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WHAT IS DISASTER? THE NEED FOR CLARIFICATION IN DEFINITION AND CONCEPTUALIZATION IN RESEARCH

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Introduction

Whenever we want to research or discuss the consequences of any phenomenon, we need to have a clear idea of what that phenomenon is. So it is when we hypothesize that what we call "disaster" has negative consequences for mental health. While it may seem easy to conceptualize what constitutes a disaster, the task is far more complicated than appears at first glance. Even more complicated is the task of identifying the mental health effects of disasters. The phenomena are not self-evident. The disaster literature yields little consensus on the definition of the basic concept of disaster or any of its derivatives. Nor does the literature provide much of an empirically based position on any possible relationship between disaster occasions and mental health.

An underlying theme of this paper is that we will never clearly understand the effects disasters may have on mental health unless we clarify what we want to consider as a disaster, including the most important dimensions of disaster. The lack of consensus on any such definition has impeded research and hindered our ability to draw valid and significant conclusions about the relationship between disasters and mental health. While enough work has been done to suggest relevant models, significant questions, and reasonable hypotheses, there is likely to be little progress in this research area unless we move toward conceptual clarification of the key concept involved, that is, disaster.

An example illustrates the point that there is no "self-evident" definition or conceptualization of disaster. In June 1983, major flooding occurred along the banks of the Colorado River following release of water from swollen reservoirs by the Federal Bureau of Land Reclamation. The flooding led to seven deaths, millions of dollars in property damage, contamination of underground wells, and fear of the spread of disease due to the extensive new breeding grounds afforded mosquitoes.

A debate ensued as to whether this disaster was "an act of God" or was caused by human actions. Some blamed the Bureau of Land Reclamation, claiming that it had waited too long to lower water levels. Others, including Federal engineers, responded that there was no choice but to release the waters since so much melted snow had come into the system in late spring that

it was then too late to draw down reservoirs. Still others said that the flooding was a recognized trade-off between flood control and water storage (New York Times, July 13, 1983, p. 1).

This brief account illustrates some of the difficulties in trying to discuss the nature of disasters, what creates them, and what effects they have, and gives rise to a number of questions. For example, was this event a disaster? Obviously yes and no. Was it an "act of God" or the result of human actions? Obviously, it was one or the other, both, or neither. What were the important dimensions or characteristics of this event? Obviously that depends on the perspective of the different actors involved. What were the effects of the happenings? Obviously, they were not the same for the various parties involved. Were there any mental health consequences? Some would see the blame assignment as an obvious mental health effect, others would not.

Now obviously the word "obviously" is used in an ironic sense since we, and presumably many others, would have little difficulty in answering in all the ways indicated (and other ways that could be visualized); we could do so even though, on the surface, many of the answers are inconsistent, contradictory, or illogical. The point, of course, is that no phenomenon is inherently self-defining or self-explaining. However, we all get accustomed to looking at the world from our own very limited personal and professional stance; we are so habituated to that particular stance that we see only what is obvious to us and often fail to recognize the lack of obviousness to others. As Alfred North Whitehead once wrote, ". . . it takes a very unusual mind to undertake the analysis of the obvious" (quoted in Lindesmith and Strauss, 1949, p. 261).

Fortunately, we do not need an unusual mind to draw one implication from the above intellectual exercise; that is, that some issues and questions in the disaster area—including the basic one of what constitutes a disaster—are not primarily matters of empirical determination; rather, they rest fundamentally on the conceptual definitions and theoretical approaches used, either explicitly or implicitly. These are derived, however, from a variety of social, psychological, and behavioral disciplines; these differences are further compounded by major differences in the objectives or goals underlying whatever work is undertaken (e.g., that with applied versus that with basic knowledge goals). As a consequence, the whole disaster area is plagued by a variety of concepts and definitions about which there is little agreement and no consensus. This situation exists even for the most elementary phenomena.

None of the above is intended to suggest that the questions and issues raised cannot be answered in some way. In fact, part of the problem is that multiple and varied answers are almost assured. Some faced with this situation seek a resolution of the differences in what the empirical evidence supposedly indicates. But our position is that any data—and even their existence as "data"—are based on the conceptual tools used and the theoretical

orientations assumed. For example, if a mass kidnapping is not seen as a disaster phenomenon, anything about the kidnapping probably would be seen as totally irrelevant for dealing with what is perceived to be a disaster. If terrorism or civil disturbances are perceived as essentially conflict situations, whereas natural and technological disasters are viewed basically as consensus situations, there may be little of relevance in the former for the latter. If unconscious motivation under stress is not seen as meaningful in a radical behavioral model, the former does not even exist for purposes of the latter. Thus, unless there is a measure of consensus on definitions and models, any research or discussion will be undermined by misperceptions of the positions of others and misunderstandings of one's own position.

As will be indicated in the next section, several major efforts have been made to define or conceptualize the term "disaster." Those conceptualizations that seem most useful for social science purposes, and reasons why a particular one may be best for examining relationships between disasters and mental health, are major themes of the next section. We then examine the issue of whether an "agent-specific" or a "generic" approach to disasters is most useful for most purposes and conclude that the latter yields the greatest theoretical and practical payoffs. Using this generic approach, the discussion in the concluding section focuses on several major dimensions or characteristics of disasters that seem to have a potential to create or exacerbate mental health problems.

What Is a Disaster?

Elsewhere, we have indicated that most people in the disaster area have avoided explicit and systematic attention to the question, What is a disaster? (Quarantelli 1982a). Too many have accepted the view that ". . . a disaster is perhaps easier to recognize than it is to define" (Barkun 1974, p. 51). But while there has been relatively little manifest scholarly attention to the problem, anyone who conducts studies of or undertakes planning for disasters must have at least an implicit image or conception of the phenomenon. From the few explicit discussions (e.g., Carr 1932; Barton 1963, 1970; Stoddard 1968; Kinston and Rosser 1974; Berren et al. 1980; Kreps 1984) and the many implicit assumptions about the phenomenon, it is possible to pull together what social and behavioral scientists assume when they use the term "disaster."

In ideal-type terms, disasters have been equated with:

1. Physical agents;
2. The physical impact of such physical agents;
3. An assessment of physical impacts;
4. The social disruption resulting from an event with physical impacts;

he social construction of reality in perceived crisis situations which may or may not involve physical impacts;

6. The political definition of certain crisis situations; and
7. An imbalance in the demand-capability ratio in a crisis occasion.

Before discussing each of the above concepts, some general comments seem in order. In the course of efforts to reformulate the term disaster, there have been changes in emphasis. The first three formulations above--the earliest in the area--have primarily physical referents. However, for about the last two decades, socially oriented definitions have also been advanced. A turning point in setting the stage for later definitions of a more social nature was probably Charles Fritz's 1961 article, "Disaster." If anything, the more recent definitional and conceptual attempts, as manifested in the last four formulations above, have been variants of an attempt to view disasters as essentially social phenomena of some kind. The emphasis has been changing from a focus on the physical event to a focus on social situational aspects, that is, on an event, a construction, a political position, or an occasion with particular social characteristics.

To be sure, even most of the newer social conceptions tend to assume relatively identifiable focused events that can be located in space-time terms (Quarantelli and Dynes 1977). This leaves unclear the categorical status of very diffuse occasions, such as famines and epidemics, that are often classified as disasters. This, in turn, has led some to argue that the emphasis on a specific event, as a distinguishable feature, reflects a bias of Western society and is unsuitable for identifying disasters in underdeveloped countries (Westgate and O'Keefe 1976). The most extreme attack is mounted by those who argue that the word disaster is an outmoded concept, a residue from the flow of history that captures relatively insignificant phenomena, rather than terrors and pervasive perils that have emerged in the modern world (Barkun 1974).

The critics may have some valid points. However, it seems premature to discard totally the concept of disaster. For theoretical and practical purposes, it may not be critical that the older, everyday usages of disaster are not fully captured by some current research, and scholarly, policy, and administrative discourse. Historically, scientific concepts are often developed by progressive refinements that exclude part of what was intended in the original commonsense uses of words. For the time being, the better part of wisdom seems to dictate a need for continuing efforts to answer the question, What is a disaster?

What follows is a look at each of the seven ideal-type formulations listed above. We will ignore the reification and anthropomorphism that are rampant in many definitions of disasters as well as the misplaced concreteness and logical flaws that permeate efforts to conceptualize disasters. Instead, for

purposes of exposition, we present the formulations as they are advanced either explicitly or implicitly by social and behavioral scientists who use the term "disaster."

Disasters as Physical Agents

The word "disaster" is sometimes equated with certain kinds of physical agents, such as earthquakes, fires, floods, and explosions. The basic idea here, as Dynes (1976) notes, is there is "something" that can potentially produce an effect on the environment. These "somethings" are designated as disaster agents, though a frequent distinction is made between "natural" agents or "acts of God" and "human" or "man-made" agents. Thus a natural land movement of certain kind is called an earthquake; the accidental transformation, following human error, of an inert liquid into an expansive gas is called a chemical explosion.

In this image of disaster, there is a search primarily for the physical cause of whatever occurs. Many philosophers and scientists, of course, see a search for cause as a chimerical exercise; in their view ". . . causality is a property of theoretical systems rather than of the world" (Mullins 1974, p. 4). However, if one accepts the notion of cause, it follows there would be different causal agents for different phenomena. An earthquake is caused by something different than a fire. Extremely agent-specific causes are involved, and knowledge of one agent tells nothing about another. Studies of a radically different nature are necessary for different agents.

Disasters as Physical Impact

In some usages, the term "disaster" is equated only with a physical impact. There is a disaster when there is some kind of noticeable physical impact on some part of the environment. A hurricane will move air and water; an earthquake will move land and water. What is important is that the physical impact be discernible.

In this formulation, attention is paid to how characteristics of the disaster agent may affect impact and the sphere in which the impact occurs. With respect to the latter, impact can be seen as occurring in the geophysical sphere or environment, in the biological environment, and/or in the sociotechnical sphere (Dynes 1976). Also, certain characteristics of disaster agents are seen as having implications for producing particular types of impact (Dynes 1974). Thus, disaster agents differ in their frequency, since they are not randomly distributed over space. Generally, localities must be near a geological fault to be impacted by discernible earthquakes. Tsunamis cannot directly impact areas that do not border on large bodies of water. Disaster agents also differ as to their duration. A volcanic eruption, such as Mt. St. Helens, may have a prolonged duration. The usual chemical explosion is of very brief duration. Discernible physical characteristics may or may not be socially significant; however, there is

little question that the features of many physical impacts can be ascertained, often in quantitative terms.

Disasters as Assessment of Physical Impacts

In this third formulation, discernible physical impacts of disaster agents may occur but, depending on the assessment made, only some would be categorized as "disasters." In some manner or another, the event must be categorized as "disastrous." This seems to be the reasoning behind, for example, the old U.S. Office of Emergency Preparedness report on preparedness for ten natural disasters. In this document, causes and characteristics of each agent are noted briefly. Then, in more detail, there is a discussion of each agent's primary and secondary effects, the probability and places of its occurrences, and what it may do to people, property, economy, and ecology (Disaster Preparedness Study Group 1972, pp. 71-83).

This approach implies the concept of a benchmark or threshold beyond which one is justified in calling the event a disaster. Often the assessing criteria are implicit. However, sometimes they are semi-explicit, as exemplified in the Mercalli and the Richter scales of earthquakes' strengths. Both scales--the first measuring intensity and the second magnitude--involve combinations of discernible physical impacts and some assessments of those effects. Analogous assessment measures of impact have been developed recently for hurricanes and tornadoes. In this approach, most adherents seem to agree with some variant of a statement by Barkun (1974, p. 72): "Disaster means damage--physical, social, and psychological." Nevertheless, many assessments focus primarily on the physical effects.

While similar and related, the three conceptions of disasters noted above have different emphases. In the first formulation, the focus is on antecedent conditions responsible for the physical agent. In the second, the distinguishing feature of disaster is a discernible physical impact. In the third, something is a disaster when its effects are assessed as notable. In other words, the three formulations of disaster respectively stress causes, characteristics, and consequences of physical agents and/or their impacts.

Disasters as Social Disruptions from Events with Physical Impact

Conceptions of disasters that involve social aspects begin to come to the fore in this fourth view. In this approach, a physical impact is a "disaster" if the magnitude of the impact--as indicated by property damage and casualties--is believed to be high enough to result in disruption of social life. Thus, if there is considerable destruction of material goods and/or a relatively large number of deaths or injuries, the event is viewed as a disaster. It is a disaster not because of the physical impact per se, but because of the assumed social consequences of the physical happenings. Thus, this formulation of disasters differs somewhat from the third conception because the relative emphasis is on the social rather than the physical; physical indicators are simply used primarily as a sign of probable social disruption. This fourth approach is exemplified in the definition of disaster used most frequently by social scientists:

> . . . an event, concentrated in time and space, in which a society, or a relatively self-sufficient subdivision of a society, undergoes severe danger and incurs such losses to its members and physical appurtenances that the social structure is disrupted and the fulfillment of all or some of the essential functions of the society is prevented (Fritz 1961, p. 655, as adapted from Endleman 1952).

As a member of the group of social scientists from whom this definition emanated, I can say that the original statement assumed a very close correlation between extensive physical impact and social disruption. In fact, for study purposes, disasters were found by noting indications of death and damage; it was assumed that social disruption was a necessary consequence if an event involved major impact. Although the defining group deliberately and successfully avoided the use of the term "social disorganization," it is clear (at least in retrospect) that the definers expected physical destruction or disarray to be reflected in social disorder or disorganization. The use of physical signs to identify disaster in terms of assumed resultant social problems continues to this day.

Disasters as Social Constructions of Reality in Perceived Crisis Situations That May or May Not Involve Physical Impacts

The four conceptions of disasters noted to this point assume a physical impact of some kind. However, social scientists have always been troubled by the easily made observation that there is no necessary correlation between physical impact and social activity. For example, the New Madrid earthquake of 1811-1812 had massive physical effects on the topography of the region and even changed the course and channel of the Mississippi River (Penick 1976). But many do not characterize this major physical upheaval as a disaster, since the area was then very sparsely populated and there was very little damage or destruction of property and possibly no loss of life. On the other hand, a completely false story about a major break in a dam above a town precipitated flight and evacuation (see Danzig et al. 1958); this behavior is not distinguishable from that studied in the actual Teton Dam break (see Golec 1980). So, many define these last two cases as disasters, despite the lack of any physical impact in the first instance. From the viewpoint of social reality, both dam

situations had been socially constructed; thus, they were perceived as dangerous by the involved populations. The principle here is an old social-psychological one: if a situation is defined as real, it is real insofar as consequences are concerned. Therefore --as far as a disaster is concerned--the question to some is not the presence or absence of physical impact, but whether there is a belief in danger to such important values as life, well-being, property, and social order.

In this conception of disaster, there also must be a socially constructed perception of a crisis situation, that is, a situation that necessitates unexpected collective action because it involves high-priority values (see, e.g., Form and Nosow 1958, who conceptualize a crisis situation as one where previous modes of individual, group, and organizational actions and behavior are no longer applicable and illustrate their concept by examples drawn from the social aftermaths of a tornado in Michigan). According to this view, actual impact is not the crucial element. As one of the earliest researchers who grappled with the concept of disasters said, "The nature of agent--flood, fire, wind, poison, disease, explosion, etc.--has meaning as well as consequences; that is, it makes differences in the subjective response of threatened people, as well as in the measures that have objectively to be taken against it or because of it" (Powell 1954, p. 11-22). The relevant meaning in this conception of disaster is the perceived need for collective action, a consensus type of crisis in contrast to a dissensus crisis (see Quarantelli 1970). There are major differences between these two types of crisis situations, as shown by comparative studies of natural disasters and riots conducted for NIMH by the Disaster Research Center (DRC). Briefly stated, natural disasters, in contrast to riots, involved some consensual agreement about the nature of the phenomenon (see Dynes and Quarantelli 1973, 1975).

Clearly this approach makes the concept of disaster a relative rather than an absolute term since it postulates differential perceptual possibilities as a result of different social constructions of reality. In fact, a completely social constructionist approach to the problem can lead eventually to the position that no one entity can be called a disaster. As this author has written elsewhere:

> . . . a disaster is not a unitary whole. For different areas or communities, for different organizations and families, the "same" disaster may start and may stop at different chronological points. For example, a weather service may start getting involved in a disaster with the first sighting of danger cues picked up by its monitoring system, and its involvement may end after a warning message has been issued. In the same situation, the disaster for some governmental agricultural agency may start six months after actual impact because certain crops might not be planted until that time due to salt water contamination, and the organizational involvement may end only two years after that.
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> The importance of noting this is that what is considered a disaster and its duration can vary, and usually does, even for emergency organizations which may become involved. Thus, what may appear to be an urgent matter to one group requiring immediate action, is not seen in that light at all by another organization. There are differential time involvements and differential time withdrawals from a disaster. A disaster is not a fixed entity out there with fixed time duration. A disaster, insofar as its existence is concerned, is always a relative matter, varying according to whose perspective is being applied (Quarantelli 1977, p. 102).

Disasters as Political Definitions of Certain Crisis Situations

Certain writers have pushed the social construction of reality approach to one extreme point and argued that disasters are not only social constructions but also basically political phenomena (e.g., Brown and Goldin 1973; Westgate and O'Keefe 1976; Dombrowsky 1981). Thus, whether crisis situations are defined as disasters depends upon political decisions in the broad sense of the term. Such political decisions reflect the interest of the elite or power holders in a society or community. Thus, in this view, disasters should be seen as certain kinds of political definitions.

There have been instances where nations' official declarations have indicated that no disaster occurred when, by other definitions, a disaster has occurred. In some instances, the formal denial of an earthquake, cyclone, or famine disaster not only deflects international disaster relief, but also leads to little or almost no internal domestic response (see, e.g., Freudenheim 1979). Conversely, of course, there are examples where "disasters" have been officially declared but disinterested outside parties could not see that the designated disasters were materially different from "normal," everyday happenings. Thus, some students of the problem argue that definitions of disasters are less related to "objective" happenings than to the interest of those who can affect the political decisionmaking (see Davis 1975; Glantz 1976).

Those who define disasters as political are not impressed when others argue that something actually has happened and that what is involved is simply an unwillingness, for political reasons, to officially define or "label" a situation. As noted, they observe that the formal designation can make a difference in everything from mitigation and prevention to response and recovery activities. In the United States, an official Presidential declaration of a disaster, or a denial of such a declaration, determines whether

various resources can or cannot be mobilized and different programs can or cannot be implemented. It makes a difference. Unless one is very naive, it would be foolish to deny that political considerations enter into the decision to make a declaration and that they affect other aspects of response to the situation.

For various reasons, disaster researchers and theorists generally have shied away from looking at the political aspects of disaster phenomena (Quarantelli and Dynes 1977). Planners and policy makers often well understand the issue involved but they, too, generally have said little openly about the matter. Yet, it seems that political processes are involved in all aspects of disaster phenomena. (For specific research questions, see Taylor 1978.) Political processes particularly determine whether an occurrence will be called a disaster and, thus, subsequently affect what happens. For some disaster theorists and definers, this fact is enough to justify the stance that disaster should be conceptualized as a political statement about certain crisis situations.

Disasters as an Imbalance in the Demand-Capability Ratio in a Crisis Occasion

There are those who argue that a "disaster" is better thought of as a particular kind of crisis, that is, a social "occasion." These analysts see a disaster when the demands for action exceed the capabilities for response in a crisis occasion. Because high-priority values are threatened, there is a perceived urgent need to act, but the available capabilities—intangible or otherwise—are not enough to meet the demands of the occasion. The "occasion" (a term taken from Goffman 1963, and specifically applied to disaster phenomena by Brown and Goldin 1973) typically requires nonroutine and emergent collective behavior. Thus, a tornado is a disaster if nontypical and new social behavior is necessary to generate an appropriate balance between the demands and capabilities present in the occasion. Emphasis in this formulation is not on social disorganization, perceptual beliefs of danger, or elite labeling processes--ideas respectively central to the three previously discussed social conceptions of disasters--but on the collective effort in the occasion to terminate a particular crisis by restoring capabilities to the level of demands.

The ideas involved in this conception of disaster were first focused on the behavior of formal organizations in extreme stress situations (see some of the initial ideas in Thompson and Hawkes 1982, later developed by Drabek in Drabek and Haas 1970 and Haas and Drabek 1973). However, the notions involved are equally applicable at other analytical levels, such as individual aggregations, households, nonorganizational groups, interorganizational systems or networks, communities, or societies. Furthermore, the general idea can be used whether the occasion is just a threat or an actual happening, whether the agent is of slow onset, cumulative, and diffuse (e.g., some toxic substances) or rapid, impactive, and focused (e.g., earthquakes), or whether the crisis is of very long or short duration. Some disaster researchers find value in conceptualizing disasters as crisis occasions where the demands exceed the capabilities. Generally, they would see their view as being consistent with the statement that, ". . . on the most general level, an anticipated disaster is a contradiction in terms. Without the element of surprise, defenses both material and psychological, may be erected. Much of the force of a disaster comes from the sudden manner in which it assaults unprepared societies, institutions, and psyches" (Barkun 1974, p. 57).

For the reasons just indicated, the definition of disasters as crisis occasions in which demands exceed capabilities seems to this author the most useful conceptualization presently available. It emphasizes behavioral response rather than whatever may generate that response. It turns attention away from physical features of disaster agents that may be differentially perceived or that, in some cases, may not exist physically. The formulation also provides some narrowing limits by its focus on a social occasion of a consensus nature. It thus excludes conflict situations, be they the result of war, terrorism, civil disorders, or other specifically human-generated and -maintained situations. Further, the focus on a crisis occasion precludes equating disasters with "collective stress situations." Since the latter could be quite appropriate descriptions of, say, some metropolitan hospital emergency rooms on a Friday night or some football teams on a Saturday afternoon, it is important to distinguish them from occasions likely to be termed "disasters." Finally, the formulation emphasizes the collective nature of disasters, that is, that they essentially represent the inability of a group or a community to mobilize its capabilities to meet demands; as such, it links disasters to what is or is not available to meet the needs or demands and keeps us from identifying the phenomena solely in terms of some kind of loss or damage.

Before proceeding, it seems useful to summarize our answer to the question, What is a disaster? From our present perspective, a disaster is a consensus-type crisis occasion where demands exceed capabilities. In Goffman's (1963, p. 18) terms, a social occasion is ". . . a wider social affair, undertaking, or event, bounded in regard to place and time. . . [which] provides the structuring social context in which many situations and their gatherings are likely to form, dissolve, and reform, while a pattern of conduct tends to be recognized as the appropriate . . . or intended one." Some occasions are ad hoc or unprepared for organizationally, some are a regular part of a series of occasions, and some are irregular, one-shot affairs (Brown and Goldin 1973). Disasters are ad hoc, irregular occasions that involve a crisis; there is relative consensus that things have to be done, but the wherewithall is not enough to meet the demand. In a disaster, there is considerable variation in how the everyday capability/resource and demand/need balance gets unbalanced (see, e.g., Haas and Drabek 1973).

.en this definition and conception of disasters, what possible characteristics of disasters follow? We lead into this question by first considering the prior issue of whether disasters are agent-specific or generic.

What Are the Characteristics of Disasters?

Any view of what constitutes a disaster mostly entails taking an agent-specific or a generic (i.e., an all-disaster spectrum) approach to disasters. Here, instead of looking at the separate implications of each formulation, the discussion will be limited to making a collective contrast between the first three and the last four conceptions described above. As a whole, the first three are either consistent with or require an agent-specific approach.

Worthwhile work has long been undertaken on specific physical agents, especially conventional geophysical and meteorological agents. Even if the mysticism of causation is set aside, it is certainly meaningful to ask why, for example, the earth sometimes suddenly shakes and to answer that this results from the movement on a fracture of the earth's crustal rocks (usually by a sliding along a rupture plane or fault). In such a framework, it does not matter if there are no discernible human or social consequences from the physical agents. In fact, the vast majority of earthquakes are not discernible except by sophisticated measuring instruments. It has been estimated that ". . . perhaps as many as one million earthquakes occur each year over the globe. . ." but that only perhaps 6,000 of these are felt by humans (Cornell 1976, p. 110). Nevertheless, there is a physical phenomenon, whether sensed directly by humans or not, whose agent dynamics can be and are usefully studied.

An important question, however, is whether it is equally valid also to look at, say, earthquakes or chemical explosions as special and unique cases of disorganizing events, perceptual constructions, political definitions, or particular kinds of crisis occasions? Put another way, will social and behavioral scientists gain more by approaching earthquakes or chemical explosions as very agent-specific disasters or by looking at them as members of a broader class that share much in common with other disasters?

Our answer is that more is to be gained by taking the latter position. It is not only defendable but necessary for seismologists, for example, to look at earthquakes as disaster agents in very specific terms. It is not as defendable for social and behavioral scientists to do so; it is far more useful for them to approach disasters involving earthquakes as part of a generic class. In fact, it becomes increasingly necessary to do so as one moves from a conception of a disaster as a disrupting event to a conception of a disaster as a crisis occasion.

The socially oriented conceptions of disaster force a focus on the properties of the social happening and away from the specific characteristics of disaster agents and impact. Vastly oversimplifying for purposes of illustration, was it important that approximately 60 persons were killed and two hospitals were put out of commission in the San Fernando earthquake of 1971? For certain purposes, yes. But, in terms of the demand-capability ratio of that occasion, it is far more crucial that there were seven and one-half million "survivors" and 120 intact hospitals. If we use only these simplified figures, there is even a question of the extent to which the occasion at San Fernando was a disaster. A strong case could be made that Three Mile Island, with no known casualties and almost no property damage, was far more of a disaster. It is neither the properties of the disaster agent nor the physical impact that are crucial, but rather the nature of the collective response.

More important is the fact that social factors can be quite similar across many social occasions in a way that agent characteristics cannot (and even less than we ourselves once postulated--see, e.g., Quarantelli and Dynes 1970, p. 328). This can be more than stated. While it is an occupational disease of researchers to complain that very little is known about whatever they are studying, including, in this case, the disaster area (see, e.g., Mileti et al. 1975; White and Haas 1975), the fact is we are not totally ignorant of sociobehavioral aspects of disasters. Relatively speaking, we have advanced tremendously in knowledge and understanding since the first social scientists took to the field to study disasters in the United States in the mid-1950's and in Japan in the early 1960's. Scholarship about past studies is not a strong point of many recent researchers, who unknowingly keep reinventing the wheel. However, the current knowledge base is substantial though uneven.

Crucial for the argument in this paper is that cumulative research and theory in the disaster area show there are many sociobehavioral features which are not disaster-specific but are manifested across many different types of disaster agents. As a consequence, it has been possible to derive principles of disaster planning and emergency management. A recent disaster primer includes a discussion of similarities and differences between community planning for natural hazards and chemical hazards. While some differences are noted, it is observed that:

> . . . these differences do not necessarily rule out the application of principles of natural disaster planning to problems of chemical hazards. In fact. . . studies on natural disaster planning and response can be of value for persons connected with chemical disaster preparedness.

It is then stated:

> . . . regardless of the characteristics of a particular disaster agent and the specific demands generated by it, the same kinds of community response-related tasks are necessary in both kinds of disasters and for all disaster phases. In any community, for example, the assessment of hazards and the aggregation of disaster-relevant resources are necessary, regardless of the specific hazards and resources in question. Similarly, post-impact communication and decision-making procedures must be planned for and activated in <u>any</u> community crisis.
>
> To draw an analogy, a battle on land is fought with different weapons, material, personnel, and support systems, than those used in sea battles, but, nevertheless, the general overall battle requirements are the same for both. In both cases, intelligence about enemy strength and movements must be gathered, resources must be collected, trained personnel must be led effectively, and so on. The same is true for disaster planning; although disaster agents and the human and material resources needed to respond to them may vary, the same generic kinds of activities must be performed in the predisaster, preimpact, response, and recovery periods, regardless of the specific threat (Tierney 1980, pp. 18-19).

At a less abstract level, we have substantial research findings on such disaster-relevant topics as warning (Mileti 1975; Perry 1979), evacuation (Quarantelli 1980; Perry et al. 1981), delivery of emergency medical services (Taylor 1977; Quarantelli 1983), search and rescue (Drabek et al. 1981), and family behavior (Bolin 1976, 1982; Drabek and Key 1984). We also have considerable understanding of such disaster-related problems as looting (Quarantelli and Dynes 1969) and panic flight (Quarantelli 1979). The point in noting these few selected examples is that they are typically consistent in ignoring the specific disaster agent. The findings are generalized because the research effort was not agent-specific. Thus, when Parr (1970) wanted to understand the emergence of groups on disaster occasions, he looked not only at the Alaskan earthquake, but also at tornado, explosion, flood, and plane crash disaster occasions. To develop knowledge of civilian-military disaster relations, Anderson (1969) examined earthquakes in Chile, Japan, and El Salvador, tornadoes, floods, and the Alaskan earthquake in the United States, and a dam disaster in Italy. In the DRC studies on more than 50 emergent citizen groups, the situations of interest involved eight different disaster agents (Stallings and Quarantelli 1985).

It also has become increasingly clear that what have been called response-generated demands are far less agent-related than what have been called agent-generated demands (see Dynes et al. 1981). The latter (never visualized as agent-specific) are demands or tasks generated by a disaster when it impacts or threatens to do so; they include such activities as warning, search and rescue, care of the injured, welfare needs, and restoration of community services. Response demands, in contrast, are those tasks that must be carried out if the agent-related demands are to be met; they include communication, continuing assessment of the disaster situation, mobilization and utilization of human and material resources, and coordination and exercise of authority. DRC studies suggest that even agent demands are inherently related to the social occasion involved; they seem to have little direct relationship to any specific agent dimension. In research on planning for and response to acute chemical emergencies, chemical agent-related dimensions proved less directly important than originally hypothesized (see Gray and Quarantelli 1981).

Even when social aspects seem somewhat agent-specific, closer examination frequently indicates that is not the case. For example, the concept of "disaster subculture" was linked initially to a specific agent, such as a flood subculture or a hurricane subculture (see Moore 1964; Osborn 1970). There is now reason to believe experience and other situational factors are more important in the development of the subculture than the characteristics of the specific disaster agent (Wenger 1978).

We have mentioned mostly emergency-time disaster phenomena, but other topics could be cited, such as implementation of hazard mitigation measures (Rubin and Barbee 1985) or long-term demographic and economic consequences of disasters (Rossi et al. 1983). Here, too, the findings are disaster generic rather than agent specific. Most of the work is derived from the American scene; however, findings from cross-cultural and cross-societal research also are supportive of a disaster-generic rather than agent-specific approach (see, e.g., McLuckie 1975; Cattarinussi and Pelanda 1981; Hirose 1981; Huffman 1983; Mileti 1983; Perry and Hirose 1983).

We think a generic approach is also justified whether problems are divided by time stage, by functions, or by levels of response. For example, issues related to floods or explosions can be looked at in terms of the pre-impact, the emergency, and/or the post-impact periods. Similarly, flood or explosion problems can be divided with respect to such functional tasks as mitigation, preparedness, response, and/or recovery. The responding units may be individuals, households, groups, organizations, communities, societies, or international systems. From our viewpoint, we will learn more about time stages, functions, or levels of response by considering earthquakes or explosions as members of a generic class of disasters. Thus, we would argue that even earthquake predictions are not that agent specific. In a recent statement, Turner (1980) implies that much of what we know about how people respond to threats and warnings for other dangerous

possibilities is equally applicable to prediction scenarios for earthquakes (but, cf. Panel on the Public Policy Implications of Earthquake Prediction 1975).

It sometimes may appear that a generic approach to disasters combines rather dissimilar kinds of physical agents or other heterogeneous elements and otherwise violates common sense. In one way, this is correct, but it is not necessarily significant. An analogy may make this point better than a direct discussion.

Biologists have long classified whales, bats, and human beings as mammals. There are many manifest differences in sizes, structures, and functions of these three creatures; however, for purposes of biological study and application, these obvious commonsense differences are far less significant than less overt structural and functional similarities, such as the fact that all mammals are warm-blooded and bear their young alive. For purposes of biological study, the physical size of a whale compared with a bat, or the fact that the former needs a water environment whereas human beings basically need a land environment, are unimportant. Combining manifestly different physical agents or overtly different disaster-related elements can be viewed similarly.

The general position expressed here is hardly unique to this author and his colleagues at DRC. When the United States Congress was considering the Implementation Plan required by the Earthquake Hazards Reduction Act of 1977, the Office of Technology Assessment was asked to develop "Criteria for Evaluating the Earthquake Mitigation Implementation Plan." In a summary of the report which discussed the criteria, it was noted that a major issue was "earthquake versus an all natural hazards strategy." With respect to this matter, the conclusion was:

> While it may be convenient for researchers and the large federal agencies to handle hazards categorically, the practicalities of state and local government organization and function increasingly require integrated planning and operations for all hazards. Similarly, federal construction and housing programs also could be responsible to all hazards, not just to one or a few selected hazards. (Quoted in The Hazard Monthly, July 1980, p. 3; see also Coates et al. 1979).

The generic approach to disasters is not one all find easy to accept. This is understandable, even apart from differences in conceptualizing disasters. There are a number of other reasons--bad, indifferent, and good--for not accepting a generic disaster approach. There is a historical reason. Much early work on disasters initially focused on the physical agent; to some, this has become a habitual way of doing things. As implied earlier, "a way of seeing is also a way of not seeing." We have observed a similar reluctance to abandon an agent-specific orientation in the fire

and chemical hazard areas. Researchers and operational personnel in those two areas have been struggling with questions about the physical agents involved and their specific characteristics. Accustomed to thinking in that way, they have difficulty seeing that sociobehavioral studies of other disaster situations have direct applicability to their own areas. But, even in these areas, the generic disaster approach is making headway (see, e.g., Tierney 1980).

Recognition of the idea that there may be a more valid approach than an agent-specific perspective is also handicapped by the fact that many of us have difficulty in communicating because our worlds of specialization and knowledge differ. Some of us are specialists and/or knowledgeable about one kind of disaster agent, such as hurricanes, famines, or explosions. Others of us are specialists and/or knowledgeable about topics and questions that cut across various kinds of disasters; thus, we may think primarily in such topical terms as warning, evacuation, medical treatment, or disposition of the dead. In a sense, some of us divide the disaster world horizontally; others divide it vertically. This does not facilitate communication from one axis to another. Furthermore, it appears more difficult for vertical communicators (agent-specific specialists) to understand horizontal communicators (general disaster specialists) than vice versa.

Finally, the usefulness of an agent-specific and generic approach to disaster varies with the purposes involved. It can be quite valid to resist a generic approach. It is functional to take an agent-specific approach for certain purposes. With respect to sociobehavioral aspects, a generic approach would be more fruitful (see also Dynes et al. 1981).

At times, when the polarity in approach is raised and discussed, a statement is made to the effect that, yes, a difference in approach is possible, but the division is a practical versus a theoretical one. Thus, it is said that operational personnel faced with an immediate emergency situation need agent-specific knowledge. For example, how far do people have to be evacuated to avoid the toxicity of flying debris if a tanker of chlorine is threatening to explode? On the other hand, it is said that those with more theoretical concerns can deal with more generic questions. What, for example, are the general factors involved in motivating families to evacuate?

We do not see the practical-theoretical distinction as a valid one. It seems to confuse tactical matters (e.g., the distance to evacuate) with more generic strategic matters (e.g., general principles of motivation applicable in all situations). Some strategies cut across disasters. While the tactics may be more situationally specific, even the military (from which the strategy-tactics distinction is drawn) seems to feel soldiers can be taught tactical principles.

We can note also that such a practical and applied field as medicine generally proceeds as if planning and responses in

disasters need not be agent specific. It is rare to find disaster medical personnel training and preparing for only one kind of medical treatment. Disasters are viewed in a generic sense; for example, the World Health Organization defines a disaster as ". . . a situation which implies unforeseen, serious, and immediate threats to public health" (see Lechat 1980, p. 18). In disaster medicine the emphasis is on general principles, the organizational focus on triage, allocation of patients to hospitals, and other nonspecific aspects. Parenthetically, DRC's extensive studies of the delivery of emergency medical services in mass casualty situations (Quarantelli 1983) greatly influenced our own thinking about the importance of taking a generic approach to many disaster problems and issues.

A meaningful typology of disasters would be of considerable theoretical and practical usefulness. Although the first analytical typology was offered more than a half century ago (Carr 1932), most efforts to date have not progressed much beyond simple and unrewarding distinctions (e.g., that between acts of God and human-generated disasters). In the disaster area we need a typology based on general dimensions that not only cut across different disaster agents but also the same disaster agent. As many have said, what is important is not the physical differences between an explosion or an earthquake, but the fact that neither, for example, usually allows time for warning. Or as others have said, ". . . a flash flood resulting from a broken dam might have more similarity to a sudden tornado than to a slowly rising Mississippi River flood" (Stoddard 1968, p. 12); ". . . a flood in Cincinnati for which there may be two weeks warning, is simply not a comparable event to a flood in Denver with six hours warning, or to one in Rapid City where warnings were received as flood waters entered dwellings" (Mileti et al. 1975, p. 5); or ". . . the differences between damaging events due to the same natural or man-made agent may be larger than between events initiated by a different agent" (Hewitt and Burton 1971, p. 124). If we could develop disaster typologies based on combinations of meaningful dimensions of social occasions, we could better grasp the commonality of sociobehavioral phenomena across various agent differences and differences within the same agent. In our view, all the typologies advanced and all the dimensions suggested for typological comparisons are flawed in very serious ways, often because they are not based on a clear conceptualization of disasters or mix rather different conceptions, such as the seven ideal-type ones discussed earlier. This is true even of some unpublished formulations that are far more sophisticated than anything that has reached print so far. One example is the typological dimensions of a physical, temporal, and social nature used by the National Academy of Sciences Committee on U.S. Emergency Preparedness. This typology made a very systematic comparison of nuclear and non-nuclear emergencies; however, only very limited and highly selective excerpts of a substantive rather than a methodological nature have been published so far (see Perry 1981, 1983; Quarantelli 1982b; Kreps 1984).

Perhaps the best that can be done, at present, is to suggest some of the dimensions that ought to be considered in developing a typology. To name such dimensions is to indicate significant features or characteristics of disasters. This in turn, as already noted, requires starting with some conception of disaster.

Our conception of disaster necessitates looking at the dimensions of the crisis occasion involved. The following are some dimensions that might be regarded as important. They are neither presented systematically nor in any particular order because we would have little confidence in such formulation. Also, in terms of the logic of our conceptualization, we ought to be presenting dimensions that affect both the demands and the capabilities in the crisis occasion. This distinction is only faintly implicit in what is set forth. Finally, we assume the response in the crisis occasion to be discussed is by the population in the affected community. (We leave aside here the troublesome question of what constitutes an affected community, a problem we discuss in Part II of this volume.)

Among major dimensions or characteristics that could be singled out with respect to a population's response in a disaster occasion, eight will be discussed. Given our conceptualization of disaster, the emphasis is on characteristics of the occasion, rather than any dimension of an agent (even if there is one, which is not always the case). Furthermore, the characteristics noted are those which--either in terms of logic or some empirical observations--appear to have a potential to create or exacerbate mental health problems.

The Proportion of the Involved Population

The proportion of the population involved relative to some base is more important than absolute numbers. This is true whether the focus is on concrete losses or only psychological involvement. For example, 61 dead in the Indianapolis Coliseum explosion involved relatively less of that community than did 34 dead in the Xenia tornado, given the affected population bases in the two communities. The same absolute numbers might mean a catastrophe in some communities but only a bigger than usual emergency in others. In more general terms, this disaster characteristic has less to do with geographic scope or the physical impact of the disaster agent than with the social scope of the disaster occasion. The degree of community involvement has to be identified in social terms relative to the total population base. Generally, it might be supposed that the higher the proportion of the population involved, the more likely the disaster occasion will engender mental health problems. However, this is a complex matter. As we discuss later, absolute losses might be counterbalanced by perceptions of relative losses.

The Social Centrality of the Affected Population

Green (1982) has suggested considering whether the affected population is central or peripheral to the larger geographic community. While this idea is implicit in some discussion of long ago about the victims of the Cocoanut Grove night club fire, and is specifically cited in rather recent discussions of airplane disasters (e.g., Quarantelli 1980), the more general and systematic formulation of this disaster dimension posited by Green seems worth pursuing. The lack of post-impact social support which victims suffer when they are socially peripheral to the larger community population has been shown to have important mental health consequences; this has been demonstrated not only in American disasters but also, in a more complicated way, in Australian disasters (Parker 1975; Milne 1977). The occasion of one disaster may involve a rather different population mix than another, even with an identical disaster agent in the same community (as might occur if a tornado were to hit a crowded airport terminal at one time and a large, local church bingo game at another time in the same community, making victims, respectively, of many transients and many long-time, closely linked neighborhood residents). The degree of social centrality of the involved population would appear to be an important characteristic of disaster occasions and critical to our understanding of both mental health problems and problems in providing disaster mental health services.

The Length of Involvement of the Affected Population in the Crisis

There is almost certainly some relationship between length of involvement in crisis occasions and possible mental health effects; however, it is doubtful the relationship is a linear one. For example, generally speaking, the longer a population is involved with a threat, the more likely its members are to make an adjustment to the threat, including a possible desensitization process. In the recent Ft. Wayne flood, for instance, it was our impression that the population's concern and fear about an actual flood decreased as the crisis occasion went from hours into days, even though the actual possibilities of the levees giving way increased. On the other hand, it could be argued that there is some accumulative process, the longer the length of involvement in a social crisis. The idea entails also some threshold or breaking point. Despite the murkiness of the little empirical data available, it appears mental health consequences are linked to length of crisis involvement, perhaps in both directions. Length of involvement refers, of course, to the population crisis response in the disaster occasion; it should not be confused with duration of the threat, which is usually considered a dimension of the physical agent. Thinking of length in the sense indicated permits us to take into account occasions where the duration of the primary disaster agent is shorter but the length of crisis involvement is longer because of secondary threats (e.g., an accident involving a train carrying chemicals may be over in a few minutes, but the threat or actual slow release of toxic chemicals from the wrecked train may generate a crisis that lasts for days, as at Mississauga where the actual danger was over almost immediately after the train wreck). Or, as a number of disaster researchers have noted, there could be an occasion like the 1979 accident at Three Mile Island where the duration of the accident was relatively short but the length of the crisis for certain population segments continues to this day.

The Rapidity of Involvement by the Population in Crisis

In some disaster occasions, the population becomes slowly involved in the crisis. Generally, populations adjust well to such occasions, and there may not be much of a crisis. On the other hand, there may be very rapid involvement in a disaster occasion. Adjustment seems to be much more difficult in those cases; presumably, this raises the probabilities of negative mental health consequences. Most riverine floods and flash floods are almost ideal polar-type examples of the differences in these two kinds of occasions; however, as noted earlier, there are also generic differences that cut across agents. The Rapid City flood, many dangerous chemical emergencies resulting from transportation accidents, the false story of a dam collapse at Port Jervis, New York, and the Kansas City Hyatt Regency Hotel walkway collapse are examples of the kinds of occasions in which the affected population is quickly involved. While rapidity of involvement is sometimes related to the next characteristic to be discussed--predictability--it is nonetheless independent of it. Predictability has to do with expectedness, rapidity with speed; the two can vary independently. Also, we treat rapidity of involvement as a characteristic of the disaster occasion; it is not equated with speed of onset, which is a feature of some physical disaster agents. Rapidity refers to what happens in the response pattern and is viewed from the perspective of those involved; thus, it may or may not correspond with the actual time available for action. Mental health effects stem not from how long in some chronological sense people have available to act, but rather from whether they perceive themselves as having to hurry to save threatened values, as being in a "crisis" in the sense earlier discussed.

The Predictability of Involvement in a Crisis

As just indicated, there are times when populations can predict their possible involvement in disasters; in other cases, the crises are unexpected. Such evidence as exists indicates the unexpected is much more psychologically disturbing than the expected. If one can predict involvement in a dangerous situation, culpability for the involvement is more likely to be attributed to self. If predictability is very low--as seemed to be the

case in Mt. St. Helens and Three Mile Island--others are more likely to be held culpable. Also, if predictability is high--as in the instances of populations living near chemical complexes--there is greater sensitivity to danger cues, willingness to act upon them, and less trauma in evacuations (as indicated by a recent DRC study--see Quarantelli 1981). Finally, if predictability is low, we speculate there would be a tendency for a strong affective reaction. The common thread in all this is the element of the unexpected; as a consequence, people in the community are unable to bring their normal routines and coping mechanisms to deal with the crisis. While most people behave relatively well in such immediate crises, there is undoubtedly considerable stress and strain that may have negative psychological consequences.

The Unfamiliarity of the Crisis

Along with low predictability, high unfamiliarity with a disaster occasion appears to be psychologically disturbing. This issue has several different aspects. For example, people have different images of different kinds of threats; they are clearly most concerned with and afraid of those that are most unfamiliar, such as threats associated with nuclear power plants and chemicals. (The knowledge people have of many natural disaster threats may be little better than their knowledge of other threats, but there is little doubt some threats are perceived as more unfamiliar and therefore more worrisome to most people.) Also, as noted in studies on handling of the dead (see Hershiser and Quarantelli 1976; Blanshan 1977; Blanshan and Quarantelli 1981), the great majority of people--at least in American society--are unfamiliar with dead bodies, especially in large numbers. They become very psychologically disturbed if they have to deal directly with the dead. Also, few Americans are accustomed to seeing very badly injured or disfigured live or dead bodies; such an unfamiliar sight in a disaster occasion is usually very psychologically upsetting. Many transportation disasters, as well as flash floods, tend to generate such sights (see, for plane crashes, Quarantelli 1980); in addition to being psychologically disturbing, they are often disruptive of search and rescue efforts. Although research data on this matter are far from solid, it might be hypothesized that the kinds of unfamiliar scenes just discussed may not only be among the most psychologically disturbing for disaster victims but also behaviorally dysfunctional. Some impressionistic DRC field observations suggest that first responders who are not direct disaster victims may react in the same way and may be more psychologically vulnerable because they are not direct disaster victims.

Unfamiliarity also can be associated with the "statistically unusual." For example, few people have had experience in search and rescue activities. Too, in many disasters there is a need to undertake many varied tasks in very short periods of time; what during normal times is familiar and spread out over time often occurs almost simultaneously in a disaster occasion. Although not always present, a strong element in most such situations is a perception of being unable to control what one is subject to. Situations simply impinge upon disaster victims. The quantity and quality of the unfamiliar present in many disaster situations is bound to have mental health effects.

The Depth of Involvement of the Population in the Disaster

It is possible to take certain kinds of losses (e.g., deaths of family members, loss of home, forced moves) as an indication of disaster impact. However, the relative nature of what is involved may be more important than absolute features. It is not so much what one has lost in absolute terms, but what one has lost relative to others. In one of the first disaster studies, Prince (1920) noted that victims of the Halifax ship harbor explosion felt less personal loss because their own losses were in the context of around 2,000 dead and enormous property damage. The perception of relative deprivation, of course, can be in relation to other people as well as one's own standard of living. In absolute terms, some poor populations may lose more than some wealthier ones; yet, the psychological stress may be higher for the more affluent.

The Recurrency of Involvement

For some populations, involvement in disaster occasions is a recurrent happening, not a new experience. However, the fact of prior experience, or even many experiences, appears to be far less important than whether the prior experiences have been incorporated into ongoing attitudes and behaviors. There are cases, for example, where the development and maintenance of a disaster subculture are unrelated to frequency of event occurrence (Wenger 1978). In terms of mental health problems, disaster subcultures essentially quasi-routinize disaster occasions and make them much less disruptive and disturbing. However, if recurrent experiences are not so quasi-routinized, they could become a source of psychological stress and strain, although we are not aware of clear-cut evidence about this possibility. Depending on the prior development of a disaster subculture, recurrence as a disaster characteristic may influence mental health either positively or negatively.

In discussing specific characteristics of disasters, what we have noted so far primarily reflects the needs/demands side of how we have conceptualized disasters. If disasters represent social occasions that involve an imbalance between demands and capabilities, logic would dictate a discussion of the capabilities/resources side of the question. In this approach, the degree of social preparedness of a population or community would be one characteristic of a disaster occasion, and it could be argued that it would have mental health consequences. Some investigators, of

course, would treat this and similar characteristics as intermediate or intervening variables in a model. However, from our perspective that stance misses the point; it coutinues to treat disaster as "something" outside the social system involved. Interestingly, European and Canadian critics of mainstream disaster studies (most of which are conducted by researchers in the United States) all cite this assumption as a basic but unrecognized theoretical flaw in the disaster research undertaken by social and behaviorial scientists in the United States. It is obvious to them that a disaster is the manifestation of internal societal vulnerabilities and weaknesses, not something that impinges on the system from the outside (see, e.g., O'Keefe et al. 1976; Westgate and O'Keefe 1976; Jager 1977; Waddell 1977; Dombrowsky 1981; Pelanda 1981; Hewitt 1983). A few researchers in the United States are beginning to address these criticisms (see, e.g., Quarantelli 1982; Kreps 1983, 1984). However, since we have not fully accepted the criticism, we will not further attempt here to develop the capabilities/resources side of our model of disaster characteristics.

Before concluding, two related matters warrant mention, namely, the possibility of interaction between the factors discussed and the probability that all factors are not of equal weight. Given the presence to some degree of the eight characteristics of the factors discussed, the end result would be some degree of disruption of or deviation from the population's preimpact or normal routines. Clearly in any consideration of interactiveness or weighting, the question is not one of absolute presence or absence of a factor(s), but one of degree in terms of the response pattern of the total affected population. Thus, even where a disaster subculture exists, not all of the responding population will be part of it; even those who are will vary in their involvement with that subculture. In relation to the probable interactiveness of the different characteristics and dimensions, it is likely, for example, that the higher the degree of predictability of involvement the higher the rapidity of involvement in the crisis.

While the objective of weighting and quantifying interactive factors is a laudable one--and certainly relevant to assessing the mental health effects of disasters--it is, in our view, a task far beyond any immediate resolution. It is instructive in this regard to consider experience with the disaster topic that probably has received the most research attention, namely, disaster warnings. It is now fairly clear that certain perceptual aspects of warning messages are crucial in acceptance of and response to the warning; these include perceived danger to self, immediacy of the danger, and certainty of the danger (see Mileti 1975; Perry 1979; Quarantelli 1980). However, no researcher has ventured to suggest, except in a very nominal way, that weights should be assigned to the different "warning" factors. Some fairly sophisticated statistical techniques, such as path analysis, have been used in attempts to assess the weighting and the interactive effect of the warning factors (see, e.g., Perry et al. 1981); however, no one would seriously suggest that major inroads have been made into solving the problem. If the problems of weighting and interaction are at such a primitive level in a topical area that has received far more quantitative and qualitative study than the topic of mental health in disasters, it seems reasonable to assume the field is not yet ready to assign weights and interactive influences to mental health factors. Weights could be assigned and interactive effects could be posited, but they would not be derived from any meaningful empirical base. It may not be amiss to note that the Federal Emergency Management Agency (FEMA) is currently attempting to derive a weighted scale of community hazardousness (which has certain parallels to trying to develop a scale of the mental health impacts of disasters). The FEMA effort is plagued by many of the same problems just mentioned. Unless there is some clear conception of X, of hazardousness, of disasters, it is very difficult to derive--empirically or otherwise--significant consequences of X.

In this paper, we have tried to indicate why we think high priority should be assigned to the problem of defining and conceptualizing the phenomena to be called "disaster." That established, it then becomes possible to suggest the significant dimensions or characteristics of disasters. This known, it becomes easier to see what effects or consequences might result from such characteristics. Finally, if the consequences are known, it then becomes possible to plan meaningfully for the delivery of mental health services for disasters and to design more sophisticated and probing research on disasters and mental health.

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