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DISASTER: AN ENTRY FOR AN ITALIAN DICTIONARY  
OF SOCIOLOGY

E.L. Quarantelli  
Dennis Wenger

Disaster Research Center  
University of Delaware

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## I. The Selective Focus

The social scientific study of disasters has increased tremendously in the last 30 years. While the initial research interest was concentrated in the United States, work on the human and group aspects of disasters is now a world-wide enterprise with major research being undertaken in such countries as Australia, Italy, Japan and Sweden. Thus, we can only look at selective, significant features of the topic in this article. We will primarily discuss the concept of disaster, present a brief sociohistorical description of the development of the research work, summarize the major substantive themes, findings and conclusions regarding a variety of disaster issues and questions, and conclude with a note about the future. While our emphasis will be on the work of sociologists, it should be noted that geographers in particular have also contributed substantially to the development of the area.

## II. The Concept of Disaster

The word "disaster" is used in everyday speech and scientific discourse to refer to a variety of negatively defined individual and collective stress phenomena. However, while the term in popular parlance continues to be applied to a range of heterogeneous and undesirable activities, conditions and states, scientists have been attempting to more precisely delimit its meaning. As yet, there is no full consensus on the concept, but some ideas have won more acceptance than others among social scientists.

The earliest proposed definitions tend to equate disasters with some feature of a physical agent. Distinctions are made between "natural" or "acts of God", and "human" or "man-made" agents. Thus, a natural

E. L. Quarantelli and Dennis Wenger

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## **DISASTER**

### Summary

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land movement of a certain kind is called an earthquake; the accidental transformation, as a result of human error, of an inert liquid into an expansive gas is called a chemical explosion. On other occasions, the emphasis is placed on the physical effects of the agent, i.e., the damage done to life and property. In essence, disasters are identified almost solely in physical terms -- the presence of a volcanic eruption, flood, fire, or poisonous gas which can be seen to have physical consequences. The implicit notion in these early formulations is that if there is no physical agent and material effects, there is no disaster.

However, even the first conceptions advanced by social scientists emphasize social rather than physical aspects of an event. Their definitions of disasters argue that a physical impact of some kind should only be visualized as a disaster if the magnitude of the impact is enough to result in a significant disruption of social life. Later, it was noted that the perceived threat of an impact can be just as socially disruptive as an actual impact. For example, the evacuation behavior as a result of a rumor of a dam collapse is often not that different from what occurs in an actual dam collapse. In even more recent formulations, disasters are seen not only as social constructions of reality, but as the political definitions of certain socially disruptive, crisis generating impacts or threats in social systems. Marxist based approaches sometime take this view. Still other researchers equate disasters with situations where the demand for action by organization exceeds their capabilities for response in a crisis. This formulation borrows heavily from stress models of psychological and social phenomena. Finally, some of the most recent conceptions of disasters

see them as overt manifestations of latent societal vulnerabilities. Thus, in the work of Pelanda in Italy and Dombrowsky in Germany, a disaster is an expression of a weakness in the social structure or system.

All of these formulations assume that disaster is primarily a social phenomena and therefore must be identified in social terms. There may or may not be the impact of a physical agent, but there is always some kind of nonroutine social response. This response reflects some internal or external perception of difficulties in the social structure.

Many sociologists involved in current disaster studies would probably accept a concept of disasters as social occasions, observable in time and space, in which social entities (from societies to smaller subunits such as communities) undergo disruptions of their routine social activities, as a result of actual impact or perceived threat from the relatively sudden appearance of natural and/or technological agents, which cannot be directly and fully controlled by existing social knowledge. Thus, an earthquake or a chemical explosion—as might be popularly understood—is not sociologically viewed as a disaster unless it exhibits all the indicated characteristics.

However, social happenings of a conflict nature involving intentional, deliberate human activity to produce social disruption, such as occurs in riots, civil disturbances, terrorist attacks, or wars, would not be categorized as disasters. These collective types of crises, along with the more consensus-like crises of disaster, are subtypes or classes within the more general category of collective stress situations. But

the conditions which produce conflicts and the characteristics they exhibit are seen as essentially different from the conditions and characteristics which are present in what are called disasters.

Some researchers and theorists are nonetheless not fully satisfied with the definitions of a social nature which have replaced the early referents in almost solely physical terms. It is argued that even the newer conceptions tend to assume concentrated space-time events or occasions, leaving unclear the categorical status of very diffuse or non-specific agent happenings, such as famines, droughts and epidemics, which historically have been treated as disasters. Also, there is some question of whether even the most accepted social definitions of disaster capture well certain kinds of agents, such as slowly diffusing dangers like the spread of toxic chemicals in the food chain, or the less easily observable threats to health that result from extended exposure to hazardous waste sites or radioactivity. In addition, some writers see the emphases upon specific events or occasions, and actual or perceived agents, as essential features in identifying disasters, as reflecting an industrial and urban bias in developed Western societies. Some British and German scholars, for instance, argue that these emphases are unsuitable for distinguishing disasters in many developing societies, where there is not that much difference between everyday chronic problems of subsistence and what elsewhere would be called a disaster. Clearly, although the field has advanced considerably over the past three decades, there is work yet to be done on the conceptualization of the phenomena of disasters.

### III. Sociohistorical Development of Studies

The failure to achieve complete conceptual clarification may be somewhat attributed to the fact that systematic social studies of disasters have only been undertaken for about three decades. While the first actual sociological study of a disaster was done in 1920 (by Prince on the social change consequences of a very destructive ship explosion in the harbor of Halifax, Canada), extensive and continuous research was not launched until after World War II. In the early 1950's, as a result of a concern over how the American civilian population might react to direct atomic bomb attack, the U.S. military initiated studies of actual peacetime natural disasters with the hope of extrapolating the findings to potential wartime situations. Although research was undertaken at several universities, the most important of this work was done in 1950-1954 at the National Opinion Research Center at the University of Chicago.

Several characteristics of this early work became dominant features of disaster research which still can be seen to prevail in most of the current studies in the United States. Most of the initial work was undertaken by sociologists, a pattern which continues to this day. The early studies emphasized conducting research by sending teams of trained workers into the field during the emergency time period of disasters. At present, disaster study is known as the prime exponent of "firehouse" research, i.e., of maintaining a standby group of researchers ready to quickly move into a disaster site when a disaster threatens or occurs. It also became typical for most of the early studies in the disaster area to gather their data through primarily a qualitative research methodology. Currently, the use of unstructured or open-ended inter-

viewing, systematic participant-observing, and extensive document collecting remain the prime field research techniques of the typical American disaster researcher. Thus, much of what was pioneered in the early 1950's became the standard way of doing disaster research in the decades which followed.

As American military agencies lost interest in funding disaster studies, civilian agencies helped the U.S. National Academy of Sciences to initiate an extensive research program in the last half of the 1950's. This work was primarily social-psychological in orientation, and through a rather extensive series of case studies focused upon individual behavior during disasters. The research examined such problems as convergence on the disaster site, and empirically documented that many commonly held beliefs about behavior in disasters, such as the supposed widespread existence of looting behavior, were, in effect, mythical.

With cessation of disaster studies at the Academy in 1961, a major research endeavor was launched in 1963 at the Disaster Research Center (DRC). Founded and manned by sociologists, DRC became the locus of a continuing series of field studies on a diversified set of disaster research questions. First at The Ohio State University, and since 1985 at the University of Delaware, the Center has studied over 470 disasters and other mass emergency situations. In contrast to much of the earlier work, the DRC research has primarily focused upon the organizational and community levels of preparing for, responding to, and recovering from disasters. Besides instituting a publication series which now numbers over 300 items, DRC established the first specialized library devoted to collecting books and other publications on the human and social aspects of disasters.

The early 1970's saw a great expansion in disaster studies and research related activities in the United States. Geographers with an interest in natural hazards research joined sociologists to establish the Natural Hazards Research and Applications Information Center at the University of Colorado. This Center's major missions include encouraging through workshops and other means communication and interaction between researchers and research users, and publishing contributions from disaster researchers in all social and behavioral science disciplines. This Center also publishes The Natural Hazards Observer, a newsletter with a circulation figure of over 7,000 around the world.

Also, in the late 1970s sociologists were prominent in serving on a number of temporary special committees on disaster problems organized by U.S. National Adacemy of Sciences. These committees produced state-of-the-art and knowledge reviews about different disaster questions such as one on the social implications of earthquake predictions. They additionally issued research agendas for the study of particular emergency management problems, such as the operations of the mass media in disasters.

Currently, and indicative of the growing acceptance and institutionalization of the field, research is underway at a number of academic institutions on a broad range of problems ranging from hazard mitigation to long run recovery from disasters. In addition to the efforts noted above, sociologists at Arizona State University, the University of Denver, William and Mary College, Colorado State, the University of Minnesota, New Mexico State University, the University of Massachusetts, the University of California at Los Angeles, and other higher educational

institutions are engaged in major disaster studies. Some social science disaster research also goes on at non-academic institutions, such as the Oak Ridge National Laboratory and the Battelle Human Research Institutes. Funding primarily comes from the U.S. National Science Foundation, although there is scattered support from some other federal sources particularly from the Federal Emergency Management Agency. Sociologists and other social and behavioral scientists make regularly scheduled presentations at the annual national and regional meetings of their professional associations.

Also, noticeable with the coming of the decade of the 80's is the increasing attention of American disaster researchers to the threats posed by nuclear power, chemical production and transportation, hazardous waste disposal, and fires in high rise buildings. Technological disasters are becoming more the object of study. Extensive research on the socio-behavioral problems in preparing for and responding to acute chemical emergencies has been undertaken by DRC. Sociologists and others were and are still heavily involved in studying the nuclear plant accident at Three Mile Island, making it the most studied mass emergency in history. Other researchers have looked at the social aspects of toxic waste pollution such as occurred at Love Canal, New York. Although there have been exceptions, most sociological disaster students in the United States have assumed that the social and organizational aspects of preparing for and responding to technological disasters are not generically different than those involving natural disaster agents.

The tremendous increase of researchers and studies on the American scene in the 70's and 80's has been accompanied by a parallel development

in a number of other countries around the world. While some systematic disaster studies were undertaken as early as the middle 1960's in Japan, Canada, and France, the greatest initiation of systematic social science research occurred in the next decade. Sociologists in Sweden, and in Italy, particularly at the Institute of International Sociology (ISIG) in Gorizia, established systematic research programs on disasters and produced series of publications. Sociologists also took major roles in the development of extensive studies and centers in Australia, Canada, and Japan, and have participated in the somewhat lesser disaster research undertaken in Colombia, Greece, New Zealand, and West Germany. The disaster work of a social nature undertaken in Belgium, Great Britain, France, India and Mexico has had relatively little sociological input, possibly because the research in the first two countries at least has had a focus on socio-health problems in disasters which prevail in developing societies. Some research of a sociological kind on earthquakes is going on in China, but almost nothing about it has appeared in public sources.

One consequence of the flourishing of disaster studies has been its internationalization in several ways. Joint research seminars, as well as joint studies, have been carried out by Japanese and American disaster students using the same field research design. Similar efforts involving researchers from several other societies, including Italy, are in the planning stage. Disaster students are increasingly spending extended periods of time in research institutions in other countries. DRC, for example, has hosted researchers for long term visits from Japan, Australia, Italy, and Germany. Also, an international network among

disaster researchers has been institutionalized with the establishment of the Research Committee on Disasters within the International Sociological Association. The committee with members from 25 countries publishes its own professional journal, Mass Emergencies and Disasters and its own newsletter, Unscheduled Events. The secretariat of the committee is located at Uppsala University in Sweden. Finally, it is not uncommon, now, for researchers to conduct field work outside of their own countries. For instance, French researchers have studied explosions in Mexico; German and American researchers have done research on earthquakes in Italy; Canadian researchers have studied cyclones in Australia; and Japanese researchers have conducted field work on earthquakes in the United States and Italy.

#### IV. Major Substantive Themes, Findings, and Conclusions

As a result of all the research undertaken, there is now a substantial, although uneven, body of knowledge about disaster behavior. In 1977, Quarantelli and Dynes produced an overview for what was then known as the Annual Review of Sociology. The work in the field was updated by Kreps in 1984 in the same volume. We draw from these reports in summarizing the major themes, findings, and conclusions of the sociological disaster literature.

##### 1. General and specific codifications

In 1961 Fritz produced the first attempt to codify what was known about the social aspects of disaster behavior. Based upon the research to that time, this early effort summarized findings mostly about the social psychology of disaster behavior. Among the observations were that many commonly assumed images of disaster victims are, in fact, false.

Victims generally do not panic, suffer extreme psychological trauma or "disaster shock," or behave in an irrational fashion. It was noted that the convergence of information, material and individuals upon the disaster site is a far more serious problem than the absence of such resources. Furthermore, disasters may create a "therapeutic community" or social support system that has a number of positive benefits for the survivors. But while the Fritz work did a good job of descriptively inventoring what was known, he made no effort to integrate the findings into a theoretical framework.

In the early 1970's, two complimentary attempts at a more theoretical codification were published.

Barton produced a richly detailed and comprehensive overview that is very sociological in tone. He examines a range of issues, from what motivates the behavior of individuals in disasters, to how personal and organizational behaviors are linked at such times, to how inter-organizational coordination is affected at times of mass emergencies. Drawing upon a diversity of sources, he also advances an interrelated model of 71 propositions to explain and to predict the rise of the "therapeutic community" and what factors affect individual behavior with respect to that community. The book, Communities in Disasters, stands as a classic in the field and offers a plethora of still untested research hypotheses about behavior in disaster ranging from role conflict possibilities to factors influencing organizational mobilization.

Another codification effort was by Dynes who wrote Organized Behavior in Disasters, which drew mostly from 250 pre-DRC descriptive accounts

of the activities of formal organizations and informal groups at times of disasters. Leaving aside the social-psychological and macro social organizational levels, Dynes presents a systematic overview of organizational structure, process, and problems during the pre-, trans-, and post-impact periods of disasters. A basic idea advanced is that organizational mobilization and problems of coping with the uncertain environment of a disaster can be understood by noting that four different types of groups will be involved in the emergency response, namely established, expanding, extending, and emergent organizations. Major hypotheses are proposed on how interorganizational relationships are affected by perceptions of organizational legitimacy, and how overall community disaster structure emerges from the creation and coordination of different tasks being carried out by the responding organizations in the disaster.

These earliest codification efforts attempted to displace common myths with empirically based findings, and to isolate social-psychological factors involved in role behavior in disasters. They also tried to emphasize that organizations have major communication and coordination problems in disasters, and that much of the organized response at the height of a mass emergency has a strong emergent quality. In addition, those writers made attempts to link the nascent field of disaster studies to the conceptual vocabulary and theoretical frameworks of general sociology.

Mileti, Drabek and Hass in 1975 attempted still another general codification. They classified 1399 findings from 191 published studies through a "knowledge matrix" that categorized findings by level of

analysis and time period of the disaster. This imposing effort provides the disaster researcher with a valuable compendium of findings about disaster behavior at the individual, group, organizational, community, societal, and international level. This work found that the largest number of findings were, first, about individual behavior, and second, about community behavior. However, the authors intentionally chose not to generate a theory from their overview or to attempt to link theoretically the disparate findings they present.

In a more recent effort, Drabek has updated and expanded upon this earlier work. He has systematically reviewed not only the more significant English language literature, but took into account some of the research done in Japan and in Italy, especially some of the ISIG studies. This ambitious effort is still unpublished, but will represent the most systematic and comprehensive inventory of research findings available, when it appears.

While there have been few general codification efforts, there have been a number of specific or more limited attempts to codify knowledge in specific subareas of disaster research. Codification efforts have been generated with respect to such topics as warning systems and behavior, evacuation behavior, communication processes in disaster, community structural alterations during disaster, panic behavior, sheltering patterns in disaster, the operation of police, fire and civil agencies in disaster, conflict in natural disasters situations, the delivery of emergency health services, emergency mental health services, emergent groups in disasters, search and rescue activity, and many other phenomenon. The

past fifteen years have been the era of "limited codification."

Unfortunately, there is considerable diversity within the knowledge bases of the various topics examined. About some of them, such as the operation of mass communication systems during disaster, little is empirically known. Furthermore, such issues as military-civilian relations during disasters have generally been ignored over the past two decades. However, our knowledge and understanding of some other topics is quite extensive. For example, the literature concerning warning systems, warning diffusion, and warning behavior is extensive, comparative, and reliable. It is known that an effective warning response is dependent upon such factors as a verifiable threat, consistent and authoritative warning messages, reinforcing feedback from both media and interpersonal sources, previous disaster experience, and prescriptive and proscriptive knowledge concerning effective behavior. In fact, if there is one area in which the knowledge of disaster rests on substantial empirical grounds, it is probably that of warning behavior.

The efforts at general and specific codifications have been hindered by the fact that the field is replete with case studies of varying quality and a paucity of replication efforts. Because "findings" are often based upon few observations, generalizations are made difficult. However, one encouraging sign is that more recent studies done in Japan, Italy and Australia have independently confirmed some of the earlier American research conclusions; for example, with respect to the absence of major pathological and antisocial behavior by victims after disasters, the ubiquity of mass convergence upon disaster sites, and the likelihood of interorganizational conflicts among relief and emergency groups

responding to a major disaster. However, while researchers outside of the United States have attempted to test generalizations advanced by American researchers and have produced reviews of the literature, only in Italy and Sweden have there been even partial codification attempts in the disaster area.

## 2. Models and taxonomic schemes

As the field of disaster research has matured, increasingly there has developed concern over integrating the disparate findings into meaningful, theoretical models. The codification efforts just discussed are frequently seen as prior steps to developing models. However, some writers have attempted to go directly to model building.

The building of models is not a new activity for either sociology or disaster research. However, in both fields it has significantly increased in the past two decades. That is true with respect to both general and specific disaster models.

The models tend to be of two forms. First, there are general, orienting models. These present basic, sensitizing concepts, often delineated by time sequence, and postulate contentless linkages between factors. For example, a frequently used model among American researchers in the disaster area proposes that certain sets of conditions will lead to phenomena with certain characteristics which will follow a career that will have certain consequences. Second, there are more specific, detailed models of more limited, focused elements of disaster behavior. These models are generally operationalized, multivariate constructions focusing upon such dependent dimensions as warning response and evacuation

behavior. For example, Perry and other researchers have examined such variables as the level of perceived risk, confirmation behavior, the content of warning messages, previous disaster experience, and the existence of a plan as predictors of evacuation behavior. Generally, these models lend themselves to multivariate statistical analysis, such as path analysis.

While model building has been advocated, still other sociologists have said that it is as equally crucial to integrate concepts and findings from disaster research into general sociological theory. However, some students of disasters have argued that before either of these goals can be achieved, the problem of taxonomic development, or classification, must be overcome.

Kreps, in particular, has stressed that the fundamental problems of the field are taxonomic. Specifically, he says that the classification of forms of association that are enacted by social units in disasters can be a productive link to general theories of social organizations. It is suggested that theoretical integration can more readily be achieved by focusing upon the developmental sequence involved in such organizational variables as domain, tasks, resources, and activities.

In contrast to those who emphasize the application of research findings, this kind of approach represents basic sociological thought. As noted earlier, the field has moved away from its earliest definitions of disasters in physical terms. There is an implicit argument here that the field must also move away from common sense typologies (which are often derived from operational problems in disasters) to more sociologically relevant taxonomies. This may explain recent efforts

to classify and integrate theoretical themes with respect to social systems and disasters, human ecology and disasters, communities and disasters, organizations and disasters, and collective behavior and disasters.

### 3. The social system perspective

Students of disaster in the United States, coming mostly from the structural tradition in sociology, have generally approached their units of analyses, be they families, organizations, or communities, as social systems. Usually, these assumptions of structural or systemic linkages were latent in the earliest studies. However, increasingly the approach to research has been one of manifest, systemic analysis. For example, community preparation and response to disaster is generally visualized as being the result of networks of interorganizational relationships. Within this general system notion, researchers have also examined the structure and operation of various "task subsystems," such as the system surrounding medical care and mental health delivery, security provisions, restoration of services, and disaster warning.

The utilization of a systemic orientation has both practical and scholarly payoff. Emergency management officials and organizations involved in disaster response in the United States tend to view their activities as part of a "system." Researchers are therefore able to assess the existence and viability of the assumed "system." In addition, the use of system notions allows for the integration of disaster findings within standard sociological models of social systems. European disaster researchers, especially Pelanda in Italy, have written extensively on the use of a social system perspective in dealing with disaster phenomena.

#### 4. The social organization emphasis

Paralleling developments over the past two decades in sociology, there has been a general trend towards social-organizational, as opposed to social-psychological, research on disaster. The earliest work in the field was primarily social-psychological in nature. These valuable studies shattered various myths about individual behavior in disasters and provided the conceptual scheme for the current solid base of knowledge concerning warning behavior.

However, knowledge of social-organizational aspects of disaster response was relatively ignored in the first decade of disaster research. However, since the middle 1960's, this lacuna has been filled. Organizational, interorganizational, and community levels of analysis have dominated in the work done by American sociologists in the disaster area, particularly in the past 15 years. Interestingly, it has been geographers and other behavioral social scientists in the United States who have continued to use a social-psychological orientation.

Similarly, an initial research focus upon individuals has been replaced by increasing use of the group as the primary unit of analysis. Considerable research has focused upon such established groups as families and formal organizations in disaster. The importance of the family in evacuation and sheltering decisions has been given to the operation of various, bureaucratically structured organizations, such as local civil defense, police, fire, hospital, relief, and governmental units. However, very little attention has been paid to the disaster behavior of private organizations, businesses, and voluntary associations. Increasingly, studies outside of the United States, such as in Italy

and Japan, have looked at the behavior of emergency organizations in disasters.

In addition to these established groups, recently American research has focused upon emergent group phenomena. These emergent groups range from ad hoc, search-and-rescue teams during the emergency period to evolving, citizen-action groups in relation to hazard planning and mitigation. Studies suggest that effective response during the disaster period on the part of traditional, institutionalized organizations must be integrated with the activity of these emergent groups. Recent research in Sweden has attempted to test hypotheses about emergent groups during the emergency period, which were first developed in American field studies. Furthermore, the operation of emergent groups and social movements can have a profound impact upon future hazard management. For example, emergent citizen groups have had significant influence upon the growth and regulation of nuclear power use in the United States.

##### 5. Emergence and collective behavior

Many of the pioneers in disaster research not only had a social-psychological orientation, but they also were students of collective behavior, i.e., the study of noninstitutionalized, emergent group behavior. Collective behavior, while an old and recognized subarea of specialization within American sociology, was until recently little known elsewhere in sociological circles. But even in the United States, as work in disasters developed, less attention was paid to emergent forms of social behavior. Research attention became focused upon traditional, established organizations. In the past decade, however,

there has been a strong reemergence of interest in emergent collectivities. Work has been done on the topic by Australians, studying massive brush fires, and by Swedish workers, studying major landslides, and by American researchers as well.

This research interest has both empirical and conceptual components. Empirically, a variety of types of emergent phenomena have been identified in disaster settings. These types range from the creation of small-size, task and/or expressive groups of victims and helpers, to the evolution of larger-scale social movements and community coalitions of citizen groups. Recent research has utilized network analysis and block modeling in an attempt to describe and classify types of emergent, organizational networks in the crisis period. The mapping of multiorganizational networks in warning and search-and-rescue activities has isolated blocks of organizations that develop emergent patterns of interaction during emergency times. The integration and overlap between these emergent and traditional networks and their implication for system response have been examined. In addition, recent work has focused upon the emergence of citizen groups in disaster. Research efforts have looked at the contextual factors that facilitate the emergence of groups related to hazard preparation and mitigation, the characteristics of these groups, and the consequences of their action.

Sociologists who have studied disaster behavior have attempted to bridge the conceptual gap between traditional, bureaucratic forms of organization, and collective behavior or emergent forms of behavior. Generally, in American sociology these two fields have been viewed as somewhat divergent. Organizational theorists, following in the steps

of Max Weber, tend to focus upon clearly defined forms of organization, established boundaries and role relationships, institutionalized or traditional authority relationships, and highly patterned activities. Collective behavior theorists, however, have often been concerned with the more flexible, new, nontraditional forms of association.

Disaster researchers, of necessity, have been faced with studying both forms of organization. They have noted that there are more similarities in the structure, activities, and interorganizational relationships of these two, ostensibly contrasting forms of organization, than was originally thought. Furthermore, the operation of established organizations often facilitates the development of emergent or collective behavior. The emerging orientation among American sociologists is double-pronged. For those with the typical sociological orientation toward formal organizations, it has emphasized the processual, changing and "process-in-development" nature of established, organizational behavior in disasters. For those from the collective behavior school, it has emphasized that there are structural, patterned elements to collective behavior, i.e., norms, role relationships, a division of labor, differentials in power, etc., that are similar in nature to those elements found within institutionalized organizations. Therefore, the gap between these two seeming antithetical forms of association has been bridged.

#### 6. Continuity and social change

The earliest studies of disaster tended to focus almost exclusively upon the immediate emergency period of disasters. There was a tendency to treat the time period in almost analytical isolation from the existent pre-impact structure of the social system. With the possible exception

of the contextual variables of previous disaster experience, or the degree of disaster planning, the response of individuals, organizations and communities to disaster was viewed as if it occurred in a social vacuum. Some German critics, who also made this point about the early disaster research in the United States, seem to be reflecting a traditional European criticism of American sociology as being too ahistorical and narrowly empirical.

There is now the increasing acceptance of the "principle of continuity," i.e., that the best predictor of trans- and post-disaster behavior is pre-disaster behavior. This principle applies to disaster situations just as it does to all of social life. It applies also to all levels of analysis ranging from the micro to the macro.

At the individual level, studies show that people do not regress to a subhuman or anti-social level during disasters, but as they do in normal times, engage in purposive, often altruistic behavior. Furthermore, most American research indicates mental illness does not suddenly increase in the face of the stress of disaster. Of course, if individuals are pathological in any way or engage in deviant behavior in their pre-impact situations, they will continue to manifest such traits in their trans- and post-impact activities.

At the level of organizations and communities, while some alterations in structures and activities may be observed in a disaster context, these modifications are generally embedded within the normal, ongoing activities and patterns of everyday behavior of these units. There is, in fact, an attempt to "normalize" disaster response to the usual, patterned, and expected of the organization or community. If this effort

is not effective, temporary emergency alterations may be made. These alterations, however, usually represent variations on pre-impact themes, and are not totally new innovations. The emergent behavior American organizations and communities may show at times of disasters is drawn from the pre-impact structure.

Furthermore, studies by American researchers show that existing political, economic and social organizational aspects in the pre-impact period can have significant influence upon disaster behavior. The prior degree of hazard mitigation activity and disaster planning in the typical community in the United States is an obvious factor that can influence disaster response. Thus, political and economic decisions concerning such issues as flood plain development, health and safety regulations, policy decisions on risk assessment, and private and public investment profiles can all significantly influence responses in disasters.

Related to this issue is the question of the degree to which disasters create longer run social change within the social systems that experience them. Generally, it has been found that disasters in American society do not create significant changes at least at the organizational or community levels. Often in the recovery the attempt is made to recreate the pre-crisis system of the affected locality. When and where social change is observed, it is often simply the acceleration of change processes that were already underway when the disaster impacted.

However, some research does suggest that there are qualifications which need to be added to the "principle of continuity" and the lack of social change resulting from disasters. Under extreme stress or severe disruption, there may be some long run psychological disturbances in individuals.

Usually they are of a transitory nature and are not behaviorally dysfunctional, but, for example, greater sensitivity to dangerous weather cues may become part of the permanent psychological set of victims. Some specific community organizations that experience extensive problems during the disaster period may undergo some alterations in their long run resource base. Some American emergency organizations do learn from the experience of a disaster and become better prepared for future ones.

Research done outside of an American context in particular suggests that the question of disaster related social change may be more complex than once believed. Bates and his colleagues have reported, for example, that in a very extensive and longitudinal study, they found disparities in class structure were actually increased in the long run as a result of the recovery process in a very severe earthquake in Guatemala. Caporale and Rossi in their intensive research on the aftermaths of the southern Italian earthquake found differential long run consequences in different impacted villages. The post recovery studies of the Friuli earthquake done by Cattarinusi and his ISIG colleagues, as well as the related work by the German, Geipel, also suggest differentiated post-recovery and social change effects. The different overall conclusions from these studies and that reported in American based research may be related to the magnitude of the disaster studied. Disasters in American society, as the post-disaster surveys of Peter Rossi and his colleagues have demonstrated, are relatively minor events in the context of the U.S. economy and demographic structure, and leave little in the way of population or community change. The non-American based studies on this topic, instead, have usually be on major disasters, if not catastrophes, and thus varying

degrees of social change have been observed.

#### V. A Note on the Future

What will the future bring in the disaster area? There appears to be several strong probabilities. For one, it can be anticipated that there will be more and worst disasters in the future. In part, this is because more people will be living in more hazard vulnerable geographical areas than ever before. However, more important is the certainty of increase in technological disasters; the rise alone in the number of dangerous chemicals assures that. Partly because of the increase in disasters, there will be more disaster studies than ever before. But the greater volume of research will in part result from the fact, as illustrated earlier, that there is now a solid base of knowledge about disaster behavior upon which new studies can build.

The future research should also be better. In part this will result from the application in disaster work of new ideas and findings from general sociology, as the basic discipline itself evolves. However, the qualitative improvement in disaster studies is more likely to result from internal developments within the field of study itself--through conceptual clarifications, the creation of better models and theoretical schemes, and the conducting of more significant research along the lines indicated in the preceding pages.

In addition, the revolution in data gathering, processing, storing, and analyzing being brought about by the advent of computers and related technologies should materially help future studies in disasters. Even now, for example, researchers are able by way of computers to undertake simulations of disaster behavior in ways not previously possible.

So while it is all but certain we will continue to have disasters, and probably even more and worst ones, our sociological understanding and knowledge of them will also undoubtedly increase.

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