

University of Delaware
Disaster Research Center

PRELIMINARY PAPER
#209

PREPAREDNESS AND DISASTERS:
A VERY COMPLEX RELATIONSHIP

E. L. Quarantelli

1994

**PREPAREDNESS AND DISASTERS:
A VERY COMPLEX RELATIONSHIP***

E. L. Quarantelli
Disaster Research Center
University of Delaware
Newark, Delaware 19716

*This is a written but unreferenced version of the oral remarks made at the AFTER EVERYONE LEAVES Conference in Minneapolis, Minnesota on November 5, 1994.

PREPAREDNESS AND DISASTERS: A VERY COMPLEX RELATIONSHIP

Introduction

Our remarks are organized around the three major words in the title, namely, preparedness, disasters, and relationships.

As a preface, we should note our comments are not based on the results of any particular study, but instead are drawn from about four decades of social science research starting in the late 1950s. Thus, our knowledge data base includes literally at this point thousands of studies. Our Center alone, the Disaster Research Center, has examined in the field more than 515 different disaster and crisis occasions. Also, while initially the work on disasters was primarily undertaken in the United States, through the years it spread around the world so that at the present time there are about three dozen different societies where there is at least a core of social science disaster researchers. Thus, the research results we use are not exclusively rooted in American society. To be sure, the studies done are somewhat slanted more towards developed than developing societies and are more focused on sudden rather than diffuse kinds of disaster situations, but many of the observations made would appear to be rather generalizable.

Thus, it is our overall intention to present some of the major perspectives and distinctions that social science disaster research has found to be of value.

What has been learned through this research is, in our view, important in understanding how to plan for and manage disasters. We will draw a number of distinctions between and among different phenomena; these are not merely semantic exercises or abstruse categorical distinctions. Instead the points made are of value because of both their theoretical and practical implications, or in other words should make a difference in how we should go about planning for and managing disasters.

DISASTERS

A good starting point is the word "disasters".

Unless a number of distinctions are made here, we will be mixing rather different phenomena such as apples and rocks with diamonds and lemons, so to speak.

FIRST, it is necessary to distinguish between consensus and conflict type crisis occasions.

While all crises can be said to share certain limited common features, along this line of consensus and conflict, the differences are far more important than the similarities.

Particularly excluded by self designated disaster researchers doing studies in the field are conflict types of occasions, that is where one or more parties in the situation are consciously and deliberately trying to inflict damage, destruction and/or disruption on some of the populations involved. Thus, disaster researchers on the whole have not taken as part of their immediate subject matter such situations as wars, riots and civil disturbances, terrorist attacks and hostage takings, product tampering and sabotage, and pogroms and massacres. The conflict that characterizes these kinds of situations is what makes it different from natural and technological disaster occasions. Conflict may occur in disasters, even in the emergency period, but it is not the essence of the situation. (Example of hospital operations in disasters and civil disturbances---three shifts versus one because of curfews and roadblocks; incoming in disasters rise to a peak then drop off sharply while in riots are very erratic; everyone agrees to treatment in disasters but not in riots leading to difficult ethical questions; in fact, fights in emergency and operating rooms in riots, etc.).

SECOND, however, the often made distinction between natural and technological disasters does not seem to have much value.

A kind of separate agent specific orientation might seem natural and obvious. Are not chemical threats different from earthquakes? Are not floods different from massive fires in high rise buildings. The answer of course is "yes" but the yes is in an important sense an answer to the wrong question, that is the possible source of the crisis. The agent specific approach assumes that each type of disaster agent (e.g. a volcanic eruption, a nuclear radiation fallout) or classes of agents (e.g., the source being in the natural or in the technological sphere) possess certain distinctive characteristics that have consequences for what occurs. But increasingly it has been recognized that a hazard per se is not a disaster; a disaster is a social happening. Thus, there has been an increasing movement away from agent specific formulations and an emphasis on across-the-board features in the response. From an agent specific to a generic approach to disasters.

Actually, there are two basic reasons for this shift to a generic approach. One is theoretical and the other empirical.

The first is related to the fact that increasingly it has been recognized that a hazard per se is not a disaster; a disaster is a

social happening or occasion. There is the logical recognition that e.g. the occurrence of an earthquake or a chemical explosion per se does not automatically result in a disaster. Unless there are significant social negative effects of some kinds, the happenings remain only a geophysical event or a chemical process. From this perspective, a disaster can be identified only in terms of some features of a social occasion, that is, some characteristics of the individuals and groups reacting in the situation. The socially oriented conception of a disaster forces a focus on the common or similar properties of the social happening and away from the physical features of natural and technological agents and impacts. (Actually, disasters can occur without agents but as a result of "rumors").

Empirically, for very many of the human and organizational problems in preparing for and managing the response to disasters, the specific kind of agent involved, does not matter. Whether the emergency time disaster task be warning, evacuation, sheltering, feeding, search and rescue, disposition of the dead, mobilization of resources, information flow, etc., the same general activities have to be undertaken irrespective of the specific agent involved.

E.g., the same kind of warning messages and the same kind of warning system is needed and is effective in getting people to evacuate irrespective of the agent involved. It does not matter if the agent is a tornado, an oil spill, a tsunami or a major fire in an hazardous waste site--what will motivate people to give credence to warning messages, what kinds of warning messages will be effect, what will limit the acceptance of a warning, and so on, will the same in all cases. These human aspects of a disaster do not depend on the specific type of agent involved.

Similarly if there is need of organized search and rescue or the delivery of emergency medical services, the more important organizational aspects that have to be dealt with do not depend on the specific agent in the situation. For example, research has consistently shown that less seriously injured are likely to be treated first, that one or a few hospitals will take a disproportionate number of the injured victims, and that there will be no overall coordination of the medical-health response.

Studies have also concluded that ordinary citizens in impacted localities will quickly undertake most (up to 90 percent) of the initial search and rescue, that the handling of dead bodies is very psychologically disturbing, and that formal search and rescue teams tend to operate in an unintegrated way. The specific agent involved doe snot matter very much in the carrying out of such emergency tasks.

THIRD, and very important, disasters are not merely bigger emergencies.

Instead of seeing the phenomena as merely being one of degree, the argument is that there is also a difference of kind. Particularly at the organizational level, it is now recognized that in disaster occasions at least in highly urbanized and industrialized societies, organizations have to:

quickly relate to more and unfamiliar groups;
adjust to losing part of their autonomy and freedom of action;
apply different performance standards; and,
operate within a closer than usual public and private sector interface.

FOURTH, in a similar way, there are important differences between what might be called disasters and catastrophes.

Just as disasters are differentiated from everyday emergencies, we think that there are both quantitative and qualitative differences between "disasters" and "catastrophes." The latter (partly illustrated by Hurricane Andrew in the US) differ from the former in the following respects:

most or all of the total residential community is heavily impacted;
the facilities and operational bases of most if not all emergency organizations are themselves hit;
initially many leadership roles in the emergency responses have to be undertaken by outsiders because local personnel are casualties and/or community resources are not available; and,
most of the normal everyday community functions are sharply and simultaneously interrupted with places of work, recreation, worship and education totally shut down and the lifeline infrastructure badly disrupted.

PREPAREDNESS

Now for some comments about the word "preparedness".

Earlier this year, we were part of the official US delegation meeting in Yokohama and focused on the UN Decade for Natural Disaster Reduction. It was clear in that conference that the word preparedness was used in drastically different ways by various participants and organizations from around the world. Also, at times, some parties were equating preparedness with any kind of planning, while other parties were simply treating preparedness as merely one kind of planning. The result was, in our opinion, much miscommunication and misreading of what other parties at the

meeting were saying.

FIRST, in US society, there has more or less developed a rough consensus that it is necessary to make a four fold distinction between different phases of disaster planning, namely that mitigation (or prevention), preparedness, response and recovery planning should be distinguished from one another.

Mitigation includes policies and actions taken at a time distant (usually before) from an actual disaster situation and which are intended to prevent or reduce the impact of a disaster when it occurs (building codes, land use regulations, zoning, engineering construction designs, laws and ordinances, insurance, educational and training information, etc.).

Preparedness has to do with the steps and measures planned and undertaken when the probability of a disaster in a particular locality is at hand, e.g. such matters as warnings and evacuations.

Response has to do with the actions undertaken during and immediately after impact, e.g. such matters as search and rescue and providing of emergency medical services.

Recovery generally has to do with activities undertaken after the response in the emergency period is over, e.g., such as the restoration of utilities and the rebuilding of homes.

The four phases should be seen not in a linear fashion (from mitigation through recovery) but in a linked way. What is done at the previous stage affects the later stages and all the way around back to mitigation.

SECOND, there has been a growing and accelerating emphasis in American society and its disaster oriented groups and organizations on mitigation.

Now in an historical sense, there has been a slowly evolving fundamental change in American disaster planning or preparedness. The focus has gone from primarily a focus on response to now one on mitigation. This is both the FEMA and the official US government position.

There are reasons for this change in emphasis. Dealing with the conditions responsible for rather than the symptoms. Mitigation does make a difference in some instances. A frequently cited recent case is a comparison between the earthquake in Armenia and the Loma Prieta earthquake in the United States. Roughly there was the same magnitude in terms of physical impact but the consequences

were rather different; in the former about 20,000 people were killed whereas in California less than 100 died--the difference can be attributed primarily at one level to better American building structures.

THIRD, there are some accepted research based principles of planning, especially for preparedness and response.

Let us mention 10 of them, Ten Commandments if you will. The BEST OR MOST APPROPRIATE planning to have in place, at any level but particularly at the local community level is planning which:

(1) as previously noted, views disasters as quantitatively and qualitatively different both from accidents and minor emergencies, and from catastrophes;

(2) is multihazards rather than single in focus, generic rather agent specific;

(3) includes all four time phases of the planning process rather than just one time phase;

(4) aims at multiple rather than single hazard or risk reduction goals;

(5) focuses on general principles rather than specific details;

(6) highlights a continuing process rather than an end product, such as the production of a written plan;

(7) builds on research findings derived from systematic data rather than just personal experiences ("war stories");

(8) emphasizes the need for intra- and interorganizational as well as community coordination rather than control;

(9) assumes potential victims will react rather well instead of poorly during the emergency time periods of major crises; and,

(10) distinguishes between planning and managing, between the strategies and the tactics necessary.

FOURTH, it has become increasingly clear that planning is not managing.

The last point made is particularly important it can not be assumed that just because even good planning is in place, it will actually

be implemented or carried out as planned. What needs to be recognized here is a distinction that the military developed a long time ago. They made and continue to make a distinction between strategy and tactics. Somewhat oversimplified, strategy has to do with the overall approach to a problem. Tactics has to do with the specific contingencies that have to be dealt with in an actual situation, capturing a hill in the daylight as over against doing it at night. In a rough parallel fashion, planning for disasters can be equated with the strategies that ought to be used. Tactics, however, have to do with the particular or specific things that have to be done in an actual disaster occasion. But just as the military believes that they can enunciate principles of both strategy and tactics even though the two are different areas; also in the disaster area there is a need to distinguish between planning, the strategies that should be used, and tactics, the means that have to be used to cope with situational contingencies.

A consequence of this is that it is actually possible to have good planning in place, but very poor managing of a disaster occasion and vice versa. It is actually possible to have poor planning but end up with relatively good managing---not to be recommended but possible.

RELATIONSHIP

The basic question is what difference does planning make on the status of preparedness, and if it occurs, how the crisis occasion is managed? In other words, what is the relationship between planning and disasters? We suggest it is a very complex one.

FIRST, there is a need to differentiate between different levels of human and social behavior, where the impacts occur.

For example, much of the summarized social science research in the area draws generalization in terms of behaviors at the individual, the household or family, the organization, the community and the national levels.

Why are such distinctions important? Because different levels of response to disaster occasions are at best only partly correlated with one another. Take the example of evacuation. It is one of the most well established propositions in the disaster area, that evacuation is a group or small group activity rather than individual behavior. That is, to understand this behavior requires an understanding of small group decision making; similarly appeals for evacuation have to be aimed at the small group rather than individuals.

In this kind of framework, the research done suggests the following about:

Individual behavior:

(1) It is very difficult to get individuals or households to be self interested and to prepared, much less to be concerned about disasters before they happen (two exceptions are disaster subcultures and focus of emergent citizen groups);

(2) When disasters do occur, contrary to many mythological beliefs, individuals react very well as a whole (they do not engage in panic flight; start looting or do other antisocial behaviors; or remain passive in the face of the crisis)

(3) While the experience of a disaster is a memorable one, and there are differential short run effects, there does not appear to be too many lasting behavioral consequences, although there is lack of consensus about the possibility of certain longer lasting negative psychological effects.

Organizational behavior:

(1) those organizations that do plan for disasters, and almost all emergency-oriented ones do, often fail to recognize the crucial differences between emergencies and disasters, and between disasters and catastrophes;

(2) organizations typically have major problems in attempting to manage disasters although these are often not the expected difficulties but have to do with the processing of intra and intergroup information and flow to and from citizens, making appropriate decisions (as a result of overworked personnel, conflict over new tasks and confusion over jurisdictional responsibilities), and developing coordination (lack of consensus about what is "coordination", strained relationships over new tasks and the magnitude of disaster impact);

(3) There is only selective organizational learning and change at best from undergoing disasters (much talk but little action).

Community behavior:

(1) Except in some disaster prone or at risk localities, local communities generally give very low priority to preparing for disasters although in the US the situation has markedly improved in the last decade or so;

(2) The greater the disaster, the more there will be the emergence

of new structures and functions as the community attempts to cope with and adjust to a disaster occasion (as illustrated from a fourfold DRC typology);

(3) There are selective longer run outcomes and changes in communities that have been impacted by disasters including negative effects, although more frequent there is simply acceleration of existing trends.

SECOND, impacts can be of a variety of things, e.g., changes or alterations of attitudes, knowledge, new social links, new behaviors, new laws/legislation, etc.

Without going into any details, clearly there are fundamentally differences depending on what is being discussed. For example, it is much easier to change the information or knowledge that people have compared to changing their behaviors; it is much easier to alter existing channels of information in organizations than it is to establish new ones; it is much easier to modify existing community ordinances or laws than to create new ones.

This is a very complex matter that needs much thinking through when planning and managing is being undertaken.

THIRD, what is success is not as obvious as may appear at first glance.

E.g., efficiency versus effectiveness. They are different and require different efforts. Many disaster problems are solved effectively but not efficiently. Good planning and managing really has much more to do with efficiency than effectiveness.

There are fundamental values involved in assessing what is success. For instance, lives are being saved, but economic losses are increasing in American society. It therefore past and current disaster planning and managing a success?

Some basic questions:

(1) the goals of recovery---particularly is it to bring back the past or to create something different from the past? One could assess reconvey in terms of restoration of whatever previously existed prior to the impact of the disaster. On other hand, the process can be evaluated in terms of bringing the postimpact level up to a higher level than existed in preimpact phase. (Old Red Cross position;provision of assistance was for need not loss)

(2) the levels of recovery. The process might not proceed at the same rate or in the same way at different levels of the social

units involved. While the recovery of individuals, households, organizations, the community and the society are not totally independent of one another, neither is the linkage or correlation necessarily very tight.

(3) the size of the recovering unit. The larger the social unit involved, the more likely there will be postimpact recovery. Several families for instance may be literally destroyed by a disaster but in terms of the overall community of which they were a part, their loss could be completely insignificant insofar as overall community recovery from a disaster is concerned.

(4) The perspective on recovery. What might be deemed an unsuccessful recovery from the viewpoint of one local community may not be deemed unsuccessful from the viewpoint of higher levels such as the state or federal levels. Higher levels have relatively more experiences of disasters, while for communities it is often the experience of a lifetime. As such, the former are more likely than the latter to have realistic rather than idealistic conceptions about recovery.

(5) the recovery from secondary or ripple effects of disasters. There is a strong tendency in disaster occasions to focus on the obvious and direct destruction and damage. One consequence is that the recovery process sometimes ignores or downplays the secondary or ripple effects of disasters. The Three Mile island example.

(6) recovery from disasters differs from recovery from catastrophes. One major difference between community level and regional or national level disasters is that in the former there typically is a convergence of assistance from nearby communities. But the more a disaster encompasses nearby geographically contiguous areas, the less likely will those localities, themselves impacted, be able to help in emergency relief or recovery activities. Thus, the larger the disaster, or a catastrophe, not only is there more likely to be greater short and long run needs, but there is less likely to be available certain kinds of assistance from nearby areas that would be present in smaller type disasters.

FOURTH, what is involved in the recovery of victims is very complex.

We will touch on two research derived points here: (a) some major findings about those who are assisted in the recovery effort after disasters; and (b) a few briefer comments about those who give or provide recovery assistance in the aftermath of a disaster.

Regarding victims:

- (1) Disaster victims tend to judge not only their losses but also what they obtain in recovery efforts in relativistic rather than absolute terms.
- (2) Certain preimpact social locations or placements affect being helped in the recovery process.
- (3) Some families/households receive more help from various sources than others with roughly equivalent losses/needs.
- (4) There is differential knowledge in terms of social status of where to go for help and how to obtain assistance.
- (5) For the great majority of victims, relatives and kin are the major helping sources in the recovery period.
- (6) The family socioeconomic status is important in the recovery process. The higher the better the recovery.
- (7) The later a victim family is in the life cycle, the less likely will there be recovery to a preimpact level.
- (8) There is a difference, and no necessary strong correlation, between perceptual/symbolic recovery and economic recovery.
- (9) The more temporary housing relocations occur, the more difficulties there will be in the recovery period.
- (10) There can be positive as well as negative consequences from involvement in the recovery process, social psychological as well as socioeconomical.

Regarding those helping victims:

- (1) Almost all of the assistance provided informally and also by relatives and friends is less noticed and reported, giving formal agencies the impression that they proportionately provided more recovery help than is actually the case.
- (2) A very typical characteristic of disasters is the appearance new groups and new ways of doing things, which has sometimes been called the emergent quality of disaster response.
- (3) Even leaving emergent groups aside, there tends to be relatively little coordination among the formal organizations involved in recovery efforts.
- (4) Often overlooked are the personnel or staff problems of the organizations that undertake to provide recovery aid and

assistance.

(5) Finally, unless there is systematic record keeping and a formal critique, there will be few lessons learned about organizational operations in reconvey.