

**ORGANIZED BEHAVIOR IN DISASTER:  
A REVIEW ESSAY\***

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**INTRODUCTION**

To the sociologist, a disaster event presents two distinctive opportunities: first, to study and develop a further understanding of social reality; and second to apply the theoretical constructs underpinning the parent discipline. In the first instance, the preparation necessary to counter disaster and the activities required to alleviate impact enable the sociologist: (1) to witness both manifest and latent functions of human interaction, (2) to discover the structures of social systems within which interaction is embedded, (3) to distinguish the social processes

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\* Russell R. Dynes, *Organized Behavior in Disaster*. Published by Heath Lexington Books. Studies in Social and Economic Process Series. D.C. Heath and Company. Lexington, Massachusetts. 1970. Library of Congress Number: 75-128831.

Republished in 1974 by the Disaster Research Center. The Disaster Research Center Series (editors E.L. Quarantelli and R.R. Dynes). The Ohio State University. Columbus, Ohio.

Parts of the 1970 text were first released in R.R. Dynes, *Organized Behavior in Disaster: Analysis and Conceptualization*. Disaster Research Center Monograph Series Number 3. Disaster Research Center. The Ohio State University. Columbus, Ohio. April 1969.

contained therein, and (4) to identify the social forces that operate within the society. As Dynes declares--and as Fritz (1968) did before him--community crises provide as few other occasions can "an opportunity to study a social system during a period of great strain" (1970, p. 4). And it is reasonable to claim that it is only under conditions of great stress and strain that "a kind of maximum test ... about the operation of social systems" (1970, p.4) presents itself.

There is a relationship between the everyday happenings which routinely take place in any society and those that are witnessed when the (usually) infrequent disaster event strikes. Both of these social contexts lie within the proper purview of the sociologist's domain. The connection between these two antithetical social events, as Kreps ably pointed out, is based on the understanding that "disasters both reveal elemental social processes of the social order and are explained by them" (1984, p. 327). However, many past academic sociologists have not been convinced of the value of studying disasters as a social process, as Dynes (1987b) has recently pointed out in his exposition of the history of sociological studies in disaster. Similarly, some disaster professionals have been slow to see the value of disaster research as a tool to help them in disaster mitigation. In a study conducted by the author, the organizational practices pursued by the majority of disaster managers did not differentiate between everyday accident and emergency events and disaster. These managers have so far been successful in retaining existing institutional and administrative arrangements for countering disasters, and appear determined to avoid upsetting existing power and authority relations that may not reflect the best management and inter-organizational arrangements (Britton 1985).

The second benefit to the sociologist in studying the multifarious aspects of disaster is that sociological constructs can be applied, tested, refined and further developed. In order to understand the consequences, or even the threat, of disaster impact on a community, the researcher needs to appreciate the ongoing normative routines of the specific social system during the prevailing "non-disaster" conditions (Britton 1987). Familiarity with pre-crisis community functions enables the crisis episode to be seen in perspective. Such an orientation potentially allows the sociology disaster researcher to utilize an array of insights, theoretical perspectives, and concepts developed within the discipline, in the ef-

fort to understand and explain the crisis episode. Furthermore, it permits the crisis event to be regarded as yet another part of a community's many features, rather than some earlier views which held that disaster is best perceived as an aberration or as an example of a "social problem." It is only in relatively recent times that this perception has moved to one in which disaster is now judged as a social product, which in turn, has enabled the study of disasters to be accommodated and accepted by mainstream sociology as a legitimate field of inquiry. Despite this belated recognition, the contribution of the "disaster sociologist" to the wider development of what the late C. Wright Mills described as "the sociological imagination," has been significant.

Dynes' book, *Organized Behavior in Disaster*, has played a central role in bringing about the acknowledgement and acceptance of disaster studies as a legitimate area of sociological concern and as a valuable body of knowledge for policy makers and other social/behavioural scientists. *Organized Behavior in Disaster* takes advantage of both the two distinctive opportunities the study of disaster grants the sociologist, particularly in applying and developing the sociology of organizations, where its influence can be regarded as pivotal. The study of organizations and of organizational behaviour in the context of disaster management is regulated by the general headway made within the social, behavioural and/or business sciences. Within this context, however, *Organized Behavior in Disaster* has a special place in the annals of the development of organization studies because, first of all, it provided a whole generation of graduate students and established theorists in the 1970s with a comprehensive coverage of theoretical and empirical insights into organized behaviour in the disaster setting. Second, it presented researchers with an impetus for opening up new ground and to further develop organizational analysis by legitimizing the testing of organization theories in a previously unexplored area. And third, although not related specifically to organizational analysis, both *Organized Behavior in Disaster* and Barton's (1969) text, which was released at about the same time, brought together many assumptions and findings about disaster which had hitherto remained uncollated.

This essay will review, using references which cite *Organized Behavior in Disaster*, (1) the contribution *Organized Behavior in Disaster* has made by illustrating the text's coverage of many important substantive areas

of sociological research in the field of disaster studies; (2) how *Organized Behavior in Disaster* has been subsequently employed by disaster researchers in a wide range of disaster-relevant quests; and (3) the particular influence *Organized Behavior in Disaster* has had on organizational studies within the disaster setting. However, before reviewing the impact of the text, it is important to briefly describe the status of disaster research and organization sociology prior to the release of *Organized Behavior in Disaster*. In order to achieve this, specific organization texts will be cited in order to contextualize the review text (for instance, Evan 1976; Haas and Drabek 1973; Hall 1982; Maurer 1971; Thompson 1967); and the work of a specific group of individuals to whom the reviewer will refer as the "first generation disaster sociologists" (namely Baker and Chapman 1962; Form and Loomis 1956; Form and Nosow 1958; Fritz 1961, 1968; Fritz and Williams 1957; Killian 1952, 1954; Moore 1956, 1963, 1964; Quarantelli 1954; Wallace 1956) will be used. It should be pointed out that neither of these groups have cited the review text.

#### DISASTER STUDIES PRIOR TO ORGANIZED BEHAVIOR IN DISASTER

It is probably fair comment to state that the "boom" years of sociological research into disasters began in the United States during the 1970s and they have continued into the 1980s. During the 1980s this field of inquiry has assumed a more international character, although it still is heavily influenced by scholars and research from the USA. Despite the impetus produced by the war years of 1939-1945, the study of disasters received its major boost from the consequences of natural disasters. Apart from a handful of earlier works (for example Prince 1920; Carr 1982) the first series of comprehensive disaster studies prior to the publication of *Organized Behavior in Disaster* were released in the 1950s and 1960s. Even then, the number of publications produced by sociologists was relatively few, although their contribution in laying the ground for the developing field of natural hazards and disaster studies was very significant. Unlike the geographers, and to a lesser extent some psychologists and psychiatrists, who were also becoming interested in the area during the 1950s and 1960s, sociology's contribution was

hamstrung to a degree by the lack of recognition mainstream academic sociology granted disaster studies. For the reader who is interested in pursuing this particular issue, Drabek (1986, Pp. 1-6) and Dynes (1987b, Pp. 14-27) provide a reliable and more comprehensive source.

In 1952, Killian published a paper on the potential consequences of multiple-group membership in disaster situations. He raised some interesting questions concerning the relationship between the roles individuals may take up, particularly as they relate to family and work spheres. Killian's article and others mentioned in this section are the focus of other reviews in this special issues and will not be discussed here. Several studies undertaken by Powell and his colleagues (Powell and Rayner 1952; Powell 1954; Power et al. 1954) were released at approximately this time. While members of this team were not sociologists, their studies on the "natural history of disaster" were--and still are--very significant for sociologists. Their model of "disaster-time" is arguably one of the most cited compositions by disaster researchers. In 1954, Killian and Powell, in separate papers, contributed to what was probably the first academic journal special issue devoted to disaster studies. The *Journal of Social Issues* (volume 10(3) 1954), under the title of "Human Behavior in Disaster: A New Field of Social Research," published seven articles (plus an introductory paper), four of which were written by sociologists. Chapman, in his editor's introduction, stated that:

... five years ago, it would have been an exaggeration to describe 'human behavior under conditions of disaster' as anything more than an embryonic field of research ... we can now say, without hyperbole, that this baby has been born (1954, p.2).

As if to prove Chapman's assertion, that same year saw the publication, in the *American Journal of Sociology*, of Quarantelli's (1954) sociological study of panic, a paper which was drawn from his master's thesis, submitted to the University of Chicago the previous year. Two years later, in 1956, three more publications joined the small but growing number of studies. Two of these were printed in the *American Sociological Review* (the first by Form, Loomis and colleagues, on the functioning of social systems during crises--volume 21(6); the second paper by Moore, on a theory of disaster--volume 21(6)). The third major

contribution that year was Wallace's (1956) "Tornado in Worcester," published by the National Academy of Sciences-National Research Council. Wallace's contribution of spatially representing disaster impact joined the ranks of Powell's work, by being immortalized in nearly every subsequent general disaster text. A year later, in 1957 Fritz and Williams were invited to contribute a disaster article to *The Annals*, in which aspects of disaster warnings, post-impact behaviour, convergence, coordination, blame, and social solidarity were discussed. This was followed a year later by what was one of the first hardback disaster sociology publications: Form and Nosow's *Community in Disaster* (1958), in which the authors systematically analyzed the consequences of a devastating tornado on a specific community. This text is significant in that it was one of the first studies to focus, among other things, on organizational aspects of disaster response.

In the 1960s the pace quickened and many descriptive accounts of disaster impact were published. In addition, Fritz (1961) published his influential essay, "Disaster," in a volume edited by two influential sociologists, Merton and Nisbet. This article was supplemented by a second powerful composition by the same author in 1968 and published in Sills' *Encyclopedia of the Social Sciences*. In 1962 *Man and Society in Disaster*, the first edited disaster text, was published. Headed by George Baker and Dwight Chapman, the book contained fourteen original insights relating to various aspects of disaster research. At least ten of the seventeen contributors to this volume had a sociological background. This book contained two articles (one by Barton, the other by Thompson and Hawkes) which contributed valuable insights into the small number of studies dealing with formal organizations and disasters. Moore's analyses of community responses to hurricanes (1963, 1964) added to the growing number of significant studies which were becoming available at the close of the 1960s, as did Stoddard's (1968) presentation of conceptual models, and his 1969 study of voluntary disaster organizations. The decade ended with the release of Allen Barton's (1969) pioneering work on collective stress, which is arguably the most potent work yet published on the subject. Barton discussed at length the concepts of "collective stress" and the "emergency social system," and his book contained chapters on individual (chapter 3) and group (chapter 4) behaviour; the therapeutic community in disaster (chapter 5); and or-

ganizational factors (chapter 6). So, by the beginning of the 1970s the majority of research available to the disaster student comprised descriptions of particular impact episodes which focused by and large on social psychological factors, tied together with some significant analytical and theoretical contributions (including several sociology PhDs., mostly coming from the Ohio State University). One other noteworthy exception to the general social psychological thrust was Quarantelli's (1966) paper, "Organizations Under Stress," which was detailed again in Quarantelli and Dynes (1967).

#### ORGANIZED BEHAVIOR IN DISASTERS AND ORGANIZATIONAL SOCIOLOGY

To enable *Organized Behavior in Disaster* to be anchored to the wider sociological enterprise at about the time of the text's development and publication, it is important to review organizational sociology, particularly the area of formal and complex organizations. The major contribution of *Organized Behavior in Disaster*, in this reviewer's opinion at least, is in the sphere of organizational activities within the disaster setting.

In the mid-1960s, at the time members of the newly-created Disaster Research Center (at Ohio State University) were developing the formulation which was later to be known as the "DRC Typology" (see Drabek 1987; Dynes 1987a), some organization theorists, and in particular a few organizational sociologists, were beginning to move away from the predominant "closed-system" analytical approach to organization research. This approach emphasized internal organizational structure, organizational goals, organization size, the internal dynamics of power, authority and control, and the like (see Hall 1982). Some theorists were beginning to question the utility of the dominant organization studies approach, particularly in some areas of research, and began instead to regard the organization's wider environment to be a significant factor. This new orientation began to apply a more "open-system" approach to organizational studies (see Katz and Kahn 1966; Maurer 1971). It is probably not insignificant that this development was occurring at about the same time that some other sociologists were beginning to apply biological concepts to community studies and were

formulating a "human ecology" perspective (see Hawley 1950, 1968). This particular direction would later lead to a specific interest in organization ecology (discussions on this can be found in Britton 1985, 1986a and 1986c; Faupel 1987; Stalling 1987a; Whetten 1987).

With the development of the "open-system" approach, interorganizational relations were not regarded as being a significant area for the researcher to pursue. Accordingly, studies dealing with organizational exchange (Levine and White 1961), "organization-sets" (Evan 1976), interorganizational "fields" (Warren 1967), organizational boundaries (Aldrich 1971), and the environment-organization link (Dill 1962; Emery and Trist 1965; Terraberry 1968) were taking hold. Thompson's (1967) powerful discourse, *Organizations in Action*, was making its presence felt. Other areas of study were also developing, such as an interest in organizational effectiveness (Georgopolous and Tannanbaum 1957; Yuchtman and Seashore 1967; and later, Price 1972). While the new insights offered by the "open-system" theorists were enabling some organization researchers the opportunity to expand their horizons, mainstream organization studies were still cast in terms of Weberian bureaucracies or in terms of industrial "sociology." Thus, the majority of organizational theory was still static and passive. What was needed for disaster sociology was active organizational theory, something which emphasized and explained rapid change within the general environment and in particular the organizational setting. New conceptions were required to interpret and clarify what the disaster sociologist was witnessing.

Three years after the release of the Dynes text, two "second generation disaster sociologists" produced an organization studies manual which drew several examples from the disaster field. The Haas and Drabek (1973) text discussed, at length, change within the organization and the concept of organization stress, both potentially significant for future disaster studies. While the Dynes text was not cited amongst the fifteen or so disaster-specific references, which in itself was a first for a general organization text, reference was made to Brouillette and Quarantelli's (1971) article, an article which has an important association with a major section in *Organized Behavior in Disaster*.

### ORGANIZED BEHAVIOR IN DISASTERS AND DISASTERS SOCIOLOGY IN GENERAL

Any discussion of *Organized Behavior in Disasters* must address its intertwined evolution, which is stated somewhat simply here. This account should be regarded as an outsider's attempt to stitch some of the main threads together. The project which brought Dynes' book to fruition was, at the outset, the result of efforts of several individuals connected over a period of time with the Disaster Research Center. One of the first tasks was to undertake a review of the literature. Because it was recognized that there was little in the literature on organizations, the team developed an extensive schedule which included a review of all material, not just the social scientific literature. This phase produced five very large volumes of data. Dynes took on the responsibility of reviewing the material from the five volumes. As the project moved along, it was recognized that the literature was not providing an appropriate way of conceptualizing "organization" and that the original classification system the team had developed was not proving to be particularly useful. Something more appropriate was required, and out of necessity a new conceptualization was developed, based on the literature review which by this time had become secondary and was subsequently used to provide case studies and illustrations for the newly developing theoretical formulation (Dynes 1987c).

The first substantive publication containing much of the material published in *Organized Behavior in Disaster* was presented in a DRC monograph and released in 1969. Other publications by DRC members, particularly the theoretical formulations developed by Quarantelli (1966) and Quarantelli and Dynes (1967), together with a paper presented at the 1969 meeting of the American Sociological Association (published by Brouillette and Quarantelli 1971), elaborated the new organization conceptualization. The 1970 edition of *Organized Behavior in Disaster*, originally published by Lexington Heath Books in the "Studies in Social and Economic Process" series, was followed by another release in 1974, this time put out by the DRC in order to satisfy continued demand (the original hardback by then was out of print). It is important to recollect that the book was the outcome of collective and evolving processes which were prompted by the frustration of DRC staff at not

finding much in the disaster or the organizational literature that was useful for thinking about organized behaviour in disaster. In this sense, the book is a collective record of the thinking of many people.

For the benefit of the discussion which follows it is convenient to regard *Organized Behavior in Disaster* in two general sections. The first section comprising chapters 1, 3, 4, and 5, can be described as a codification of earlier disaster studies which includes, but goes beyond, the first decade's work of the Disaster Research Center. The bulk of these studies pertain to descriptive or analytic reports "on the impact of disasters on formal or complex organizations in American society" (Quarantelli and Dynes 1977, p. 27). Citing this source again:

... a basic idea advanced [in the book] is that organizational mobilization and recruitment of personnel, and the operational problems of adapting to radically changed environmental conditions, can be examined best by separating out four different types of groups likely to respond to disasters: established, expanding, extending, and emergent organizations. An attempt is also made to show how interorganizational relationships are affected by boundary personnel, organizational sets, and organizational legitimacy, and how a community disaster structure emerges from the creation and coordination of task subsystems (1977, p. 27).

These four groups of organizational types are the focus of the second major section of the book which centres on the development and elaboration of the "DRC Typology" (chapters 2, 6, 7, 8 and 9). The first section of *Organized Behavior in Disaster* encompasses a plethora of areas relating to disaster sociology. It furnishes accounts of pertinent disaster-relevant fields such as: the collection and transmission of information; the disaster subculture; convergence; evacuation; expansion of the citizen role, including passages on "boosterism"; families in disaster; local and state government roles; the effect of mass media on community evaluation; preparation for impact; rescue and recovery; the therapeutic community concept; changing community values after impact (the emergency consensus); the role of volunteers; victimization; and warning processes. These chapters include general statements relating to disaster consequences in the community setting; changing environmental condi-

tions pre- and post-impact; characteristics of disaster agents, including a discussion on disaster-time and disaster-space; post-impact community stress; a discussion on the emergency social system; the maintenance of community order, and group morale.

One way to judge the value of a book is to gauge the degree to which others apply it. The following "use analysis" provides an account of the extent to which *Organized Behavior in Disaster* has been cited by other natural hazard and disaster researchers. Many researchers, and not only sociologists, have sought the Dynes text either to lend direct support for their own findings, or as a general information source. Anthropologists such as Sheets (1980), and Torry (1979) have referred to its utility as a background source. Economists have used it to assist them in their analyses (for example, Sorkin 1982). Geographers have cited it as a valuable sourcebook (Sorensen and White 1980). Legal academics have cited it (see Macalister-Smith 1985). Management specialists have recommended it as a sourcebook relating to industrial crisis (see Shrivastava 1987). Political scientists have cited it (see Davis and Seitz 1982). Public administration specialists have used it in their analyses (Wettenhall 1979, 1980). Psychologists find it valuable as a mental health sourcebook (Parad et al. 1976); and psychiatrists have referred to it in their discussion of post-impact consequences (Raphael 1986). Practitioners and disaster management trainers have also mentioned this as a source for disaster planning (see for instance, Green et al. 1982; Jones 1980); and finally, development and nongovernmental disaster assistance agencies have used it (Cuny 1983).

The text has been quoted by a wide variety of hazard and/or disaster specialists in many agent-specific studies, as well as in general studies of natural hazards (Sorensen and White 1980; White and Haas 1975, for instance). Flood-related studies like those conducted by Britton (1986a), Drabek et al. (1979), Fisher (1985), National Science Foundation (1980), Scanlon (1980), and Wolensky (1984), as well as water resources research in general (see Dynes and Wenger 1971) have mentioned *Organized Behavior in Disaster*. Earthquake studies (Ayre 1975; Britton 1979; Drabek et al. 1983; Hoover and Bates 1985), and earthquake prediction research (Turner 1976) have used it. Tsunami studies (Ayre 1975), tropical cyclone (Britton 1981), volcano impact research (Kilijanek 1981; Sorensen and Gersmehl 1980), and wildfire investiga-

tions (Britton 1983, 1984a, 1986b; Wettenhall 1975, 1979) have found the Dynes book a reliable foundation. The current focus on technological hazards analysis has followed a similar pattern, beginning with a citation in Barry Turner's (1978) general text. Recent studies dealing with issues such as hazardous materials (Lindell and Perry 1980; Perry et al. 1983; Quarantelli 1981), lethal gas leaks (Shrivastava 1987), nuclear power malfunction (Dynes 1982; Perry 1983; Sorensen et al. 1987; Sylves 1984), oil spills (Gephard 1984), and nuclear warfare/civil defence (Perry 1982) have specified the Dynes text within their references. *Organized Behavior in Disaster* has crossed geographical boundaries as well as interdisciplinary and hazard-specific ones. Research conducted in countries as diverse as Australia (Britton 1981, 1983, 1984a, 1984b, 1985, 1986a, 1986b); Innes Reid 1980; Raphael 1986; Wettenhall 1974, 1979, 1980), Guatemala (Hoover and Bates 1985), India (Shrivastava 1987), The Netherlands (Rosenthal 1986), New Zealand (Britton 1979), and Sweden (Syren 1981) have employed information from the Dynes text.

Sociologists in particular have been quick to spot the relevance of *Organized Behavior in Disaster* for their own research. The specific studies which have cited the text are as diverse as the field itself. Anderson (1969), who referred to the early DRC monograph, and Perry (1982), citing the 1970 edition, both used the book as a reference in their separate studies on the American civil defense system. Warheit (1976) found the text handy in his discussion of the comparison between natural disasters and civil disturbances. Collective behaviour treatises by Rosenthal (1986) and Wenger (1987) did likewise. Studies in communications by Drabek et al. (1979), Kilijaneck (1980), and Scanlon and Frizzell (1979) saw value in the book. Cuthbertson and Nigg's (1987) discussion concerning the appropriateness of the therapeutic community concept, and other studies relating to the community in disaster (see for example, Innes Reid 1980; Wenger 1978; Wettenhall 1975) found practical value in it. Taylor et al. (1976) and Tierney and Baisden (1983) cited it in their respective studies concerning mental health delivery and community crisis intervention. Drabek (1983, 1987), referring to disaster management decision-making, and similar studies by Wolensky (1977) and

agency and disaster planning. Papers on disaster preparedness (Perry 1987) saw service in citing it. The work done on various facets of group emergence (see for instance the work by Drabek 1987; Drabek et al. 1981-82; Perry et al. 1974; Stallings & Quarantelli 1985); evacuation (Perry 1983; Quarantelli et al. 1980), and studies of family actions in disaster (Bolin 1982; Bolin and Trainer 1978; Drabek and Key 1976; Drabek and Stephenson 1971; Dynes and Quarantelli 1976; Erickson et al. 1976); as well as studies on political decision-making (Wolensky 1982, 1984; Wolensky and Miller 1983) have referenced it. Similarly, hazard warning studies (McLuckie 1970; Perry and Mushkatel 1984; Quarantelli and Taylor 1978); management (Drabek, 1983, 1985, 1987), media aspects of disasters (Beady and Bolin 1986; Goltz 1984; Kreps 1980; Larson 1980; Scanlon et al. 1985; Wenger 1980), and studies of minority groups in disaster-related environments (Perry 1987; Perry et al. 1983; Perry and Mushkatel 1984) have applied or adapted parts of *Organized Behavior in Disaster*. Finally, the text has also been cited in studies relating to public policy formation (Faupel 1987; National Research Council 1978; Turner 1976); recovery (see Bolin 1982; Golec 1983; Mileti 1975; Rubin 1979; Wright et al. 1979); relocation (Perry and Mushkatel 1984); rumour (Scanlon 1977); search and rescue (Adams et al. (1979; Drabek 1980; Drabek et al. 1981); social change (Bates and Peacock 1987; Hoover and Bates 1985); subcultures (Britton 1981; Wenger and Weller 1973); victimization (Rossi et al. 1983); and volunteers (Dynes and Quarantelli 1980; Fisher 1985; Stallings 1987b; Wolensky 1979).

What is left to say, in concluding this section, is that the chapters constituting the first section of the Dynes text, as it has been described here, cover a significant portion of the disaster research spectrum by providing a valuable summary of social psychological, group and community level response to disaster.

#### ORGANIZED BEHAVIOR IN DISASTER AND ITS IMPACT ON ORGANIZATIONAL CONSIDERATIONS IN THE DISASTER CONTEXT

"Crises," Dynes declares, "reveal how organizations are structured, how organizations maintain stability, how organizations change, and how organizations fulfill their functions." A disaster, from a sociological

standpoint, is probably the event which, above all other social crisis events, causes maximum community disruption and dislocation. Because organizations have a central role in our social system, organized response to disaster is a particularly significant area of study. *Organized Behavior in Disaster*, according to its author, is concerned with the "organized activities within communities experiencing disaster ... [at both the] theoretical and practical" levels (Dynes 1970, p. 4). It is the first systematic summary of this specific area of inquiry.

The Dynes' book contains descriptions of organizations in terms of task requirements and responses to specific disaster events; discusses internal design, strategy, staffing, and the like; and explores the relationships between (disaster) focal organizations and other disaster-relevant agencies or with the larger social environment. Organized behaviour and disaster has subsequently been studied by other sociologists. Anderson (1969) focused attention on the civil defense organization within the USA; intraorganizational features of specific agencies such as the State/Territory Emergency Services in Australia have been scrutinized by Britton (1983, 1984a, 1984b, 1985). Blanshan (1978), Quarantelli (1970), and Stallings (1968, 1987b) concentrated on hospitals. Scholars like Brouillette and Quarantelli (1971), Drabek (1987), Gephart (1984), Kreps (1978, 1983), Mileti and Sorensen (1987), Mileti et al. (1975), Ross (1978), and Stallings (1978) have highlighted many important attributes associated with organizational behaviour. Adams et al. (1979); Britton (1984a, 1985); Drabek (1980, 1983, 1987); Drabek et al. (1981); Kilijanek (1980); Kreps (1978); Kreps and Bosworth (1988); Sorensen et al. (1985); and Wright (1978) have all considered interorganizational features. All these studies cite *Organized Behavior in Disaster*.

The Dynes text focuses on several definite spheres of organization sociology. Specifically, it discusses the development of organization studies in the disaster context (130-134); staff recruitment, training, and mobilization (150-157); role conflict (151-154); and many operational problems encountered by disaster-relevant organizations (164-180). Several interorganizational areas (see chapter 8) are also canvassed, including boundary spanning activities (183-185); organization-sets (186-196); and organizational legitimacy (196-202). Two central features of the text are the focus on organizational roles in the disaster context (see discussion by Dynes 1987 on this point), and emergent organizational

structures, see Drabek (1987). Dynes' and Drabek's comments will be detailed later in the discussion. Organizational roles have subsequently been discussed by Bosworth and Kreps (1986), Drabek (1987), Dynes (1987a), Gillespie and Perry (1976), and Rogers (1984). Organizational change within the disaster environment has been taken up by Bardo (1978), Dynes and Aguirre (1979), and Kreps et al. (1988). Research looking into aspects of organizational effectiveness (Britton 1985; Mileti and Sorensen 1987) have originated in part from *Organized Behavior in Disaster*. Interorganizational features discussed by Dynes have been advanced particularly by Drabek (1983) and his colleagues (Adams et al. 1979; Drabek et al. 1981).

Dynes' study can be viewed as an initial effort to incorporate the observations of the earlier scholars, such as Form and Nosow (1958), Fritz (1961), and Thompson and Hawkes (1962) while also setting out to develop some of the directions suggested by Barton (1969). The book is also a deliberate attempt to consolidate the work by both Dynes and Quarantelli, and many of their graduate students, on types of organizational responses to disaster. The text can be considered as a primer on organizational behaviour within the disaster context. It outlines both societal and organizational changes that are manifested by alterations to time and space indicators (see 64-86) and describes how the disaster event creates immediate nonroutine priorities to which organizations have to react. It also outlines the fundamental prerequisites for appropriate organizational response (87-91). By achieving this *Organized Behavior in Disaster* may be judged as heralding the development and spread of organization studies within the disaster framework.

The nucleus of *Organized Behavior on Disaster* is the typology discussed from chapter 6 on. First advanced by Quarantelli (1966; see also Quarantelli and Dynes 1967), organizational tasks were categorized along two variables: (1) whether the tasks were regular or non-regular, and (2) whether the structures used to achieve these tasks were old or new; that is whether the organization pre-dated the disaster event, or was constituted as a result of impact. Combining these two variables produced four organizational types: Type I (established organizations: regular tasks and old structure), Type II (expanding organizations: regular tasks and new structure), and Type III (extending organizations: non-regular tasks and old structure), and Type IV (emergent organiza-

tions: non-regular tasks and new structure). The "DRC Typology," to give the formulation its current popular title, highlighted a range of concerns faced by each organizational variety within the disaster setting. Dynes applied the typology to describe and predict the characteristics and problems of different organizations in disasters.

Dynes recently elaborated the original typology and expanded statements relating to organizational roles (both permanent and volunteer) in the disaster context (1987a, Pp. 93-99). He explains that an aim of the original typology was to highlight the contrasts different organizational types face as they attempt to implement either their traditional or emergent disaster-relevant roles. Dynes' latest discussion is a useful augmentation to the original material. For instance, he examines how role strain is minimized in permanent officers in established organizations through secondary socialization techniques, a method which Dynes suggests renders role conflict to be an inconsequential matter. He also outlines the problem rigid and/or traditional organizational domains might place on role expectations within the disaster setting; and suggests that Type I organizations often have difficult relations with other organization types, a statement borne out in several recent empirical studies. In terms of the expanding (Type II) organization, Dynes suggests ambiguity and organizational stress can be created because of the comparatively large number of new and untested roles the professional cadre are likely to encounter. This can create interorganizational problems, because the new or untested roles taken on by Type II organizations are often considered by Type I agencies to be within their jurisdiction. Potential problems with volunteers in expanding organizations have subsequently been developed beyond the original 1970 statements. Dynes and Quarantelli (1980), compared the relationship of agencies and volunteer behaviour on the basis of (1) whether organization norms were old or new, and (2) whether relationships between the organization and volunteers were old or new. Dynes' recent (1987b) comments further advance this important area of study by looking at the volunteer role relationships in Type II agencies on the basis of (1) the skills and expertise of the individual volunteer and (2) the volunteer's type/quality of prior agency affiliation. Dynes also discusses enlisting organizational personnel "en masse" in Type III organizations. This may not eliminate problems relating to boundaries and autonomy, as Dynes is quick to

point out, but it does maintain the "absorbed" organization's authority and communication structure as well as existing patterns of role relationships. Enlarging on the Type IV (emergent) organization, Dynes (1987b) suggests that the predominant factor for group membership is likely to be previous friendship networks. If this is so, then the sociometric studies pioneered by Drabek and his colleagues could well pinpoint affiliations to emergent groups.

Further comments about the DRC Typology have come from Bardo (1978), who argues the original typology is too limited and not sufficiently precise to distinguish short-run response and long-run change within the organization. Bardo maintains that the existence of a disaster subculture can produce short-term ("particularistic") alterations because the existence of a subculture provides a latent disaster plan for the organization. Rather than implying the emergence of a new structural or functional type, the presence of the subculture would mean "a temporary or intermittent metamorphosis of the organization" (Bardo 1978, p. 90), and would be achieved within the existing organizational framework, rather than creating new patterns of organizational behaviour. This point has been acknowledged by Quarantelli (1985) when he summarized previous material relating to emergent groups, and by Drabek (1987) who reviewed literature on emergent structures. Drabek also points out that the typology is restricted to the emergency period of the "disaster-time" spectrum. In response to this he proposes a three-dimensional model of an expanded typology based on the "life-cycle" approach (see also Drabek 1986).

Another matter has been raised by Britton (1984a, 1984b, 1985) in connection with the relationships between organizations within disaster networks, and Drabek (1987) has recently focused on the impact boundary-spanning functionaries can have within the system. Britton has suggested that while the DRC typology provides an adequate explanation of the types of organizations to be found in the disaster environment, it does so from a static perspective: the typology has no interactive component. It does not provide a good basis for identifying the location of power-bases, authority, and decision-making structures in the network. Britton used the DRC typology as a jumping off point to assess relationships within the disaster network by examining (1) the potential of each organization to determine the role it would perform within that network

and (2) the organization's potential to influence the direction of the interorganizational network. The possible combinations of these factors produce four organizational types: (1) cardinal organizations (high on ability to determine role; high on network influence); (2) conditional organizations (high on role determination; low on network influence); (3) controlled organizations (low on role determination; high on network influence); and (4) constrained organizations (low on role determination; low on network influence). This typology enabled the researcher to locate features that influenced the relative effectiveness of specific disaster organizations, and also highlighted some of the structural features that were embedded within the interorganizational response network (Britton 1984a, 1984b, 1985).

The adjustments to the typology do not detract from its value. Rather, they could be interpreted as indicating the vitality of the initial formulation in encouraging the continuing development of the typology. As Quarantelli (1985) points out, much of the work carried out at DRC was guided by the typology and it has played a valuable role in developing several research directions.

#### A FEW FINAL COMMENTS

It is not an easy task to evaluate a piece of work if it has become part of the foundation of a field of research. That "problem" is compounded if the work itself, despite single authorship, is a codification of previous material by one group of scholars and an amalgamation of the reflective thinking by another group. The task is tantamount to passing judgment on several generations of scholars and their labour. The assignment would be easier if there had been the equivalent of a paradigm shift occurring since the books' publications, but obviously, nothing like this has happened. What has transpired, however, is a progressive development of understanding in the field of disaster research and this development is the result of much collaborative work, from scholars within par-

occurring especially in the late 1960s, highlighting, specifically, changes in the sociological field of organization studies.

The influence of any contribution to the advancement of knowledge can be gauged by developments which flow from it, the motivation it inspires in others to pursue certain fields of inquiry, and the attribution others are prepared to assign it. On all these counts, *Organized Behavior in Disaster* would have to be seen as influential. The text signifies an important development in the advance of disaster sociology and has played a prominent role in disseminating empirical and theoretical findings. This last factor is important because the development of knowledge is dependent just as much upon the dissemination of current thinking and findings as it is on the creation of knowledge.

#### REFERENCES

- Adams, C.R., T.E. Drabek, T.S. Kilijanek, and H.L. Tamminga. 1979. "Exploring an Emergent Multiorganizational Network." Paper presented at the annual meeting of the American Sociological Association. Boston, Massachusetts, August.
- Aldrich, H.E. 1971. "Organizational Boundaries and Interorganizational Conflict." *Human Relations* 24(4):279-293.
- Anderson, W.A. 1969. *Local Civil Defense in Natural Disaster: From Office to Organization*. Disaster Research Center Report Series #7. Columbus, Ohio: The Ohio State University.
- Ayre, R.S. 1975. *Earthquake and Tsunami Hazards in the United States: A Research Assessment*. Boulder, Colorado: Institute of Behavioral Science, University of Colorado.
- Baker, G.W. and D.W. Chapman (eds.). 1962. *Man and Society in Disaster*. New York: Basic Books.
- Bardo, J.W. 1978. "Organizational Response to Disaster: A Typology of Adaptation and Change." *Mass Emergencies* 3:87-104.
- Barton, A.H. 1962. "The Emergency Social System." Pp. 222-267 in *Man and Society in Disaster*, edited by George W. Baker and Dwight W. Chapman. New York: Basic Books.
- \_\_\_\_\_. 1969. *Communities in Disaster: A Sociological Analysis of Collective Stress Situations*. New York: Doubleday & Company.

- Bates, F.L. and W.G. Peacock. 1987. "Disaster and Social Change." Pp. 291-330 in *Sociology of Disasters: Contribution of Sociology to Disaster Research*, edited by Russell R. Dynes, Bruno De Marchi, and Carlos Pelanda. Milan, Italy: Franco Angeli.
- Beady, C.H. and R.C. Bolin. 1986. *The Role of the Black Media in Disaster Reporting to the Black Community*. Natural Hazard Working Paper #56. Boulder, Colorado: Institute of Behavioral Science, University of Colorado.
- Blanshan, S.A. 1978. "A Time Model: Hospital Organizational Response to Disaster." Pp. 173-198 in *Disasters: Theory and Research*, edited by Enrico L. Quarantelli. Beverly Hills, California: Sage.
- Bolin, R.C. 1982. *Long-term Family Recovery from Disaster*. Program on Environment and Behavior Monograph #36. Boulder, Colorado: Institute of Behavioral Science, University of Colorado.
- Bolin, R.C. and P. Trainer. 1978. "Modes of Family Recovery Following Disaster." Pp. 233-247 in *Disasters: Theory and Research*, edited by Enrico L. Quarantelli. Beverly Hills, California: Sage.
- Bosworth, S.L. and G.A. Kreps. 1986. "Structure as Process: Organization and Role." *American Sociological Review* 51(5):699-716.
- Britton, N.R. 1979. "The Inangahua Earthquake: An Application of the Powell and Rayner Model of Disaster-Time." Master of Arts Thesis. Christchurch, New Zealand: Department of Sociology, The University of Canterbury.
- \_\_\_\_\_. 1981. *Darwin's Cyclone "Max": An Exploratory Investigation of a Natural Hazard Sequence on the Development of a Disaster Subculture*. Disaster Investigation Report #4. Townsville, Queensland, Australia: Centre for Disaster Studies, James Cook University.
- \_\_\_\_\_. 1983. *The Bushfires in Tasmania, February 1982: How the Disaster Relevant Organizations Responded*. Disaster Investigation Report #6. Townsville, Queensland, Australia: Centre for Disaster Studies, James Cook University.
- \_\_\_\_\_. 1984a. "Conceptual Alternatives for the Analysis of Counter-Disaster Organizational Networks." Pp. 263-299 in *Report of Proceedings of a Research Workshop on Human Behaviour in Disaster in Australia*. Mt. Macedon, Victoria: Australian Counter Disaster College, Natural Disasters Organisation, Department of Defence.

- \_\_\_\_\_. 1984b. "Australia's Organized Response to Natural Disaster: Background and Theoretical Analysis." *Disasters* 8(2):124-137.
- \_\_\_\_\_. 1985. "The State/Territory Emergency Service as a Constrained Organization Within the Australian Disaster Management System." Dissertation. Townsville, Queensland, Australia: Department of Behavioural Sciences, and Centre for Disaster Studies, James Cook University.
- \_\_\_\_\_. 1986a. *The Administrative Structure of Disaster Response in Australia: A Note on the Current Organizational Arrangements for Public Flood Warnings*. CRES Working Paper 1986/23. Canberra: The Australian National University.
- \_\_\_\_\_. 1986b. "An Appraisal of Australia's Disaster Management System Following the 'Ash Wednesday' Bushfires in Victoria, 1983." *Australian Journal of Public Administration* XLV(2):112-127.
- \_\_\_\_\_. 1986c. "Developing an Understanding of Disaster." *Australian and New Zealand Journal of Sociology* 22(2/July):254-271.
- \_\_\_\_\_. 1987. "Toward a Reconceptualization of Disaster for the Enhancement of Social Preparation." Pp. 31-55 in *Sociology of Disasters: Contribution of Sociology to Disaster Research*, edited by Russell R. Dynes, Bruno De Marchi, and Carlos Pelanda. Milan, Italy: Franco Angeli.
- Brouillette, J.R. and E.L. Quarantelli. 1971. "Types of Patterned Variation in Bureaucratic Adaptations to Organizational Stress." *Sociological Inquiry* 41(Winter):39-46.
- Carr, L.J. 1932. "Disaster and the Sequence-Pattern Concept of Social Change." *American Journal of Sociology* 38:207-218.
- Chapman, D.W. 1954. "Introduction." *Journal of Social Issues* 10(3):2-4.
- Cuny, F.C. 1983. *Disasters and Development*. New York: Oxford University Press.
- Cuthbertson, B.H. and J.A. Nigg. 1987. "Technological Disaster and the Nontherapeutic Community: A Question of True Victimization." *Environmental Behavior* 19(4):462-483.
- Davis, M. and S.T. Seitz. 1982. "Disasters and Governments." *Journal of Conflict Resolution* 26(3):547-568.
- Dill, W.R. 1962. "The Impact of Environment on Organizational Development." Pp. 259-290 in *Concepts and Issues in Administration*.

- tive Behavior*, edited by S. Lailock and E.H. Van Ness. Englewood Cliffs, New Jersey: Prentice-Hall.
- Drabek, T.E. 1980. *Taming the Frontierland Tornado: The Emergent Multiorganizational Search and Rescue Network in Cheyenne, Wyoming, July 1979*. SAR Research Project. Technical Report. Denver, Colorado: Department of Sociology, University of Denver.
- \_\_\_\_\_. 1983. "Alternative Patterns of Decision-Making in Emergent Disaster Response Networks." *International Journal of Mass Emergencies and Disasters* 1(2):277-305.
- \_\_\_\_\_. 1985. *Emergency Management: The Human Factor*. Emmitsburg, Maryland: Federal Emergency Management Agency.
- \_\_\_\_\_. 1986. *Human System Responses to Disaster: An Inventory of Sociological Findings*. New York: Springer-Verlag.
- \_\_\_\_\_. 1987. "Emergent Structures." Pp. 259-290 in *Sociology of Disasters: Contribution of Sociology to Disaster Research*, edited by Russell R. Dynes, Bruno De Marchi, and Carlos Pelanda. Milano, Italy: Franco Angeli.
- Drabek, T.E., C.R. Adams, T.S. Kilijanek, and H.L. Tamminga. 1981-82. "After the Wind: The Emergent Multiorganizational Search and Rescue Network Following the Cheyenne, Wyoming Tornado of July 1979." *Humboldt Journal of Social Relations* 9(1):90-120.
- Drabek, T.E., D.Q. Brodie, J. Edgerton, and P. Munson. 1979. *The Flood Breakers: Citizen Band Radio Use During the 1978 Flood in the Grand Forks Region*. Program on Technology, Environment and Man Monograph #29. Boulder, Colorado: Institute of Behavioral Science, University of Colorado.
- Drabek, T.E. and W.H. Key. 1976. "The Impact of Disaster on Primary Group Linkages." *Mass Emergencies* 1:89-105.
- Drabek, T.E., A.H. Mushkatel, and T.S. Kilijanek. 1983. *Earthquake Mitigation Policy: The Experience of Two States*. Program on Environment and Behavior Monograph #37. Boulder, Colorado: Institute of Behavioral Science, University of Colorado.
- Drabek, T.E. and J.S. Stephenson. 1971. "When Disaster Strikes." *Journal of Applied Social Psychology* 1(2):187-203.
- Drabek, T.E., H.L. Tamminga, T.S. Kilijanek, and C.R. Adams. 1981. *Managing Multiorganizational Emergency Responses*. Program on

- Technology, Environment and Man Monograph #33. Boulder, Colorado: Institute of Behavioral Science, University of Colorado.
- Dynes, R.R. 1969. *Organized Behavior in Disaster: Analysis and Conceptualization*. Disaster Research Center Monograph Series No. 3. Columbus, Ohio: The Ohio State University.
- \_\_\_\_\_. 1970. *Organized Behavior in Disaster*. Lexington, Massachusetts: Heath Lexington Books, D.C. Heath and Company.
- \_\_\_\_\_. 1974. *Organized Behavior in Disaster*. The Disaster Research Center Series. Columbus, Ohio: Disaster Research Center, The Ohio State University.
- \_\_\_\_\_. 1982. "The Presidential Commission on the Accident at Three Mile Island." *American Behavioral Scientist* 26(4):607-621.
- \_\_\_\_\_. 1987a. "The Concept of Role in Disaster Research." Pp. 71-102 in *Sociology of Disasters: Contribution of Sociology to Disaster Research*, edited by Russell R. Dynes, Bruno De Marchi, and Carlos Pelanda. Milano, Italy: Franco Angeli.
- \_\_\_\_\_. 1987b. "Introduction." Pp. 13-29 in *Sociology of Disasters: Contribution of Sociology to Disaster Research*, edited by Russell R. Dynes, Bruno De Marchi, and Carlos Pelanda. Milano, Italy: Franco Angeli.
- \_\_\_\_\_. 1987c. Personal communication.
- Dynes, R.R. and B.E. Aguirre. 1979. "Organizational Adaptation to Crises: Mechanisms of Coordination and Structural Change." *Disasters* 3(1):71-74.
- Dynes, R.R. and E.L. Quarantelli. 1976. "The Family and Community Context of Individual Reactions to Disaster." Pp. 231-244 in *Emergency and Disaster Management: A Mental Health Sourcebook*, edited by Harold J. Parad, H.L.P. Resnick, and L.G. Parad. Bowie, Maryland: The Charles Press.
- Dynes, R.R. and E.L. Quarantelli. 1980. "Helping Behavior in Large-Scale Disasters." Pp. 339-354 in *Participation in Social and Political Activities*, edited by David Horton-Smith, J. Macaulay and Associates. San Francisco, California: Jossey-Bass.
- Dynes, R.R., E.L. Quarantelli, and G.A. Kreps. 1972. *A Perspective on Disaster Planning*. Disaster Research Center Report Series #11. Columbus, Ohio: The Ohio State University.

- Dynes, R.R. and D.E. Wenger. 1971. "Factors in Community Perception of Water Resource Problems." *Water Resources Bulletin* 7(4):644-651.
- Emery, F.E. and E.L. Trist. 1965. "The Causal Texture of Organizational Environments." *Human Relations* 18(1):21-32.
- Erickson, P.E., T.E. Drabek, W.H. Key, and J.L. Crowe. 1976. "Families in Disaster: Patterns of Recovery." *Mass Emergencies* 1:203-216.
- Evan, W.M. 1976. *Organization Theory: Structures, Systems, and Environments*. New York: John Wiley and Sons.
- Faupel, C.E. 1987. "Human Ecology and Disaster: Contributions to Research and Policy Formation." Pp. 181-211 in *Sociology of Disasters: Contribution of Sociology to Disaster Research*, edited by Russell R. Dynes, Bruno De Marchi, and Carlos Pelanda. Milan, Italy: Franco Angeli.
- Fisher, A.L. 1985. "Voluntary Labor, Utah, the L.D.S. Church, and the Floods of 1983: A Case Study." *International Journal of Mass Emergencies and Disasters* 3(3):53-74.
- Form, W.H. and C.P. Loomis. 1956. "The Persistence and Emergence of Social and Cultural Systems in Disasters." *American Sociological Review* 21(2):180-185.
- Form, W.H. and S. Nosow. 1958. *Community in Disaster*. New York: Harper and Brothers.
- Fritz, C.E. 1961. "Disaster." Pp. 651-694 in *Contemporary Social Problems*, edited by Robert K. Merton and Robert A. Nisbet. New York: Harcourt, Brace & World.
- Fritz, C.E. 1968. "Disasters." Pp. 202-207 in *International Encyclopedia of the Social Sciences*, edited by David Sills. New York: Macmillan Company and the Free Press.
- Fritz, C.E. and H.B. Williams. 1957. "The Human Being in Disasters: A Research Perspective." *The Annals* 309:42-51.
- Georgopolous, B.S. and A.S. Tannenbaum. 1957. "The Study of Organizational Effectiveness." *American Sociological Review* 22:534-540.
- Gephart, R.P. 1984. "Making Sense of Organizationally Based Environmental Disasters." *Journal of Management* 10(2):205-225.

- Gillespie, D.F. and R.W. Perry. 1976. "An Integrated Systems and Emergency Norm Approach to Mass Emergencies." *Mass Emergencies* 1:303-312.
- Gillespie, D.F. and R.W. Perry. 1984. "Administrative Principles in Emergency Planning." *The Environmental Professional* 6:41-45.
- Golec, J.A. 1983. "A Contextual Approach to the Social Psychological Study of Disaster Recovery." *International Journal of Mass Emergencies and Disasters* 1(2):255-276.
- Goltz, J.D. 1984. "Are the News Media Responsible for the Disaster Myths?: A Content Analysis of Emergency Response Imagery." *International Journal of Mass Emergencies and Disasters* 2(3):345-368.
- Green, B., R.G. Lewis, and L. Meyer. 1982. *Disaster Mental Health Training Project*. Final Report. Andover, Massachusetts: Research for Social Change, Inc.
- Haas, J.E. and T.E. Drabek. 1973. *Complex Organizations: A Sociological Perspective*. New York: Macmillan Publishing Company.
- Hall, R.H. 1982. *Organizations: Structure and Process*. Third edition. Englewood Cliffs, New Jersey: Prentice-Hall.
- Hawley, A.H. 1950. *Human Ecology: A Theory of Community Structure*. New York: Ronald Press.
- Hawley, A.H. 1968. "Human Ecology." In *International Encyclopedia of the Social Sciences*, edited by David Sills. New York: Macmillan.
- Hoover, G.A. and F.L. Bates. 1985. "The Impact of a Natural Disaster on the Division of Labor in Twelve Guatemalan Communities: A Study of Social Change in a Developing Country." *International Journal of Mass Emergencies and Disasters* 3(3):9-26.
- Innes Reid, J. (ed.). 1980. *Planning for People in Natural Disaster*. Second edition. Townsville, Queensland, Australia: Department of Behavioural Sciences, James Cook University.
- Jones, R.T. 1980. "Large-Scale Disasters - Planning for Effective Initial Response." In *Large Earthquakes in New Zealand: Anticipation, Precaution, Reconstruction*. Miscellaneous Series #5. Wellington, New Zealand: The Royal Society of New Zealand.
- Katz, D. and R.L. Kahn. 1966. *The Social Psychology of Organizations*. Second edition. New York: John Wiley & Sons.
- Kilijanek, T.S. 1980. *The Emergence of Interorganizational Communication Networks Following Natural Disasters*. SAR Research Project.

- Technical Report. Denver, Colorado: Department of Sociology, University of Denver.
- \_\_\_\_\_. 1981. *There She Blows: The Search and Rescue Response to the Mount St. Helens Volcano*. SAR Research Project. Technical Report. Denver, Colorado: Department of Sociology, University of Denver.
- Killian, L.M. 1952. "The Significance of Multiple-Group Membership in Disaster." *American Journal of Sociology* LVII(4):309-314.
- \_\_\_\_\_. 1954. "Some Accomplishments and Some Needs in Disaster Study." *Journal of Social Issues* 10(3):66-72.
- Kreps, G.A. 1978. "The Organization of Disaster Response: Some Fundamental Theoretical Issues." Pp. 65-85 in *Disasters: Theory and Research*, edited by Enrico L. Quarantelli. Beverly Hills, California: Sage.
- \_\_\_\_\_. 1980. "Research Needs and Policy Issues on Mass Media Disaster Reporting." Pp. 35-74 in *Disasters and the Mass Media*. Washington, DC: The National Research Council.
- \_\_\_\_\_. 1983. "The Organization of Disaster Response: Core Concepts and Processes." *International Journal of Mass Emergencies and Disasters* 1(3):439-465.
- \_\_\_\_\_. 1984. "Sociological Inquiry and Disaster Research." *Annual Review of Sociology* 10:309-330.
- Kreps, G.A. and S.L. Bosworth. 1988. *Social Networks and Organizing: Interdependence as Process*. Final Report. Williamsburg, Virginia: Department of Sociology, College of William and Mary.
- Kreps, G.A., J.G. Crooks, and J.R. Linn. 1988. *Organizational Change: Static and Dynamic Aspects*. Final Report. Williamsburg, Virginia: Department of Sociology, College of William and Mary.
- Larson, J.F. 1980. "A Review of the State of the Art in Mass Media Disaster Reporting." Pp. 75-136 in *Disasters and the Mass Media*. Washington, DC: The National Research Council.
- Levine, S. and P.E. White. 1961. "Exchange as a Conceptual Framework for the Study of Interorganizational Relationships." *Administrative Science Quarterly* 5:583-601.
- Lindell, M.K. and R.W. Perry. 1980. "Evaluation Criteria for Emergency Response Plans in Radiological Transportation." *Journal of Hazardous Materials* 3:335-348.

- Macalister-Smith, P. 1985. *International Humanitarian Assistance: Disaster Relief Actions in International Law and Organization*. Dordrecht: Martinus Nijhoff Publishers.
- Maurer, J.G. 1971. *Readings in Organization Theory: Open-System Approaches*. New York: Random House.
- McLuckie, B.F. 1970. *The Warning System in Disaster Situations: A Selective Analysis*. Disaster Research Center Report Series #9. Columbus, Ohio: The Ohio State University.
- Mileti, D.S. 1975. *Disaster Relief and Rehabilitation in the United States: A Research Assessment*. Boulder, Colorado: University of Colorado.
- Mileti, D.S., T.E. Drabek, and J.E. Haas. 1975. *Human Systems in Extreme Environments: A Sociological Perspective*. Program on Technology, Environment and Man. Boulder, Colorado: Institute of Behavioral Science, University of Colorado.
- Mileti, D.S. and J.S. Sorensen. 1987. "Determinants of Organizational Effectiveness in Responding to Low Probability Catastrophic Events." *The Columbia Journal of World Business* XXII(1):13-21.
- Moore, H.E. 1956. "Toward a Theory of Disaster." *American Sociological Review* 21(6):733-737.
- Moore, H.E. et al. 1963. *Before the Wind: A Study of the Response to Hurricane Carla*. National Academy of Science--National Research Council Publication #1095. Washington, DC: The Disaster Research Group.
- \_\_\_\_\_. 1964. *And the Wind Blew*. Austin, Texas: The Hogg Foundation for Mental Health, University of Texas.
- National Research Council. 1978. *The US Government Foreign Disaster Assistance Program*. Washington, DC: National Academy of Science.
- National Science Foundation. 1980. *A Report on Flood Hazard Mitigation*. Washington, DC: National Science Foundation.
- Parad, H.J., H.L.P. Resnick, and L.G. Parad (eds.). 1976. *Emergency and Disaster Management: A Mental Health Sourcebook*. Bowie, Maryland: The Charles Press Publishers, Inc.
- Perry, R.W. 1982. *The Social Psychology of Civil Defense*. Lexington, Massachusetts: Lexington Books, D.C. Heath and Company.

- \_\_\_\_\_. 1983. *Comprehensive Emergency Management: Evacuating Threatened Populations*. Topical Report. Tempe, Arizona: Center for Public Affairs, Arizona State University.
- \_\_\_\_\_. 1987. "Disaster Preparedness and Response Among Minority Citizens." Pp. 135-151 in *Sociology of Disasters: Contribution of Sociology to Disaster Research*, edited by Russell R. Dynes, Bruno De Marchi, and Carlos Pelanda. Milan, Italy: Franco Angeli.
- Perry, R.W., D.F. Gillespie, and D.S. Miletic. 1974. "System Stress and the Persistence of Emergent Organizations." *Sociological Inquiry* 4(2):111-119.
- Perry, R.W., M. Greene, and A.H. Mushkatel. 1983. *American Minority Citizens in Disaster*. Final Report. Seattle, Washington: Battelle Human Affairs Research Centers.
- Perry, R.W. and A.H. Mushkatel. 1984. *Disaster Management: Warning Response and Community Relocation*. Westport, Connecticut: Quorum Books.
- Powell, J.W. 1954. "Gaps and Goals in Disaster Research." *Journal of Social Issues* 10(3):61-65.
- Powell, J.W., J.E. Finesinger, and M.H. Greenhill. 1954. *An Introduction to the Natural History of Disaster*. Final Contract Report. Disaster Research Project. Maryland: The Psychiatric Institute of the University of Maryland.
- Powell, J.W. and J. Rayner. 1952. *Progress Notes: Disaster Investigation*. Chemical Corps Medical Laboratories Contract Report. Maryland: Army Chemical Center.
- Price, J.L. 1972. "The Study of Organizational Effectiveness." *Sociological Quarterly* 13(Winter):3-15.
- Prince, S.H. 1920. *Catastrophe and Social Change*. New York: Columbia University Press.
- Quarantelli, E.L. 1954. "The Nature and Conditions of Panic." *American Journal of Sociology* LX(3):367-375.
- \_\_\_\_\_. 1966. "Organization Under Stress." Pp. 3-19 in *Symposium on Emergency Operations*, edited by B. Bricston. Santa Monica, California: System Development Corporation.
- \_\_\_\_\_. 1970. "The Community General Hospital: Its Immediate Problems in Disasters." *American Behavioral Scientist* 13(3):380-391.

- \_\_\_\_\_. 1981. *Sociobehavioral Responses to Chemical Hazards: Preparations for and Responses to Acute Chemical Emergencies at the Local Community Level*. Final Report. Columbus, Ohio: Disaster Research Center, The Ohio State University.
- \_\_\_\_\_. 1985. *Emergent Citizen Groups in Disaster Preparedness and Recovery Activities*. Final Project Report. Newark, Delaware: Disaster Research Center, University of Delaware.
- Quarantelli, E.L., B. Baisden, and T. Bourdesh. 1980. *Evacuation Behavior and Problems: Findings and Implications from the Research Literature*. Columbus, Ohio: Disaster Research Center, The Ohio State University.
- Quarantelli, E.L. and R.R. Dynes. 1967. "Operational Problems of Organizations in Disasters." Pp. 151-179 in *Emergency Operations Symposium*, edited by R. Bricston. Santa Monica, California: Second Santa Monica Conference.
- \_\_\_\_\_. 1977. "Response to Social Crisis and Disaster." *Annual Review of Sociology* 3:23-49.
- Quarantelli, E.L. and V.A. Taylor. 1978. "Some Views on the Warning Problem in Disasters as Suggested by Sociological Research." Pp. 1-4 in *Disaster Preparedness Report*. Special Issue. Washington, DC: U.S. Department of Commerce, February.
- Quarantelli, E.L. and K.J. Tierney. 1979. "Disaster Preparedness Planning." *Fire Safety and Planning*: 263-313.
- Raphael, B. 1986. *When Disaster Strikes: A Handbook for the Caring Professions*. London: Hutchinson.
- Rogers, G.O. 1984. *Continuity, Role Conflict and Emergency Response*. Pittsburgh, Pennsylvania: University Center for Social and Urban Research, University of Pittsburgh.
- Rosenthal, U. 1986. "Collective Behavior Research in The Netherlands: From Residual to Partnership." *International Journal of Mass Emergencies and Disasters* 4(2):91-115.
- Ross, G.A. 1978. "Organizational Innovation in Disaster Settings." Pp. 215-232 in *Disasters: Theory and Research*, edited by Enrico L. Quarantelli. Beverly Hills, California: Sage.
- Rossi, P.H., J.D. Wright, E. Weber-Burdin, and J. Pereira. 1983. "Victimization by Natural Hazards in the United States, 1970-1980: Sur-

- vey Estimates." *International Journal of Mass Emergencies and Disasters* 1(3):467-482.
- Rubin, C. 1979. *Natural Disaster Recovery Planning for Local Public Officials*. Columbus, Ohio: Academy for Contemporary Problems.
- Scanlon, J. 1977. "Post-Disaster Rumor Chains: A Case Study." *Mass Emergencies* 2:121-126.
- \_\_\_\_\_. 1980. "The Media and the 1978 Terrace Floods: An Initial Test of a Hypothesis." Pp. 254-266 in *Disasters and the Mass Media*. Proceedings of the Committee on Disasters and the Mass Media Workshop. Washington, DC: National Academy of Science.
- Scanlon, J., D.S. Alldred, A. Farrell, and A. Prawzick. 1985. "Coping with the Media in Disasters: Some Predictable Problems." *Public Administration Review* 45(Special Issue):123-133.
- Scanlon, J. and A. Frizzell. 1979. "Old Theories Don't Apply: Implications of Communications in Crises." *Disasters* 3(3):315-319.
- Sheets, P.D. 1980. *Archeological Studies of Disaster: Their Range and Value*. Natural Hazard Research Working Paper #38. Boulder, Colorado: University of Colorado.
- Shrivastava, P. 1987. *Bhopal: Anatomy of a Crisis*. Cambridge, Massachusetts: Ballinger Publishing.
- Sorensen, J.H., D.S. Mileti, and E. Copenhaver. 1985. "Inter and Intraorganizational Cohesion in Emergencies." *International Journal of Mass Emergencies and Disasters* 3(3):27-52.
- Sorensen, J.H. and P.J. Gersmehl. 1980. "Volcanic Hazard Warning System: Persistence and Transferability." *Environmental Management*.
- Sorensen, J.H., J. Soderstrom, E. Copenhaver, S. Carnes, and R. Bolin. 1987. *Impacts of Hazardous Technology: The Psycho-Social effects of Restarting TMI-1*. New York: State University of New York Press.
- Sorensen, J.H. and G.F. White. 1980. "Natural Hazards: A Cross-Cultural Perspective." Pp. 279-318 in *Human Behavior and Environment: Advances in Theory and Research, Volume 4: Environment and Culture*, edited by I. Altman, A. Rapoport, and J.F. Wohlwill. New York: Plenum Press.
- Sorkin, A.L. 1982. *Economic Aspects of Natural Hazards*. Lexington, Massachusetts: Lexington Books, D.C. Heath & Company.

- Stallings, R.A. 1968. "Structural Change in Professional Organizations: A Hospital Response to Disaster." Master of Arts Thesis. Columbus, Ohio: Department of Sociology, Ohio State University.
- \_\_\_\_\_. 1978. "The Structural Patterns of Four Types of Organizations in Disaster." Pp. 87-103 in *Disasters: Theory and Research*, edited by Enrico L. Quarantelli. Beverly Hills, California: Sage.
- \_\_\_\_\_. 1987a. "Volunteerism Inside Complex Organizations: Off-Duty Hospital Personnel in a Disaster." Revised version of a paper presented at the 1986 meeting of the Pacific Sociological Association.
- \_\_\_\_\_. 1987b. "Organizational Change and the Sociology of Disaster." Pp. 239-257 in *Sociology of Disasters: Contributions of Sociology to Disaster Research*, edited by Russell R. Dynes, Bruno De Marchi, and Carlos Pelanda. Milan, Italy: Franco Angeli.
- Stallings, R.A. and E.L. Quarantelli. 1985. "Emergent Citizen Groups and Emergency Management." *Public Administration Review* 45(Special Issue):93-100.
- Stoddard, E.R. 1968. *Conceptual Models of Human Behavior in Disaster*. El Paso, Texas: Texas Western Press, University of Texas.
- \_\_\_\_\_. 1969. "Some Latent Characteristics of Bureaucratic Efficiency in Disaster Relief." *Human Organization* 28(3/Fall):177-189.
- Sylves, R.T. 1984. "Nuclear Power Emergency Planning: Politics of the Task." *International Journal of Mass Emergencies and Disasters* 2(1):184-196.
- Syren, S. 1981. *Organized Aktivitet Efter Tuveskredet*. Disaster studies #10. Uppsala: Uppsala University.
- Taylor, V.A., G.A. Ross, and E.L. Quarantelli. 1976. *Delivery of Mental Health Services in Disasters: The Xenia Tornado and Some Implications*. The Disaster Research Center Book and Monograph Series #11. Columbus, Ohio: The Ohio State University.
- Terreberry, S. 1968. "The Evolution of Organizational Environments." *Administrative Science Quarterly* 12(4):590-613.
- Thompson, J.D. 1967. *Organizations in Action*. New York: McGraw-Hill.
- Thompson, J.D. and R.W. Hawkes. 1962. "Disaster, Community Organization, and Administrative Process." Pp. 268-300 in *Man and Society in Disaster*, edited by George W. Baker and Dwight W. Chapman. New York: Basic Books.

- Tierney, K.J. and B. Baisden. 1983. *Crisis Intervention Programs for Disaster Victims: A Source Book and Manual for Smaller Communities*. Rockville, Maryland: U.S. Department of Health and Human Services, National Institute of Mental Health.
- Torry, W.I. 1979. "Anthropological Studies in Hazardous Environments: Past Trends and New Horizons." *Current Anthropology* 20(3):517-540.
- Turner, B.A. 1978. *Man-Made Disasters*. London: Wykeham Publications.
- Turner, R.H. 1976. "Earthquake Prediction and Public Policy: Distillations from a National Academy of Sciences Report." *Mass Emergencies* 1:179-202.
- Wallace A.F.C. 1956. *Tornado in Worcester: An Exploratory Study of Individual and Community Behavior in an Extreme Situation*. NAS-NRC Committee on Disaster Studies Publication #392. Disaster Study No. 3. Washington, DC: National Research Council.
- Warheit, G.J. 1976. "A Note on Natural Disasters and Civil Disturbances: Similarities and Differences." *Mass Emergencies* 1:131-137.
- Warren, R.L. 1967. "The Interorganizational Field as a Focus for Investigation." *Administrative Science Quarterly* 17:396-419.
- Wenger, D.E. 1978. "Community Response to Disaster: Functional and Structural Alterations." Pp. 17-47 in *Disasters: Theory and Research*, edited by Enrico L. Quarantelli. Beverly Hills, California: Sage.
- \_\_\_\_\_. 1980. "A Few Empirical Observations Concerning the Relationship Between Mass Media and Disaster Knowledge: A Research Report." Pp. 241-253 in *Disasters and the Mass Media*. Washington, DC: The National Research Council.
- \_\_\_\_\_. 1987. "Collective Behavior and Disaster Research." Pp. 213-237 in *Sociology of Disasters: Contribution of Sociology to Disaster Research*, edited by Russell R. Dynes, Bruno De Marchi, and Carlos Pelanda. Milan, Italy: Franco Angeli.
- Wenger, D.E. and J.M. Weller. 1973. *Disaster Subcultures: The Cultural Residues of Community Disasters*. Disaster Research Center Preliminary Paper #7. Columbus, Ohio: The Ohio State University.
- Wetherhall, R.T. 1975. *Bushfire Disaster: An Australian Community in*

- \_\_\_\_\_. 1979. "Organisation and Disaster: The 1967 Bushfires in Southern Tasmania." Pp. 431-435 *Natural Hazards in Australia*, edited by R. Les Heathcote and Bruce G. Thom. Canberra: Australian Academy of Science.
- \_\_\_\_\_. 1980. "The Response of Government to Disaster: A Study in Fragmentation." Pp. 261-295 in *Response to Disaster*, edited by John Oliver. Townsville, Queensland, Australia: Centre for Disaster Studies, James Cook University.
- Whetten, D.A. 1987. "Organizational Growth and Decline Processes." *Annual Review of Sociology* 13:355-358.
- White, G.F. and J.E. Haas. 1975. *Assessment of Research on Natural Hazards*. Cambridge, Massachusetts: The MIT Press.
- Wolensky, R.P. 1977. "How Do Community Officials Respond to Major Catastrophes?" *Disasters* 1(4):272-274.
- \_\_\_\_\_. 1979. "Toward a Broader Conceptualization of Volunteerism in Disaster." *Journal of Voluntary Action Research* 8(3):33-43.
- \_\_\_\_\_. 1982. "Power Structure and Group Mobilization Following Disaster: A Case Study." *Social Science Quarterly* 64:97-110.
- \_\_\_\_\_. 1984. *Power, Policy, and Disaster: The Political-Organizational Impact of a Major Flood*. Final Report. Center for the Small City. Stevens City, Wisconsin: University of Wisconsin--Stevens Point.
- Wolensky, R.P. and E.J. Miller. 1981. "The Everyday Versus the Disaster Role of Local Officials: Citizen and Official Definitions." *Urban Affairs Quarterly* 16(4):483-504.
- \_\_\_\_\_. 1983. "The Politics of Disaster Recovery." Pp. 259-269 in *The Sociological Galaxy: Sociology Toward the Year 2000*, edited by C.E. Babbitt. Harrisburg, Pennsylvania: Beacon's Press.
- Wright, J.D., P.H. Rossi, S.R. Wright, and E. Weber-Burdin. 1979. *After the Clean-up: Long-Range Effects of Natural Disasters*. Beverly Hills, California: Sage.
- Wright, J.E. 1978. "Organizational Prestige and Task Saliency in Disaster." Pp. 199-213 in *Disaster: theory and research*, edited by Enrico L. Quarantelli. Beverly Hills, California: Sage.
- Yuchtman, E. and S.E. Seashore. 1967. "A System Resource Approach to Organizational Effectiveness." *American Sociological Review* 32(6):891-903.