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HUMAN AND GROUP BEHAVIOR IN THE
EMERGENCY PERIOD OF DISASTERS:
NOW AND IN THE FUTURE

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Introduction

This paper summarizes what social science research has established about human and group behavior in the emergency time period of disasters. First, we discuss the behavior of human beings at the height of a disaster. This is followed by a similar discussion of how groups react during the same time period. We conclude by very briefly looking at whether the behaviors that have been observed in the last half century are likely to be the same in future decades.

Our remarks are drawn from a large body of research literature developed over the last 40 years. Some findings come from the over 535 field studies that the Disaster Research Center (DRC) alone has conducted on natural and technological disasters since 1963. However, we also draw from the systematic work done by others including the research undertaken in three dozen countries around the world (for recent summaries of research findings, see Kreps, 1984; Drabek, 1986; Disaster Prevention and Mitigation, 1986; Quarantelli, 1988; Auf der Heide, 1989; Drabek and Hoetmer, 1991).

For expositional purposes, we primarily focus on community type disasters--where there is a sudden and major disruption of the everyday routines of an urban area as a result of some natural or technological disaster agent that threatens and/or impacts life, property, and social routines. However, there are non-community type disasters such as most transportation accidents which seldom disrupt the ongoing routines of an urbanized area (an exception was the chemical threat from a train derailment which forced the evacuation of 215,000 residents near Mississauga, a Toronto, Canada suburb; see Scanlon and Padgham, 1980). At the other extreme, there are also catastrophic occasions that extend far beyond temporarily disrupting the normal habits of a single community and that are qualitatively as well as quantitatively different from typical "disasters". Overall, our remarks will be mostly about individual and organizational behaviors in community disasters.

1. The Reactions of Human Beings

There is a prevailing popular image of how people will react in disasters. While there are variations in the imagery, the general picture is that human beings do not respond too well in such situations (Wenger, Faupel and James, 1985). It is generally assumed that individuals are likely to panic and act irrationally, will be stunned and unable to take care of themselves, act in anti-social ways, be emotionally traumatized or psychologically incapacitated, and generally react selfishly and in self centered ways during and immediately after a disaster threat and impact. However, the research studies indicate that this picture is an incorrect one in almost every respect. The popular image is a compound of myths and misunderstandings about how human beings actually behave in the emergency time periods of disasters.

1. The panic myth.

If there is one word associated with disaster behavior, it is the word "panic". Of course, the term can have many references. If the referent is to the probability that most human beings during disasters will be frightened and afraid, that is a correct perception. Any sane person will be scared in the face of great personal danger. However, when the term panic is used in everyday speech, mass media accounts, or official statements in connection with disasters, usually far more is implied. It is assumed that in the face of great danger most people will "panic" in the sense of wildly fleeing, aimlessly running around or hysterically breaking down. Even if the response is not viewed as intrinsically self destructive, the behavior is seen as nonadaptive and inappropriate for the situation and in a basic sense as being irrational.

However, research has consistently shown that panic in these behavioral senses of the term, is extremely rare if not actually nonexistent in community disasters. Disaster victims do not flee wildly, they do not run around aimlessly, they do not hysterically break down. Instead of fleeing away, they will usually converge upon impact sites to help in whatever ways they can. Instead of irrationally running around (a favorite scene in disaster movies), victims intentionally and deliberately proceed to search for relatives and friends. Instead of breaking down in hysterics, they do what they can for themselves and others in the situation.

Disaster victims may be very concerned and frightened, but that does not mean they will act selfishly, impulsively or without thinking. They do not become unreasoning animals. In fact, it is arguable that they show more rationality under stress than they do normally, if by rationality is meant conscious weighing of alternative courses of action. None of us undertake much conscious weighing of optional courses of actions in performing the great majority of our daily routines. But those caught in disasters, when their very lives and those of others that are important to them may be at stake, become very conscious and aware of the behavioral choices they have and make.

Panic flight behavior can occur. But it is quite rare, usually engaged in by very small numbers of people, and typically is of short duration and distance. Furthermore, the occurrence of panic requires an unusual combination of circumstances, mainly the perception of an extremely sudden and very direct threat to one's life in a very limited spatial area, that escape by one's own actions from a specific danger is still possible, and that self can not be helped by others around them. These are conditions that are not usually present in community disasters; they are more likely to be present in a spatially focused emergency occasion such as a nightclub or hotel fire (Quarantelli, 1981).

Overall, panic behavior is not a major characteristic of almost any kind of disaster. It is of very little practical or operational importance in the great majority of community disasters. It can be ignored in disaster planning, except for the keeping in mind that it is a myth and not something to be expected.

2. The passivity myth.

If panic is not generated, it is sometimes thought that disasters create just the opposite--paralysis of action. Thus, it is believed that in the face of warnings of extreme threats, people will freeze and be unable to react. Another related widespread notion is that most victims are so stunned or shocked, that they cannot cope with the crisis in which they find themselves. There is a tendency to assume survivors are so dazed, shocked and disoriented that outsiders will have to do the most elementary tasks for victims such as feeding, clothing and sheltering them. Essentially the image is one of passive dependency on others by those impacted, and that nothing will happen unless Big Brother in the form of helping outsider agencies step in.

Research has consistently shown that this image of helplessness is also quite incorrect. In the face of credible warning messages, people will seek safety and generally take actions that are adaptable for the situation. Furthermore, those who experience disasters are not immobilized by even the most stressful of occasions. They are neither devoid of initiative nor passively expectant that others will take care of them and their needs. Usually before full impact is over, survivors initiated search and rescue efforts (over 90 percent are typically rescued in this way). The injured are found and transported as quickly as possible by any available means to hospitals. Temporary shelter is actively sought from and offered by kin and friends; the same is true of food and water. In fact, the evidence is substantial that far from even seeking and depending upon formal relief organizations, these are among the last sources that most victims will turn to for help.

In the immediate aftermath of disasters, self- and kin-help and mutual informal initiative and assistance will emerge. Except for the severely injured, survivors respond quickly and initiate many personal and social recovery actions. Helplessness and passively waiting for organizations to provide help is far from the norm.

3. The antisocial myth.

To inexperienced officials and journalists, disasters are seen as offering opportunities for the surfacing of antisocial behavior. It is assumed that deviant behavior will emerge and that dazed victims will be the easy targets for looting and other forms of criminal activity if they do not engage in widespread pillaging themselves. In fact, next to the supposed "panic" problem, is the supposed "looting" problem. The imagery is that as Mr. Hyde takes

over from Dr. Jekyll, crime will increase and exploitative behavior will spread. This picture is often supported by mass media accounts and widely circulating stories or rumors.

According to research studies, this image is also basically incorrect and fundamentally mythical. Many stories of looting do typically circulate, but actual instances will be very rare and if they occur will be done by outsiders rather than the impacted population itself. Far more material will be freely donated and given away than could conceivably be looted. Postimpact crime rates almost always drop. Exploitative behavior is only likely to be seen in relatively rare instances of profiteering after the immediate emergency period is over.

In actuality, prosocial rather than antisocial behavior is a dominant characteristic of the emergency time period. If disasters unleash anything, it is not the criminal in us but the altruistic. Such crime as occurs will be far below that which would normally occur in the community on a normal everyday basis.

4. The traumatized myth.

The traumatic stress of a disaster experience is widely thought to have both short and long run negative consequences for the mental health of the survivors. Thus, supposedly some people are driven "crazy", numerous others are so psychologically scared that they cannot function normally, and many seriously emotionally damaged victims are left behind. These pathological reactions are presumably manifested by a great majority of victims and may last indefinitely unless treatment is given.

However, this image of great stress as inevitably creating many and serious mental health problems is another one of the prevailing major myths of disaster behavior. In reality, community disasters very rarely, if ever, produce any new psychoses or severe mental illness. They neither appear at the time of impact nor emerge later in the recovery period. Outpatient treatments by mental health clinics, visits to psychiatrists, self reporting surveys of impacted populations, admissions to mental health institutions, use of psychotherapy facilities, outreach programs to find survivors needing psychological counseling, etc. have consistently failed to show post impact rises which can be interpreted as signifying the appearance of serious mental health problems as a consequence of a disaster impact (Quarantelli, 1985). It is also important to note that in any given community on any given day, there are residents suffering from mental health and psychological problems. To argue that disasters bring about problems requires showing frequencies above the normal everyday rates--at least 15% according to some recent epidemiological surveys in the United States, see Regier et al., 1988--which field research has consistently failed to find.

Disasters can generate many surface psychological reactions such as sleeplessness, loss of appetite, anxiety and irritability (Lystad, 1988). But these tend to be subclinical, short lived and self remitting. While occasionally disaster survivors show many such symptoms, more typical is considerable variation in the number of victims who exhibit them, and the kinds of postimpact psychological reactions that appear. Equally important, even those showing these kinds of reactions are rarely incapacitated in terms of their normal everyday behavior. The disaster experience often becomes part of the psychological makeup of victims (e.g., in memory) but it seldom is behaviorally dysfunctional for the work, school and household activities of those involved (Quarantelli, 1985).

In fact, for a minority of survivors, disasters can have favorable psychological consequences, strengthening positive self conceptions and social ties to others. Just as communities and groups can be better off as a result of undergoing a disaster, so are some individuals and families. This is simply part of the fact that disasters are not totally bad in all their consequences; it is an empirical matter that sometimes there are good effects.

Overall, the research evidence is that mythical beliefs to the contrary, disaster victims do not panic, they are not passive, they do not become caught up in antisocial behavior, and they are not behaviorally traumatized.

We do not want to leave a romanticized picture that individuals by themselves can handle all community disaster related problems. There are some things which individuals cannot do or do well. Neighbors can find victims in a search and rescue effort; they cannot perform major surgical operations or give blood transfusion. Similarly, major debris clearance, restoration of electric power, testing for water pollution, for example, are not tasks that private citizens can perform very well. Furthermore, such matters as the issuance of threat warnings, assigning community priorities for emergency preparedness actions, integrating the convergence of outside relief help, or making immediate policy decisions about agency responsibilities--to but hint at the myriad possibilities involved--of necessity have to be organizational tasks and involve group actions. They cannot result from the initiative or be the acts of isolated individuals or small groups of private citizens.

Nonetheless, what social science research has concluded is that the source and locus of most problems in the emergency phase of disasters is not to be found in the victims, but in the organizations attempting to help them (Dynes, 1990). Human beings cope fairly well. In a social sense, disasters are primarily disruptions in the routine behavior of groups rather than interruptions of the everyday actions of individuals. Basically, disasters are public difficulties in collective social entities; they are not the personal problems some persons might have.

In any disaster, emergency oriented organizations are inevitably involved. These typically would be police and fire departments, the local emergency management agency, the local Red Cross chapter, hospitals and emergency medical service groups, and the public utilities. Research shows that the preparedness planning of these organizations varies considerably from one community to another. In American society this planning has generally gotten consistently better through the last two decades (see Wenger, Quarantelli and Dynes, 1986 for local emergency management agencies; see Wenger, Quarantelli and Dynes, 1989 for police and fire departments). In fact, it is the rare place where local emergency oriented groups have done no disaster planning. Rather the question is whether the planning is good or not (Dynes, Quarantelli and Kreps, 1981).

Good organizational and community disaster planning must: Recognize that disasters are qualitatively different from minor emergencies.

There is a widespread belief that a disaster is merely a very large scale traffic accident. This view is simply wrong. In a disaster there is a difference of kind not just degree compared to what goes on in an accident or minor emergency. There is not only a quantitative difference but also a qualitative one. A disaster involves not just more, but something which is qualitatively different. An accident cannot be perceived as a little disaster, nor can a disaster be viewed as a big accident. There are fundamental differences between the two kinds of situations. During community disasters, organizations are faced with a new set of circumstances with which they must cope that are different from those in minor emergencies. In disasters compared to everyday emergencies, organizations have to:

- (1) quickly relate to far more and different groups;
(e.g., business concerns with government units, local agencies with state and national organizations that they were not even aware of before the disaster occasion).
- (2) adjust to losing a part of their autonomy;
(e.g., personnel, operations, resources and locations become partly controlled by public authorities).
- (3) apply different performance standards;
(e.g., instead of speed of response, allocation of resources can become the norm).
- (4) operate within a closer public and private sector interface;
(e.g., boundaries between public and private personnel, goods and services become blurred).

Disaster preparedness planning which does not recognize these differences between emergencies and disasters cannot be good. Disaster planners have to think about disasters in a rather

different way than they do for everyday accidents, disruptions, and minor emergencies. To paraphrase Hemingway, just as the rich are different from the poor in their behaviors, disasters as social crises are different in fundamental ways from everyday emergencies.

It is often assumed that if there has been disaster planning there will be successful emergency time management. That would seem to be the ultimate purpose of planning ahead of time. Unfortunately, however, research has shown that is far from being the case. There often is a big gap between what was planned and what actually happens in a major disaster crisis. There is only a partial correlation between the undertaking of preparedness planning and the successful or good managing of community disasters.

One reason is that preparedness planning can be poor in the first place. Thus, if the planning is agent specific rather than generic, if planning is too segmented or segregated rather than involving all relevant social actors, or if the planning demands artificial or far-from-everyday activities, there will be implementation of poor planning in actual disaster situations. Poor planning can only encourage poor management activities.

Also, problems are very likely if there is a failure to recognize that the principles of crisis management are different from the principles of disaster planning. Studies of disasters have demonstrated that organizational officials do not always distinguish between the two processes with consequent negative results. It too often is assumed that because planning is in place, management of a disaster will only require implementation of the prior planning. But preparedness planning and emergency managing are not simply two sides of the same coin.

This point can perhaps be made clearer by drawing a parallel. The military draws a distinction between strategy and tactics. Strategy refers to the overall approach to a problem or objective. But there are always situational factors or contingencies which require particular adjustments to attain a specific goal if the overall objective is to be attained. This is the area of tactics. In somewhat parallel terms, good planning involves the general strategies to be followed in readying for disasters. In good crisis management, particular tactics are needed to handle the specific situational contingencies which will appear.

It is impossible ahead of time to detail all the particular tactics which have to be used because they will be relatively specific to the actual situation encountered. Good crisis management, to a considerable extent, is the application of tactics which are specifically relevant to the situational contingencies of a given community disaster. However, just as the military can advance tactical principles in addition to strategical principles, disaster researchers can point to problems that require tactical considerations for effective and efficient crisis management.

II. The Reactions of Groups

Just as there are many mythologies about human behavior in disasters, there are also widespread misconceptions about organizational responses. In what follows we will summarize under four categories the major mythological and real problems of organizations in the emergency time periods of disasters.

1. The mobilization of groups.

It is sometimes thought that organizations cannot mobilize and function well because of a possible conflict between the work role and the family role of officials. Thus it is sometimes assumed that key personnel will stay away or leave their jobs at the emergency times of disasters because of a concern for or a need to take care of their victimized families. Forced to choose, it is believed that people will choose family over work responsibilities, thus hindering organizational mobilization for a crisis.

Research however shows that this role conflict does not result in the failure to carry out or the abandonment of major occupational responsibilities. At least it is not a major problem, especially in the higher echelons of organizations and particularly those work roles that are seen as necessary in a crisis. Studies indicate officials in such positions can be expected to do their jobs, although it does result in psychological stress for those caught in such a role conflict (Dynes and Quarantelli, 1986; Rogers, 1986).

It is also sometimes believed that local organizations cannot mobilize quickly because they are overwhelmed by a disaster. Part of this is seen as stemming from the shock that groups undergo as a result of the experience (paralleling the shock that humans supposedly undergo as noted earlier), and part from the belief that organizations are faced with a totally unfamiliar situation.

Studies do not support this view of organizational paralysis. Groups move quickly to do what they are capable of doing; many tasks and responsibilities are the same as in normal times (e.g., fire departments can continue to fight fires, lifeline agencies can provide usual services). While often there may be a lag in group mobilization, this stems mostly from the lack of adequate information and knowledge about the needs and demands of the disaster which are relevant to the operations of the organization. Learning what has happened in the immediate aftermath of a disaster impact is usually a major problem for all responding organizations; this is the problem rather than any kind of organizational shock.

There are also other organizational difficulties in mobilizing. One problem is that often there is little of an appropriate nature around for a required task. For example, it is not always clear, who has the responsibility for suddenly performing new disaster-related tasks, such as undertaking large scale formal search and

rescue, making up lists of missing persons, or processing large number of dead bodies. These are not the normal responsibility of any community agency, but these and similar tasks in a major disaster will have to be assumed by someone sooner or later. Absent prior planning, some group will have to mobilize its personnel for the work and attempt to ascertain what has to be done and what will be needed for a rather untypical type of work activity. So while a disaster does not generate an overall unfamiliar social setting, it can create specific new tasks that will hinder group mobilization.

Along another line, the problem in mobilizing may be an overabundance of something that is not needed. For example, an almost always existing problem at emergency time of disasters is the use of volunteers. Many well motivated volunteers with a wide variety of skills are not necessarily an organizational resource. In fact, in the absence of very good prior planning of who will use volunteers, where they will be sent, how they will be supervised, when they will be used, and so on--in the absence of such detailed planning, the sheer presence of masses of individual volunteers will simply create another disaster related organizational problem. Often, vitally needed regular staff members will have to be used to attempt some ad hoc planning and/or training for some hurriedly designed tasks. Consequently, volunteers often hinder rather than help in the mobilization of almost all organizations.

2. Communication and the processing of information.

It is often assumed that communications are a problem in disasters; many after action reports or retrospective looking back will allude to the communication difficulties that existed at the emergency time period. Research however indicates this is a partially incorrect reading of the nature of the problem. Very often poor communication is equated with not having enough communication channels or means. But it is only in the most unusual or catastrophic of disasters that most communication technologies will be destroyed or disrupted, or that there will not exist enough physical ways of communicating because radios, telephones and computers are inoperative or not usable. Substitute means such as ham or citizen band radios and runners or foot messengers will often quickly emerge as substitute means of communication. On occasions, there may be scarcity of equipment for the given emergency demands, but this usually reflects the preimpact situation rather than a consequence of disaster impact.

The major difficulties are in the processing of information through the available communication channels. The real problems in this area are in poor, incomplete or inefficient information flow. Thus, in the great majority of instances, a major organizational problem that develops at the emergency time of disasters is in what is communicated, not in how it is communicated

There are information flow problems within organizations or intraorganizationally, also between organizations or interorganizationally, from certain groups to citizens generally, and from citizens to groups.

Intraorganizational problems. Three kinds of information flow problems are typical. Organizations may use extra shift personnel and/or volunteers who have to be linked into the message system of the group. If they are not, the intraorganizational information flow will be seriously impaired. Also, the communication channel used may be unusual with, for example, information entering the group at atypical entry points (e.g, the head nurse in a hospital emergency room) Many groups assume information will come into them at particular points and be transmitted to particular officials; this does not always occur during a disaster. Also, not infrequently, important information will be collected at certain places in an organization and will never reach all relevant officials. In many disasters is not the absence of organizational information or knowledge, but its existence at and flow to the "wrong" points in the group structure.

Interorganizational problems. In the typical emergency time period, groups have to interact with organizations with which they are unfamiliar. Public agencies may have to deal with previously unknown private concerns. Local organizations may be in contact with extra community groups, many of whom might not even have known of one another's existence prior to the disaster. During an emergency time period, informal channels of communication might be used between organizations that ordinarily use formal links. And of course the substantive content of the information exchanged could be radically different from what it is on an everyday basis.

These and other changes in the information flow frequently create problems in the interaction between responding organizations. This is particularly likely to be a major source of difficulty in the early stages of a disaster. Studies also suggest that the more formal and bureaucratic organizations are in preimpact period, the more difficult it is for them to alter their interorganizational information flow patterns during disasters.

Organizations to citizens problems. Often organizations suddenly have to communicate with local citizens. Many groups are not accustomed to such communication and even emergency oriented agencies such as police and fire departments have less experience in doing this than is realized. It is often unclear too what information different segments of the public need and it is almost never known if citizens are being reached because no feedback can be quickly obtained. There is also a tendency to frame messages/requests in terms of organizational expectations and requirements, and a failure to couch them from the perspectives of the often heterogenous population that needs to be informed.

Citizens to organizations problems. The converse of the just mentioned problem is that it is also very difficult for interested citizens to communicate well with organizations during disasters. Part of this has to do with uncertainty about which groups should be contacted. Not all organizations, including emergency oriented ones, are fully trusted and seen by all the citizenry as legitimate sources of information. Residents generally contact familiar organizations, but these are not necessarily those who have the information being requested. One almost inevitable consequence is an overload of inquiries and questions for a few groups.

Problems in organizational information flow are serious ones. If such difficulties are not solved or mitigated, other kinds of problems can not be handled. Rapid and accurate information flow are essential core ingredients of any effective and efficient organizational response in disasters. Any weaknesses in good information flow will simply magnify the difficulties or make it impossible to adequately deal with other organizational problems.

3. The exercise of authority and decision making.

Disasters require that some agencies assume responsibilities and that some officials make decisions. If the exercise of authority is weak during non-stressful times, it will prove even weaker at the emergency time of a disaster. However, even if we assume that the exercise of authority among agencies during periods of normalcy are operating properly within a community, there will still be problems during disasters. Moreover, the difficulties which surface are often not those commonly anticipated, and have more to do with decision making than the exercise of authority.

Thus, the organizational chain-of-command and line-of-authority very seldom breaks down in established groups. Even if there is inadequate information flow during a disaster, officials usually continue to exercise their formal authority and fulfill their normal official duties and responsibilities. If higher echelon personnel are not present or cannot be reached, officials at middle and even lower echelons often will make decisions they do not normally make. Even rigid bureaucracies will show some flexibility on this matter when faced with clear cut crises that require an immediate organization decision or response; in fact, decentralized group decision making is a common feature of disasters.

Likewise, there are not many problems arising from questions concerning which organizations have the authority during disasters for performing traditional tasks. Thus, there are seldom disputes concerning decisions on who fights fires, repairs telephones, performs major surgical operations, or other specialized but everyday routine tasks. Such matters are the traditional responsibility of certain local community groups and a disaster will not alter the normal pattern.

However, research indicates three major problems regarding organizational decision making during disasters. First, there is the problem of personnel burnout which stems from the strong tendency of key officials to continue to work too long. Such officials working around-the-clock will eventually collapse from exhaustion or become inefficient in their decision making and other tasks. More important, when such officials are succeeded by others, their successors will often lack vital information, because data is seldom recorded at the height of crises. Good decision making requires relevant knowledge. Officials with the appropriate information will not always be physically capable of working beyond a certain point. If such officials occupy key decision making positions, the disaster response capability of the organization can be seriously impaired.

Authority and decision making problems can arise also because of conflicts over organizational domains. Frequently this is an issue between established local agencies and outside or emergent groups and usually has to do with a traditional task. For example, the security of an area is normally considered a traditional local police function. Conflicts can arise if nonlocal police or military personnel come into an impacted locality and also attempt to provide security. Such actions tend to be viewed by local police as an attempt to usurp their authority. This issue is often manifested in disputes over who has the right to set up roadblocks or to issue passes allowing entry into a restricted impacted zone. Also, if for example the outside or local relief group is a new organization, established local agencies undertaking the same disaster task(s) are almost certain to raise questions about its legitimacy and authority.

Finally, community disasters frequently cut across jurisdictional boundaries of local organizations. This creates much potential for intergroup or agency conflict. During non crisis times, most vague, unclear or overlapping formal authority and responsibility matters can often be ignored. During disasters, with decisions having to be made, this is frequently not possible. This is one of the more difficult organizational problems in disasters since the source of the problem is in the preimpact situation and can also have consequences for the post-disaster period, often fueling everyday community organizational conflicts.

4. The development of coordination.

Coordination is sometimes confused with control. Emergency oriented organizations which operate with a "command and control" image of how a disaster response should be handled are particularly vulnerable to this mistaken notion. Drawing from an inappropriate military model, the incorrect assumption is made that an integration of the community response can best be made by imposing an authoritarian and centralized structure on the crisis situation. Research shows that this is not a good way of bringing about

effective and efficient coordination to a civilian disaster. Coordination cannot be imposed. It has to be created.

Development of organizational coordination is problem plagued. It is very unusual to find organizations which do not agree in principle that coordination is needed during disasters. However, the term "coordination" is neither self explanatory nor a matter of much consensus. At one extreme, some organizations view coordination at best as informing other groups about what they will be doing in the disaster. At the other extreme, some groups see coordination as the centralization of decision making in a particular agency or among a few key officials. Given such diverse views, it is to be expected that even when a formal predisaster agreement to coordinate the disaster response exists, there can occur mutual accusations that one or both parties have failed to honor the agreement. But prior agreement or not, in the absence of an explicit understanding of what coordination means in operational terms, there will be serious organizational coordination problems. Studies show that it is rare to find such explicit understandings in community disaster planning.

There are also problems in coordinating organizations from the public and private sector. Public and private groups often have different interests, tasks and goals. For example, public agencies, by law and by tradition have to consider a disaster situation and the demands it creates from the perspective of the community at large. Private sector organizations necessarily have a much narrower perspective, assessing their involvement primarily as they see the disaster generally impinging on their operation and profitability and have much less flexibility in using their resources than do public groups.

Finally, coordination between organizations working on common but new tasks is also difficult. Even local agencies accustomed to working together, such as police and fire departments, may encounter difficulties when they suddenly try to integrate their activities to accomplish a novel disaster task, such as the handling of mass casualties. While police and fire departments may be accustomed to recovering a few bodies resulting from traffic accidents or fires, the large number of deaths resulting from a major disaster will pose a coordination problem. It is partly the newness of many disaster tasks which create strained relationships among organizations which had previously worked together in harmony. Also, in daily operations there can be a gradual development, frequently on a trial and error basis, of a working relationship between two groups concerned with the accomplishment of a common goal. Such leisurely developments of cooperative relationships are generally an impossibility given the immediate demands during the emergency phase of a community disaster.

III. BEHAVIORS NOW AND IN THE FUTURE

What we have described are behaviors observed in disasters over the last half century or so. Can we expect the foreseeable future to be the same as the present? A hint is provided in historical accounts of ancient disasters that while individual behaviors were probably the same in the past, group, especially organizational behaviors differed somewhat. This is understandable. Human society has evolved. Collective arrangements have emerged that had not previously existed, such as police departments or formal welfare groups, social inventions only roughly two centuries old.

What organizational behaviors might be anticipated in disasters in the 21st Century? In general, we might expect a continuing acceleration of certain basic social organizational trends. That is, we can foresee societies, communities, organizations and all social forms above the human level to continue to become more specialize, more heterogeneous, and more interrelated with others (as can be see in the last decade with the advent of computers). Put another way, we should expect increases in the complexities of organizational divisions of labor, in organizational hierarchical systems, and in intra and interorganizational relationships. As some have written, we have entered an era where organizations (be they societies, communities or formal groups) will be more complex and important than ever before (Perrow, 1991). If this is to be, there will be consequences in the disaster area. Overall, disaster planning and managing will also become more complicated since there will be more that can go wrong and negative effects will have more social amplifications (e.g., in "disasters" in computer operations as recently occurred in Japan and the United States (see, Pauchant, Mitroff, Weldon and Ventolo, 1990).

On the other hand, there is little evidence that at the human being or individual level, we ought to expect the foreseeable future to be much different than the present or the past insofar as behavior is concerned. Persons will continue to be very afraid in the face of threats. But they also can be anticipated to rise to the challenge of disasters, neither breaking down in the face of danger or reverting to an anti-social mode of response. Equally, there is no reason to think that human beings in the next century will not move as best as they can to cope with the demands of emergency time periods of disasters. Just as human behaviors currently tend to be quite similar across different cultures, and in different disasters, we think they are much the same in different temporal eras, whether the past or now, and even in the future. This is consistent with the notion of universals in human behavior (Brown, 1991).

Bibliography

- Auf der Heide,
Erik
1989 Disaster Response: Principles of Preparation and Coordination. St. Louis, MO.: Mosby.
- Brown, Donald
1991 Human Universals. Philadelphia: Temple University.
- 1986 Disaster Prevention and Mitigation: A Compendium of Current Knowledge. Social and Sociological Aspects. New York: United Nations.
- Drabek, Thomas
1986 Human System Responses to Disaster: An Inventory of Sociological Findings. New York: Springer Verlag.
- Drabek, Thomas and Gerard J. Hoetmer (eds.)
1991 Emergency Management: Principles and Practice for Local Government. Washington, D.C.: ICMA.
- Dynes, Russell R.
1990 Community emergency planning: False assumptions and inappropriate analogies. Newark, DE.: Disaster Research Center, University of Delaware.
- Dynes, Russell and E. L. Quarantelli
1986 Role simplification in disaster. In Role Stressors and Support for Emergency Workers. Washington, D.C.: U.S. Government Printing Office: 23-37.
- Dynes, Russell R., E. L. Quarantelli and Gary Kreps
1981 A Perspective on Disaster Planning. Newark, DE.: Disaster Research Center, University of Delaware.
- Kreps, Gary
1984 Sociological inquiry and disaster research. Annual Review of Sociology 10: 309-330.
- Lystad, Mary (ed.)
1988 Mental Health Response to Mass Emergencies: Theory and Practice. NY.: Brunner/Mazel.
- Pauchant, T., I. Mitroff, D. Weldon and G. Ventolo
1990 The ever-expanding scope of industrial crises: A systemic study of the Hinsdale telecommunications outage. Industrial Crisis Quarterly. 4: 243-262.
- Perrow, Charles

- 1991 A society of organizations. Theory and Society 20: 725-762.
- Quarantelli, E. L.
1981 Panic behavior in fire situations: Findings and a model from the English language research literature. In Proceedings of the 4th Joint Panel Meeting, the U.J.N.R. Panel on Fire Research and Safety. Tokyo, Japan: Building Research Institute: 405-428.
- Quarantelli, E. L.
1985 An assessment of conflicting views on mental health: The consequences of traumatic events. In Charles R. Figley (ed.) Trauma and Its Wake: The Treatment of Post-Traumatic Stress Disorder. New York: Brunner/Mazel: 173-215
- Quarantelli, E. L.
1988 Disaster crisis management: A summary of research findings. Journal of Management Studies 25: 373-385.
- Regier, Darrel A. et al.
1988 One-month prevalence of mental disorders in the United States. Archives of General Psychiatry 45: 977-986.
- Rogers, George
1986 Role conflict in crises of limited forewarning. Journal of Applied Sociology 3: 33-49.
- Scanlon, Joseph and Massey Padgham
1980 The Peel Regional Police Force and the Mississauga Evacuation. Ottawa: Canadian Police College.
- Wenger, Dennis, T. James and C. Faupel
1985 Disaster Beliefs and Emergency Planning. New York: Irvington.
- Wenger, Dennis, E. L. Quarantelli and Russell Dynes
1986 Disaster Analysis: Emergency Management Offices and Arrangements. Newark, DE.: Disaster Research Center, University of Delaware.
- Wenger, Dennis, E. L. Quarantelli and Russell Dynes
1989 Disaster Analysis: Police and Fire Departments. Newark, DE.: Disaster Research Center, University of Delaware.