapter is divided into five sections: 1) history, including key literature reviews, definitions and issues of controversy; 2) major contributions to the knowledge base; 3) key points of overlap with other disciplines; 4) recommendations for emergency managers; and 5) future research agenda.

History

While there are many definitions of sociology, most would agree that the focus of the discipline is the study of human interaction. Hence, when disaster strikes, sociologists have asked, “how do humans respond?” From the outset, starting with Prince’s (1920) initial study of the collision of two ships in the Halifax harbor (December 6, 1917), this has been the key question that defined the sociological research agenda. The fundamental epistemological assumption was that while all disaster events were unique historic episodes, comparative analyses could identify elements of commonality, i.e., modal patterns of behavior. Literature reviews have summarized studies of individuals and their social units, ranging from families, to organizations to communities,

e.g., Barton 1969; Dynes 1970; Quarantelli and Dynes 1977; Kreps 1984; Drabek 1986).

More recently, under the auspices of the FEMA Higher Education Project, Drabek (1996b, 2004) prepared detailed literature summaries for instructors of courses focused on the social dimensions of disaster. Collectively, these numerous synthesizing statements integrate the research conclusions from hundreds of post-disaster field studies. While preparedness and mitigation activities have been studied, the total aggregate of such inquiries, like those examining “root causes” of disaster, pale in comparison to the number of post-event assessments (e.g., preparedness studies include Quarantelli 1984; mitigation studies include Drabek et al. 1983; for assessments of “root causes” see Enarson et al. 2003).

Sociologists have argued that disasters may expose the key values and structures that define communities and the societies they comprise. Social factors that encourage both stability and change may thereby be documented. Thus, both core behavior patterns and the social factors that constrain them may be illuminated by the study of disaster. And while cultural differences may be associated with substantial variations in response, cultural similarities have been documented by those comparing the U.S.A. profile to responses by the British (e.g., Parker 2000), Australians (e.g., Britton and Clapham 1991) and others (e.g., Parr on New Zealand, 1997-1998 Domborsky and Schorr on Germany, 1986). In contrast, results from the former Soviet Union (Portiriev 1998b), Japan (Yamamoto and Quarantelli 1982), Italy (Quarantelli and Pelanda 1989) and elsewhere (e.g., Bates and Peacock 1992; Oliver-Smith and Hoffman 1999) have documented the role of culture in pattern variation.

Typically, sociologists have differentiated *disasters* from *hazards*. Following most, for example, Drabek (2004) defined these terms as follows. A disaster is “. . . an event in which a community undergoes severe such losses to persons and/or property that the resources available within the community are severely taxed.” (Drabek 2004, Student Handout 2-1, p. 1). This conceptualization is consistent with these proposed or implied by the earliest research teams, e.g., Fritz 1961; Dynes 1970. In contrast, a hazard is “. . . a condition with the potential for harm to the community or environment.” (Drabek 2004, Student Handout 2-1, p. 1). For sociologists, the term *disasters* referred to specific events like Hurricane Jeanne (2004) whereas *hazards* define a class of threats like hurricanes, tornadoes, earthquakes, and so on. Thus, they refer to the hurricane hazard or the tornado hazard that reflects the risk, vulnerability, or exposure confronting families, communities or societies.

Flowing from these definitions, most sociologists view emergency management as “. . . the process by which the uncertainties that exist in potentially hazardous situations can be minimized and public safety maximized. The goal is to limit the costs of emergencies or disasters through the implementation of a series of strategies and tactics reflecting the full life cycle of disaster, i.e., preparedness, response, recovery, and mitigation.” (Drabek 2004, Student Handout 1-3, p. 1).

These terms have provided an important frame of reference for dozens of scholars who have sought to use the perspectives, concepts, and methods that define the broad field of sociology in their study of disaster. These applications have been nurtured by major research centers, most notably the Disaster Research Center. Since its founding at The Ohio State University in 1963, this unit has encouraged, integrated, and applied these

tools to the study of disaster. After its relocation to the University of Delaware in 1985, the process of rapid arrival to disaster scenes continued. Implementation of a “quick response” funding process that was coordinated through the Natural Hazards Research and Applications Information Center at the University of Colorado has enabled dozens of scholars to gather perishable materials. At times these quick response field visits have facilitated larger and more focused studies. Important policy insights and recommendations have been proposed to emergency management professionals following such work.

Over time, however, key issues and concerns have precipitated much debate. Among these, two are most fundamental, and clearly are pushing alternative research agenda in very different directions. These issues reflect: 1) different definitions of the term “disaster”, and 2) degree of focus on vulnerability and/or risk based paradigms.

Clearly there are basic and very real differences in viewpoints as to how the core concept of “disaster” ought to be defined. To some, like Murria (2004) the matter may best be pursued by an engineer or other non-sociologically oriented professional. So by comparing numerous dictionaries reflecting many different languages ranging from English, French, Spanish, Portuguese, and so on, the origins and nuances of the term “disaster” can be compared. Thus, within the Romance languages such as Spanish or French, “the noun *disaster* has magical, astral, supernatural and religious connotations...” (p. 127). For others, like the Poles and Czechs, “ . . . the translation of the noun *disaster* comes from the translation of the English word of Greek origin *catastrophe*, i.e., *catastrophe*.” (p. 127). In contrast, Dutch, Japanese, Arabs and others relate the term to

such concepts as “great loss,” “terrible happening,” “big accident” or other such phrases that convey misfortune (p. 127).

Others too continue to wonder what the point of the question is. And so, even as recently as 2004, statements like the following characterize the literature. “When a hazard occurs, it exposes a large accumulation of risk, unleashing unexpected levels of impacts” (Briceño 2004, p. 5). Despite the differentiations of many others continue to use the terms “disaster” and “hazard” interchangeably.

Starting with definitions that are event based, many have proposed differentiations that reflect key analytical features of disasters. Kreps and Drabek (1996) proposed that some comparative analyses could be enhanced if disasters were viewed as a special type of social problem. Four defining features of such events, among others, are: 1) length of forewarning, 2) magnitude of impact, 3) scope of impact, and 4) duration of impact (p. 133). Reacting to criticisms from social constructionists (e.g., Stallings 1995) who emphasize the social processes whereby some events or threats are collectively defined as public concerns, while others are not, Kreps and Drabek (1996) emphasized that “ . . . the essence of disaster is the **conjunction** of historical conditions and social definitions of physical harm and social disruption at the community or higher levels of analysis.” (p. 142; for elaborations see Kreps 1995a and 1995b).

Such a perspective has led some to propose elaborate typologies of differentiation whereby “levels” of disaster might be defined with precision. For example, by placing disaster within a framework of collective stress, Barton proposed that sources of threat (i.e., internal or external), system level impacted (i.e., family, organization, community), and other such features could differentiate natural disasters from riots, wars, revolutions

and so on. More narrowly focused, Britton (1987) proposed a “continuum of collective stress” whereby classes of events could be grouped as either accidents, emergencies, or disasters (pp. 47-53). Reflective the thinking of his Russian colleagues and also the U.S.A. research base, Profiriev (1998a), proposed a typology that integrated numerous analytical criteria whereby different types of emergencies could be compared. These included such features as the “gravity of impact’s effect” (i.e., emergencies vs. disasters vs. catastrophic situations); “conflict vs. non-conflict”; “predictability”; “rapidness of spreading’ (p. 49). Most recently, Fischer (2003) has proposed a “disaster scale” that could facilitate comparative analyses by researchers *and* preparedness activities by practitioners (pp. 99-106). Drawing an analogy to the use of the Richter scale for easily communicating the severity of earthquakes, his ten “disaster categories” are “. . . based upon the degree of **disruption** and **adjustment** a community(s)/society experiences when we consider **scale**, **scope** and **duration of time**.” Thus, “disaster category 1” is comprised of “everyday emergencies”, whereas “disaster category 4” would be restricted to events of a major scale that impact small towns. Logically following them are such categories as “DC-8” (i.e., “massive large city”), DC-9 (i.e., “catastrophe”) and DC-10 (i.e., “annihilation”).

Reflecting his symbolic interactionist theoretical perspective Quarantelli (1987; 1998) has pressed scholars to retreat from frameworks focused exclusively on analytical features of crisis events or the “agents” that “cause” them. Rather, additional research questions ought to expand the agenda, e.g., what are the social processes whereby certain types of crisis situations become “legitimate” bases for social action? Why are there

massive relief efforts following a tornado and yet many resist funding for programs assisting victims of the HIV-virus or famine?

Drabek (1970, 2000) has proposed that comparisons among disaster field studies could be integrated more effectively if this question was placed within a methodological framework. That is, the issue is viewed as one of “external validity.” Researchers must answer “to what can we generalize?” By using a variety of event based criteria like “length of forewarning,” he documented that the behavior of private business employees (1999), tourists (1996a) and others varied during evacuations triggered by hurricanes, floods, and tornadoes. Events reflecting different criteria were responded to somewhat differently. Of course, such conclusions from a few field studies await the integrative efforts of others if disaster research is to be cumulative. And that is another reason why this key question of definition is so paramount. Implicit in the question, “What is a disaster?” is a fundamental question of strategy. That is, which approach will best permit the systematic accumulation of research findings flowing from separate disaster studies.

The second key issue confronting sociologists who are studying disasters pertains to the paradigms used. Most do not elaborate on the theoretical perspectives that might be guiding their field work although elements of functionalism, structuralism, symbolic interactionism, and other such frameworks can be identified. Many have built upon the “collective stress” framework first outlined by Barton (1969) although the nomenclature usually is modified. For example, Drabek elaborated on his “stress-strain perspective” (e.g., 1990, 1999, 2003) which had its origins in the early DRC studies (e.g., Haas and Drabek 1970, 1973). Others have pursued the insights of social constructionists and moved into research agenda that usually are ignored by those rooted within a collective

stress viewpoint. For example, Stallings (1995) carefully documented the “claims-making activities” of those who have “manufactured” the earthquake threat. This same perspective permitted Jenkins (2003) to document the shifting “ownership” of terrorism, both regarding the “guilty” and the “causes” being used to justify the killing of others.

In contrast, many (e.g., Mileti 1999) have turned to environmental studies for help. By emphasizing the social desirability of “environmentally friendly” disaster mitigation policies, concepts of “sustainability”, and “risk communication”, “adoption of hazard adjustments” and others have redefined the research agenda (Mileti 1980). Community education programs are designed and evaluated throughout the implementation process so as to guide emergency managers seeking to have community based disaster mitigation programs that will encourage development that may better “live with nature” rather than against. Mileti (1999), pp. 30-35) proposed that six core principles delineated this “Sustainable Hazards Mitigation Approach”, e.g., “Maintain and, if possible, enhance environmental quality” (p. 31); “Foster local resilience to and responsibility for disasters” (p. 32); and “Adopt a consensus-building approach, starting at the local level.” (p. 34).

Finally, some have proposed a paradigm shift reflecting a focus on the concept of vulnerability (e.g., Wisner 2001). Citing such scholars as Mileti (1999) and Geis (2003), McEntire (2004) begins a recent article by stating that: “Scholars interested in disaster studies are calling for a paradigm shift.” (p. 23). Among the reasons for such a shift, are “15 tenets” that include such observations as: “We have control over vulnerability, not natural hazards” (p. 23), “Vulnerability occurs at the intersection of the physical and social environments” (p. 24); “ Variables of vulnerability exhibit distinct patterns” (p.

25). This last “tenet” was amplified significantly by Enarson et al. (2003) who designed an instructional guide for college and university professors entitled *A Social Vulnerability Approach to Disasters*. Building on the poignant criticisms of scholars like Hewitt (1983), this team nicely spelled out the basic elements of a social vulnerability paradigm and specified how it differs from “the dominate view” of disasters, e.g., focus on socio-economic and political factors rather than the physical processes of hazard; goal is to reduce vulnerability rather than damage. By documenting the differential and changing patterns of risk and vulnerability, long term levels injustice are highlighted. And so the “root causes” of disaster are exposed as are the policies and practices of those who benefit most by the existing social structure. Rather than accept differential exposures and losses by the politically weak, be they female, aged, or ethnic minorities, those adopting this paradigm question the status quo. They ask, “Why must the patterns of greed and financial corruption continue to perpetuate so-called disasters wherein those most vulnerable are disproportionately hurt?”

When one starts from a social vulnerability perspective, issues of disaster take on a very different look. For example, how did the attacks on the World Trade Center (2001) become defined as a “national” disaster? Oyola-Yemaiel and Wilson (2003) insightfully propose that “. . . we do not consider the terrorist attack itself as a disaster (system failure), we believe that the generalized conception of disaster as well as how the media and the authorities responded to the event illustrates *symptoms* of system failure.” (p. 27) Hence, this perspective pushes researchers to examine the nature of vulnerability to terrorism in highly differentiated and interdependent societies. And in so doing, the nature of proposed solutions reflect root causes and basic societal processes that

heretofore have rarely been the focus of disaster researchers. Oyola-Yemaiel and Wilson (2003), for example, offer the following.

“ . . . rather than immense and impersonal business far away where the fate of the individual, the family, and the local community are in the hands of third parties, society should move forward to a social exchange that would enable local communities to have interdependence with the national system as well as independence of operation from it. At this point each community can sustain life independently outside the whole if needed. In so doing, the communities could become isolated from the threat of terrorism.” (p. 37).

This case study underscores insightful conclusions proposed by Bankoff (2003). In contrast to western cultural norms, “ . . . vulnerability has been proposed as the key to understanding a novel conceptualization of risk that attempts to break with the more causal, mechanistic attitudes that have characterized the relationship between human societies and their environments over past centuries . . . ” (p. 6). Furthermore, “Social systems generate unequal exposure to risk by making some people more prone to disaster than others and that these inequalities in risk and opportunity are largely a function of the power relations operative in every society.” (p. 6) Echoing the observations of Oyola-Yemaiel and Wilson (2003), Bankoff proposed that “ . . . complexity may be just as much a source of vulnerability as it is an answer to risk.” (p. 20). Thus, “ . . . attempts to control the environment need to be replaced by approaches that emphasize ways of dealing with unexpected events, ones that stress flexibility, adaptability, resilience and capacity.” (p. 20).

Major Contributions

Beyond the integrative reviews noted above, e.g., Dynes (1970), Barton (1969) and Drabek (1986), several collections summarize substantive contributions by sociologists to the study of disaster. Detailed statements are available in the collection edited by Dynes et al. (1987) that focus on such topics as: “Disaster Preparedness and Response Among Minority Citizens” (Perry); “Human Ecology” (Faupel); “Collective Behavior” (Wenger); “Organizational Change” (Stallings); “Emergent Structures” (Drabek) and “Social Change” (Bates and Peacock). Similarly, the collection of essays prepared in honor of E.L. Quarantelli that was edited by Dynes and Tierney (1994) also presents excellent summaries of both specific studies and broad perspectives such as “An Ecological Approach to Disasters” (Bates and Pelanda); “Public Risk Communication” (Fitzpatrick and Mileti); and “Post Disaster Sheltering and Housing” (Bolin).

As the diversity and depth of these topics indicates, a summary of contributions to the knowledge base is far beyond the limited space of this essay. But four broad topics stand out when a long term view is applied: 1) disaster myths; 2) research methods; 3) theory and 4) social criticism.

Disaster Myths. Historically, the most significant contribution of sociological research on disasters has been the correction of distorted images of human response (e.g., Quarantelli 1960; Quarantelli and Dynes 1972). Images of panic, looting, and other such anti-social behavior were debunked and properly labeled as myths. That is not to claim that such forms of anti-social behavior never occur. They do. But the image of such behavior as the prevailing response is an exaggeration that simply is wrong. Both the public and emergency officials were found to support such erroneous notions (Wenger et

al. 1975; Wenger et al. 1980; Fischer 1998). One of the most widely circulated documents among local emergency managers outlined these myths and the evidence that debunked them (Dynes et al. 1972). Today, many emergency management professionals point to disaster myths as the first item of substantive knowledge they associate with sociology.

Research Methods. Several excellent statements have been published that highlight unique contributions designed by sociologists studying disasters, e.g., Cisin and Clark 1962, Drabek 1970, Mileti 1987, Stallings 2002. Concerns raised by Killian (1956) in the 1950s (see the summary of his monograph in Stallings 2002, pp. 49-93) are a sharp contrast to a range of more current issues such as those pertaining to electronic media raised by Dombrowsky (2002, pp. 305-319) or the uses of geographic information systems described by Nash (2002, pp. 320-333). Following the dictum that interesting questions should be pursued and appropriate methods designed, Drabek (2002) summarized numerous studies he directed that reflected varied types of methodological innovation. Some, like the analysis of police and fire department audio recordings built on unobtrusive data that many had not thought about collecting. Other innovations ranged from the construction of an elaborate police communications simulation to devising ways to track down tourists who were victims of Hurricane Andrew, Iniki, and other disasters.

Methodological innovations continue to be made as researchers seek to improve their understanding of disaster response and impact. Homan's (2003) recent explanation of the use of autobiography is a case illustration. Using materials at the Mass-Observation Archive at the University of Sussex, she demonstrated the utility of this

approach and the range of new substantive research questions it permits. For example, “The 1989 Mass-Observation Directive sought to gauge, from personal perspectives, what people thought of the role of the media in disasters and the way in which they are reported, as well as issues apportioning blame and post-disaster relief work.” (p. 64). If comparable materials were within the U.S.A. before and after the World Trade Center attacks in 1993 and 2001, important tracking of public perceptions could be available. Comparative analyses of shifts and continuities following earthquakes, hurricanes, and the like, could be most instructive in understanding the “manufacturing” processes being used by various groups within the society.

Theory. Evolving from years of analysis of interviews conducted by DRC staff, Kreps and his associates have moved toward a generalized theory of disaster response (e.g., Kreps 1987; 1989; Kreps et al. 1994). When disaster strikes, emergent networks are born to handle the unique demands generated. Early on in the life of the DRC, a typology of organized disaster responses was formulated (Dynes 1970). Many (e.g., Stallings 1978) discovered that this typology helped make sense of the complex responses they observed in the field. The typology reflected two criteria: structure and tasks. Thus, established organized response units (Type I) reflected old structures being used to accomplish regular tasks. Conversely, emergent organized response units (Type II) reflected new structures being used to accomplish non-regular tasks. Expanding and extending units reflected non-regular tasks with old structures (Type II) or regular tasks with new structures (Type III). Kreps and his associates coded hundreds of DRC interviews so as to document the patterns of social structure that emerged during responses to disasters resulting from such agents as tornadoes, hurricanes, and the like.

Their structural code reflected four key analytic qualities, i.e., domains, tasks, human and material resources, and activities. Their preliminary theoretical framework specified that various exogenous factors, e.g., event qualities were followed by social processes that defined the post-event organizing behavior which in turn produced various outcomes that could be assessed at both the individual and structural level. Their meticulous work lead them to conclude that the DRC typology was both an efficient and effective tool for understanding disaster behavior. Furthermore, if “. . . specifies nicely a micro-macro link between the individual and social structure.” (Kreps et al. 1994, p. 191).

Building on the collective stress perspective noted above, Drabek (2003) formulated a model for predicting the relative effectiveness of disaster responses. This work paralleled the logic of the Kreps team, but introduced different concepts. Local emergency managers were viewed as being nested within state and federal systems that changed over time reflecting perceptions of threats, government policies, demographic trends, and other such factors (pp. 147-152). By implementing a series of managerial strategies, various forms of interagency networks are nurtured which spring into action when disaster threatens. Use or misuse of 26 specific coordination strategies predict the shape of the emergent response and its effectiveness. While far from complete, future comparative research along these lines will provide the foundation required for scientifically based theories of emergency management.

Finally, as Dynes (2002, 2003) has documented, social capital theory offers many important insights. This analysis was extended by Nakagawa and Shaw (2004) in their case study of reconstruction following the 1995 devastating earthquake in Kobe, Japan. Their results clearly documented that the high level of trust in local leaders by the

community was the major factor that facilitated acceptance of the collective decisions made throughout the recovery process. They concluded that “. . . social capital and leadership in the community are the basic attributes, which are universal in nature, irrespective of the development stages of the country.” (p. 29).

Social Criticism. A final area of contribution has taken the form of social criticism. Reflecting its historical roots, sociologists have offered “observations” about disaster responses that have highlighted fundamental flaws in both response and policy. This practice has reflected DRC publications since its origin. In its first publication, for example, Drabek, pinpointed “operational problems” stemming from inadequate inter-organizational coordination and communication (e.g., 1968, pp. 155-169). Years later (Drabek 1996a) reemphasized that business executives need to “resist threat denial” (1996a, p. 244), “do not overreact” (1996a, p. 245), and “debunk the panic myth” (1996a, p. 245). Dynes (1994, 1983) repeatedly has critiqued the planning and preparedness actions practiced by many who continue to fail because their top-down approach is fundamentally flawed, rooted in assumptions reflecting myth rather than research results.

Most recently, the Homeland Security Advisory System (HSAS) has been found lacking. For example, Major and Atwood (2004) documented that only 49 percent of U.S.A. citizens surveyed in April, 2003 (p. 82) responded that the system was “useful.” Ambiguity in the announcements was the major complaint and it had real consequences. “The ambiguity of such announcements leaves the public with but one choice: not to prepare.” (p. 97). Studies like these led Aguirre (2004) to a highly critical view.

“The current Homeland Security Advisory System does not draw from years of social science study and does not benefit the nation. It is not a warning system. At best, HSAS is a mitigation and anticipatory public relations tool.” (p. 112).

Disciplinary Overlaps

Sociologists studying disasters frequently have integrated both theory and methodological tools reflective of other disciplines into their work. Indeed, the first major textbook on emergency management (Drabek and Hoetmer 1991), reflected a blending of concepts, conclusions, and analyses from sociology, public administration, and a wide variety of other disciplines. Such points of overlap within the literature at large are varied and numerous. The following *illustrations* document the point.

Response. A core theme in the analysis of disaster response is the concept of emergence, e.g., Drabek and McEntire 2002, 2003. Quarantelli (1996) summarized many of the key insights that had been accumulating over the years as scholars like Stallings (1978), Weller (1972), and Neal (1984) examined such dynamics. Most recently, Mendoça and Wallace (2004) have combined these insights with those from social psychologists like Weick (1993), and offered important new observations based on detailed examination of DRC interviews after Hurricane Camille (1969). In so doing they have developed a new methodology to specify the types of data required to document the “where, when and how” that improvisation occurs during disaster responses.

Recovery. Assessments of long-term impacts of disaster on individuals and communities illustrate, the close links between sociology, psychology, economics, and

other disciplines. Drabek (2004) summarized numerous studies wherein various theoretical frameworks were used to document the lasting psychic pains following the *Exxon Valdez* oil spill (Arata et al. 2000), Hurricane Floyd (Willigen 2001), the 1994 Northridge Earthquake (Siegel et al. 1999), the 1995 bombing of the Alfred P. Murrah Federal Building in Oklahoma City (Benight et al. 2000) and other disasters. While controversy remains regarding the relative efficacy of alternative treatment modalities (NIMH 2002, p. 9), the evidence is clear that most individuals cope well with even the worst of events. For some, however, the lingering pain of loss and fear continue although some interventions such as the “critical incident stress debrief” may offer promise (e.g., Mitchell and Everly 2000). Economic and demographic shifts following such events as Hurricane Andrew (e.g., Peacock et al. 1987), have recast earlier “no-effect” conclusions reached by others (e.g., Rossi et al. 1978; Wright and Rossi 1981). Short-term effects on such social phenomena as marriage rates (e.g., Cohan and Cole 2002) regarding Hurricane Hugo), transportation patterns (e.g., Edwards et al. 2000 regarding Hurricane Floyd) and other social phenomena continue to be documented as does increased ethnic inequality such as that which occurred after Hurricane Andrew (Morrow and Peacock 1997). Future multidisciplinary collaboration will be required if the processes and outcomes disaster recovery are to be better understood.

Preparedness. Following extensive study of tourism evacuation behavior (e.g., Drabek 1996a), FEMA supported Drabek’s effort to team with faculty of the School of Travel Industry Management, University of Hawaii at Manoa (Drabek and Gee, 2000). An emergency management instructor guide was created for faculty within departments of tourism, hospitality, restaurant and travel management. This facilitated the diffusion

of knowledge from the social sciences, especially sociology, into this professional area whose businesses reflect a catastrophic level of vulnerability (Drabek 1994).

Diffusion of innovations has long been a focal point of sociologists and communications researchers (e.g., Rogers 1962). Drabek (1991) documented the social history of the adoption and implementation of microcomputers into several local and state emergency management agencies during the late 1980s. Problematical aspects of such adoptions were specified by Quarantelli (1997). His observations contrast sharply with the advantages of such technology that are proposed by those coming from other disciplinary perspectives, e.g., Stephenson and Anderson 1997; Gruntfest and Weber, 1998.

Mitigation. Learning from the wisdom of such social geographers as Gilbert White, Mileti (1980) formulated a general paradigm for assessing human adjustments to the risks associated with environmental extremes. Over the years, his work matured so that by 1999 he was able to present a well developed framework of a “sustainable hazards mitigation approach” (Mileti 1999, pp. 31-35). His approach has not been without criticism, however, and scholars like Aguirre (2002) have questioned both the content and direction. Others, like McEntire et al. (2002, pp. 270-272) have registered strong reservations about the entire concept of “sustainability,” not just Mileti’s application.

Emergency Manager Recommendations

As is evident from the above analysis, sociologists have offered recommendations to emergency managers for decades. Many of these were codified in the text edited by Drabek and Hoetmer (1991). These ideas built on the continuing stream of publications

produced by DRC staff, graduates, and sociologists located at other universities. Most important among the recommendations are such principles as the following.

- An all-hazards approach is essential (Drabek and Hoetmer 1991).
- Planning and preparedness activities are continuous processes, not goals to be accomplished and put aside (Dynes et al. 1972).
- Social science knowledge, not myths, should guide program activities, priorities, and implementation strategies (Quarantelli and Dynes 1972).
- If disaster plans are to be relevant guides for the behavioral response, they must be developed by those who will implement them (Dynes and Drabek 1994).
- Managing emergency responses requires the implementation of theoretical models that are resource based rather than authority based (Dynes 1994; Neal and Phillips 1995; Drabek 2003).

This last principle reflects another point of disciplinary overlap and points the way for a future research agenda. Writing from the perspective of a political scientist, Sylves (2004) stated the point with succinctness. “When it comes to the field of emergency management, the aim should be to develop new theory or adapt old theory to produce manageable policy. . . . the field must advance through the production of codified knowledge widely diffused to anyone who chooses to learn it.” (p. 32).

These basic recommendations, and others like them, are being implemented in local emergency management agencies and related units of government more frequently than at any other time in the history of the nation. A recent write-up by a utility security manager in Bradenton, Florida is but one of dozens of illustrations that could be cited. In response to the federal mandates which amended the Safe Drinking Water Act, i.e.,

Public Health Security and Bioterrorism Preparedness Act of 2002, Brian Sharkey (2004) pressed for changes. Among the steps taken, all of which reflect the principles listed above, were these.

- “At the outset, the plan was developed with input from the department’s senior staff. These are the people who are responsible for carrying out the plan, so they must have input and ownership.” (p. 7)
- “Local emergency response agencies were involved in plan development. This “. . . allowed the emergency response agencies to integrate their plan with ours.” (p. 7)
- “The plan is always considered an unfinished product. It has been made an active and evolving part of our working environment, and is not just another dust collector.” (p. 7)

Unfortunately, vulnerabilities and risks are accelerating at rates that far exceed such increased capacities due to a whole host of social, demographic, technological, and political factors. So while much has been accomplished through applications of sociological research findings, the net result has been a society at increased risk. And globally, the situation is far worse.

Future Research Agenda

To celebrate the 40th anniversary of the founding of the Disaster Research Center (DRC), numerous scholars gathered to reflect on the past and propose directions for the future (Rodríguez et al. 2004). At the end of their two day conference, they identified a list of research priorities. Among these was a vision of increased “globalization,” more

focus on vulnerability and development, increased multi and interdisciplinary research, emerging technologies, special population impacts especially children (and race, ethnic, gender, class and age inequalities), and new complex threats as represented by terrorist attacks (pp. 130-131). This listing and the elaborations provided are invaluable to any who might formulate their own research agenda. From this and other such efforts (e.g., Anderson and Mattingly 1991; Simpson and Howard 2001), two key themes merit priority.

1. *Alternative theoretical perspectives should be elaborated, encouraged, and compared.* Starting with the social problem orientation proposed by Kreps and Drabek (1996), disasters must be placed within the broader context of public policy, perception, and history. Similarly, analyses must be continued of the unique and continuing social injustices reflective in the inequalities of race, gender, age, etc. that are highlighted by those advocating social vulnerability perspectives (e.g., Enarson et al. 2003). So too must the insights from Mileti (1999) and others whose focus on mitigation led them to see the wisdom of the breadth of perspective inherent in sustainability theory. Different research questions may best be pursued through one of those perspectives or some other. The field will develop best through expansion, not premature closure.

2. *A global, rather than a national, focus must be developed.* There are many reasons why a global perspective must be nurtured. First, it is through cross-societal comparison that the issues of external validity can best be addressed (Drabek 2000; Peacock 1997). Second, as Dynes (2004) pointed out so effectively, the majority of disaster victims reside in underdeveloped countries where few research teams have ventured. Third, links between disaster consequences and other events, like resettlements

caused by World Bank mitigation projects, should be assessed. “Without understanding the impoverishing consequences of displacement, the inequalities between gainers and losers from such projects will be amplified and perpetuated: more than a few displaced people will end up worse off, poorer than before the project came into their midst.” (Cernea 2003, p. 37). Fourth, new threats, like terrorism, and the vulnerabilities they reflect must be viewed within an international context if preparedness, response, and mitigation policies are to be informed effectively. Dynes put it succinctly:

“One of the other consequences of 9/11 was the effort to remove the burkas, which distorted the vision of those in Afghanistan. U.S. policy has insisted that we keep our burkas on, ignoring the lessons of Hamburg, Hiroshima, and New York.” (Dynes 2003, p. 21).

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