

Emergencies, Disasters and Catastrophes Are Different Phenomena

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In this paper we discuss the differences between emergencies, disasters and catastrophes as these tend to be conceptually differentiated by disaster researchers. As illustrated in the examples below, these are differences that should make a difference in the planning and management activities of any crisis relevant groups.

Disasters and Everyday Emergencies

For some time now, there has been widespread acceptance among researchers of a rough distinction between “everyday emergencies” and disasters. Almost all researchers and many policy and operational personnel in emergency planning and managing agencies now recognize and make that distinction, seeing a quantitative and qualitative difference between routine accidents and “disasters.” It is granted that a disaster is not simply a “bigger accident” than usual.

For instance, research shows that in terms of organization behavior there are the following differences. In disasters in contrast to everyday emergencies, organizations have to:

1) Quickly related to more and unfamiliar groups (e.g., one DRC study of an airline crash found that more than 68 different fire departments alone converged on the scene; a Canadian study done by Scanlon in 1991, on a major fire found 346 organizations appeared including seven departments of local government, 10 regional government agencies, 25 entities from the provincial government and 27 organizations from the federal level, as well as 31 fire departments, 41 churches, hospitals and schools, four utilities, eight voluntary agencies, four new emergent groups and also at least 52 different players from the private sector). Such a massive convergence does not occur in everyday emergencies or accidents.

2) Adjust to losing part of their autonomy and freedom of action (e.g., since community and crisis time needs and values take precedence over everyday ones, all individuals and organizations may be monitored and ordered about by social entities that many not even exist in routine times, or where the destruction of property is accepted to save lives in search and rescue efforts, or in the building of levees or firebreaks). Such loss of relative independence does not occur in routine emergencies or accidents.

3) Apply different performance standards (e.g., New organizational norms emerge regarding what is acceptable and non-acceptable at the height of the crisis. Thus, performance standards for organizations often change, such as in hospitals and emergency medical services where the normal speed of response and care given to treating the injured is superseded by a need to more equitably distribute many victims in the available medical facilities as well as curtailing the care given to victims). Changing to such kinds of standards does not occur at times of everyday emergencies or accidents.

4) Operate within a closer than usual public and private sector interfaces (e.g., the need for the

quick mobilization of resources for overall community crisis purposes often preempts everyday rights and domains with goods, equipment, personnel and facilities, without due process or normal private organizational procedures are often requisitioned or volunteered, for the common good from everywhere and everyone, be they individuals or organizations). Such a collapse of the private-public sector lines does not happen on any scale in routine accidents or emergencies.

Disasters and Catastrophes

Increasingly researchers are also suggesting that it is necessary for planning and managing purposes to additionally make a distinction between occasions that might be called "disasters" and those that might be designated "catastrophes." For American researchers in particular, this has become more and more evident as they have studied crisis generating occasions in other societies, especially developing countries. Certain of the social behaviors in some of those occasions clearly have a different quality to them than those in the more typical happenings. These qualitatively different occasions are more usefully called "catastrophes."

The differences that appear can be especially seen at the organizational, community and societal levels. For our purposes here, let us state and illustrate at least four general ways in which disasters and catastrophes differ.

In a catastrophe, compared to a disaster:

1) Most or all of the community built structure is heavily impacted. For example, Hurricane Hugo destroyed or heavily damaged more than 90% of all homes in St. Croix in the U.S. Virgin Islands. This made it impossible, for instance, for displaced victims to seek shelter with nearby relatives and friends, as they typically do in disaster situations. In contrast, only parts of a community are typically impacted even in major disasters. For instance, in the Mexico City earthquake of 1985, at worst less than two percent of the residential housing stock was lost, with only 4.9% of the population in a survey conducted by the Disaster Research Center, reporting that here was great damage to the building in which they lived. This example also implies that it is not total loss but loss relative to the total base that is crucial. A sudden loss of 50 homes in a metropolitan area may not even be a disaster, but would be catastrophic in nature for a small village.

In addition, in catastrophes the facilities and operational bases of most emergency organizations are themselves usually directly hit. After Hurricane Andrew in southern Florida, for instance, many structures that housed police, fire, welfare and local medical centers were seriously damaged or destroyed, making work operations in them all but impossible. While in a major disaster some such facilities may be directly impacted, the great majority typically survive with little or not physical damage.

2) Local officials are unable to undertake their usual work roles, and this often extends into the recovery period. Related to the observations just made, is that in catastrophic situations, local personnel are often unable for some time, both right after impact and into the recovery period, to carry out their formal and organizational work roles. This is because some local workers either are dead or injured, and/or unable to communicate with or be contacted by their usual clients or customers and/or are unable to provide whatever information, knowledge, skills, etc. they can usually provide. For instance, in some recent catastrophes in developing countries, practically all

the medical or police personnel in some towns were fatalities. In impacted Florida communities after Hurricane Andrew, many social workers had no way of communicating with or being reached by past and new users of their services. The general inability to provide usual services happens, if at all, only on a very small scale in major disasters, and if it does, lasts only for relatively short periods of time.

One overall consequence is that because local personnel are casualties and/or usual community resources are not available, many leadership roles may have to be taken by outsiders to the community. Planning which assumes that local community officials will take an active work role in the immediate post-impact period of a major disaster is very realistic and a valid view. Contrary to the arguments sometime made regarding evacuation planning around nuclear plants, almost all relevant officials will fail to carry out their formal work role in an actual disaster. However, if there is no place to work in or activities cannot be carried out, the motivation to do one's job may exist, but cannot be implemented in actual fact in catastrophic occasions. Another consequence from this is that the local-outside organizational friction that only occasionally arises in disasters can become a major problem in a catastrophe.

3) Most, if not all, of the everyday community functions are sharply and simultaneously interrupted.

In a catastrophe, most if not all places of work, recreation, worship and education such as schools totally shut down and the lifeline infrastructure is so badly disrupted that there will be stoppages or extensive shortages of electricity, water, mail or phone services as well as other means of communication and transportation. For example, this could be seen in many communities after Hurricane where in southern Dade County, more than half of the homes were totally destroyed and/or suffered major damage. Similarly, for days after the tornado that devastated the town of Xenia and surroundings areas, regular community life was mostly nonexistent, given that according to a DRC study, 39.1% of homes were completely destroyed and 19.1% were severely damaged. This also occurred in the very widespread Armenian earthquake. In such kinds of situations, the damage to residential areas tends to be correlated with similar destruction of nonresidential areas. Among other things, it means that there are far more social elements that need to be restored to "normal" functioning after a catastrophe than after a disaster.

Even in major disasters, there is no such massive across-the board disruption of community life, even if particular neighborhoods may be devastated as happened in the Mexico City earthquake of 1985, but with life in many contiguous areas going on almost normally; similarly this was true of the Northridge, Los Angeles earthquake of 1994. For instance, 12,000 people went as usual to the horse racing track in that California area the afternoon of the quake.

4) Finally, help from nearby communities cannot be provided. In many catastrophes not only are all or most of the residents in a community directly affected, but often those in nearby localities will be similarly stricken, as can often be seen in the typhoons that hit southwest Asia such as in the Philippines, and as occurred in areas around Chernobyl after the accident at the nuclear plant there. In short, catastrophes tend to affect multiple communities, and often have a regional character. This, for instance, can and does affect the massive convergence that typically descends upon any stricken community after a disaster. In a disaster there is usually only one target for the convergence, whereas in a catastrophe not only can nearby communities not contribute to the inflow, but they themselves often become competing sources for an eventual

unequal inflow of goods, personnel, supplies and communication. The recent Hurricane Mitch in central America is a good example of a catastrophe that actually engulfed several different countries.

However, whatever differences there may be at the organizational level and whatever the damage to community areas, research suggests that insofar as individual, household and small group level other micro level behavioral responses are concerned, there may not be many behavioral distinctions between catastrophes and major disasters. For instance, as is typically true in disasters, the great bulk of search and rescue was done by the immediate survivors even in the catastrophic earthquake in Armenia a few years ago, or more recently the one in Kobe, Japan. Similarly, prosocial behavior will be predominant, with antisocial behavior such as looting being as rare in catastrophes as it is in disasters.

Implications

Now the distinction we have just drawn between catastrophes and disasters is not just an academic exercise. What is involved goes far beyond a terminological distinction. What is crucial is that catastrophes require some different kinds of planning and managing than do even major disasters. This is true whether the focus is on the planning for mitigation, preparedness, response and/or recovery measures. We noted earlier, possible problems in sheltering victims or mobilizing local organizations. Many more differences can be surfaced and found by looking at the local community planning and asking what does it assume as being in place after impact.

This does not mean that everything is different. Although research has not yet fully clarified what are the most significant differences, it appears that the differences are more likely to appear going up the social scale from the individual to the nation. In the crisis period, right around impact time, at the individual human level, the reaction is remarkably similar and generally good (e.g., citizens very seldom panic, evacuation is undertaken mostly by family or household units, casualties will be taken to nearby medical facilities, etc.). However, at the organizational and community level there are more differences in catastrophes compared with disasters and generally they will lead to a poorer response in the former compared to the latter kind of occasion (e.g., there will be even slower organizational assessments of the problems in the situation, poorer and more inaccurate information flow between agencies, and substantially greater difficulty in coordinating the organized response and make an Incident Command System, which is a dubious arrangement even for disasters, even less appropriate for a catastrophe).

Nevertheless, the planning and managing principles that hold for major disasters are not necessarily totally invalid for catastrophes. For example, it is probably still true that crisis time planning for even a catastrophe ought to be as close as possible to everyday, traditional ways of doing things. Everything else being equal, the less citizens and groups are asked to act in unfamiliar or non everyday ways, the better the response will be.

On the other hand, the qualitatively different demands and needs that surface in catastrophes compared to disasters, means that more innovative and creative actions and measure will be required in a catastrophe than even a major disaster. Actually any kind of crisis requires imagination in responding. But the most is required by a catastrophe.

The ideas presented in this paper should enable anyone responsible for disaster planning and managing to do a better job. At least that is our hope.