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SOME LEGAL AND CRIMINAL IMPLICATIONS OF RE-  
SEARCH FINDINGS ON THE PSYCHOLOGICAL AND SOCIAL  
ASPECTS OF PREPARING FOR AND RESPONDING TO  
DISASTERS \*

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## Focus of the Report

For about the last three decades, dozens of social and behavioral scientists in the United States, Canada, some Western European countries and Japan, who have informal contact with one another, have been systematically studying the human and social aspects of different kinds of disasters. However, the majority of the research involving hundreds of field studies have been done in America, mostly by sociologists who have focused on relatively sudden or acute types of disasters (e.g. from earthquakes and floods to explosions and chemical spills). Also, while all phases of disaster relevant behaviors have been studied, from mitigation and prevention through disaster preparedness and managing to longer run recovery and reconstruction, the greatest emphasis has been on the middle two, the preparing for and the responding to the emergency time period. Likewise, while research has occurred at all levels of behavior from the individual and households through groups and communities to the national and societal level, the most work has been done on human and organizational behavior.

Thus, in this selective report, we will primarily summarize the major research findings on emergency time human and organizational behavior in relatively sudden disasters in the United States. Because the research evidence generally is not supportive of the distinction, we do not distinguish between behaviors in disasters involving natural and technological agents. On the other hand, we primarily discuss the research results about behavior in major disasters rather than in emergencies or minor crisis since findings from studies suggest qualitative as well as quantitative behavioral differences between the former and the latter collective stress situations.

The behavior of individuals will be discussed in the first major section that follows. After noting what is known about how human beings generally prepare for disaster, the typical behavior patterns during impact and the emergency time period will be described. Next, some qualified answers will be provided to the question of whether disasters generate personal pathology or deviancy. Much of this analysis will be in the context of noting that there exists very widespread and deeply rooted mythological beliefs about how disaster victims react. This section on individual behavior concludes with a very brief statement about what the research findings enumerated imply about preparedness planning for and managing of disasters, and some legal questions they suggest.

In the next major section that follows, the matter of organizational behavior in disasters is discussed. Again, after first noting typical planning patterns, we describe the general emergency time behavior of groups and organizations. This is followed by an examination of the question of whether organizational deviancy occurs in disasters. This issue is discussed in the context of observing that there is much emergent group behavior at the emergency time period of disasters and that organizations are both the locus and the source of most of the serious problems that appear (rather than the victims themselves). Some

conclusions are then drawn as to what the research observations imply about organizational disaster preparedness planning and managing, and a few legal questions they raise.

The third and last major section of the paper then addresses issues about the validity of the social science findings set forth in the two earlier sections and their cross-societal applicability. How methodological and theoretical factors might affect the quality of the research data discussed are considered. We conclude with a few remarks about which patterns of individual and organizational behaviors in disasters might be more universalistic and those which might be more societal or social system specific.

## Individual Behavior

### Disaster Preparedness

The vast bulk of citizens are oriented to the "here and now." As such, the idea of a possible disaster in the future in their community is seen as so remote, unlikely and uncertain that the threat does not enter into consciousness, or, if it does, is quickly dismissed. The actual very low probability nature of disasters strongly reinforces this orientation.

Even when in certain localities there is a recognition and awareness of a potential threat (e.g., near an earthquake fault or a hazardous waste site), citizens see disaster planning as primarily a governmental responsibility. This obligation of the state tends to be seen more in moral than legal terms. People do assume planning is something which can and should be done. However, the passive attitude and expectation that public agencies ought to be taking the lead is indicated by the fact that extremely few persons undertake any kind of specific disaster preparedness in their households, or on their own at places of work.

There are two major exceptions to the above. In localities which repeatedly experience sudden disaster threats or impacts, an agent specific disaster subculture may develop, (e.g., for riverine floods or for hurricanes) part of which involves residents learning and preparing for such events. Also, if people come to define a serious, likely and probable threat in their immediate neighborhood, and if they judge the local authorities as illegitimately dismissing the concern of residents over the danger, citizen groups may emerge. These groups, only a small number of whom are successful in any way, try to pressure governmental entities to do something about the specific threat. On occasion, this involves attempting to get laws, ordinances or regulations passed to prevent or to prepare for the threat. These informal citizen groups may also at times try to prepare the local population for a possible disaster from the particular danger involved.

### Disaster Response

The most notable overall characteristic of victims of disasters is that they actively seek relevant information and attempt to do what they

can to deal with exigencies presented by the emergency. The threat of a disaster soon to happen or its actual impact does not paralyze those affected. Passivity in the face of danger is very rare, and the nearer the threat is perceived to be or the more there have been life disrupting problems to be solved after impact, the more active people will be in responding.

It is true that initial indications or warnings of dangers are usually downplayed or assimilated to the normal. Physical cues that something may be amiss are usually initially interpreted in everyday non-threatening terms (e.g., a loud sharp distant noise as a truck backfiring or construction activities rather than an explosion; the trembling of a house as the passage of heavy traffic or sudden wind gusts rather than an earthquake)--what has been called the normalcy bias. People also tend to seize upon any vagueness, ambiguity or incompatibility in warning messages to interpret them in the most optimistic ways possible. Disbelief, rather than acceptance, is typically the first response to signs or statements of an oncoming threat.

However, if the cues or messages of dangers are persistent enough and indicate that the danger will be threatening to self or valued other human beings and that the impact will occur fairly soon and that it is fairly certain, efforts will be made to confirm that the perception is real. Even an official warning is not automatically accepted, except sometimes in disaster subcultures. Confirmation of the threat will be sought from other persons, especially significant others. Only if the perception of the threat is socially reinforced are individuals likely to accept cues or messages of danger (apart from situations where the threat can be directly and physically perceived and is an obvious and immediate danger, e.g., a raging forest fire outside of one's house).

When danger is recognized as imminent and personal, people seek safety or escape. If evacuation (pre- or post-impact) occurs, the great majority of those affected will leave, but some will never evacuate even if officially ordered (while formal orders can be issued, legally, residents cannot be forced out of their homes). Given enough of a time period for movement, there will frequently be evacuees who will leave before any evacuation is suggested or ordered. Overwhelmingly, evacuation is not by solo individuals but by group members, usually family units. Usually, threatened persons will delay evacuating as long as possible from home locations until other family members arrive or there is knowledge that they are safe elsewhere.

Evacuees are often offered quarters in, and generally go to, the homes of friends and relatives. The major kind of emergency when this does not occur is when friends and relatives themselves have to evacuate. Mass public shelters, being disliked, are not used at all if possible; if use is unavoidable, they are left for other more individualized quarters as soon as possible.

During, and immediately after, a sudden impact disaster, people tend to think of the event as something centered around their immediate

surrounding, and to underestimate, therefore, the scope and destructiveness of some kinds of disasters. This results in considerable variability in the initial behavior of victims as they enact their usual social roles as worker, family member, friend, official, etc. At the individual and small group level, the behavior is organized, meaningful and goal oriented, but often, incorrectly, appears as chaotic, confused and random to outside observers. For instance, the bulk of the search and rescue is quickly initiated by survivors. Usually, this informal action, at times undertaken by ad hoc small groups, establishes the whereabouts and status of most of those in the searched neighborhood, finds the injured, and often gets them transported for medical treatment. Concurrently, other survivors may be attempting to find out if relatives in other localities are safe, while others will try to get to their work places if they think they will be needed there, while still others will voluntarily undertake a variety of emergency tasks from unofficially clearing streets of debris and directing traffic to informally providing shelter, food, and clothing, if they have such items after impact, to their neighbors in immediate need of them. Survivors do much prior to and separate from actions and directions of officials, which sometimes leads emergency agency personnel to mischaracterize the activities as confused and non-goal directed. The more visible convergence of outside help, that will inevitably swarm in after impact, tends to obscure the surge of emergency actions that will immediately develop among the survivors in impacted areas.

#### **Pathology and Deviance.**

The belief that disasters generate a great amount of personal pathology and deviance is very widespread and deeply rooted in the public at large, community officials, and, to some extent, even among personnel of emergency organizations and disaster victims themselves. Three different themes predominate in the thinking of people. Thus, it is assumed that disasters generate irrational panic, unleash anti-social behavior, and leave victims psychologically damaged. Stories and rumors about such behaviors are almost universal after a disaster, but actual instances are often nonexistent, low in relative frequency when they do occur, and surface only with a particular set of circumstances which tends to be rare in community type disasters (although somewhat more likely, but still not typical, in non-community type disasters, such as most large scale night club fires or transportation accidents). These myths about disaster behavior are important, however, because they affect what both citizens and officials often expect and, accordingly, influence other behaviors (e.g., a reluctance to evacuate because of a concern over possible looting, or a failure to issue warnings because of a concern over possible panic flight).

a. Panic behavior. Disaster victims do not generally act irrationally, certainly no more so and even less likely than in everyday activities. People who perceive themselves in great danger, if they have any contact with social reality, will feel greatly afraid. But even great fear does not automatically translate into hysterical paralysis, wild

flight or other dysfunctional actions--three frequent referents when the term "panic" is used.

A very small minority of persons unexpectedly faced with a sudden threat (e.g., an explosion or an earthquake) may be momentarily uncertain of what to do, but this reaction (called a shock syndrome) is very ephemeral. The great majority of individuals, even in the middle of violent ongoing massive physical destruction (e.g. a building collapsing on them), will struggle to avoid the dangers and to help others that are spatially around them. Nor does the sight of much destroyed property or even dead and injured lead to paralytic hysteria in the immediate presence of such a situation. There is more likely to be inaction and immobility among the spectators or onlookers at a serious traffic accident than in a major community disaster, where it is perceptually obvious that all persons around have undergone a generally similar impact experience.

Wild flight, additionally endangering self and/or others, can and does occur in some collective stress situations, but even isolated episodes of such panic behavior are very rare in disasters. This is because the typical disaster setting lacks the specific conditions necessary for panic flight; that is, a confined space, an immediate high particular risk to self, a perception that escape from entrapment is still a possibility, and a sense of social isolation; these are more likely to appear, for example, in a hotel or theater fire. Instead of wild flight away from a disaster site, there is far more likely to be convergence on places where emergency activities are being carried out. Motivations to help others, rather than narrow self preservation or help, predominate in community disasters.

Rapid movement away from danger, however fearful the participants might be, is not panic flight; in reality, the behavior may be, by far, the most rational course of action possible in the situation (i.e., the best means that can be used for desired ends). The goal oriented flight involved in evacuation is typically quite orderly (when vehicles are involved, traffic accidents are far below normal rates), and, as indicated earlier, generally involves intact social units such as families or groups of friends. The movement almost always resembles the controlled retreat of an intact military unit rather than the disintegration of a military unit in panic flight where those involved may physically trample over one another and abandon those with whom they have the closest social ties and bonds.

While it cannot be said that all actions taken at the emergency time period by those caught in a disaster are completely functional, the vast majority of persons show remarkable overt composure and the great bulk of their actions are meaningful efforts to cope with the crisis. Far from engaging in panicky behavior, victims respond in controlled ways, playing their traditional social roles as much as possible and trying to help others. The reasonableness and adaptive nature of the behavior, especially when seen from the perspective of the actors, is what stands out, rather than irrational and dysfunctional actions (the very rare instances of which are sometimes highlighted in mass media stories as if they were representative examples of victim behavior).

b. Antisocial behavior. Especially to inexperienced officials and journalists, disasters are seen as offering maximum opportunities for the surfacing of anti-social behavior. It is speculated and written that survivors are the easy target for looting and other forms of criminal activity. The imagery is that as Mr. Hyde takes over from Dr. Jekyll at the time of the emergency, property crime rates will rise, violent crimes will increase, and exploitative behavior will spread. However, the research evidence lends almost no support to these notions.

In almost all disasters, many stories of looting (stealing of goods) circulate and almost everyone in a stricken area will hear some of them. Typically, press accounts will report looting and/or the deployment of security forces to prevent expected looting (in a small minority of cases, the story that there is or was no looting in a particular disaster is presented as a newsworthy item because, presumably, it is so atypical). Even social control agency officials may believe popular stories of looting despite the fact that they may have no reports from their own forces. So pervasive is the belief, that security forces almost always deploy extra personnel to try and prevent looting, a measure often expected by the public at large.

However, in the typical community disaster, looting at the time of the emergency is not a problem; often, apparently not even a single case occurs. Such instances as do occur are not numerous, usually involve articles of little value (which may have been picked up by sightseers), and seem to be committed by outsiders to the community--at times by members of security forces brought in to prevent looting!

Sometimes the widespread looting that occurs in many civil disturbances and riots are extrapolated to disasters. But the two situations differ fundamentally. Looting in civil disturbances (such as occurred in America in the late 1960s) is widespread, collective, and public, being undertaken by local residents who are selective in their activity and who receive community support for their actions. In contrast, such looting as occurs in community disasters is limited, individual, and private, generally engaged in by outsiders to the community taking advantage of certain situational opportunities, but who are strongly condemned for their actions.

Similarly, there is not an upswing in violent crimes, such as murder and rape, during the height of the emergency period. Stories of fingers being cut off the dead to obtain rings and of rapes of disaster survivors, for example, were relatively frequent in some major American disasters in the past, but these stories seem to have disappeared from popular circulation after World War I. It is noticeable that supposed perpetrators of such heinous crimes are usually identified as members of lower status, especially negatively viewed ethnic groups in the society.

In fact, standard crimes, as a whole, during disasters seem to drop, some substantially, below the usual everyday rates whether this be in terms of what is reported to the police or in terms of arrests made.

While a partial drop could be partly attributed to a failure of the police to uphold certain laws during the disaster emergency period (e.g., parking violations), this would hardly explain a usual decrease across-the-board. Furthermore, survey and other data from affected populations do not indicate that they suddenly become major victims of crimes during the emergency periods of disasters.

During the same time period, survivors, victims as well as early arriving helpers from the outside, may engage in behaviors that technically could be illegal. For instance, informal search and rescue efforts might involve breaking into locked buildings and destruction of property, or cars used in transporting emergency supplies of the injured might be driven and parked in ways that clearly violate traffic regulations and codes. But, given the emergency situation, such kinds of actions are never seen as illegal acts by the violators, law enforcement officers, community officials or the public at large.

False claims for damages incurred, illegal obtaining of relief supplies, and failure to provide contracted repair services, do occur and sometimes on a large scale. But these are not emergency time behaviors; they start to appear in the early stages of the recovery period. Even the extremely rare disorderly assemblages or gatherings, to the extent they appear, only do so after the emergency periods of disasters (e.g., at protest meetings over housing or relief goods distribution problems).

Overall, prosocial, rather than antisocial, behavior is a dominant characteristic of the emergency time period of a disaster. If the height of a disaster unleashes anything, it is less criminality than altruism. Such crime as occurs will be far below that which would normally occur, the mythological belief to the contrary.

Nevertheless, one possibility for the presence of high individual criminal behavior rates in disaster settings should be noted. In some pre-impact settings there are normally very high rates of stealing and weak social sanctions against such behavior. If a major disaster was to impact such a locality or neighborhood, just continuation of the everyday patterns would result in high rates. The disaster experience might not generate any new criminal behavior, but could be misinterpreted as doing so. While the few instances of this kind observed so far have been outside of the United States, it is not beyond the realm of possibility of appearing in a future disaster in certain American localities.

c. Pathological psychological behavior. 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 individuals involved. Thus, disasters supposedly drive some people "crazy", psychologically scar numerous others so they cannot function normally, and leave in their wake many seriously emotionally disturbed victims. These pathological psychological behaviors are presumably manifested by almost all, or a majority of victims and may last indefinitely unless treatment is given. However, this image of disasters as inevitably creating mental health

problems is another one of the prevailing major myths of disaster behavior.

Thus, community disasters at least very rarely, if ever, produce any new psychoses or severe mental illnesses. They neither appear at the time of impact nor emerge later in the recovery time period. (Even most pre-impact hospitalized mentally ill persons react more or less in the emergency period as do other victims.) Outpatient treatments by mental health clinics, visits to psychiatrists, admissions to mental health institutions, self reporting surveys of impacted populations, use of psychotherapy facilities, outreach programs to find people needing psychological counseling, etc., have consistently failed to show post-impact rises which could be interpreted as signifying the appearance of serious mental health problems as a consequence of a disaster impact.

Disasters can generate many surface psychological reactions such as sleeplessness, loss of appetite, anxiety and irritability. These tend to be subclinic, short lived and self remitting. While in some disasters most of the victims show many such symptoms, more typically is considerable variation in different disasters of the number of victims who exhibit them, and the kinds of post-impact psychological reactions that appear. Most important, even those showing these kinds of reactions are rarely incapacitated in terms of their normal everyday behavior. That is, the experience of a disaster often does become part of the psychological makeup of victims (e.g., in memory) but it seldom is behaviorally dysfunctional for the work and family activities of those involved.

In fact, for a minority of victims, disasters can have favorable psychological consequences, strengthening positive self conceptions and social ties to others. Just as some communities and groups are better off as a result of having undergone 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.

On occasion, an argument has been made that a massive catastrophe obliterating not only the physical community but destroying the fabric of the social community might result in more severe psychological problems than usual for the survivors. This view has actually been supported by one court case in the United States which led to compensation for victims (in the Buffalo Creek flood dam disaster). However, few disaster researchers who have studied mental health consequences of disasters think that the empirical data as a whole is supportive of the legal position reached on the basis of disputable evidence from an atypical catastrophe at the very high end of a continuum of devastation.

There is far more scientific consensus that these can be negative and dysfunctional psychological consequences for "first responders," that is, personnel from outside emergency organizations who come in and engage in search and rescue. If the members of these groups have to handle many dead bodies, especially if they are disfigured and mangled, there may be negative emotional reactions among the rescuers. An even worse case

scenario is if the bodies are those of children; apparently this is extremely stressful and very psychologically disturbing to those who have to handle them.

Also, in some non-community type disasters such as the typical major transportation accident, the survivors might show more psychological disturbances than appear in community type disasters. The explanation for the possible difference is that in the former there is less likely to be the kinds of social support and sharing of the traumatic experience that is more common in community disasters (passengers on planes or ships are likely to come from many different localities and to return to them where the surrounding population has not shared the experience).

Since personal pathologies sometime manifest themselves indirectly in kinds of social deviancy or pathologies, indications of the latter have been sought. Thus, such phenomena as wife and child beating cases, alcoholism and drug use, divorce and family quarrel reports, attempted and actual suicides, juvenile delinquency and vandalism, work and school absenteeism, etc., as well as a variety of physical health indicators, have been looked at a number of times in the aftermath of disasters. When compared with pre-impact figures and existing trends, there is little evidence of a systematic increase of the negative side in any of the measures used that can be attributed to the experience of the disaster. The tentative conclusion has been that if there are serious mental health consequences of disasters they do not manifest themselves in these standard, although indirect, ways.

Thus, the overall picture is that most persons rise rather well to the psychological challenges presented by the stresses of disaster situations. Mental health breakdowns and serious personal and social pathologies do not loom large. Post traumatic stress disorders are very rare in any numerical sense. While there may be more negative (although not pathological) psychological reactions in the emergency time periods of disasters than there is panic or antisocial behavior, as a whole the belief in their existence is more mythological than real.

### Implications

These are some major implications for disaster preparedness planning and managing if the foregoing observations are valid.

While it can be assumed that human beings will respond generally well to disasters, it can also be assumed that their involvement in planning for disasters will usually be rather low. They need to be motivated for the latter activity. Efforts to generate citizen groups might result in greater involvement than appeals based primarily on individual motivation for self-protection.

Victims and survivors will not passively wait around to have things done for them. Helping organizations who assume a Big Brother image will be acting inappropriately. Educating and training potential disaster victims to better help themselves would be a better strategy.

The social ties of individuals to others are crucial factors in all aspects of disaster response. Organizational recommendations, advice and actions need to look beyond the isolated individual to improve response. The social and collective nature of individual behavior has to be assumed in planning and managing.

The perceptions and behaviors of human beings in disasters may radically be at variance with the expectations of involved organizations. If people define situations as real, they are real insofar as consequences are concerned--a sociological truism which can be ignored only at considerable peril in understanding the phenomena. It also follows that it is far better to adjust planning to the probable reactions of people than to try to force persons to fit into organizational plans.

Certain often anticipated problems are more mythological than real, but there can be some very limited kinds of deviances under particular circumstances. It follows, that both planning and managing of disasters can be no better than the assumptions which are made about the likely realities of these behaviors in such situations. Otherwise, substantial time, effort and resources can be misused on non-problems.

There are also some interesting questions about legal and criminal justice aspects which are generated by certain of the research observations. If private citizens voluntarily undertake a great number of emergency time actions, including handling the injured, entering onto private property for search and rescue and debris clearance, and directing traffic, in what ways, if any, could they be legally liable for many of the non-traditional things they do? If citizens do not heed official warning messages or refuse to obey official evacuation orders, does that later preclude any law suit towards the involved organizations because there were personal injuries or damages? Citizens cannot be forced out of their residences; can they be forced out of their places of work as a result of a threat? Could compensation for psychological damage from the experience be claimed in all disasters? Are the laws citizen groups attempt to get passed with respect to hazards and disasters different from hazard/disaster laws generated from other sources? While discretion of the police in enforcing laws is an ever-present condition, could the even more selective discretion in disaster situations lead citizens to chance ignoring other laws? What legal rights do citizens have to endanger themselves in a disaster context; what legal responsibilities do parents have for children in such a context? Can a person helping someone else to evacuate become liable in any way for unfortunate consequences that may result for that person? What are the legal limits of what a private citizen can do to prevent looting of one's own property? Could extreme panic behavior involving trampling over others be treated as a criminal act?

## Organizations

### Disaster Preparedness

General disaster preparedness has low priority, whether measured by attention or budgets, in most communities. Thus, apart from emergency oriented types of organizations (such as police and fire departments, emergency management agencies, Red Cross chapters and hospitals), there is little planning for disasters across-the-board by other groups, public or private. However, sometimes there is very extensive agent-specific disaster preparedness by the key companies involved in a few industrial sectors such as the nuclear and the chemical areas. Also, in some scattered localities with high risk from recurrent natural disaster hazards such as earthquakes or hurricanes, the planning may involve organizations from a wide spectrum in the community. But these are the exceptions. In actuality, the overall picture is of limited and selective organizational involvement in the process by the full range of community groups.

There are almost always legal mandates at the local governmental level to prepare for all kinds of disasters. By law, in many jurisdictions, the local emergency management agency (LEMA) is supposed to be the coordinator of the community disaster preparedness planning (and of the managing of disaster responses). Reflecting local socio-political realities, LEMAs vary tremendously in structure and in the range of emergency functions they have. Nonetheless, the quality of the preparedness planning (as well as personnel) of LEMAs has markedly improved over the last decade, and many control the emergency operating center (EOC) which is designed to be the central point for the testing out of preparedness measures and the overall coordination of organizational actions at the time of disaster impact. However, while there are exceptions, typically, LEMAs have little saliency and low status in many communities. Their relationships to other emergency groups in the community can be quite mixed, and considerable disaster preparedness planning can, and does, often occur apart from, and/or independent of, them in any given community. In an increasing number of cases, but still relatively rare instances, the LEMA does have the role of being the major coordinator and also correctly emphasizes the value of comprehensive or general, rather than agent specific, disaster planning.

In a number of communities today, there is still sometimes a sharing, more often a paralleling, of disaster preparedness planning by the police department. However extensive the police role is, it infrequently involves coordination of the planning of other groups. Local fire departments usually have secondary and supporting roles in the planning, although they have increasingly come to take a more lead role in the preparations for hazardous chemical emergencies and disasters. As a whole, there usually is a cluster of disaster preparedness planning involving a core group made up of the LEMA, the police department, and the fire department in the community.

Not infrequently, there also is another cluster of planning being undertaken by the hospitals, rescue and ambulance services in the area. Often, the planning is poorly coordinated with the preparedness activities of the LEMA-police-fire cluster. In some communities there also may be even more separate preparedness planning by still other groups that revolves around the risks posed by a chemical complex and/or nuclear plants; this too often is uncoordinated with the planning in the two other clusters. However, this fragmentation of planning is actually an improvement over what the situation was two or three decades ago when very little preparedness planning was being undertaken by any community group, emergency oriented or not.

Even among emergency oriented types of groups, the planning often assumes, incorrectly as it turns out, that the standard operating procedures (SOPs) for everyday emergencies and minor crises can cope with disasters (utilities are one major exception to this view). Frequently too, the preparedness planning fails to take into account the possibility that the organization itself may be directly impacted by a disaster external to itself in the community (hospitals and mass media groups are prime examples having this problem). Also, preparedness planning is typically better for intra rather than interorganizational activities (police and fire department concerns over autonomy and domain frequently lead them not to link too well in planning with other community groups). This partly reflects the negative effects when everyday conflicts, political disagreements, competitions among emergency oriented organizations spill over into the disaster preparedness planning process, which they often do.

The organization planning for some emergency time tasks is often fairly good, for others it is rather poor. As an example of the first, although far from perfect, the organizational and interorganizational planning with regard to warnings for natural disasters is extensive, detailed and comprehensive. Problematical aspects include an absence of legal requirements for transmission of warning messages via the mass media, and the possibility of competing and non-consistent warnings from different organizations. An example of a matter about which there usually is generally poor planning has to do with pass systems to prevent or control movement in and around a disaster area. Often, no organization assumes or is given the responsibility to issue passes ahead of time, or several groups are assigned or assume the task with no effort made to integrate the multiple issuance of passes. Usually, too little thought is given to informing and educating all relevant and interested parties ahead of any emergency on what constitutes a valid pass, who can issue and receive them, where and what they can be used for, when they expire, and the legal basis of the system. In the absence of preplanning, various groups (usually different police and military units) use different criteria for all of the above, with consequent confusion and conflict at roadblocks among members of the public, various social control agencies, community officials and mass media personnel.

There are three very general problems with much of organizational planning. First, there is a tendency to equate planning with only one end

product of that process, mainly a formal disaster plan. However, the production of such a document--while sometime legally required--is not necessary for good planning, and there are many other aspects of the planning process which can be of greater importance. These include undertaking public educational activities; establishing informal linkages between key groups; assessing, monitoring and communicating information about local risks; developing techniques for training, knowledge transfer and assessments; convening meetings for the purpose of sharing information; holding disaster drills, rehearsals and simulations; involving citizens, business and industrial organizations, non-emergency public agencies and relevant non-local groups (e.g., state police) in the planning process; updating strategies, resources and laws necessary; checking that relevant local regulations and ordinances are in place and kept up to date, etc.

Second, there often is a failure to understand that planning is not managing and managing is not planning. The military draws a clear distinction between strategies and tactics; the former refers to the general approach to the situation as a whole, the latter to the specifics that have to be used to deal with situational contingencies. The principles of disaster planning refer to the general strategy, whereas the principles of emergency management have reference to the particular tactics which need to be considered in specific disasters. But this useful distinction is frequently badly confused in the particulars of plans and planning.

Finally, such disaster preparedness planning for emergency time response as is in place, usually is independent of other efforts and groups in the local community that are relevant to preventing and mitigating disasters or recovering from them. Thus, local groups that are involved in such matters as building codes, housing inspections, repair permits, land use regulations, supervision of utilities, as well as the local community development and planning agencies, only rarely have any contact or much knowledge of the responsibilities and activities of the organizations in the area, such as police and fire departments, which prepare for and respond at emergency times. One consequence is a sharp separation between possible disaster prevention and mitigation (and post-impact recovery) measures, laws and rules and those that deal with emergency time preparedness and response.

### Disaster Response

Typically, the organized response in disasters is fragmented and differentiated, and involves a wide variety of entities representing numerous sectors of governmental and non-governmental layers. In addition, organizational responses are not uniform at different time phases, with some groups just starting to get involved when others are phasing out (e.g., weather agencies have usually phased out before relief groups start operating), and with tasks of the same organization often changing through time (e.g., police who initially help in distributing warning messages undertaking search and rescue after a tornado impact).

This extreme heterogeneity in response stems from a variety of factors. For one, by law, tradition, and expectation, governmental response is decentralized. Federal agencies generally cannot intervene unless the state asserts it cannot handle the disaster with its own resources; in turn, state organizations cannot intervene unless the local community makes the same claim. So, a major community disaster insures a massive convergence of groups. Also, by law, tradition, and expectation, organizations in the public and the private sectors are assigned various responsibility for varying emergency time tasks. Finally, even in the most preplanned of situations, disasters draw to themselves a massive convergence of people, communications and material goods, as well as the emergence of new behaviors and new groups. These all contribute to the organizational heterogeneity that is a major feature of disaster response.

Apart from substantive tasks, organizations and groups responding in disasters also differ in the general structure and functions they manifest. A four-fold typology captures the phenomena well. There are Type I organizations--established ones which do not markedly change their general structure and traditional functions at times of disasters (e.g., many police and fire departments maintain their traditional forms and spheres of activities). Type II organizations--expanding ones have new structures but old functions (e.g., Red Cross chapters, who, by preplanning, incorporate many volunteers into a new social structure but carry out traditional Red Cross activities). Type III organizations--extending ones have old structures but new functions (e.g., a construction company using its traditional group structure to undertake building or street debris clearance). Type IV are new groups--entities that had no pre-impact existence carrying out new disaster functions (e.g., an emergency search and rescue team or damage assessment group). While these last kinds of groups play crucial roles in the emergency time period of a disaster, they have no corporate or formal existence. It appears that the greater the disaster, the increasing involvement of the organized entities going from Type I through Type IV. An ordinary non-disaster emergency might be handled only by Type I organizations, but a catastrophic disaster will require the presence of all four types.

Moreover, whatever the forms organizations and groups have, they have to operate in a different social context or environment at times of disasters compared to normal or everyday times. Thus, they have to interact with more and different organizations than usual; this reflects the massive convergence that occurs. In addition, partly because of official declarations or proclamations of "emergency" or "disaster," organizations lose part of their autonomy or independence. Different performance standards also become applicable (e.g., speed of response is crucial in everyday emergency medical services, but the slower pace of triaging and allocation of casualties to different hospitals becomes more important in a disaster). Moreover, all organizations have to operate with a much closer public and private sector interface at times of disasters (e.g., many private and even public agencies come under the influence, if not indirect control, of some public authorities). Finally, the personnel, equipment, facilities and resources of an organization may

be damaged, destroyed or made inoperable by a disaster; this does not occur in any meaningful way in everyday emergencies or minor crises.

Among the major organizational problems at the emergency time periods of disasters are those involved in the mobilization of the group, the processing of information and the development of coordination. Problems in mobilization include the overuse of personnel, the difficulty of incorporating volunteers into organizational work tasks, especially if there has been no preplanning, and the almost inevitable conflict between local workers and outsiders (which in organizations often parallels an "amateurs" versus "professionals" distinction--that is, outsiders frequently have the more appropriate skills necessary for the disaster situation, but they have to deal with locals who consider it their disaster).

In disasters, organizations typically have a series of problems with information flow within, and to-and-from, the organization to others. For example, it is rare that the initial flow of reports and rumors to an organization make clear the extent and scope of a disaster and what the group might be required to do in the emergency time period. Often too, different sectors and levels of the organization will have widely varying amounts of knowledge about what the group is doing; not infrequently, top echelon officials are not receiving the regular flow of information from below, and often the communication going down through the system is uneven, unclear and irrelevant to lower level personnel.

Overall control by any group or agency is impossible in any community (and even many single site non-community) disaster; a degree of coordination is the best that can be achieved. Just the multiplicity and variety of organizations, public and private, operating out of various jurisdictions preclude that orders or commands from one group would be accepted by all. In principle, martial rule, wherein the military is given supremacy over all civilian authorities and groups, would allow somewhat of a centralization of command. But martial rule has never been declared in a disaster in American society and seems to have never been seriously considered, false historical accounts to the contrary, such as that martial law was declared in the San Francisco earthquake and fire of 1906. Actually, it is doubtful that even the absolute control implied in martial law could be fully implemented successfully in any major disaster or catastrophe.

In part, this is because the greater the disaster, the more it is a catastrophe, the more there will be new or emergent behaviors and new or emergent groups (Type IVs). That is, what appears on a large scale are new ways of acting and new ways of organizing collective responses. Even in the most traditional of established organizations which may generally maintain a Type I form, it is almost certain that within subgroups of the organization, actions will be taken that are not part of the usual pattern, the normative, the administratively dictated or maybe even the legally mandated. In the face of a crisis, staff personnel will develop new, novel, or different ways than the usual behavioral patterns, in order to adjust and cope with the emergency (e.g., if phones cannot be used,

communications may be sent by ham radios or hand carried by persons who, neither by traditions, routines, nor planning, were visualized as message carriers; non-shift organizations might go to a 24-hour operation).

Furthermore, in many cases there is not only new or emergent behaviors, but there are also new or emergent groups. That is, there appears organized collectivities which had no prior existence before the disaster. These may range all the way from multiple, informal, search and rescue teams (not generated by prior organizational disaster planning), to an ad hoc coordinating committee with representation from all key groups involved in the emergency time period (the appearance of such a group could be the result of preplanning, in which case it is not an emergent entity, but in the great majority of instances, their appearance is spontaneously developed, not preplanned). Of course, while a preplanned new group would usually have some legal basis, emergent new groups are almost always operating without any clear cut legal standing.

Emergent groups focus on highly relevant emergency tasks such as the coordination of interorganizational operations, the finding and distributing of material resources, immediate damage assessment, search and rescue, initial handling of the dead, early post-impact debris clearance and home repairs, the providing of technical advice by experts, operation of unplanned temporary public shelters, outreach programs to locate victims requiring counseling and information distribution centers.

Research has shown that the effectiveness and the efficiency of organizational managing of a disaster stems from: communication which results in correct information collection and distribution; a fully functioning EOC; appropriate procurement and allocation of human and material resources; proper task delegation and coordination; a legitimated authority structure; integrated and cooperative relationships among and between local and extra community groups; harmonious relationships with mass media organizations; and, response activities based upon real and not mythical needs. In principle, all of these dimensions can be preplanned. But in actual fact, to the extent they appear in an emergency time period, they are the result of preplanning and more spontaneously emerging processes.

Put another way, if a crisis is seen as requiring immediate action to avoid further problems, there will be some efforts at emergence. No existing organizational pattern and no amount of preplanning can insure that at least some degree of this kind of emergence will not appear in major disasters. As such, emergent organizational behavior and groups are almost a universal characteristic of disasters. Because very few emergent groups and little emergent behaviors ever become institutionalized after the disaster is over, the importance of the phenomena at the emergency time period can be badly underestimated. This downplaying of emergence is also reinforced by the tendency of many organizations in the post-impact period to try and present a picture that, in the disaster, the group reacted well--indications of emergence would imply, quite correctly, that instead, new adjustive and coping steps had to be taken.

## Deviancy

The matter of organizational deviancy is partly related to the exercise of authority. Therefore, we will first discuss the general picture with respect to problems of authority at the emergency time periods of disasters. We then turn to looking at illegal organizational behaviors, violations of administrative regulations, and actions taken by groups that have no clear basis in legal administrative or bureaucratic rules.

Disasters require that some agencies and officials assume responsibilities, make decisions, and be seen as legitimate. If the exercise of authority is weak during nonstressful periods, it will prove even weaker when disaster strikes. If authority is weak in the first place, as is true, for example, in many county governments in the United States, it can completely disappear when disaster strikes. However, even if we assume that the exercise of authority among agencies and officials during periods of normalcy are operating properly within a community, there will be problems during the emergency phases of disasters. The difficulties which surface, however, are often not those commonly anticipated.

Thus, the chain-of-command and lines-of-authority do not break down in established organizations. If inadequate communication does exist during a mass emergency, officials usually continue to exercise their formal authority and fulfill their normal duties and responsibilities. If higher echelon officials cannot be reached, personnel at the middle and/or lower echelons often make decisions they do not normally make. Even rigid bureaucracies will bend when faced with clear-cut crises that require an immediate organizational decision or response.

A common belief is that organizations may be unable to function effectively due to conflict between the work role and the family role of officials. Occasionally expressed, is the fear that important officials or key personnel will either not report to work or will leave their jobs when disaster strikes because of a concern or a need to take care of their victimized families. Research has shown that this so-called role conflict does not result in the abandonment of, or failure to carry out, occupational responsibilities. (At least it is not a major problem, especially in the higher echelons of organizations, e.g., those positions carrying the most authority.) It is clear that officials can be expected to do their jobs, although there is great psychological strain for those caught in such a role conflict.

Neither are there many problems arising from questions concerning which organizations have been delegated the authority and responsibility to perform traditional tasks during disasters. Thus, there are seldom disputes or questions concerning who fights fires, repairs telephones, performs major surgical operations, or other specialized tasks. Such matters are the traditional responsibility of certain local groups. A disaster is unlikely to alter the normal pattern.

On the other hand, there are at least four problem areas involving organizational authority in community disasters: (1) loss of higher echelon personnel because of overwork; (2) conflict over authority regarding new disaster tasks; (3) clashes over organizational domains between established and emergent groups; and, (4) surfacing of organizational jurisdictional differences.

The problem of personnel burnout stems from the strong tendency on the part of key officials in positions of authority to continue working too long. Such personnel who remain on the job around-the-clock during the disaster will eventually collapse from exhaustion or become inefficient in their decision-making and other areas of responsibility. More importantly, when such officials are eventually succeeded by others, their successors will lack certain information to exercise the necessary authority because crucial data will not have been formally recorded. 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 positions of authority, the disaster response capability of the organization can be seriously impaired.

Determining who has the organizational authority to perform new disaster-related tasks is another major problem. When there are new disaster-related tasks to be performed, questions almost inevitably arise about which organizations have the authority to assume them. For example, the responsibility or authority for performing large scale search and rescue activities or mass burials of the dead are normally not everyday tasks of established emergency management agencies.

Authority problems surrounding the performance of traditional tasks sometimes arise between established organizations and outside or emergent groups. For example, for the most part, "area security" is considered a traditional local police function. Conflicts can arise if state police or military personnel move into the disaster area and also attempt to provide security. Such actions are often viewed by the local police as an attempt to usurp their authority. This issue is sometimes manifested in disputes over who has the right to issue passes allowing entry into a restricted impacted zone.

The situation is even more complex when the competing organization is an extra-community group or an emergent group, as for example, when nonlocal relief or welfare agencies provide services during a community disaster. Though they may be exercising their mandated or usual function of providing standard services, such agencies are frequently viewed as intruders into the domain of local agencies while performing such functions. If the outside, or local relief group, is a new organization, established local agencies undertaking the same disaster task(s) are almost certain to ask questions about its legitimacy and authority.

Community disasters frequently cut across jurisdictional boundaries of local organizations. This creates a great potential for conflicts. During non-crisis periods, vague, unclear or overlapping authority and

responsibility can often be ignored. During disasters this is frequently not the case. Since disasters sometimes require immediate actions and decisions, unresolved jurisdictional issues often surface at the height of an emergency period, leading sometimes to organizational deviant behavior.

Actually, there is considerable deviancy on the part of organizations during the emergency time periods, especially of community disasters. Some of the behaviors involve illegalities, others represent violations of administrative regulations and bureaucratic procedures, and still others are activities that are undertaken without any legal, administrative or bureaucratic rules that organizations normally use as a basis for their actions. It is relatively rare that the deviation arises as a conscious issue or question at the time the emergency is present. However, the matter often becomes a matter of concern afterwards as questions of blame or responsibility may emerge and, increasingly, as the possibility of legal liability for actions taken or not taken becomes an issue in modern societies. Also, at times there is the question of financial accountability—who will pay for what was not clearly authorized either by preimpact arrangements or emergency times understandings.

The range of illegal organizational behaviors involves actions of both commission and omission. For example, in most communities there are laws that require governmental purchasing agencies to obtain competitive bids when purchasing supplies or services; this inevitably gets violated at a time of disaster; so is the frequent requirement that there be a time delay between the authorization to purchase something and the actual purchase. Under the pressure to take immediate actions, governmental officials obtain goods and services as quickly as they can from the first located supplier and ignore the usually requisite paperwork and rules. Under the same pressure, local governmental units, in particular, for example, in a flood disaster, will go on private (or even normally inaccessible public) property to build levees, sandbag, let water onto the land, dynamite, etc., without obtaining the usual necessary permission and without any official action taken ahead of time to legitimate the measures taken (in some cases, after the event, city council or government groups pass retroactive legislation to attempt to officially cover what was informally done.)

There are also other kinds of attempts to justify what are manifestly illegal actions. Sometimes this involves an informal redefinition of property. For instance, it may be found that electrical generators might be needed at the height of the emergency. Without obtaining permission or agreement from anyone, a warehouse containing them will be located, broken into, the generators taken, but a note left that they were taken, for example, by the LEMA; to the extent the action is consciously justified, it is argued that the private property became community property given the urgency of the need.

In the kinds of illegal actions indicated, there never is an attempt to hide what is done or by which organization it is done. This contrasts with the extremely more rare instances of secret criminal actions. For instance, the rare cases of looting are frequently done by members of

outside security forces that come into the disaster area. It should also be noted that while done by personnel of organizations, the looting is not undertaken in the group's name, unlike the other illegal actions mentioned above.

There is much organizational behavior at the height of the emergency periods of disasters which primarily involve violations of administrative regulations and bureaucratic procedures. Decisions are taken which consciously are recognized as violating standard rules. The hours in which banks can open and can close, for example, are strictly regulated; similarly, some radio stations have to close down at certain evening hours to prevent interference of other distant stations broadcasting on the same frequency. In major disasters, both banks and radio stations widely violate the rules which, on paper at least, subject them to severe sanctions. Although sometime the action is preplanned, more often buildings such as public schools and churches are given over to be collection points, transitory shelters, staging centers, etc., with neither those taking over the facilities or those operating the facilities on an everyday basis either obtaining or granting permission for what is done (e.g., in many communities school buildings cannot be used by outsiders without written permission of the local school board, and the undiscussed use of churches for governmental activities is an apparent violation of the normal church/state separation). As a further example, hospitals will usually treat disaster casualties without charge, violating their own rules, and, in some cases, treat patients without obtaining the usual permissions, creating a gray area insofar as laws, administrative rules, and medical ethics are concerned. In other cases, the violation is clear, as when radio and television stations, in disasters, proceed to broadcast personal messages, which is clearly prohibited by Federal Communication Commission rules.

Then there are some organizational behaviors at the times of disasters which can only be described as activities taken independent of the kinds of laws or rules which normally form the basis for the activities of the group. There are two clusters of behavior in particular which stand out in this respect. One is the use of volunteers. While at times such emergency groups as local Red Cross chapters will have preplanned procedures and understandings about the rights and responsibilities of their formal pre-impact designated volunteers (the same is true of some police volunteer auxiliary personnel), this is the untypical situation. Sometimes volunteers act in the name of emergency organizations whose officials are not even aware of the existence, much less the actions, of the volunteers. But even when those volunteering are vaguely known to and very loosely given guidance by organizational officials—a typical situation—their status as workers is unclear because everything associated with them is informal and unofficial. (An exception are fire departments, the bulk of whose personnel are volunteers, but regarding which there are clear cut laws and regulations regarding responsibilities, rights, duties, liabilities, insurance, etc., because they are volunteers in a different sense than the typical spontaneous volunteer at emergency times). Yet such volunteers often constitute the largest number of persons helping in the organized response to a disaster.

Sometimes, too, there are what might be called group volunteers. That is, certain groups, such as churches or labor unions, may provide collective, rather than individual, volunteers by offering collection of sets of members of their own organizations to work for other groups. There are rather complex issues, especially of responsibility and liability, in such situations since, in one sense, it is help provided by an organization but the actual work is done by members of that organization, but not in their usual organizational role.

Sometimes what emerges has to do with interorganizational relationships. For instance, new lines of authority can develop and certain organizations may temporarily assume direction or control over particular operations or personnel from other groups (e.g., public works personnel might direct fire officers immediately involved in the construction of a new river channel). In some cases, normal tasks of other organizations might be taken over (e.g., a police department taking over the opening of public shelters, usually a preplanned activity of the local Red Cross chapter). Very typical in major disasters where there is little or no prior planning, small, rather ephemeral, groups will emerge to set emergency time priorities and initiate coordination among the major responding organizations in the disaster. In none of the examples we have cited, which are only actual cases, is what emerged as the result of legislation or preplanning.

Another unclear area of organizational behavior in disasters has to do with the flow of information. Electronic mass media entities, for example, often reduce their gatekeeping during emergency times of disasters. That is, contrary to their normal procedure of screening and selecting (via reporters) what will be broadcast or telecast, victims will be allowed to talk directly on air, frequently leading to many unverified statements being sent out as part of the news coverage of the disaster. Also, many other organizations, at times of disasters, will be issuing announcements to the public, providing information to officials and informing their own personnel, in ways rather different than normal. Apart from a very few specific emergency type groups which have formal responsibilities (e.g., the Weather Service, police and fire departments) regarding information flow and distribution, the status and responsibility of other groups regarding these matters is unclear and is often reflected in what they do (e.g., what responsibility does a chemical company have to inform anyone else of a hazard in their own plant--only in the last few years have some laws and administrative regulations even started to address this question).

Apart from established, expanding and extending organizations (Types I, II and III), there are, as frequently noted, also many emergent groups in major disasters. What a number of them do would seem to be somewhat in a legal, administrative and/or bureaucratic void, given that they have no formal or corporate existence. Yet, an informal damage assessment group, for example, may earmark many buildings to be immediately and completely knocked down because of their precarious nature as a result of an earthquake or explosion. An ad hoc coordinating group, which might have

as key members other than just public officials, may make major decisions on everything from evacuation to the priorities to be used by many public and private organizations in the disaster area. A number of informal search and rescue teams might not only agree on the specific impacted localities which each will search, but also decide when the effort of each will be terminated. So, important activities with far reaching consequences can be undertaken, and are, by emergent groups which have no formal or official authority to do anything whatsoever.

### Implications

Unlike individuals generally, at least some organizations attempt to prepare for disasters. These emergency oriented groups are handicapped by relatively low support from the public, and because they are given low priority in that they are planning for low probability events. Nevertheless, in the short run, preparedness planning could be more integrated--one agency with prime focus on disasters might take the lead role in the community, and the emphasis might be more on process than plan. In the long run, planning for all emergency time tasks need to be brought to a minimum level, and disaster preparedness/response planning should be better linked to mitigation-prevention/recovery planning.

If, as suggested earlier, individuals generally rise to the challenges of the emergency period of a disaster, almost the opposite is true of organizations. They tend to flounder in attempting to cope with a major crisis. Thus, they are the source, as well as the locus, of most of the problems that exist in disasters.

The great complexity and heterogeneity of organizational responses to disasters needs to be recognized. The context of a disaster is more than a large scale accident; as such, the managing will have to be different. Similarly, many organizational problems stem from disaster conditions. At best, partly by preplanning, coordination of organizational management of disasters can be achieved; overall control is impossible in community disasters and most non-community ones too.

While organizational authority does not collapse in disasters, there are voids in the exercise of authority during the emergency period. These need to be addressed long before impact. On the other hand, there is also considerable organizational deviancy in disasters, ranging from illegal and criminal acts to group behaviors not rooted in laws, administrative or bureaucratic rules. However, some such behaviors are functional for a good disaster response. Many of the characteristics of organizations in disasters, the problems they are faced with, and the need for coordination, are associated with the great amount of emergence that occurs in such situations.

Emergent phenomena, that is, new social arrangements and activities, are a pervasive feature of organized responses to disasters, although the manifestation may range from minor behaviors to major groups. As such, disaster planners and operational personnel should take the appearance of the phenomena for granted and incorporate the probability of its presence

into their thinking and acting. Just assuming the phenomena will occur will be helpful, for disaster research has consistently shown that one of the most disturbing aspects of disasters for emergency responders is the appearance of phenomena which they had not anticipated in their planning.

It is impossible to foresee everything, but there is no good reason for not anticipating the probable.

Related to the first point is the necessity of not automatically assuming that emergent phenomena is necessarily dysfunctional, bad, or otherwise inappropriate, as disaster research has also noted. There is a strong tendency among disaster planners and responders to think that because they have not planned for, or are not controlling some phenomena in a disaster situation, that it cannot be good. This is seldom the case. In many situations, whether it is emergence on the part of individuals or organizations, the new behavior or group may represent the most effective and efficient way of coping with problems. This is not to say that emergence always represents the best solution, but emergence does represent an effort to solve problems.

In this connection, planners and responders should consider under what circumstances and for what purposes they might actually want to facilitate certain emergent behaviors. A case in point is the phenomena of volunteers and volunteering. In most disasters, volunteers frequently are more of a problem than a help. Volunteering does represent individual emergent behavior, but most disaster planners, and even more so emergency operational personnel, in many cases discourage it unless they can force such behavior along very limited or particular lines. It might be more appropriate to try to anticipate along what lines volunteering might unfold, and plan accordingly, facilitating and taking advantage of what will occur anyway. This same point can be made about emergence at the organizational level as at the individual level.

Certain kinds of emergence can be preplanned, at least in the sense of anticipating the phenomena and creating conditions for its possible appearance. A facilitating social context is required, as well as a perceived need for action, for emergence to occur. Such a context is something disaster planners could often prepare considerably ahead of any disaster impact, but can even be done during emergency times. A great deal of improvisation is always necessary in organizational responses to emergencies because every disaster presents a particular set of combinations of demands and problems. Given this, emergency managers should accept, for example, a "loose coupling" between their organizations in the response, because such looseness is actually functional, at least for effectiveness of response.

In addition, disaster preparedness itself must build in and allow for improvisation or emergence. It makes little sense to plan, to conduct exercises or otherwise carry out preparedness measures as if there is only one standardized way to do such matters, when there is prior acceptance of the probability and usefulness of emergence in the emergency response. If there is going to be emergence in responses to disasters, there should

also be a degree of emergence in preparedness itself. Put another way, if responders are going to have to improvise in responding, they should practice some improvising in their preparedness activities.

There clearly are a variety of questions with legal implications which can be raised about organizational deviancy in disasters. Looming over all of them is a key issue: if, as it seems, some illegal organizational behaviors and many administrative and bureaucratic group deviancies in disasters make for better adjustive responses in such situations, what follows? Should laws, rules and regulations be changed for emergency time situations, or should other changes be made in preparing for and managing disasters so that organizational deviancy would not occur, or at least be considerably reduced, when organizations attempt to manage such situations?

Another important question is why is there relatively little sanctioning of violations by organizational actors? Does the lack of enforcement implicitly recognize other guiding ethical, moral or other principles in acute emergencies? Perhaps the recognition there would be little social support in the public for attempting to bring the violators to some forum for judgment. Or, does the failure stem from some other conditions?

Still, at a general level, there is another question of the selective nature, or organizational deviancy itself--what accounts for why some norms are violated but the great majority are not? Also, are there certain norms that are never violated? To argue that the organizational deviant behaviors involved are those that allow a better response, while in one sense possibly true at one level, begs the question at another level. If that is the case, how is it recognized?

More specifically, as already noted, there are a great number of legal and quasi-legal questions associated with the whole phenomena of volunteers. Because of the increasing possibility of liability, some emergency organizations have started to examine the matter, but very little has actually been done.

The legal status of emergent groups as groups also would seem to be rather unclear, despite their often central roles in disasters. Significant matters of accountability and responsibility would appear to be involved. Since there is likely to be more and worse disasters in the future, with consequent probable appearance of even more emergent behavior, this is almost certainly an issue that will be even more important in the decades ahead.

#### Validity and Applicability of Findings

The observations and findings summarized in the previous two sections of this paper come out of a body of research done for certain purposes, in certain ways, on certain kinds of disasters. Essentially, we have reported social science research based primarily on a field study methodology that has been used in looking at sudden or acute type

disasters in American society. What this involves has to be understood before the question of how valid the findings are and to what extent they can be extrapolated to other societies can be addressed.

### Theoretical Issues

As in any new field of study, social and behavioral research into disasters has attempted to clarify its central concepts, develop typologies and advance explanatory models. Much of this work is still in the pioneering stage. Some ideas have come to gain wide acceptance, others are still matters of considerable disagreement.

There is no total consensus on the concept of disaster itself, as efforts at conceptual clarification have proceeded. However, as researchers have attempted to develop a formulation that is best for research purposes, they have come to agree on one point. There can be, and are, many definitions of disasters used. But what, for example, might be an appropriate conception of disaster from a legal point of view would not be necessarily so from a sociological perspective, and vice versa. What is a useful operational definition of a disaster for an emergency relief organization to be able to mobilize (e.g., the Red Cross requires at least five families to be impacted), may not correspond to what a government agency might require to act (e.g., the United States federal agencies normally cannot intervene unless state and local authorities certify that they cannot cope with the crisis using only their resources--which means that events creating the same number of casualties and amount of property damage could evoke two opposite national level organizational responses). What is a disaster from a medical point of view is not the same from the perspective of a department of agriculture. Thus, there are widely differing conceptions of disasters validly used by different groups for their own varying purposes, and there might be very little overlap in some instances between the different formulations.

Social science disaster researchers have developed definitions and conceptions which tend to stress the social rather than the physical dimensions of the phenomena. While there is no current consensus on the most useful specific formulation, most conceptions presently employed imply that a disaster for social science purposes is a situation where the demands or needs in a crisis exceed the capabilities or resources available. Emphasis, therefore, is on the social setting or social order rather than the disaster agent itself. Many of the formulations used also imply that an important distinguishing feature of a disaster is that the routines of ongoing community life are suddenly disrupted, which means that a threat situation could be as, or even more, disruptive than some actual impact (e.g., if a city is totally evacuated for several days because of a chemical threat that actually never materializes into any impact). Furthermore, social science researchers are also inclined to take the social implications of the impact ratio into account because the same number of dead and injured and housing destroyed in a metropolitan area would be, socially, significantly different than exactly the same numbers in a small town, creating, perhaps, a catastrophe in the latter and only a minor emergency in the former. These, and other kinds of

distinctions useful and worthwhile from the perspective of social scientists, are not necessarily the same for others interested in disasters for different reasons (e.g., lawyers).

However, unless the different uses of the term disasters are recognized, there can be rather serious miscommunications. The "same" term, i.e., disaster, can have rather different referents. The referents may all be valid for the purposes used, but they are not the same. This needs to be accepted as a starting point. The notion that one formulation could be developed that would be as equally useful and valid for all purposes, is almost certainly chimerical.

Increasingly, the effort at conceptual clarification has led to the notion that certain conclusions should be matters of empirical determination rather than of definition. For example, early researchers in the area entered into their studies with the idea borrowed from everyday thinking that disasters are unequivocally bad and that those that experience disasters are always victims in the negative sense of the term. In other words, disaster phenomena was only associated with unfavorable effects. However, it has been recognized that disasters can have positive or good outcomes as well as bad or negative ones. Disasters do sometimes have positive consequences for the societies, communities, families and individuals to which they occur; they are sometimes better off because of the experience. Possible positive effects should be established through study and not read out of existence by the definitions used by researchers.

Disaster researchers have also progressed in their efforts to typologize disasters. Initially, disasters were separated according to their supposedly agent source, that is, for example, floods, earthquakes, chemical explosions, nuclear radiation accidents, etc. From this, thinking proceeded to a separation into two major categories in terms of a presumed distinction of controllability in the original source of the problem, that is, natural disasters (historically called Acts of God for legal and insurance purposes) and technological disasters (sometimes, to make the contrasts with Acts of God, they have been called man-made or human-created disasters). One seeming value of this two-fold categorization is that, in the latter, blame can be more readily allocated and prevention may be more possible than when the phenomena is assigned to a supernatural source.

However, recently, the value of the distinction made has been challenged on at least two grounds. Thus, it is argued that all disasters, in one sense, are human-created. For example, if people live in flood plains or in buildings which will collapse in earthquakes, or if they build chemical and nuclear plants, the victims are involved because of human and group decision making and actions that place them at risk. It is also said that in the modern world, human beings increasingly are coming to believe that much can be done to reduce the impact of all disasters, if not to prevent them (e.g., better warning systems for tornadoes, cloud seeding to break up hurricanes, dams and levees to reduce floods, earthquake predictions to allow neutralizing actions, etc.)

Therefore, blame is starting to be assessed in natural disasters and the fatalistic attitude that they only can be adjusted to is being questioned more and more.

Most researchers do argue that there are differences between disasters, but that they are in terms of such multiple dimensions as: duration, possibility of forewarning, speed of onset, magnitude of impact, and so on. It is said that typologies are needed that cut across not only different disaster agents, but also the same disaster agent. In this line of thinking, what is important, for example, is not the physical difference between an explosion or an earthquake, but the fact that neither usually allow time for warning. Or, it is noted, that a flash flood from a broken dam may have more similarity to a sudden tornado than to a very slowly rising riverine flood, or that an acute chemical disaster involving a toxic cloud may be more similar to a hurricane than to a diffuse and slowly acting hazardous chemical contamination.

More recently, even more social type dimensions have been proposed for the development of a typology of disasters. Among the multiple dimensions which might be used are: the proportion of the total population involved, their social centrality (i.e., residents versus transients), the length and rapidity of involvement of the affected population in the crisis, the unfamiliarity of the threat, and the recurrence of involvement. However, as yet no one typology or taxonomy of disasters has won much acceptance, although there is widespread agreement that this will be a necessary step for major theoretical advances in understanding disasters. Furthermore, the search for a typology along the lines indicated has led researchers to avoid reaching conclusions in terms of agent specific disasters (i.e., how people and groups react to chemical disasters compared to flood disasters).

The great bulk of the disaster research so far has produced far more description than analysis. This is understandable since there has to be knowledge of the characteristics and features of disaster phenomena before any significant move can be made to explain the generating conditions involved. The empirical knowledge base is uneven and selective. Thus, there are only limited explanatory models available, almost all aimed at explaining middle range or a limited range of individual behavior such as panic, evacuation, warning, etc., or of specific organizational behavior such as that by mass media groups, emergency management agencies, police and fire departments, etc. Usually, the explanatory scheme used has been borrowed from one of the traditional social science disciplines such as sociology, psychology or political science.

Clearly, disaster phenomena as a whole cuts across disciplinary lines. For many practical and operational purposes in preparing for and managing disasters, a single discipline approach is limited, at best. From an overall viewpoint, knowledge is needed, ranging from the field of atmospheric sciences to law, from the medical field to engineering, from the social sciences to the earth sciences. Thus, an integrated multidisciplinary approach would seem desirable, but little even remotely coming close to such a model exists anywhere in the literature.

However, a minority of researchers argue that what is needed more is the development of social engineers with interests in disaster phenomena. It would be their task to take the basic findings from different disciplines and to apply them for planning and managing purposes. A parallel in the physical sciences is where physicists and astronomers develop basic knowledge in their disciplines that engineers and technicians use to design space capsules and to plan and run space travel missions. This kind of division of labor does not currently exist in the disaster area.

However, one consequence of all of this is that most disaster researchers have tended to stick fairly close to their disciplinary orientation. Research findings have been couched and judged in terms of validity within a discipline. Multi or interdisciplinary work has not flourished. Also, while the need of application of research findings and the need to transfer knowledge to potential research users is widely acknowledged, most disaster researchers have not given priority to the task of getting findings applied.

Overall, the research findings reported have to be understood in the context of the conceptions of disaster used, the typologies of disasters assumed, and the explanatory schemes employed, as well as the newer ideas on these matters that have been advanced. The knowledge base is skewed along the lines indicated about these matters. Instead, as examples, if disasters were conceived in totally social terms, if a full taxonomy of non-agent specific disaster occasions existed agents, if a multidisciplinary explanatory model was available, or if the goal was primarily application, the knowledge base would be different. However, the present state of knowledge about disasters reported in this paper reflects and has to be judged in terms of its validity in the actual context in which it has been derived so far in the United States.

### Methodological Issues

It is sometimes assumed that behaviors at emergency time periods of disasters are very difficult to study. The methodological difficulties supposedly stem from the practical/logistical problems of undertaking field research in the middle of a disaster, and the sociopsychological problems of getting access and obtaining valid data from citizens and officials involved. However, more than three decades of research indicate that these are not insurmountable problems or even serious obstacles to doing adequate research.

The practical/logistical problems can be overcome by developing stand-by field teams of researchers ready to move to a disaster site sometimes even before impact (possible in many instances of hurricanes, riverine floods, some volcanic eruptions, occasional hazardous chemical threats, etc.) or as soon as possible while impact is still occurring, or within hours after impact. For such teams to function effectively, the members must be given extensive prior training on how to do such field work and they must have predeveloped field instruments (e.g., interview guides)

with which to gather data. Most of the specific logistic aspects can also be worked out ahead of time (e.g., what team members need to carry with them, arrangements for travel and housing, identification, etc.).

Also, contrary to popular belief, and even the image that exists in some social science circles, it is often easier to obtain access and get direct data at the emergency time period of disasters than it usually is during normal time. During a disaster, for psychological reasons, potential or actual victims are frequently quite willing to talk and may have more time available than in everyday life because they are not tied up in their usual work, family or other traditional everyday roles. The typical social barriers to getting access to officials in organizations almost always are lower during the crisis time of a disaster. For a variety of sociopsychological reasons, too, the experiences of a disaster tend to be more vivid in memory than more routine happenings.

If some of the mythological beliefs about behaviors discussed earlier were true, data gathering would be far more difficult. But the myths are not the realities. People can report their perceptions and actions, certainly as well as they can about routine behaviors, and in some respects they can do a better job of recounting their disaster experiences.

Furthermore, interview data (which can be internally cross-checked from the accounts of others) can be supplemented by systematic participant observing. Again, field researchers need to be trained to use preplanned participant observer field instruments. In addition, there usually is substantial material of a documentary nature available (ranging from radio recordings of dispatching rooms to organizational logs and from disaster plans to various kinds of statistics). With imagination, more can be found than is usually believed, again if prior thought has been given to what a field team should attempt to locate and find.

Our basic point is that there are no particular special problems in gathering data on disaster behavior; in fact, there might even be some minor advantages over what can be done in studying everyday activities. Whatever methodological techniques can be used in the social sciences generally can be used in studies of disasters. To the extent the methods used provide valid data generally, they can and have been used to obtain equally as valid data from disaster situations. If there are problems of data validity, they stem primarily from the methodological techniques used, not that they are used in a disaster research setting.

### **Cross-Societal Applicability**

Some of the research done in the United States has been paralleled by disaster studies in Canada, some Western European countries, Australia and Japan. In fact, much of the work has been done with at least a partial awareness of the American literature. In very general terms, the research findings so far obtained elsewhere have not been radically different from those obtained by the social and behavioral scientists in the United States.

However, almost all of the countries involved share many social/political/economic/cultural features. They also are, generally, highly industrialized types of societies, have highly urbanized ways of life, and have a great deal of technology (e.g., highly developed mass media systems) and resources. So, that there would be a number of similarities in disaster behavioral responses, is not surprising.

On the other hand, some differences also have been noted. This too might be expected. The United States, for example, has a decentralized governmental and political authority structure, relatively weak social class differences, strong norms for citizens to undertake volunteer work, high value attached to private property, a cultural belief that nature is something that human beings can master, etc. There are differences in these matters even in the aforementioned countries (e.g., Japan has a centralized system and weak norms for individual volunteering).

The observation of many similarities and some differences has led some researchers to hypothesize that cross-societal comparisons in disaster responses in the emergency time period vary directly with the level of the behavior being examined. That is, universal patterns of behavior are most likely at the individual or human behavior level. But societal specific behavior patterns become more likely as one moves up to the family, the organization, the community, and the societal levels.

Such cross societal research as has been undertaken seems supportive of the hypothesis. For example, panic flight behavior is rare among community disaster victims in any society. Search and rescue activity is primarily carried out by survivors, neighbors and private citizens. In contrast, organized mitigation measures and reconstruction activities tend to vary very much from one society to another since they are often national level activities.

If the general hypothesis is correct, it follows that organizational disaster behavior will not be universal, but also that it will not be completely societal specific. Clearly, what is needed are systematic studies which will identify the universal features and the societal specific characteristics of organizational behavior in disasters. We might hypothesize, for instance, that centralized organizations that have or use the same kind of technological resources, such as military groups, will tend to behave generally in the same way in disasters.

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