

Chapter IV

DISASTER-RELATED BEHAVIOUR PATTERNS

General

Pre-disaster planning is dependent in large part on what is assumed about human behaviour in emergency situations. Valid assumptions are essential for the planning and implementation of effective emergency measures and post-disaster responses.

In addition to the need for accurate projections of the physical impact of a disaster, effective pre-disaster planning is also dependent upon an accurate projection of human and organizational behaviour. Experience, supported by social science studies, has borne out the great disparity which exists between what is commonly assumed will happen, and often planned for, in emergency situations and what actually occurs. The fact that a difference commonly exists between what is expected and what actually transpires continues to limit the effectiveness of disaster-related programmes, and is often not fully recognized by the general public, planners and officials.

Analysis of various situations of differing magnitudes and consequences carried out over a period of more than 20 years in different countries confirms that there are many common patterns of human and organizational behaviour in emergency situations; similar actions following certain predictable patterns can be seen to occur in emergency situations in different communities, and in different countries and cultures. A close examination of these common points provides a basis for more accurate predictions and hence more reliable planning.

Studies have also identified a number of assumptions about the actions of individuals and organizations in emergency situations which, although commonly held to be true by the general public, officials and some planners, are in fact without sound basis. Those assumptions which do not represent the general reality of emergency situations, as proved by experience, have been labelled "myths"

Popular images of behaviour during disasters

The popular image of a disaster situation, often supported by anecdotes in newspaper articles, disaster films and television accounts, suggests the following scenario :

The authorities, knowing that a major disaster was imminent, decided not to warn the general public in the belief that, if an announcement was made and people were asked to evacuate, there would be hysteria, stampedes and general panic and that people could take irrational short-term actions without concern for anyone else, resulting in chaos and pandemonium.

Except for the heroics of a few, the damage and destruction left people sitting in the ruins, dazed, confused and helpless. Trapped survivors were dependent upon the arrival of the search and rescue teams, and the injured awaited the assistance of outside emergency medical teams. The traumatic shock would very likely result in significant mental disturbances in the long term

Local organizations ceased to function or were rendered ineffective by the scale of the disaster, the damage to facilities and the traumatic effect on the employees. Officials abandoned their work responsibilities to care for their families. Unaffected persons from outside the community would be needed to assume the roles of the incapacitated organizations.

In the chaos and confusion, social order broke down as people looted everything of value, taking whatever advantage they could. The important destruction and trauma, and the social upheaval, left the community in very low spirits with most people wanting to move elsewhere.

Study and observation of many different disasters has confirmed that the above scenario does not accurately reflect the human behaviour and community response that is most likely to occur in emergency situations. While individual instances of all the above responses have been noted within emergency situations, study has confirmed that they are not typical of the general response and, as such, are not reliable as a basis for planning assumptions. Emergency planning and preparedness resting on such basis would almost certainly prove to be misdirected.

Historical example

A major earthquake occurred in India, in the north-east Bihar region, on 15 January 1934, and at the time was claimed to be "one of the biggest seismic disturbances in the history of the world".¹ It was severe enough to be felt 1,000 miles from the epicentre and caused massive destruction over an area of 15,000 square miles, with the loss of at least 7,000 lives. Assistance from outside the affected area was not available for some days because the communication system, including roads, bridges, railways and telegraph lines, had been severely damaged.

While such words as "shocked", "stunned" and "paralysed" were used by different authors to describe survivors, the account of actions taken by the public provides quite a different picture. Throughout the affected communities, people were reported to have immediately initiated rescue and relief activities. Actions taken were often related to the skills and responsibilities possessed before the earthquake, although many examples were also given of people assuming new responsibilities and roles, as the situation required.

¹ *Record of the Great Indian Earthquake (The Statesman)*, 1934.

It was noted that "within half an hour" survivors were engaged in rescue and relief work, wherever "there was a prospect of recovering bodies". Injured persons were taken to local health facilities for treatment and when, as was often the case, such facilities were damaged, temporary facilities were established. The gaoler made temporary arrangements for guarding the prisoners as the gaol was damaged. The roads department immediately began clearing and repairing the roads. The public health department began distributing water in tankers and disinfecting water sources. A volunteer engineer took responsibility for repairing the air strip. The railway staff began repairing the railway. The police and local military personnel, in addition to performing such essential tasks as guarding the treasury, were dispatched to assist in rescue operations and help other Government services to repair the lines of communication, etc. The military provided equipment and lorries for use in transporting goods and clearing debris. Industrial workers began debris clearance and repair. The staff of the various departments were supplemented as necessary by paid labourers and volunteers recruited from survivors.

Within the first few days local administrators established a reporting system to determine the extent of damage, assigned officers to such special responsibilities as food control, sanitation and relief camps, made arrangements for the disposal of dead bodies, recruited casual labour for municipal debris clearance, fixed food prices, and tried to prevent general price rises by threats to confiscate stocks if prices were inflated. News bulletins were published, and public meetings were called. Particular mention was made of increasing the number of police by accepting volunteers, due to "anxieties of Government lest there might be outbreaks of disorder and looting in the shattered towns", but it was noted that "Actually the menace of looting came to nothing" as "there was almost a total absence of crime of this character. The extra police were, therefore, available for giving whatever assistance was required."

By the third day there were reports that the injured were all under treatment, that in most areas the dead bodies had been located and removed, and that conditions were improving, with roads being repaired and demolition crews dealing with houses considered dangerous. The treasury and the banks opened on the fifth day, when the first shipment of relief goods arrived. On the sixth day the roads were reported to be more passable "due to the unflagging energy of the District Engineer". By the ninth day the relief hospital outside the area had begun to function.

In summarizing the catastrophe, the following statement was made :

In spite of the enormity of the disaster which suddenly threw the entire structure of life and society into a state of utter confusion, the suffering people have not lost their nerve or their mental poise. There has been no outbreak or instance of crime, no abnormal manifestation of panic even under such exceptional circumstances.²

² S. K. Basu, "Bihar's Great Need, an Appeal by the Mayor of Calcutta", *Record of the Great Indian Earthquake* (The Statesman, 1934), p. 18.

Outside the affected area, relief efforts were mobilized as news of the tragedy became known. There was a general outpouring of sympathy and support for people in the disaster-affected area from non-affected parts of India, and relief was provided from a range of sources, varying from massive assistance from the central Government to small contributions from individuals.

The above description of the North Bihar earthquake does not paint a picture of people left incapacitated and helpless by the sudden onset of massive devastation and loss of life. Nor are the examples of self-help and community actions described in this case study unique to North Bihar, or to India. Human and organizational behaviour in emergency situations in virtually all countries around the world points to a similar willingness to cope.

Natural disaster response mechanism

What is described in the above case study might be called the *natural disaster response mechanism* that is likely to exist in every community. Human response to crisis, as depicted in the above example, is most likely to be a positive coping response in which victims themselves take stock of the situation and begin acting constructively to meet the needs of the situation, in spite of the traumatic experience. Recognition of the ability of people to cope suggests that, as a basic premise, the actions and resources of survivors must be considered in planning for, and providing assistance in, emergency situations, a point which will be elaborated more thoroughly throughout this publication.

The fact that people are adaptable and likely to take constructive action as the need dictates does not mean that major problems may not exist, that planning is not required, that people necessarily know the safest or most appropriate response to take, or that assistance from outside the community is not helpful or required. Quite the contrary. A more accurate understanding of basic human behaviour is essential for further examination of the many problems that exist, and for a better appreciation of the many factors which are likely to influence actions taken by individuals or groups. While there are important cross-cultural differences in human behaviour, there are also some universal and common human characteristics some of which can be seen in disaster behaviours.

Review of disaster myths in the emergency period

Following is a comparison between common disaster "myths", and the behaviour more likely to occur in emergency situations:

1. THE MYTH OF PANIC FLIGHT. *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 cannot be depended upon to react intelligently*

FIGURE 4



(Credit: Russ and Wilda Rosene)

Emergency shelter established by victims in Guatemala City after the earthquake of 1976. Disaster victims can be expected to take concerted action to meet their needs.

*and non-selfishly in situations of great personal danger.*³

The idea that people will panic when faced with great threat or danger is widespread, but not borne out in reality. More likely, people will stay in potentially threatening situations rather than leave, even when advised to do so. If people do flee in the face of danger they make the decision to move rationally, predictably more as family units, and even in flight often offer assistance to others. While there have been isolated examples of panic, they have been rare and limited to small numbers of people and brief periods. Panic "requires an 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. These are a combination of circumstances that on the whole are usually not present in any degree in most disaster situations."⁴

2. **THE MYTH OF HELPLESSNESS.** *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.*⁵

³ Russell R. Dynes and E. L. Quarantelli, *Images of Disaster Behavior. Myths and Consequences*, Ohio State Disaster Research Center, Preliminary Paper No. 5 (Columbus, Ohio State University, 1972), p. 1.

⁴ *Ibid.*, p. 13.

⁵ *Ibid.*, p. 2.

While living through a disaster is likely to be traumatic, experience has shown that people are not generally behaviourally immobilized or rendered helpless by even the most severe catastrophes. The immediate response of survivors is more likely to be active participation in constructive actions to meet immediate needs, beginning with search and rescue activities. People are seldom passive; actions taken are likely to be self-initiated and are often directed to assisting others.

3. **THE MYTH OF PARALYZING TRAUMA.** *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.*⁶

A majority of the population in a disaster area may show varying degrees of stress reactions in the aftermath of a major disaster, including periods of depression, dejection, restlessness, fatigue, nervousness, irritability, loss of appetite, sleep disturbances, and such psychosomatic symptoms as stomach upsets and diarrhoea, headaches, etc.⁷ However, such stress reactions do not basically affect the willingness and ability of people to take initiatives and to respond well in the recovery period.⁸

⁶ *Ibid.*

⁷ Alan J. Taylor, *Disaster Prevention and Mitigation: A Compendium of Current Knowledge*, "Social and Sociological Aspects", second draft (Geneva, Office of the United Nations Disaster Relief Co-ordinator, June 1979).

⁸ Dynes and Quarantelli, *op cit*, p. 17.

Characteristics of disaster situations which may increase the stress for an individual include: suddenness of the disaster; timing (day or night); prolonged duration; perception of the physical destruction; death and injury; exposure of the dead and badly injured; and uncertainty.⁹ Many stress reactions are not responses to the impact of the emergency but stem from the difficult living conditions often existing in the aftermath of a disaster. The intensity of the emotional reaction to a disaster will also vary according to whether or not the individual is surrounded by members of his family or by some other psychologically supportive group. For this reason it is important to keep family members, neighbours, friends together.

A form of stress or shock reaction, called a "disaster syndrome", has sometimes been observed in the aftermath of relatively sudden and extensive disasters, with acute disorientation, and apparent loss of individual purpose or direction. "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".¹⁰

The question of whether disasters are likely to cause more substantive short-term and long-term psychological impairment, in addition to the stress reaction mentioned above, continues to be debated. Of the two opposing positions, the first is based on a psychiatric interpretation of disasters and suggests that disasters are likely to produce both short-term and long-term psychological impairments. The second position, more clearly supported by sociological research findings, suggests that while disasters produce acute stress reactions, these responses are not usually behaviourally dysfunctional, longer-lasting pathological responses are not likely to be the norm and that any psychological effects decrease quickly with time.¹¹

Experience clearly demonstrates that people do not typically become incapacitated from stressful or traumatic situations. Even as survivors of a disaster are likely to experience some stress reactions, and some may have a "disaster syndrome" response or even a more pathological response, people are likely to be resilient and can be expected to act purposefully and rationally in life-supporting activities in the immediate post-disaster period and in the longer-term reconstruction period.

Evidence from the latest severe earthquake disaster, the 8.1 Richter magnitude earthquake which destroyed parts of Mexico City on 19 September 1985, clearly indicates that disasters rarely fail to mobilize solidarity and a sense of social responsibility among the stricken population. Television and press reports have praised the actions of

the public: Thousands of Mexico's citizens organized themselves into voluntary relief and rescue teams, without which the local authorities, the police and rescue services would have been severely handicapped. There were also press reports of children directing traffic with the utmost efficiency. While it is too early, at the time of going to press, to draw precise conclusions on social patterns of behaviour in the Mexican disaster, the general principles evoked in this study show strong evidence of being supported by fact.

4. THE MYTH OF ANTI-SOCIAL BEHAVIOUR. *The social disorganization of the community which is a product of disaster impact provides the conditions for the surfacing of anti-social behaviour. Since social control is weak or absent, deviant behaviour 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 behaviour spreads...*¹²

Media accounts and widespread rumours often suggest that looting is a common disaster phenomenon. After analysis of many reports of looting, including the examination of police records after different disasters, disaster researchers have found that while many stories of looting do circulate, very few cases of post-disaster looting have been substantiated. Most reports of looting are not accurate, or have been exaggerated. Studies have shown that crime rates during disasters are likely to decrease, rather than rise. While a cyclone, flood or earthquake is not likely to change the personality of persons with a penchant for stealing, for instance, experience has shown that people not inclined to commit anti-social acts prior to an emergency are not likely to do so in a post-disaster situation, even when obvious social controls seem to be absent. Rather than anti-social acts, the behaviour most likely to be exhibited is altruism and concern for others.

Because concern about the possibility of theft is widespread in the general public, and because the disappearance of some personal and public property has been substantiated in occasional post-disaster situations (although this is a much less prevalent phenomenon than is commonly assumed), the general public and local officials should of course take certain precautions. Symbolic presence of the police is important, as are public announcements that looters will be severely punished. In some communities public property is more vulnerable to disappearance than private property. However, understanding that ordinary citizens are not likely to exploit the post-disaster confusion to loot and pillage is important for the realistic planning of personnel and resources likely to be required. The risk of people looting and taking undue advantage in disaster situations is likely to be similar to the likelihood of such actions prior to the emergency. Profiteering in the long-run can however occur, especially by uninvolved locals or outsiders, but this is usually after the immediate emergency period.

⁹ Dennis D. Mileti, Thomas E. Drabek and J. Eugene Haas, *Human Systems in Extreme Environments: Sociological Perspective*, Monograph No. 021 (Boulder, University of Colorado, Institute of Behavioral Science, 1975).

¹⁰ Dynes and Quarantelli, *op cit*, p. 14.

¹¹ Gary A. Kreps, *Assumptions about Individual and Social Effects of Peacetime and Wartime Nuclear Disasters*, in press, NCRP (Williamsburg, College of William and Mary, April 1981), point 5.

¹² Dynes and Quarantelli, *op cit*, p. 2.

In disaster planning it is also important to recognize the actions which are likely to be taken by the general public as a result of their concern for loss of their personal possessions, a dominant concern and one which may cause people at times to risk lives unduly. For example, people may refuse to evacuate in order to protect personal property, or try to get back into a disaster site before it is safe, or in some societies, a family member may be chosen to remain with the property while the remainder of the family leaves for safety.

5. **THE MYTH OF THE SHATTERED COMMUNITY.** *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 appears 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.*¹³

Contrary to what is often expected, and frequently to the surprise of disaster relief workers, the morale of a disaster-affected community is more likely to be buoyed by optimism than to be shattered by despair. Studies of groups of disaster victims indicate that high morale rather than despair seems to be rooted in various psychological and social factors, including the altruism and the support of friends and associates, the fact that the cause is perceived as natural random, and affecting all equally, that less affected persons almost always outnumber more severely affected victims, and that victims are likely to consider themselves fortunate to be alive and to compare their individual plight with those around them in similar difficulties. There is also the fact that the needs created by the situation demand immediate action and are obvious, and that the actions required in the emergency phase have important value for others in the community, demand innovation, and are perceived by the community as positive and constructive. Survivors are less likely to express fatalistic and negative feelings about the outcome of the situation than are outsiders. However, while morale is usually high in the immediate post-impact period, it can drop over time especially if organized relief efforts are not well handled.

Why these myths persist

It is curious that the "myths" of human behaviour in disaster situations, although consistently shown to be false, continue to be widespread and held by people who themselves have experienced a disaster. Factors which seem to perpetuate these myths include mistakenly citing disasters, the aggravation of pre-disaster patterns,¹⁴ generalizing from statistically infrequent cases,¹⁵ assum-

ing that if the worst did not happen it was simply because of the "sterling qualities" of the community in question,¹⁶ and making the common assumption that "help" is something one does "to or for", not "with" victims. Another important factor is the efforts of journalists to achieve emotional impact by choosing single events describing behaviour from a sensational, tragic viewpoint, with graphic illustrations of the myths mentioned above. This is unfortunately a common feature of the way in which the media cover disasters.

Planning assumptions about disaster behaviour

Following are summary statements concerning the human behaviour which can be expected in emergency situations and a brief discussion of the programme implications :

1. **RESPONSE TO DANGER.** *When danger is recognized as imminent and personally threatening, people will seek safety, and their behaviour will generally be adaptable.*¹⁷

This assumption about human behaviour is based on the observed fact that in the face of danger, adaptable and appropriate behaviour is the common response. People do not become irrational or incapacitated in sudden emergency situations, or panic without regard for others. They act very reasonably, responding to the situation as they perceive it at that time.

Programme implications

The fact that people can be expected to act in an adaptable and appropriate manner in the face of danger is particularly important in considering public warnings of impending danger. An assumption that people may panic, leading to social chaos, may lead some administrators to delay warnings to the public. Evidence that people do not panic supports the need for timely information to allow people the opportunity to consider and prepare for necessary actions. However, it must be stated that people often do not recognize the potential danger existing in certain situations. Experience shows that people will not act simply because they have received a warning, especially if they are not convinced that a situation is life-threatening. Factors which influence people's response to warnings and calls for evacuation are considered in more depth in chapters 7 and 8.

2. **IMMEDIATE RESPONSE TO DISASTER.** *Except for persons severely injured, disaster victims generally respond quickly and initiate a variety of personal and social recovery activities. On the community level, a*

¹³ *Ibid.*, p. 3.

¹⁴ E. L. Quarantelli, *Social Aspects of Disasters and Their Relevance to Pre-Disaster Planning*, Ohio State Disaster Research Center, Paper No. 103 (Columbus, Ohio State University, 1977), p. 10.

¹⁵ *Ibid.*, p. 10.

¹⁶ *Ibid*

¹⁷ Kreps, *op cit*, p. 3

*vigorous and adaptive response to disasters can be assumed*¹⁸

This assumption is based on the observed fact that immediate and constructive action, rather than inaction or helplessness, is typical of the behaviour of survivors of disasters. Inaction or unwillingness to follow the suggestions, recommendations, or orders of public officials usually occurs because the official position is seen by the victim as unreasonable, meaningless, or irrelevant. "It is therefore reasonable to assume that surviving populations following a major disaster will be very active in self-help and mutual support activities. They will also want to have a strong voice in how the disaster relief and recovery effort should be carried out."¹⁹

Programme implications

Accepting that individuals in emergency situations are adaptable and social has important programme implications. Relief efforts, both local and from outside the community, can benefit from the mutual assistance efforts likely to exist within the affected community, acknowledging in planning and action that victims will mobilize certain resources, assume certain responsibilities, and have information, opinions and plans on how to solve the problems at hand.

When disaster victims are considered to be important and active participants in preparedness planning and relief programming, it will be understood that they need training and information, that their wishes and ideas should be considered, and that they should be partners in decision-making. Disaster preparedness should be perceived as a community, or family function, rather than as an activity only for formal relief agencies.

As an example, following a cyclone, emergency medical teams from outside the affected area may act on the belief that their services are required for search, rescue and emergency first-aid. However, on closer examination different needs may be identified, due to such factors as the rescue activities of local people themselves, the provision of immediate first-aid by survivors and medical personnel within the affected area, and, not least, the fact that outsiders are not normally able to enter a cyclone-affected area for days because of continuing bad weather, flooding and blocked roads.

The emergency actions taken by victims and professionals within the affected area does not mean that medical teams from outside are not useful or needed. After the 1977 cyclone in Sri Lanka, for example, when medical teams were able to reach the affected area several days after impact, their assistance was highly valued, but for services other than search and rescue or first aid. They were of most use in providing follow-up treatment for injuries, such as re-dressing wounds, providing medical care

for minor complications, dispensing treatment for secondary illnesses, monitoring disease patterns, supporting public health measures, and backing up local health professionals.²⁰ Local health institutions, while functioning even in damaged facilities, were hampered by damage to equipment and shortages of certain materials. Different assumptions about emergency needs might have resulted in the provision of different personnel, equipment and/or supplies.

There are also important preparedness considerations. If, for example, it is assumed that local residents, as the persons on the spot, are likely to provide first aid, then it naturally follows that they should be given the training and assistance they need to perform this task satisfactorily. The basic principle is to maximize or use local resources as much as possible.

The more closely related the assumptions about emergency needs are to the reality of the situation, the more appropriate the emergency assistance is likely to be. Programmes based on realistic predictions of the behaviour of victims and local professionals, damage incurred and resources remaining are likely to provide more appropriate assistance than programmes which discount or ignore the resources and capacity to cope that exist in disaster-affected communities. Conversely, emergency planning and assistance based on the assumption that victims will be helpless and totally dependent on outside intervention are likely to duplicate and disrupt local efforts, or fail to meet real needs.

3. *THE FAMILY. Disaster victims do not act as independent individuals, but their responses are to a high extent influenced by the families to which they belong.²¹ The family unit is the most basic coping mechanism, and is likely to be operating as a disaster-coping mechanism in most, if not all disaster situations.²²*

The family, is one of the most significant elements in enabling disaster victims to cope with the situation. What is considered to be the family might differ in different societies, but it is *the* most important responding social unit. Disaster response and recovery revolve around the family unit for the purposes of decision-making, provision of essential material, social and psychological support. Providing assistance to spouses, children, parents and other family members is given the highest priority. Studies have demonstrated that emergency assistance is likely to be provided first to family members, and that victims are likely to seek assistance first from other family members. When risk is perceived prior to a disaster, or if persons are thought to be trapped or in difficult straits after an

¹⁸ *Ibid.*, p. 4

¹⁹ *Ibid.*

²⁰ *Sri Lanka Cyclone Handbook*, Sri Lanka Cyclone Study Technical Report No. 7, United Nations Development Programme, Office of Project Execution, SRL/79/001 (Washington, D. C., Pacdo, Inc., 1979)

²¹ Orjan Hultaker and Jan Trost, "Family and Disasters", *International Journal of Mass Emergencies and Disasters*, vol. 1, No. 1 (Uppsala, International Library, 1983), p. 17.

²² Margaret Kieffer, *Disasters and Coping Mechanisms in Cakchiquel, Guatemala: The Cultural Context* (Guatemala, March 1977), p. 20