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IMAGES OF DISASTER BEHAVIOR:
MYTHS AND CONSEQUENCES

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Disasters have consistently captured human imagination. Throughout the

Old Testament, the frequency with which disasters are central or incidental

themes suggests that they have always been a familiar part of man's experience

and they have been a rather constant setting for posing questions about man's

existence and death. Today, an examination of the news media forces one to

the conclusion that disasters continue to be worthy of attention. We accept

this attention as natural, and perhaps it is, since disasters continue to

provide the context in which significant human dramas are revealed. Disasters

are perhaps one of the few situations in which there is both the opportunity

for the expression of heroism as well as for the ability to confront fear and

suffering. And this is played out on a rather dramatic stage for the spec-

tators to see. For those persons whose lives are characterized by the

repetitiveness of day-to-day living, disasters provide a vicarious contact

with these rather universal themes.

Because of the frequency of such events in history, the vividness of

the events themselves and the potential significance of such events for under-

standing man, a number of ideas about how people behave in disasters have

developed and have come to be somewhat widely shared. The popular image of

disaster behavior usually centers on themes of personal and social chaos.

Among these popular images, stated here in their more unqualified form, are

the following:

1. People when faced with great threat or danger will panic. This

takes the form of either wild flight or hysterical breakdowns. Even if the

response is not intrinsically self destructive, it will generally involve giving little consideration to the welfare and safety of others. Persons can not be depended upon to react intelligently and non-selfishly in situations of great personal danger.

2. Those who do not act irrationally are often immobilized by major emergencies. Thus, disaster impacts leave large numbers of persons dazed, shocked and unable to cope with the new realities of the situation. In addition to a person's initial inability to cope with the situation, the longer run personal effects are rather severe emotional scars and mental health disturbances. Paralyzing shock is followed by numbing symptoms of personal trauma.

3. Partly because of widespread individual pathological reactions and partly because of the overwhelming damage to the resources of disaster-affected communities, the ability of local organizations to perform effectively in handling emergency tasks is severely limited. Not only do such organizations have to cope with the irrationality of others, but their own personnel are so immobilized by threat and damage that they cannot fulfill their necessary occupational tasks. Therefore, local organizations are ineffective agents to handle local emergency problems.

4. The social disorganization of the community which is a product of disaster impact provides the conditions for the surfacing of anti-social behavior. Since social control is weak or absent, deviant behavior emerges and the dazed victims in the disaster area become easy targets for looting and other forms of criminal activity. Crime rates rise and exploitative behavior spreads as Mr. Hyde takes over from Dr. Jekyll.

5. Community morale is very low in disaster stricken areas. Since impacted localities are filled with irrational, disorganized and helpless persons and immobilized groups, the future of such communities appear bleak and problematical. Residents, even those not directly impacted, prepare to leave and there is a reluctance to reopen and rebuild shattered businesses and industries.

6. A descent into total personal and social chaos is possible in such stricken communities. Immediate and firm and unequivocal measures are necessary to prevent such a deterioration. But in general local and established community officials lack the resources and are so shaken by the disaster that they can not take the drastic steps required.

This is a grim picture indeed, if true. But true or not, this is the most widespread image of disaster behavior. As such it has important consequences in how people and groups prepare for and respond to disasters.

Implications for Social Policy

Many, perhaps most, images about human behavior have minor social consequences. Most conceptions primarily affect how an individual views others in the social world around him. Images about disaster behavior, however, have important social consequences since they are the major basis for making critical decisions on the part of organizational and political officials in disaster operations. As we have indicated, the popular images of disaster behavior center on the themes of personal and social chaos and these seem to be based on the assumption of the frailty of the human personality and the

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tenuousness of social organization. The personality integration and social cohesion which exists in normal times is always fragile and brittle, and becomes unglued in crisis. Taking each of the six conceptions mentioned earlier, certain policy implications follow.

1. The impression that persons act irrationally and panic in crises situations leads to cautiousness in the formulation and issuing of warning messages. Knowing that persons are not able to handle threats to themselves with any degree of rationality, warnings should be withheld until the last minute when the consequences of the panic which would result and the damage that would come from disaster impact are somewhat equal. In other words, warnings should be given at the last minute. The potentialities of the disaster impact are always more uncertain than the inevitabilities of irrational personal behavior.

2. The notion that disaster impact leaves large numbers of persons shocked and dazed contributes to a concern for the provision of immediate assistance on the part of outside agencies. The idea that victims are unable to cope with the new situation which confronts them suggests that agency help is not only mandatory but any delay in it would be catastrophic. This view is further supported by the belief that even after the initial shock, many persons are so emotionally disorganized that they need outsiders to do the most elementary tasks for them such as being fed, housed and clothed. In line with this, certain kinds of aids and supplies should be sent unsolicited to large-scale disaster areas since it is almost certain they will be needed.

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3. The supposed preponderance of irrational and disorganized individuals
also has its consequences for the ability of local organizations to function
effectively during the emergency. In particular, the effects of what is known
as role conflict are major stumbling blocks. Since all persons have many
different sets of obligations, basic obligations to one's own family take pre-
cedence over occupational responsibilities, and therefore, the effectiveness
of key officials in local emergency organizations will be hampered. To make
up for this loss, organizations must mobilize several times the number of
persons that they need in order to get a reasonably adequate number so that
the group can function. Because of such a loss of personnel, outside agencies
must assist since they are unencumbered by these problems.

4. The presumed surfacing of anti-social behavior in disaster necessi-
tates particular attention to security measures. Over and above the new tasks
which are created by disaster impact, an increase in the allocation of resources
for security is also necessary. Since the local community is overwhelmed,
these forces should be drawn from the military. In addition, to facilitate
this increased security, perhaps martial law should be invoked. Certainly
because of the social disorganization and anti-social behavior which emerges,
not only must the highest priority be given to security measures but such forces
as are used should be as large and as conspicuous as possible.

5. Since it is believed the morale of community members is low after
disaster impact, steps have to be taken to assure victims there is a future
for them and their area. Such demoralization can be partly countered by quick
visits of important public officials from outside the stricken area. More

important, to show the victims they are not forgotten, massive aid should be brought in and widely publicized. Preferably this aid should be handled by non-involved outsiders who are in a better position to make balanced judgments than dazed and demoralized local officials.

6. Since it is believed disaster stricken communities are faced with total collapse, there is an accompanying belief about the need for the assertion of strong leadership. While this leadership might come from political officials with emergency responsibilities, it is far more likely that in crises certain "natural" leaders will emerge and "take over." Such leaders are more likely to come from persons who have had military experience and who "think" in these terms. In case that such natural leaders do not emerge, strong leadership has to be provided for the community. Since the disorganization makes local persons incapable of making judgments, the decisions necessary to save the community must be made by outsiders who are more rational.

There are other policy implications which emerge from the images of disaster behavior but most of them follow a similar theme. They are all based on the "weakness" of average individuals and the fragility of typical social organization in coping with crises events. On the other hand, such policy places great faith on the capacity of a few rational strong leaders, usually those who with "command and control" experience and often with outside agencies and/or resources, to cope with the irrationality and disorganization. Planning for disaster, then, should focus on developing mechanisms to maximize the decision-making capabilities of these leaders.

These images of disaster behavior are very widespread and the policy implications derived from them are embedded in the emergency planning literature. On the other hand, there is also a considerable body of empirically based knowledge about disaster behavior which is available. It is to a brief description of this research tradition to which we now turn.

The Research Tradition

There is unknown to most people a rather impressive accumulation of research knowledge about behavior in disaster. Perhaps the first attempt to apply social science concepts to the study of disaster was Samuel H. Prince's investigation of the munitions ship explosion in the harbor of Halifax, Nova Scotia in 1917. During the 20's and 30's, there were sporadic studies, primarily by single investigators. World War II and the bombing of cities stimulated a number of studies, focusing on reactions under stress. While these studies were not directly on reactions to natural disasters, they did provide useful observations on individual reactions to crises. These not only included studies on British cities but immediately after the war, the United States conducted large-scale sample surveys of German and Japanese cities that had been subjected to bombing attacks.

In the 1950s, a more coherent program of disaster studies emerged, stimulated and supported by various government agencies charged with responsibility for handling the hazards involved in the new range of weapons which had emerged. During 1950-54, a natural disaster research project was undertaken by the National Opinion Research Center (NORC) at the University of

Chicago. Similar but less extensive studies were conducted at the University of Oklahoma, the University of Maryland, Michigan State University, Louisiana State University and the University of Texas. In 1952 the National Academy of Science-National Research Council appointed the Committee on Disaster Studies and this group supported a wide ranging program of disaster studies until its disbandment in 1962. Since 1963 the major focus of research on peacetime disasters has been at the Disaster Research Center, The Ohio State University.

The major research focus of the Center is on emergency organizations and their disaster planning and responses to large-scale community crises. Since its inception, nearly 100 different field studies of disasters have been carried out. Teams have gone to earthquakes (in Japan, Chile, Yugoslavia, Italy, Iran, El Salvador, Greece, as well as the United States), hurricanes (in Florida, Texas, Mississippi, Louisiana and Japan), floods (in Italy, Mexico, Canada, Iowa, Montana, Texas, Alaska, Colorado, Virginia, California, Minnesota and the Dakotas), as well as tornadoes in ten different states. Large explosions and forest fires, toxic incidents, destructive seismic waves and major dam breaks have also been studied in Australia, Italy, Canada and different sections of the United States.

Our point here is that there is a large body of social scientific knowledge on individual and group reaction to disaster. This knowledge is well founded, based on repeated observations by several different observers in a variety of disaster situations. While there are gaps in knowledge, there is more than a sufficient base on which to evaluate the validity of the

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popular images of disaster behavior. It is to this evaluation that we wish to turn next.

It is important to note at the outset, however, that the term disaster is one of those sponge words in the English language which usually covers anything which a speaker thinks to be unfortunate. As we will use it here, a disaster is an event caused by an agent, i.e., an earthquake, hurricane, flood, fire, etc., which creates extensive physical impact which affects existing social organization. Since various types of agents have differential effects, the modal case used in the subsequent discussion is to look at the actual behavior which occurs as the consequence of sudden and widespread impact in an American urban community, such as an earthquake or tornado striking a large city. What we will have to say, however, has considerable applicability to the consequences of other types of stress agents and, with adjustment for the level of development, also would roughly apply to similar situations in societies other than the United States. In research in other countries, we have always been more impressed by the similarities of disaster behavior than by the differences. In the discussion which follows, although we will at times cite specific studies, we will primarily draw on our knowledge of the research tradition as well as our own personal field experience in examining the validity of the popular images.

Typical Disaster Behavior

1. The idea that people will panic in the face of great threat or danger is very widespread. However, it is not borne out in reality. Insofar

as wild flight is concerned, the opposite behavioral pattern in most disasters is far more likely. People will often stay in a potentially threatening situation rather than move out of it. This really should be expected. Human beings have very strong tendencies to continue with on-going lines of behavior in preference to initiating new courses of action.

An unwillingness of residents to withdraw from threatened localities has been documented for disaster agents ranging from floods and avalanches where there is usually considerable forewarning to tornadoes and explosions where warning time might be rather short. While press accounts frequently report "thousands" or whole communities fleeing upon the receipt of hurricane warnings, systematic studies of such situations do not bear out many such reports. In most cases the evidence indicates that the withdrawal behavior that does occur is primarily by transients including tourists and not by the resident population. Even when there is evacuation of an area, the majority of people simply do not leave. By far, the largest and quite unprecedented evacuation in recent American history occurred in the face of Hurricane Carla in 1961, where more than a half million people left coastal areas in Texas and Louisiana. However, despite an extremely intensive warning campaign, a clearly recognized threat, and the fact that more than half of the population (52 percent) had more than four days of warning, a majority of the residents never left their own areas. About 35 percent remained in their own homes and another 22 percent stayed in their communities primarily at the homes of friends and relatives. Another study of a New England city hit in quick succession by two hurricanes showed that only 4 percent of the inhabitants

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evacuated each time. It is clear from the overall evidence that far from

fleeing precipitously at signs or warnings of danger, it can be assumed that

the bulk of people will probably not move at all. Certainly there is far

more of a problem in getting movement than there is in preventing unruly or

disorderly flight or wild panic -- in fact, there is no real comparison

between the two problems since the latter one almost never exists.

There is, furthermore, a frequently overlooked but fundamental difference

between panic and flight behavior. The two terms both refer to withdrawal

from a situation; they are otherwise not equivalent. Panic behavior is where

the individual flees without any consideration for others. But the vast

majority of withdrawal behavior takes the form of flight behavior. Flight

from a threatening situation involves playing traditional social roles including

the taking care of others. Drabek in a study of sudden evacuation in the face

of an immediate flood threat in the Denver metropolitan area in 1965 found

that 92 percent of family members left together, confirming an hypothesis

advanced some time ago by Moore in Texas hurricanes that "families move as

units and remain together, even at the cost of overriding dissenting opinions."

Even in very precipitous flight, fleeing groups often make attempts to assist

strangers in getting away from a seemingly immediately dangerous situation.

Mutual aid rather than panicky abandonment of others is a very manifest

characteristic of withdrawal behavior in the presence of danger.

Furthermore, if panic does occur in a disaster situation it is almost

never on a large scale. Panic episodes tend to be extremely localized,

involve very few participants, and are of very short duration. One of the

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authors has been studying panic behavior for the last twenty years but he would be hard pressed (outside of a military context) to cite more than a small handful of clear cut instances of panic behavior where more than three or four dozen people were involved at the most. The often cited example of the "panicky" reaction to the famous Invasion from Mars broadcast, upon close examination, shows there was extremely little behavior leading to the cessation of traditional role playing or much flight behavior for that matter. In fact, one survey study of the event reported that 84 percent of the audience was in no way even disturbed by the broadcast. Many supposed instances of "mass panic" upon serious examination turn out to be crisis situations where some people were frightened or concerned but whose behavior took forms other than unruly flight or disorganized activity.

Even in those rare situations where panic on a small scale does occur, the majority of persons involved in such situations seldom engage in panic behavior. Even in such historically famous cases as the Cocoanut Grove night club fire, the available evidence fairly clearly suggests that panic was not the modal form of withdrawal even in that highly circumscribed emergency situation; actually many persons died from asphyxiation before they could realize there was danger. The majority that escaped generally sought out alternate escape routes in a reasonable fashion with friends. Here as well as in other similar situations there was none of the widespread contagion that a panicky reaction is supposed to evoke automatically among those exposed to it. There was of course some panic behavior in this situation as well as other famous cases such as the Iroquois Theater fire. But it requires a very

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unusual set of circumstances involving perceptions of probable personal

entrapment within a limited spatial area, possible closing of escape routes,

an extremely sudden and very direct threat to life, as well as abandonment

of self by others in the immediate vicinity to have the possibility of panic

behavior. These are a combination of circumstances that on the whole are

usually not present in any degree from most disaster situations.

Sometimes the term panic is also applied to extremely disorganized

personal behavior, where the individual almost literally collapses in an

hysterical breakdown. This phenomena so rarely occurs in disaster situations

that it is not a practical problem. Of the many possible ways of responding

to signs of danger, this is an extremely unlikely probability for any given

individual and it is only a highly remote theoretical and statistical

possibility if reference is to any large group or aggregation of persons so

reacting in a crisis. When people see signs or receive warnings of danger,

they generally assess the credibility of the information and the likelihood

of danger to themselves and others. If the cues they receive are viewed as

credible, alternative courses of action are considered. An old pre-Mao

Chinese proverb notes the rational, adaptive nature of one alternative

possibility: "Of the thirty-six ways to escape danger, running away is best."

Accordingly in some cases endangered persons will see withdrawal from the

danger as the most intelligent step possible in the given situation. They

will then move out of the situation taking others with them. While this is

not as dramatic a picture as one frequently drawn by fiction writers of

hordes of animal-like creatures fleeing wildly and acting hysterically when they find themselves in danger, what actually happens is somewhat duller but also more reassuring than dramatic license portrays.

2. Just as the panic image of disaster behavior is generally incorrect, so is the view that disasters leave victims dazed and disoriented both at time of impact and in the recovery period. Those who experienced disasters are not immobilized by even the most catastrophic of events. They are neither devoid of initiative nor passively dependent and expectant that others, especially relief and welfare workers, will take care of them and their disaster created needs. In fact, disaster victims sometimes insist in acting on their own even contrary to the expressed advice of the public authorities and formal agencies.

A form of shock reaction, called a "disaster syndrome," has sometimes been observed in the aftermath of relatively sudden and extensive disasters. This reaction involves a state of apathy leading to a regression in normal cognitive processes. However, the "disaster syndrome" does not appear in great numbers of people; seems confined only to the most sudden traumatic kinds of disasters; has been reported only in certain cultural settings; and is generally of short duration, hours only, if not minutes. One study of an extremely extensive tornado, using an area probability sample, found that only 14 percent of all victims may have manifested some aspects of the initial stages of the syndrome.

In general, disaster victims react in an active manner, and do not wait around for assistance by outsiders or offers of aid from organizations. On

a large scale they show considerable personal initiative and a pattern of self and informal mutual help. When shelter is needed for example, displaced persons seek the aid of and move in with other family members, intimates and neighbors. When about 10,000 were made homeless in a tornado in Massachusetts, less than 5 percent sought aid from and were housed by the public authorities. In the massive evacuation preceding Hurricane Carla mentioned before, more than three-quarters of the evacuees went to other-than public shelters; 58 percent in fact went to private homes of friends and relatives. In a California flood, only 9,260 persons out of over 50,000 evacuees registered in the 38 Red Cross shelters available in 13 towns in the disaster area.

This pattern of mutual and self help also prevails in other disaster-related activities besides that of obtaining shelter. In one community emergency after another, victims repeatedly show an ability to cope with most immediate disaster problems except those necessitating special equipment or highly specialized skills as might be involved in some kinds of medical treatment. For example, a study of the Flint-Beecher tornado in 1953 found that the victim and fringe area population, with almost no aid from formal organizations, were able within three to four hours to rescue and bring to hospitals from two-thirds to three-fourths of the 927 casualties sustained in the area. In fact, less than 20 percent of the disaster-impacted population had any contact of any kind with disaster agencies during the early hours of this disaster.

Even in the most massive of disasters, formal agencies appear to contact but a relative fraction of all victims. This is partly borne out by the

official statistics of the American National Red Cross, the agency with formal responsibility for post-disaster relief activities especially of a personal and individual nature. It is clear that emergency mass care is given to but a relatively small proportion of victims in any of the organization's principal disaster relief operations. For example, in Hurricane Betsy in 1965, the Red Cross assisted 34,476 families out of 178,548 who had suffered some degree of loss. This is less than 20 percent of the total in an operation that was one of the three greatest disaster relief undertakings in American Red Cross history.

The evidence in fact is rather strong that far from seeking and being dependent on formal disaster organizations, these are the last sources that victims turn to for help. There is actually a hierarchy of assistance seeking that runs from the more informal, intimate groups to formal, less familiar organizations. Thus, people first seek help from family and intimates; then they turn to larger membership groups to which they belong (e.g., churches, work places, etc.). They look next to other individual members of the community. Only if these sources prove unresponding or unavailable do they seek assistance from the more impersonal formal organizations, such as the police and welfare departments. Last to be sought are the special disaster agencies such as civil defense and the Red Cross. Rosow, after studying a number of tornado disasters notes that because of this "informal self help and spontaneous mutual aid rather than a reliance on public services . . . inexperienced authorities . . . over-estimate the welfare needs in food, housing and clothing which they would be called upon to provide."

As implied in the last remarks, activity rather than passivity of victims characterizes not only the immediate emergency impact period but also the longer-run rehabilitation stage. In other words, disasters do not generally have disabling emotional consequences or leave numbing mental health problems among any large numbers of their victims. It is true that a majority of the population in disaster struck areas typically will show varying degrees of stress reactions in the aftermath of a major emergency. For example, the NORC study mentioned earlier found that after the tornado 68 percent of the victim population experienced some protracted physiological or psychosomatic reaction such as sleep disturbances, loss of appetite, headaches, and so on. However, what is important is that such reactions do not basically affect the willingness and ability of people to take the initiative and to respond well in the recovery effort. This is true even when the disaster has been a major one. For instance, Bates and colleagues made a study of a Louisiana parish where 8.4 percent of the residents had been killed by Hurricane Audrey, an unusually high figure for an American disaster. They not only conducted a survey of the victim population but also examined school records, reports of physicians and commitment and intake data of hospitals. Their conclusion was that while the victims were more sensitive to weather cues and generally more "nervous," there clearly was no evidence of high incidence of serious emotional disorders either in children or adults which could be associated with the disaster. The victims were able to function well in their recovery efforts. Another study showed that in the months following Hurricane Carla, there was not only a drop in neurological and psychiatric classifications in

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both out-patient as well as in-patient clinics in the impacted areas, but also a diminution of symptoms among neurotic and psychotic patients. In other words, disasters not only fail to evoke paralyzing emotional reactions among previously healthy persons, but they do not even make previously mentally ill or disturbed persons any worse.

These kinds of observations parallel what has been observed also in wartime situations, either among civilians or the military. Even under very severe stress, people do not become either totally irresponsible and dependent, or completely impotent and immobilized. Rather they attempt to solve in an active fashion, especially in conjunction with others, both their short-run and long-run problems in those ways which seem reasonable to them as they perceive the crisis situation. In general, the same can be said of the vast majority of disaster victims as generally has been said of combat soldiers by Gringer and Spiegel: "Under the most harrowing circumstances, they are able to control fear or anxiety, to think clearly and to make appropriate decisions with rapidity."

3. The assumption that local organizations are unable to cope with disasters is based both on the notion that these organizations and the communities in which they are located are overwhelmed by disaster impact, and also by the fear that the employees of these organizations are so affected by disaster impact that their efficiency is reduced. Neither of these notions stand up well under close observation.

The notion of communities being overwhelmed is usually derived from over-estimating the amount of disaster-occasioned demand on facilities and

under-estimating the number of resources still available after impact. In all disasters in recent years in the United States, the amount of destruction in relation to total resources is quite low; the same is true with regard to the ratio of casualties to the total population base involved. For example, Anchorage, the largest city in Alaska, had about 50,000 persons with an additional 50,000 in the surrounding areas including a large number of military personnel. The metropolitan area did experience extensive property damage in the 1964 Alaskan earthquake, but only one hospital eventually had to be evacuated. The earthquake occurred at 5:36 on a Friday evening. Practically all of the victims of the impact were found and removed before dark on the first night. There were five hospitals in Anchorage, two of them private, and nearly all of the casualties were brought to one hospital. Of its 155 beds, only 75 were occupied at the time of the earthquake. From the time that the first casualty arrived at 6:15 p.m. until midnight, 21 casualties were received; three were dead, seven were admitted and the rest sent home. In the next two days, this hospital handled 89 emergencies; of these 18 were clearly earthquake victims while the rest were "normal" emergencies and persons injured while working with debris. At no time did inpatient census exceed 123 during the emergency. While the death rate in the Anchorage area as a result of the earthquake was finally determined to be seven, this is a much lower figure than initial reports suggested and that most persons remember. (In the entire state, the overall figure was close to 100.)

By contrast, a disaster which did provide probably the largest number of casualties in a concentrated area in the United States in recent history

was the Indiana State Coliseum explosion in Indianapolis in 1963. Fifty-four persons were killed immediately and nearly 400 others were injured. Twenty-seven of the injured later died, raising the total to 81. The victims went to over 20 different hospitals, both in Indianapolis and in surrounding suburbs and towns, but 310 were treated in 7 hospitals within the Indianapolis metropolitan area. The casualties were not, for various reasons, distributed to the hospitals in a manner which took into account their capacity and ability to handle large numbers of emergency cases, but the hospital which handled the largest number of victims (120) had a bed capacity of 816 and was able to accommodate the 65 who were subsequently hospitalized. At this hospital, all emergency surgery as a result of the explosion was completed by 6:00 a.m., seven hours after the explosion and all of the scheduled operations for the following day, except tonsillectomies, were performed. The point here is not to under-estimate the difficulties of handling this large number of casualties but to emphasize that within that community, the seven hospitals with a bed capacity of well over 2,800 with the associated personnel to man and maintain such facilities were able to cope with the 310 casualties including the 143 who were subsequently hospitalized. Since some of the hospitals got the bulk of the victims, this also meant that other hospitals were scarcely affected by the consequences of the explosion. For example, one hospital with emergency room facilities and a 727 bed capacity received only one victim. This hospital and several others could have handled a much larger number of casualties.

While individuals will often report their own personal difficulties in handling overload situations, the resources which are available within almost every community are capable of initially handling the problems created. For example, take a situation where a disaster agent creates a high level of property damage, in a community of 100,000 persons and destroys the housing of 10,000 persons; this means that 90,000 still have homes. Neighbors and relatives are usually more than accommodating in such situations. Since there are alternatives available, victims usually do not seek out public agencies to provide shelter. While shelters can be set up in the many public and private buildings which are still left and can serve a marginal function, most "displaced persons" will seek their own accommodations. Even in a massive evacuation such as preceded Hurricane Carla, only 23 percent of the evacuees took refuge in public shelters, and this is an extraordinarily high figure for an American disaster. Again this is another kind of situation in which the adaptability of persons within the disaster area is under-estimated as well as the demand over-estimated.

Outsiders' judgment of community needs in almost every case under-estimates the basic resources which are still available in most communities. Food supplies, available in households, retail groceries and in wholesale warehouses are usually sufficient to maintain all the members of most communities for several weeks. Clothing is generally not needed on a large scale except in the unlikely event that all of the persons in the area were walking around naked when impact occurred. Medical supplies are in most instances available in hospital stocks or by wholesalers within the community

or nearby. During the emergency period, persons in the impact area do not eat more than they usually do. (In fact, one might make the case that, in some instances, they might eat better since power disruptions often cause havoc with frozen food supplies. This sometimes makes anticipated delicacies available at unexpected times.) People do not dress in a more fashionable way. In fact, casual dress is the norm. Nor is the casualty rate so high that it cannot be absorbed by locally available medical supplies, personnel and facilities.

The over-estimation of demand also leads to the assumption that when a large number of persons are affected by a disaster agent, those who man local organizations will be unable to fulfill their emergency responsibilities. This has not been shown to be the case in experience. Only in the most exceptional situations are personnel in local organizations affected so that they are unable to cope with the immediate emergency demands. Those organizations which have the most immediate relevance to emergency needs, such as police, fire departments, hospitals, etc., have a larger number of personnel available to man their organization than is needed at any one time. Such organizations, since they traditionally operate on a 24-hour basis, have from two to three times the number of personnel necessary. Such personnel know they may be needed in such emergencies. Therefore, they stay on the job after their shift is finished or they report to duty, either on their own or on notification. In one Chicago suburban 400-bed hospital, some 75 physicians and 20 interns were on the scene within several hours to treat 187 victims after a tornado struck nearby. Thus, there was a ratio of one highly

trained medical personnel, excluding dozens of nurses, available for each two
victims.

In addition to the "excess" personnel available in the more critical
emergency organizations, there are many segments of the community which
temporarily become irrelevant during a widespread disaster so that persons
who normally are engaged in these non-essential tasks are free to provide
assistance in the now more needed tasks. For example, in situations of wide-
spread impact, educational institutions usually close. This means that school
officials, teachers, maintenance personnel as well as students are available
for volunteer help. The same is true of non-essential business offices and
their personnel. In fact, a major problem in most disaster situations is the
flood of volunteers who are ready and willing to help and the rather universal
inability of organizations to utilize them effectively. In most cases, these
volunteers are not "needed" since regular organizational personnel are
available in depth.

Even in spite of the availability of regular personnel in critical
emergency organizations as well as the potential availability of masses of
volunteers, fear is often expressed in the planning literature as to the
deleterious effect of conflict which many persons are assumed to face. This
conflict is thought to be between emergency-relevant occupational responsibil-
ities of the person and his obligations to his family. A classic hypothetical
case would be the hospital administrator who is on duty when disaster impact
occurs and he finds that his home and his family is in the impact area.
Without knowledge of the safety of his family, he is assumed to opt to rush

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home and to abandon his hospital responsibilities. Such a situation as has been described could possibly occur, but in interviewing over 3,000 organizational personnel in nearly 100 disaster events and obtaining reports on the behavior of thousands of other workers, we have never found a case where a person abandoned an important emergency-related responsibility because of anxiety.

If a person is on the job in an emergency-relevant organization when disaster impact occurs, he is quite likely to be the recipient of more accurate information as to the nature and scope of impact so that he can make a determination of possible injury to family members. In addition, he is very likely to be able to obtain more detailed information about his family staying on the job. For example, a police captain while continuing to maintain his responsibilities can call a patrol car across town to get general information about his area of residence or to gather specific information about his family. Or the captain may be able to do a quick check of his family in the course of his occupational obligations. The image that persons in a disaster area immediately abandon their emergency responsibilities to determine the safety of their families is simply not the case. In addition, depending on the timing of disaster impact, not all such "responsible" individuals are on the job when impact occurs. Those who are at home can make a quick determination of the safety of their family and then report to work. Such momentary delays do not hamper the initial functioning of emergency agencies and even long delays or even the loss of certain organizational personnel does not seriously affect organizational functioning since such groups generally have both available replacements and many volunteers.

We do not wish to imply that persons do not worry about the safety and welfare of their immediate families immediately after impact. Many of them do but there are also many single, unattached persons within every community population. Too, many persons can make immediate assessment as to the likelihood of impact effect on those that are of concern to them. Even with the assessment of possible injury and in the absence of information to confirm or deny this, persons in responsible emergency roles still do not abandon them. Even if many did, there would be sufficient personnel to take over their responsibilities. In every disaster situation, the number of persons affected, either directly or indirectly, is relatively small in proportion to those that are still able and available to help. The persistent notion that local organizations become ineffective because of the fear, anxiety and helplessness on the part of their members is simply not true.

4. The idea that disaster aftermath creates the conditions for the development of anti-social behavior is widespread. In particular, there is the assumption that widespread looting takes place. The term looting has military roots, implying that invading armies take property by force, generally when the rightful owner cannot protect it. During disasters, according to common belief, invading armies of opportunists take property left unguarded when the rightful owner is forced out by the disaster. Because of the expectation that looting will occur, one does find that there is within disaster-impacted communities, anxiety about the possibilities of looting and also reports of looting which confirm the initial expectation. On the other hand, those who have done disaster research have found it difficult to cite many

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authenticated cases of actual looting. One study that did systematically

inquire into actual cases of looting was the NORC study of White County,

Arkansas after it was ravaged by a tornado in 1952. In the community that

suffered the greatest damage, about 1,000 of the 1,200 residents were left

homeless. A random sample of people from this town and adjacent impacted

areas were asked whether they had lost any property by looting. Only 9 per-

cent reported that they, or members of their immediate household, had lost

property that they even felt had been taken by looters. And fully one-

third of these people were uncertain whether the loss was really due to

looters, or whether the missing items had been blown away or buried in the

debris. Finally, most of the articles were of little value.

In contrast, 58 percent of the people questioned said they had heard

of others' property being stolen. In fact, 9 percent claimed that they had

even seen looting in progress or had seen looters being arrested. The NORC

study team on the scene, however, could verify the theft of only two major

items -- a cash register and a piano.

Other disaster research even outside the United States confirms the

rarity of looting. A study made after the 1953 floods in the Netherlands found

that, although there were many reports of looting, law enforcement agencies

could not discover a single verified case. The Dutch researchers attributed

many of the reports of looting to memory lapses in the immediate post-flood

period, and pointed out that a number of people who reported thefts later

found the missing items. Charles Fritz and J. H. Mathewson, in a review of

disaster studies published up to 1956, concluded that "the number of verified

cases of actual looting in peacetime disasters, in the United States and in
foreign countries, is small."

More recent studies point in the same direction. The Disaster Research
Center at The Ohio State University, in field studies of disasters both in
the United States and abroad, has found extremely few verified cases of looting.
Actual police records support these findings. For example, in September 1965,
the month Hurricane Betsy struck New Orleans, major crimes in the city fell
26.6 percent below the rate for the same month in the previous year. Burglaries
reported to the police fell from 617 to 425. Thefts of over $50 dropped from
303 to 264, and those under $50 fell from 516 to 366.

In addition to reports about looting, other stories about various forms
of exploitative behavior also are likely to be circulated. Stories of persons
taking economic advantage of disaster victims by selling ice or food at
inflated prices are often common during the emergency period. We would not
deny that isolated examples of such behavior may occur any more than we would
deny that similar forms of even more subtle economic exploitation occur every
day in non-impact American communities. We would argue, however, that the
function of these shared images of exploitation provide a reminder to those
involved that such exploitation should not happen rather than an accurate
account of what has happened. In fact, the most accurate description of
behavior during the emergency period is a situation where "normal" anti-social
behavior is greatly reduced and various forms of altruistic behavior greatly
increased. Possessions are shared. Food, clothing, shelter is given to those

who need them; labor is contributed. In many disasters, we continually find informal groups of persons who work for days together to help others, not just others they know, but simply others who need help.

Another change in behavior which relates to characterization of altruism within the community is found in the temporary reduction of status differences as a factor in the relationships among persons during the emergency period. Class differences, racial differences, sex differences and age differences, for a while at least, tend to be minimized so that what were important social distinctions the day prior to impact no longer have the same significance. Disaster impact has had a "humbling" experience which indicates that every social category has only tenuous significance for the future. It produces a leveling process in which the equality of man is more apparent than it usually is. It provides a situation where help can be easily given and it usually is. This is a far cry from the assumptions of selfish pathological behavior which are feared by many, insiders as well as outsiders.

In this connection, it is of interest that contrary to a widespread belief there has never been in the history of the United States, the necessity to declare martial law in a disaster area. A seeming recent exception to this universal pattern was not actually so in fact. After Hurricane Camille in 1969, a "partial martial law" was proclaimed for several southern Mississippi counties. However, the "proclamation" was so qualified and restricted and carried out in such a way that the military never superceded in any meaningful way, civilian control of the area and disaster-related activities. In fact, the proclamation seems to have arisen out of a misunderstanding between local community officials and state officials and was the source of considerable

strain in their relationship in the post-hurricane period. Press reports of
"martial law" in other disasters inevitably turn out to be completely false,
or incorrect attributions regarding limited emergency power usually given
by mayors or city councils to the local police. Typically the object of
the executive order or city ordinance is to give the police more power to
bar sightseers from disaster-stricken localities or to allow a pass system to
be set up. In no way do such actions imply or involve any cessation to the
regular civilian authority in the area.

     5. Contrary to the popular image, morale in disaster impacted communities
is not destroyed. Partly as a result of the generation of altruism and the
reaffirmation of equality just described, the result over time is an increase
in collective morale. Such an increase may seem implausible since disasters
create to a greater or lesser degree those who have immediate personal
losses -- the death of a family member, injury to themselves or damage to
their property. Victims, however, are always outnumbered by non-victims.
Even in a community with a large number of "victims," their losses do not
necessarily have a cumulative effect in lowering morale. Individual suffering
is always experienced in reference to the plight of others. Suffering in the
disaster context is not an isolated experience and, therefore, it does not
become an isolating experience. Even the victims have to judge themselves
in terms of what happened to others. With only one exception, there are always
others who are worse off. Too, the various deprivations within the community
have not been caused by the victims themselves but have been "caused" by
outside, somewhat random forces. So not only is each victim a small part of

a larger community of sufferers but even their losses are likely to be seen as "good fortune" compared to what might have happened.

All of this is well illustrated in a random probability study made of victims in a series of tornadoes that hit four towns and the surrounding areas in northeast Arkansas. Victims compared themselves to what might have been as well as what others had suffered. About three-fourths of the victims did not feel that in either relative or absolute terms that they had suffered great deprivation. Only 3 percent felt that the disaster was as bad as it could have been. Around 92 percent of the victims thought they suffered less deprivation than others; only 2 percent felt more deprived than others by personal and/or material losses. Comparable figures were found in all the areas including the most devastated small town where more than 80 percent of the population was homeless and where 35 persons were killed and about 400 injured.

All of those who are affected by disasters have the chance to see that others around them do not differ much in their responses. That victims respond to their deprivations in a relatively similar fashion, regardless of their pre-disaster position in the community, is reassuring. In addition, the damage of disaster impact has produced physical consequences toward which individual and community actions can be directed. The problems which are created are immediate and imperative -- rescue, debris clearance, helping shelter people, etc. -- and the actions necessary to solve them are apparent. Needs are obvious and the immediate solution clear enough that any action results in an immediate pay-off. Thus, disasters provide extensive

opportunities for participation in activities which are for the good of the community. In one disaster, 43 percent of all the males in the impacted area searched for the missing and 21 percent engaged in rescue efforts in the six hours after tornado impact, and where there was evidence that at least 55 percent of this activity was not oriented solely to kin or intimates.

Also, this kind of involvement and participation are carried out under conditions which give a person great latitude or choice in the determination of what and how things should be done. This is often in contrast to the restrictiveness and repetitiveness of the jobs of many of the persons in their pre-impact occupations. In the disaster context, the premium is placed on adaptation and innovation. And underlying these activities are a set of common values toward which individual and collective action can be directed. The possibilities for such direct action toward important values is in contrast to the ambiguity and even the meaninglessness of existence of many of the community members before impact. The efforts of each individual are easy to evaluate and, therefore, a person can see his own contribution to the "good" of the community. Community members, no matter how insignificant before, have become contributing members of the community with concrete positive accomplishments. In pre-disaster times, these are difficult to come by. It is not surprising therefore that one of the consequences of a disaster is, as the NORC study reported: "most of the changes perceived in other people were of a positive rather than negative nature."

There also develops the feeling of participating in something unique and historic. Disasters are dramatic events in the life of any community.

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They become important in the collective memories of communities and become major reference points by which other events are compared and rated. Since disasters are such public events, those who have shared in them are brought together by their common experience. They now possess something that "outsiders" can never know and understand.

In fact, this heightened morale within the community has unanticipated consequences. It tends to condition the relationships between the "insiders," those members of the community who have shared the experience, and the "outsiders," those persons from outside the community who have come to help. This is reflected in part by the low and even negative evaluations which "outside" agencies often receive from the local inhabitants. Such negative evaluations have little relationship to the degree of efficiency or the scope of assistance which has been offered by these "outside" agencies. But many of these agencies come in with state, regional or national personnel who possess important skills but, since they have not shared in the community suffering, they are viewed as impersonal, unsympathetic, cold and insensitive to "local" problems and issues. In other words, morale has developed to such an extent that it not only supports and motivates the local inhabitants but it also creates a wall around them to exclude the outsiders, many of whom have relevant skills and resources which might be used. To the locals, it is "their" disaster and they do not want any outsiders coming in to take credit for "their" work during the emergency period.

Furthermore, the members of even a disaster-impacted community are seldom as bleak about the future as is sometimes projected on to them by

outsiders. For them, their future and that of rebuilding their areas is often

seen in more optimistic terms than they are given credit for in most cases.

For example, tornado victims in two different Texas towns were asked how they

felt about the future of their local neighborhoods after disasters hit those

areas. In Waco, 52 percent of the victims thought their neighborhood would

be better off in the long run and 74 percent said the same in San Angelo; only

2 percent said it would be worse off in Waco, and 10 percent in San Angelo.

When asked about their cities as a whole, the residents were even more optimistic.

Sixty-six percent of those in Waco said the city would be better off in the

long run; only 3.4 percent said San Angelo would be worse off as a result of

its tornado disaster.

Not long ago, a small town in Iowa was struck by a tornado. Several days

later, the local paper published a special edition which covered various

aspects of the event. In addition to the general stories, it contained several

columns of personal anecdotes of the event, several pages of pictures and

advertisements from every business in town. The theme which pervaded the

issue was summarized by the statement at the end of the major story: "/This

town_7 is looking ahead. It has received perhaps the cruelest blow ever

dealt an Iowa town in the way of a natural catastrophe. But it is far from

being beaten. In fact, from the standpoint of becoming a finer community than

ever, the future actually appears bright." Along the Gulf Coast after Hurri-

cane Camille in 1969, the slogan "We shall rise again" was emblazoned on auto-

mobile bumper stickers, store windows and repeated over and over again in various

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mass media reports. Such optimism is usually attributed by persons in disaster-struck communities as being unique to that community and as a clear manifestation of "sterling" qualities of the local population. It is our observation however that the sterling qualities are not in any way unique, except that they may be uniquely human.

6. Patterns of leadership and of authority in disaster impacted communities are very complex. Their complexity, however, is usually misinterpreted as confusion and the panacea of "strong leadership" is frequently offered as a solution without understanding the nature of the problem. Perhaps the beginning of understanding is to start with the observation that communities are not organized to cope with disasters. This is true even in communities with extensive pre-disaster planning since there is a considerable difference in anticipating problems and facing them. What disasters do is to create a series of new problems for the community and in doing this, they necessitate new relationships among its parts. Disasters force the development of a new structure which reflects the current involvement of various parts of the community which, in turn, can make decisions "for" the community.

What happens in the early stages of a disaster emergency is that the pre-disaster community structure has to be modified in the face of new and complex problems for which this previous structure does not fit. New tasks are created by disaster impact which no existing community organization has as its responsibility. Therefore, new social forms have to be created and new relationships forged. The magnitude of these tasks necessitate "unusual" new arrangements between traditional community organizations, outside agencies,

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volunteers and many other groups not previously involved together in any pre-disaster situation. In addition, most of these new tasks are created at roughly the same time so that activity is going on simultaneously in every area, not segmentally. At the same time, the accomplishment of some tasks is clearly dependent on the achievement of others, i.e., roads have to be cleared before persons can be taken to hospitals, etc. The pre-disaster pattern of community organization is not adequate to confront these problems since it was based on a different set of problems, less complex involvement, a more traditional division of labor, more segmentalized autonomous action and a leisurely pace in resolving conflicting claims. As a consequence, a new community structure has to be developed to cope with the new problems. The key word here is developed. It cannot be imposed, particularly by "out-siders" who have no previous community authority or even by insiders since what was the pre-disaster authority structure is now more diffuse and more widely shared among the various participating segments within the community. It is clearly impossible for any one person to collect and to monopolize such diffuse authority. Authority by definition has to be given to those who possess it by those who accept it. The scope and complexity of involvement in disaster undercuts the possibilities of centralizing authority to a much greater extent than these possibilities exist even in the pre-disaster patterns of American communities.

The interdependence of those who become involved does lead, however, to the emergence of a cooperative decision-making mechanism which facilitates cooperation among the many parts and which resolves conflicts which emerge.

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Such mechanisms look untidy to those who have an expectation for a neat model of bureaucratic efficiency or as undependable to those who have little faith in the capacity of members of a community to cope with adversity. What usually emerges is a very informal brokerage system among those who have a stake in disaster operations. Such a structure involves many different people -- municipal officials, representatives of private organizations, knowledgeable and involved persons, etc. In other words, it includes those who represent the various bases of authority which exist in fact within the community. The result is not chaos or confusion but a realistic outcome of the involvement and resources of many segments of the community coming together in the accomplishment of common tasks. The structure, therefore, reflects the social realities of the situation rather than an artificial creation based on unrealistic notions of "controlling and commanding" the situation. Authority has to be earned, not imposed, and those who wish to impose it will seldom earn it. It is earned by those whose performance shows that they deserve it and it seldom comes to those who just claim it.

As an illustration, in one major city which was struck by earthquake, coordination began to emerge as a result of the desire to pool information about the extent of damage and the status of emergency activities. After impact, each emergency organization with its own "intelligence" system began to accumulate indications of the problems they faced. The police department knew where their patrolmen were and what they were doing, as did the fire department, the public works department, the hospitals, etc. The mayor and other city officials through personal inspection tours had other types of

information. Other persons initiated actions which they saw as necessary. A city employee and several of his friends obtained city maps and began to make systematic damage surveys. Members of a Mountain Rescue Group became involved with search-and-rescue operations along with members of the police and fire departments as well as many other "unofficial" individuals. In effect, hundreds of individuals on their own and on various organizational requests began to take action of many types.

About midnight, the mayor through one of the local radio stations indicated that a meeting would be held at 3:00 a.m., some nine hours after impact, at which time the situation would be reviewed. At that time, a variety of persons assembled including city department heads, civil defense personnel, military personnel, public health officials, representatives of relief agencies, state and federal officials as well as many persons who were organizational "unattached" but who had played important roles up to that point. In one sense it was an open meeting. The mayor began the meeting and explained that the civil defense director, who had just been appointed, would assist in recruiting personnel for various emergency programs. The mayor suggested what he considered to be several important priorities and then the meeting quickly moved into a format where persons would report on the damage as their organization saw it, report on actions already taken and report on current problems. Suggestions were made by the group for solving these problems, obtaining resources, etc. The meeting, in effect, functioned as the initiation of what was the "coordination" of emergency activities and, while many, if not most, of those attending had "official" positions, the

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group itself had no official or legal base. More importantly, however, it was representative of the current involvement of the community and, therefore, it could "speak" in the name of the community.

Earlier we indicated what many people think will happen in a disaster. In this later discussion we have shown what actually occurs. It is clear that the two pictures of such situations are not the same.

Why Do Misconceptions Persist?

Given the fact that there is such a wide gap between the popular images of disaster behavior and the research evidence, there is an interesting question as to why these myths persist. Let us suggest here that major elements in perpetuating a picture of personal and social disorganization are: (1) certain views of organizational officials involved in disaster activities and (2) the factors that normally influence the news gathering process. It should be emphasized here that we no not wish to imply that there is a deliberate attempt to distort, but that there are certain factors which tend toward reinforcing these misconceptions as well as factors which inhibit correcting the misconceptions.

Seemingly a major factor in the perpetuation of disaster myths are the views of certain officials in emergency-related organizations. We emphasize again that the distortion is not deliberate but that particular organizational perspectives seemingly require expectations which are seldom met in disaster behavior. From these perspectives, the inability to fulfill them is seen as

a result of disorganization rather than a result of inadequate perspectives.

Many emergency organizations, such as police and fire departments, are organized on a quasi-military model. Such organizations structure reality in terms of a model of hierarchy of rational authority where orders are passed down from the top and implemented by those below. Such a model structures situations in terms of "establishing" command and control of them. Such organizations use the vocabularies of "re-establishing order." With this perspective, there is a tendency for persons in these organizations to develop what they consider to be rational procedures to accomplish disaster-related tasks. These procedures often do not work with the degree of perfection anticipated. Thus, warnings are issued but often are not heeded. Evacuation routes are identified but not followed. Procedures are established but do not work. Since many persons do not respond to these organizational directives, this is often taken as evidence of their irrationality. There is often the expectation that people will conform to certain norms in disaster situations (for their own good) when conformity to the same norms in non-disaster times would not be expected or would be recognized as being unlikely. The lack of conformity to organizational directives in disaster situations, however, is now interpreted as a result of irrationality rather than as a normal outcome. The failure to establish "command and control" of the disaster situation is blamed on irrationality rather than questioning the plausibility of the assumption.

This preoccupation with the military model and vocabulary is further enhanced by the fact that many persons involved in emergency planning and operations are so selected because of their previous experience in the military. For example, a relatively high proportion of local civil defense officials are ex-military. In addition, disaster committees in various organizations, such as hospitals, relief groups and others are often chosen because of wartime experiences. This is not to suggest that they do not do an effective job; they generally do, but they bring a perspective in which they assume they can "control" and their failure to "control" is attributed to irrational behavior of others.

The "helpless, dazed" perception of disaster victims also tends to be perpetuated by welfare and relief agencies involved in disaster. These organizations justify their existence on the grounds that they have a clientele which needs their services. Therefore, helpless people must exist in order for them to have a reason to operate. One of the more frustrating experiences for relief agencies is to develop facilities for helping persons and finding no persons to help. Therefore, it is in the organizational self-interest to insist that there are large masses of helpless persons waiting "somewhere" to be helped. Often a situation develops where a large number of agencies compete for a small number of persons to help. The point to be made here is that certain organizations in order to provide a justification for their own operation and support have a vested interest in emphasizing the helpless nature of the impact population so in turn they can emphasize the part that they played in re-establishing morale and hope within these populations.

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It is also important to point out that so-called personal experience is
no necessary corrective for misconceptions about disaster. In the first
place, what is often called first-hand experience is often not that at all
but only that a person has been in the general geographical area. This does
place the person in a situation of greater exposure to press interpretations
of the disaster. Even immediate personal experience is no guarantor of
accurate perception. What are called eyewitness reports are most often des-
criptions by untrained observers. Too, even "valid" personal experiences
are always selective. Ernie Pyle once commented in reference to the nature
of war that war was "that which was five feet on one side of you and five
feet on the other." This narrowness of personal focus is true not just of
impact but also of involvement during the emergency period. We have found,
for example, that hospital physicians are very poor respondents in describing
hospital operations. With their focus on specific medical problems, they
know little about emergency input, allocation of patients around the hospital
and the variety of problems of medical organization which are created by an
influx of patients. In addition, more typical experiences of disaster
behavior on the part of those involved are often dismissed by them as being
atypical or heroic. "Knowing" that panic is a common reaction, the person who
does not experience it, can discount his own non-panic as being atypical or
can inflate his reaction as a manifestation of heroism. In other words, even
in spite of personal experience to the contrary, various misconceptions still
persist.

Since personal experience with disaster impact is so infrequent and difficult to arrange, the major impressions of disaster behavior come from accounts in the mass media. This is true even for those who are in the impact area and, of course, the media reports are the only initial source for those outside. The major effect of the media coverage is often only to pool other people's misconceptions and to report them. This, in large part, is due to the conditions for the coverage of news as well as to certain well established norms within the mass media industry.

In the first place, reporters also have images of what should happen and, in the absence of contrary evidence, often report these images. For example, during the massive evacuation in Hurricane Carla, a wire service story, carried as a headline in some newspapers stated that in parts of Texas "more than 100,000 persons fled in near panic." A later systematic study showed that this report was false insofar as the conditions of the evacuees was concerned. In fact, the study made of that behavior particularly commented on the extraordinarily low accident rate despite the fact that a half million people fled; involvement in traffic accidents or delays enroute because of them was reported by only .6 percent of the evacuees and no fatalities at all resulted from the massive movement of cars during the evacuation. Given the normal condition of traffic and traffic fatalities this was probably one of the most interesting aspects about this particular instance of disaster behavior. However, the mass media people who reported the story seemed to have presupposed that fleeing people are "panicky" and reported it as such.

Given the image of disaster behavior involved, even journalistic behavior which seems to be checking on the story may not actually be doing so. For example, a reporter may go to a sheriff and ask him what action he is taking to prevent looting. He then reports that the sheriff said that he is calling out the entire force to prevent looting. The sheriff would certainly be politically naive to say that he was doing "nothing." Thus, what might appear to be the checking out of the validity of a story is often not that at all.

In addition, the conditions for news gathering in a disaster area are not the best. The telephone system may be disrupted or irregular. Spatial movement is often limited if not blocked. Conditions for visual assessment are often poor so that only a selective "view" is possible. Pressure for immediate action on the part of various community agencies tends to preclude accurate record keeping. Therefore, particularly in the early stages of the emergency period, there is a lack of factual knowledge as to what happened. Media personnel, however, are confronted with deadlines and the desire for "facts." Their demands on community officials for quick facts can only be countered by estimates and "unknowns." The reporting of "unknowns" gives the impression of confusion rather than conveying the difficulties of information gathering. These "unknowns" will be known sooner or later but not on a schedule imposed by news deadlines.

Media accounts center on the extensiveness of physical damage and on incidents which illustrate the human "condition." The assumption is made that a disaster is a dramatic event and should be reported as a drama. In one sense, the most dramatic aspect of a community struck by disaster is the

amount of the community which is still left intact. This, of course, is not defined as interesting. The camera lens, instead, focuses on destruction, often pieced together to give the impression of continuity and universality. Even the most dramatic picture distorts as well as it illustrates. For example, in the Alaskan earthquake, one of the most widely used photos in the mass media was of the destruction of a multi-story department store. While the destruction was undeniable, across the street there was little damage, even to the extent that several stores and offices still retained their large plate-glass windows. In addition, a half a block away was the Anchorage City Hall, which sustained some damage but functioned as the operational locus of activity throughout the emergency. What was destroyed was interesting; what was left was not.

The focus on human interest stories selects the unusually heroic or unusually tragic aspects of the disaster -- the anxiety of a mother whose child is hurt or missing or the superhuman efforts of a particular person in a rescue operation. Again the stories may not be factually incorrect but they are often read and interpreted as being common. Another illustration might suffice at this point. In their coverage of an earthquake, a very large mass circulation magazine presented a full-page picture of a ragged old man, asleep in a chair holding a dog. The picture conveyed the notion of the weak clinging on to their possessions even in tremendous adversity. On the other hand, one of the areas of greatest damage in the city was in what would be known as "skid row." Those who knew the old man suggested that in his new home, the YMCA, this was the warmest, most well fed and certainly the driest

period in the man's life for many years, and that the dog was probably not his. It is doubtful that the photographer or the picture editor knew this and certainly the millions who saw the photograph did not.

One other form of distortion that is sometimes evoked by media personnel is the attempt to assess blame, which suggests fault. Continuous news coverage of a disaster event cannot be built on repeated coverage of the same damage. New topics must be sought. The problems and confusion which often plague the gathering of news are sometimes seen by newsmen as results of human error, not as the result of factors inherent in the disaster situation. Given the assumption of human error, attention is given to placing blame on some set of individuals or organizations. In other words, there is the attempt to identify the "villain." For example, in studying a disaster in another country, one of the authors was asked by the press for an interview. As a matter of courtesy, the interview was granted. When the time came, he was ushered into a room which contained reporters from every major TV network, press service and paper in the country. The direction of all of the questions was focused on attempting to gain "outside expert" confirmation that the disaster had been badly handled. It was his considered opinion that it was probably the best handling of a disaster he had ever seen (and he still believes this a number of years later). It was obvious that this was not the type of opinion which was being sought so the press conference ended on a rather uncomfortable note for both parties. They had not found their scapegoat and we could not convince them that there was none.

There are other factors which tend to heighten the perception of chaos and confusion. In the absence of conditions which make the collection of accurate information possible and under the demand of the media and other sources for quick information, there is a tendency for various public officials to over-estimate the human and property costs. If one is forced to come up with an estimate in the absence of knowledge, it is best to make a high estimate and later reduce it. Then, one can attribute the reduction to effective emergency procedures or to the heroism of the local inhabitants. A low estimate, however, is more likely to result in later accusation of incompetence and inefficiency. So common is the over-estimation that we have developed an informal law which suggests that the number of casualties varies directly with the distance from the disaster site. For example, in the Alaskan earthquake, the initial estimates circulating in Columbus, Ohio were 1,000 killed in Anchorage alone; on our way to Alaska, the estimates in the Chicago papers were 500; in Seattle it was down to 300; and in Anchorage, 100. The actual number of deaths in Anchorage was 7. The point here is that the measure of destructiveness is often based on remembering the initial estimates rather than the later accurate determination.

There is one final source of perpetuation of misconceptions and this is self-fulfilling. If, for example, there is evidence that there has been no looting in a particular disaster situation, this is often interpreted as being a consequence of effective security rather than as evidence that the behavior did not occur anyway. The lack of looting is seen by law enforcement people as the result of the effectiveness of their activities. At the same time, other areas "next door" which did not have the same security but also were not

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characterized by looting are seen -- if they are noted at all -- as being atypical and irrelevant. The interpretation is given which suggests the effectiveness of the countermeasures and the question of whether the behavior would have emerged in any case is dismissed as irrelevant.

In sum, what we have suggested is that many misconceptions about disaster behavior tend to be perpetuated rather than corrected. Even personal experience is no panacea since personal reactions are often evaluated as being atypical or heroic and the narrowness of involvement precludes an overall view of typicality. Perception of disaster behavior for most comes mainly from mass media accounts. The conditions during the emergency period for the accumulation of factual knowledge and for accurate reporting are poor. This, then, conveys the impression of incompetence, inefficiency and disorganization among persons with disaster responsibility. Too, the media view focuses on physical damage and personal tragedy. Just as the media can vividly convey the brutality of war, it suggests extensive personal disorganization. The best effect is to present and to reinforce themes suggesting personal and social chaos.

The perpetuation of these myths reinforce those who have a low estimate of the capacity of man to adapt to adversity, and, at times, supports the belief of some in their capacity to maintain order for others. By contrast, in our experience, the actual lesson of human behavior in disasters is to see the tremendous resilience of individuals under conditions of great adversity, their amazing capacity to cope and innovate and the persistence and effectiveness of old and new forms of social organization. Large-scale disasters, even with their social costs, provide a situation where the technological facade of modern society temporarily crumbles. When this facade comes off, it reveals

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with clarity, basic human values and the capacity of organized social life
to implement these values in the most difficult situations.

A Final Note

We are not saying that there are no major problems in disasters. There
are some very serious ones for which much emergency planning and organization
is necessary. Some of these we mentioned, others we have implied in the
prior discussion.

What we are saying is that what are generally believed to be the problems
are not the real ones in most disaster situations. It is not possible to
plan and/or to respond on the basis of myths, even though the myths themselves
are part of the reality that have to be taken into account. We ourselves
could point to vivid but isolated cases of looting, personal disorganization,
failures of local officials, breakdowns of community emergency activities,
the needed use of mass shelters, etc. But while these would be actual cases
they would represent the atypical, the unlikely rather than the typical, the
modal behavior that can be expected in disasters.

We are also not implying that much of what we have said is not under-
stood by some experienced planners and officials in such organizations as the
Office of Emergency Preparedness, Civil Defense, the American National Red
Cross and other organizations likely to provide assistance in a major disaster
in the United States. However, even in these organizations, the myths can
be found; in part, they exist because the organizational personnel likely to
be involved in disaster operations are often so close to the emergency that
they cannot see the larger picture. As said earlier, participation does not

automatically make either for a correct or an objective perception of a situation. At the local level also in these kinds of organizations, where there is even less continuous experience with disasters, the myths are even more widely and strongly believed.

It is also true that a truly extraordinary disaster of the magnitude of the 1970 Pakistan cyclone where hundreds of thousands were killed, would alter some but not all of the picture of disaster response that we have sketched. A massive earthquake in the center of Los Angeles would generate some different reactions than did the 1971 San Fernando earthquake. However, the largest death toll in any American disaster has been the 5,000 plus killed in a hurricane that hit Galveston, Texas in 1900 (excluding some maritime catastrophes, only three other American disasters have resulted in over 1,000 fatal casualties). In fact, Red Cross figures show that in a four year period -- mid 1966 through mid 1970 inclusive -- only 779 persons in total were killed in all major American disasters. And this was a time period in which there were two very extensive hurricanes, Beulah and Camille, a devastating tornado in Lubbock, Texas, and major floods in the midwest and northcentral parts of the country. There can be extraordinary disasters. But much of what we have said would hold true for a massive as well as an average or typical disaster. Furthermore, disaster planning has to plan for the typical rather than the special case. There is of course need to be sensitive to the possible extraordinary event but realistically it is the modal case around which plans and response have to be organized.