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DISASTER RESEARCH:  
AN ENTRY FOR AN ENCYCLOPEDIA

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### Sociohistory of the Field

Descriptions of calamities go as far back as the earliest human writings, but systematic empirical studies and theoretical treatises on social aspects of disasters have appeared only in the 20th century. The first publications in both cases were produced by sociologists. Samuel Prince (1920) wrote a doctoral dissertation in sociology at Columbia University in 1920 which examined the social change consequences of a munitions ship explosion in the harbor of Halifax, Canada. Pitirim Sorokin (1942) two decades later wrote Man and Society in Calamity which mostly speculated on how war, revolution, famine, and pestilence might affect the mental processes, behavior, social organizational and cultural life of involved populations.

However, there was no building on these pioneering efforts, and it was not until the early 1950s that disaster studies started to show any continuity and the accumulation of a knowledge base. Military interest in possible American civilian reactions to post World War II threats from nuclear and biological warfare led to support of academic research on peacetime disasters, with the key project being done 1950-1954 by the National Opinion Research Center (NORC) at the University of Chicago. This project, in intent multidisciplinary, came to be dominated by sociologists as were other studies about the same time at the University of Oklahoma, Michigan State and the University of Texas. The NORC study not only promoted field research as the major way of studying behavior, but also brought sociological ideas from collective behavior and notions of organizational structure and functions into the thinking of disaster researchers (Quarantelli and Dynes, 1977; Dynes, 1988).

While the military interest quickly waned, research in the area obtained a strategic point of salience and support when the US National Academy of Sciences created the Disaster Research Group (DRG) in the late 1950s. Operationally run by sociologists using the NORC work as a prototype, the DRG supported field research of others as well as conducting its own studies (Fritz, 1961). At the time DRG phased out in 1963, the Disaster Research Center (DRC) was established at the Ohio State University. DRC helped the field of study to become institutionalized by its continuous existence to the present day (having moved to the University of Delaware in 1985) and by the training of dozens of graduate students, the building of the largest specialized library in the world on social aspects of disasters, the production of over 500 publications, the continual and conscious opening up to a sociological perspective

of new disaster research topics, the setting up of an interactive computer net of researchers in the area, and an intentional effort to help create domestic and international networks and critical masses of disaster researchers (Quarantelli and Dynes, 1977; Kreps, 1984).

The sociological work in disasters was joined in the late 1960s by geographers with interest in natural hazards, and in the 1980s by risk analysts especially concerned with technological threats (Perrow, 1984; Short, 1984). The initial focus by sociologists on emergency time behavior also broadened out to include studies on mitigation and prevention as well as recovery and reconstruction. More important, in the 1980s disaster research spread around the world and led to the development of a critical mass of researchers which culminated in 1986 in the establishment within the International Sociological Association of a formal Research Committee on Disasters (#39) with membership in over 30 countries and its own professional journal, The International Journal of Mass Emergencies and Disasters, and a newsletter, Unscheduled Events. Sociologists are particularly prominent in current research in China, Germany, Italy, Japan, the Soviet Union and Sweden as well as the United States.

#### Conceptualization of "disaster"

Conceptualizations and definitions of "disaster" have slowly evolved from acceptance of everyday usages of the term through a focus on social aspects to attempts to set forth more sociological characterizations. The earliest definitions equated disasters with feature of physical agents and made distinctions between "Acts of God" and "technological" agents. This was followed by notions disasters were phenomena that resulted in significant disruptions of social life, which however might not involve a physical agent of any kind, (e.g., a rumor that a dam had burst could evoke the same kind of evacuation behavior, etc. that an actual one would). More recently disasters have been seen not only as social constructions of reality by responders, but as the political definitions of certain socially disruptive crises in social systems. Other researchers equate disasters with occasions where the demand for emergency actions by community organizations exceeds their capabilities for response. Finally, more recent conceptions of disasters see them as overt manifestations of latent societal vulnerabilities, basically of weaknesses in social structures or systems (Quarantelli, 1987; Kreps, 1989a; Schorr, 1987).

Given these variants about the concept, it is not surprising that no one formulation is totally accepted within the disaster research community. However, there would be considerable agreement that the following would be minimum dimensions involved in using the term "disaster" as a sensitizing concept. Disasters are relatively sudden occasions where because of perceived threats the routines of the collective social units involved are seriously

disrupted and where unplanned courses of action have to be undertaken to cope with the crisis. The notion of relatively sudden occasions indicates that disasters have unexpected life histories which can be designated in social space and time. Disasters involve the perceptions of dangers and risks to valued social objects, especially people and property. The idea of disruption of routines indicates that everyday adjustive social mechanisms can not cope with the perceived threats. Disasters necessitate the emergence of new behaviors not in the standard repertoire of the endangered collectivity, a community, which is usually the lowest social level entity accepted by researchers as being able to have a disaster (Kreps, 1989b).

In the process of the refinement of the concept, sociologists have almost totally abandoned the distinction between "natural" and "technological" disasters; any disaster is seen as inherently social in nature, whether this be origin, manifestation or consequences. However, there is lack of consensus on whether social happenings involving intentional, deliberate human actions to produce social disruptions such as occurs in riots, civil disturbances, terrorist attacks, product tampering or sabotage, or wars, should be considered disasters. The majority who oppose their inclusion argue that conflict situations are inherently different in their social intentions and goals. They note that in disaster occasions there is no conscious attempt to bring about negative effects as is true of conflict situations (Quarantelli, 1987). However, there is general agreement that both conflict and consensus type emergencies are part of a more general category of collective stress situations as first suggested by Allan Barton (1970).

#### Major Research Findings

While the research efforts have been uneven, much has been learned about the behavior of individuals, organizations, communities, and societies in the pre-, trans, and post-impact time periods (Kreps, 1984, 1985; Drabek, 1986).

#### Preimpact behavior.

**Individuals.** Most individuals show little concern about disasters before they happen even in risk prone areas. Citizens tend to see disaster planning as primarily a moral than a legal responsibility of the government. Exceptions to these passive attitudes are where there is much recurrent experience of disasters as occurs in some developing countries, where disaster subcultures (institutionalized expectations) have developed and where potential disaster settings, such as at hazardous waste sites, are the focus of attention of citizen groups.

**Organizations.** Except for some disaster oriented groups such as police and fire departments, there usually is little organizational planning for disasters. Even agencies which plan

tend to think of disasters as extensions of everyday emergencies and fail, according to researchers, to recognize the qualitative as well as quantitative differences between routine crises and disaster occasions. These involve the fact that in disasters the involved organizations have to: quickly relate to more and different groups than normal; adjust to losing part of their autonomy to overall coordinating groups; apply different performance standards and criteria; operate within a closer than usual public and private interface; and function when their own facilities and operations may be directly impacted by the disaster agent.

**Communities.** Usually low priority is given to preparing localities for disasters and when there is some effort it is almost always independent of general community development and planning. This reflects the reactive rather than proactive orientation of most politicians and bureaucrats and the fact that the issue of planning very seldom becomes a matter of broad community interests as would be indicated by mass media focus, discussions in the political arena, or interest groups. Efforts to initiate general overall disaster preparedness often are hindered by prior organizational and community conflicts, cleavages and disputes.

**Societies.** Generally disaster planning does not rank very high on agenda of most societies. However, increasingly there are exceptions in developing countries when major recurrent disasters have major impact on gross national product and developmental programs. Also, certain catastrophes such as a Bhopal or Chernobyl can become symbolic occasions that lend impetus to instituting preparedness measures for specific disaster agents. Increasingly too, attention to national level disaster planning has increased as citizens in recent times have come to expect their governments to provide more security in general for the population.

#### Transemergency Period Behavior.

**Individuals.** When disasters occur, individuals generally react very well. They are not paralyzed by a threat but actively seek relevant information and attempt to do what they can in the emergency. Victims while usually very frightened, not only act positively but also show little deviant behavior; they extremely seldom break in panic flight, they do not act irrationally especially from their perspective, and they very rarely engage in antisocial activities; although stories of such contrary behavior as looting may circulate very widely. Prosocial behavior especially comes to the fore with the initial search and rescue being undertaken quickly and mostly by survivors in the immediate area. Most immediate needs, such as emergency housing, are met by family and friends rather than official relief agencies. Family and household relationships are very important in affecting immediate reactions to disasters such as whether evacuation will occur or if warnings will be taken seriously.

**Organizations.** While there are many organizational problems in coping with the emergency time period demands of a disaster, these difficulties are often not the expected ones. Often it is assumed that if there has been organizational disaster planning that there will be successful crises or emergency management; but apart from the possibility of planning being poor in the first place, planning is not management and the former does not always translate well into the latter in community disasters. There typically are problems in intra and interorganizational information flow, and in communication between and to organizations and the general public. Groups initially often have to struggle with major gaps in knowledge about the impacts of a disaster. There can be organizational problems in the exercise of authority and decision-making. These can stem from losses of higher echelon personnel because of overwork, conflict regarding authority over new disaster tasks, and clashes over organizational jurisdictional differences. Generally, there is much decentralization of organizational response which in most cases is highly functional. Organizations operating with a command and control model of response, do not do well at emergency times. There often too are problems associated with strained organizational relationship created by new disaster tasks and by the magnitude of a disaster impact.

**Communities.** The greater the disaster, the more there will be the emergence of new and adaptive community structures and functions, especially emergent groups. The greater the disaster, the more organized improvisations of all kinds appear accompanied by pluralistic decision making. The mass convergence of outside personnel and resources on impacted communities while functional in some ways, creates major coordination problems.

**Societies.** Few societies ignore major disasters, but it does occur especially of slow and diffuse occasions such as droughts and famines, especially if they primarily affect subgroups not in the mainstream of a developing country. In responding to domestic disasters, typically massive help is provided to impacted areas including even using help from outside enemies. Increasingly, most societies, including governmental officials at all levels, obtain their view of their disasters from mass media accounts; this also affects what is often remembered about the occasions.

#### Postimpact behaviors.

**Individuals.** While the experience of a major disaster is a memorable one from a social psychological point of view, there does not appear to be too many lasting negative behavioral consequences. Disasters very seldom produce any new psychoses or severe mental illnesses. They do often but not always generate subclinical, short lived and self remitting surface reactions such as loss of appetite, sleeplessness and anxiety. More common are many problems in living that stem more from inefficient and ineffective relief

and recovery efforts of helping organizations rather than from the direct physical impacts of disasters. In some cases, the experience of undergoing a disaster results in positive self images and closer social ties among victims. Overall, there is little personal learning as a result of undergoing a single disaster.

**Organizations.** Organizational changes, whether for planning for disasters or for other purposes, in the postimpact period is not common and selective at best. Most modifications are simply accelerations of changes already planned or underway. Much post impact discussion of how to improve disaster planning seldom gets translated into concrete actions (unlike civil disturbances which at least in American society in the 1960s led to many changes in organizations). However, overall, both in the United States and elsewhere, there has been in recent decades the growth of small, locally based, formal, social groups primarily concerned with emergency time disaster planning and managing.

**Communities.** There are selective longer run outcomes and changes in communities that have been impacted by disasters. There can be acceleration of some ongoing and functional community trends (e.g., in local governmental arrangements and power structures), and generation of some limited new patterns (e.g., in providing of local mental health services or some mitigation measures such as flood proofing regulations). On the other hand, particularly as the result of rehousing and rebuilding patterns, there can be magnifications of preimpact community conflicts and generations of new ones; some of the latter is manifested in blame assignation which however tend to deflect attention away from social structural flaws to mass media influenced search for individual scapegoats. It is also being recognized after disasters that changes in technology that create diffuse networks and systems, such as among lifeline organizations, are increasingly creating the need for regional rather than just community based disaster planning.

**Societies.** In developed societies, there are few long run negative consequences of disaster losses whether of people or property since such effects are absorbed by the larger system. In developing societies and very small countries, this is not necessarily true. Nevertheless, changes or improvement in national disaster planning often does not occur except in certain cases such as after the Mexico City earthquake where an unusual set of circumstances existed, including a "political will" to do something. But increasingly in the aftermath of major disasters, to the extent that planning is instituted or improved, it is being linked to developmental planning, a move strongly supported by international agencies such as the World Bank.

#### The Future

There is a dialectical process at work: there will be more and worse disasters at the same time that there will be more and

better planning. Why more and worse disasters? Risks and threats to human beings and their society are increasing. Traditional natural disaster agents, such as earthquakes and floods, will simply have more to impact as the result of normal population growth and higher denser concentration of inhabitants in risk prone localities, such as flood plains or hurricane vulnerable shorelines which otherwise are attractive for human occupancy. There is an escalating increase in certain kinds of technological accidents and mishaps in the chemical, nuclear and hazardous waste areas that are new in the sense they were almost unknown before World War II. There are technological advances that create risks and complexities to old threats such as when fires are prevented in high rise buildings by constructing them with materials that are highly toxic, or when the removal of hazardous substances from solid sewerage waste generate products that contain dangerous viruses and gases. New versions of old threats are also appearing such as the increasing probability of urban rather than rural droughts, or the potential large scale collapse of the infrastructure of older metropolitan area lifeline systems. Finally, there is the epidemic, to the biological threats that are inherent in genetic engineering, to the crises that will be generated as the world increasingly becomes dependent on computers that are bound to fail somewhere at some key point with drastic consequences for social systems. In addition, the newer threats are frequently dangerous at places and times rather distant from their initial source or origin as dramatized by the Chernobyl nuclear radiation fallout and some hazardous waste site problems (Quarantelli, 1987).

On the other hand, there is increasing concern and attention being paid to disaster planning of all kind. The future augers for more and better planning. Citizens almost everywhere are coming to expect that their governments will take steps to protect them against disasters; this is often actualized in planning for emergency preparedness and response. Whereas two decades ago a number of societies had no preimpact disaster planning of any kind, this is no longer the case. A symbolic manifestation of this trend has been the proclamation by the United Nations of the 1990s as The Decade for Natural Disaster Reduction. This international attention will undoubtedly accelerate efforts at planning trying to better prevent, prepare for, respond to and recover from disasters; an activity in which there is reason to believe social scientists, especially sociologists, will have an important role.

#### Relationship to Sociology

Although not true everywhere, sociologists have been increasingly accepted as having an important contribution to make to disaster planning. In part this stems from the fact that in many countries they have played the lead role among social scientists in undertaking disaster studies. While many reasons account for this, probably crucial factor has been that there



is much in general sociology which can be used in doing research in the area.

There has been a close relationship between disaster studies and sociology from the earliest days of work in the area (Killian 1952; Form and Nosow, 1958). In part this is because sociologists being among the leading pioneers and researchers in the area have tended to use what they could from their discipline. Thus, sociology has contributed to the research techniques used (e.g., field studies and open-ended interviewing), the research methodology utilized (e.g., the "grounded theory" approach and the employment of inductive analytical models), the theoretical ideas utilized (e.g., the notion of emergence from collective behavior thinking and the idea of informal and formal structures of organizations), and the general perspectives used (e.g., that there can be latent as well as dysfunctional aspects of any behavior and that societies and communities have a social history that are not easily set aside). In a recent volume entitled Sociology of Disasters: Contributions of Sociology to Disaster Research (Dynes, De Marchi and Pelanda, 1987) these and other contributions to disaster theory, disaster research methods, disaster models and disaster concepts, are set forth in considerable detail (see also Wright and Rossi, 1981).

The relationship has not been one sided since disaster research has also contributed to sociology. The field of collective behavior has probably been most influenced, but there have been significant contributions to the study of formal organizations, social roles, social problems, organizational and social change, mass communications, the urban community, and medical sociology (Dynes and Quarantelli, 1968; Dynes, 1974; Quarantelli, 1978; Wright and Rossi, 1981; Kreps, 1984; Quarantelli, 1989). A recent symposium on social structure and disaster, coattended by disaster researchers and prominent sociological theorists, attempted to examine how disaster studies not only are informed by but could also inform sociological theory; the proceedings have been published in Social Structure and Disaster (Kreps, 1989b).

#### Bibliography

Barton, Allan. 1969. Communities in Disaster: A Sociological Analysis. Garden City, NY: Anchor.

Drabek, Thomas. 1986. Human System Responses to Disasters: An Inventory of Sociological Findings. NY.: Springer Verlag.

Dynes, R. R. 1974. Organized Behavior in Disasters. Newark, DE.: Disaster Research Center, University of Delaware.

Dynes, R. R. (ed.) 1988. "Disaster classics special issue." International Journal of Mass Emergencies and Disasters 6: 209-395.

Dynes, R. R., B. DeMarchi and C. Pelanda (eds.). 1987. Sociology of Disasters: Contributions of Sociology to Disaster Research. Milan, Italy: Franco Angeli.

Dynes, R. R. and E. L. Quarantelli. 1968. "Group behavior under stress: A required convergence of organizational and collective behavior perspectives." Sociology and Social Research 52: 416-429.

Form, William and Sigmund Nosow. 1958. Community in Disaster. NY.: Harper and Row.

Fritz, Charles. "Disaster." 1961. Pp. 651-694 in Contemporary Social Problems edited by Robert Merton and Robert Nisbet. NY.: Harcourt, Brace and World.

Killian, Lewis. 1952. "The significance of multiple group membership in disaster study." American Journal of Sociology 57: 309-314.

Kreps, Gary. 1984. "Sociological inquiry and disaster research." Annual Review of Sociology 10: 309-333.

Kreps, Gary. 1985. "Disaster and the social order." Sociological Theory 3: 49-65.

Kreps, Gary (ed.) 1989a. "The boundaries of disaster research: Taxonomy and comparative study special issue." International Journal of Mass Emergencies and Disasters 7: 213-431.

Kreps, Gary (ed.) 1989b. Social Structure and Disaster. Newark, DE.: University of Delaware Press.

Perrow, Charles. 1984. Normal Accidents: Living With High Risk Technologies. NY.: Basic Books.

Prince, Samuel. 1920. Catastrophe and Social Change. NY.: Columbia University Press.

Quarantelli, E.L. (ed.) 1978. Disasters: Theory and Research. Beverly Hills, CA.: Sage.

Quarantelli, E.L. 1987. "What should we study? Questions and suggestions for researchers about the concept of disasters." International Journal of Mass Emergencies and Disasters 5: 7-32.

Quarantelli, E.L. 1989. "The social science study of disasters and mass communication." Pp. 1-19 in Bad Tidings: Communication and Catastrophe. edited by L. Walters, L. Wilkins and T. Walters. Hillsdale, N.J.: Lawrence Erlbaum.

Quarantelli, E.L. and R.R. Dynes. 1977. "Response to social crises

and disasters." Annual Review of Sociology 3: 23-49.

Schorr, J. 1987. "Some contributions of German katastrophensoziologie to the sociology of disaster." International Journal of Mass Emergencies and Disasters 5: 115-135.

Short, James F. 1984. "The social fabric at risk: Toward the social transformation of risk analysis." American Sociological Review 49: 711-725.

Sorokin, Pitirim. 1942. Man and Society in Calamity. NY.: Dutton.

Wright, James and Peter Rossi (eds.) 1981. Social Science and Natural Hazards. Cambridge, MA.: Abt Books.