Risk management
Disaster response: generic or agent-specific?

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This paper addresses three questions about possible differences between disasters and their implications for planning. First, for planning purposes, are disasters best approached generically or in agent-specific terms? (The answer, based mostly on research, is that the generic approach is more valid. This does not mean there are no meaningful differences between disasters.) Second, along what lines might disasters be usefully differentiated? (Eight dimensions significant for emergency responses are discussed.) Third, what distinctions are made, and do they apply equally in all phases of the disaster planning cycle: mitigation or prevention, emergency preparedness, emergency response, and recovery? (It appears that the generic approach is most applicable in the emergency phases and somewhat less so in the mitigation phase. Recovery falls somewhere in between.) Answering these questions is a useful way to discuss the institutional and organizational behavior appropriate for disaster planning in different situations.

Disasters as generic phenomena

Most but not all disaster planning is agent-specific. People tend to organize planning around specific disaster agents. Thus, there are often separate plans for disasters resulting from hazardous chemicals, hurricanes, emergencies in nuclear plants, floods, and so on. Usually different organizations prepare for and respond to threats or events viewed as different from each other.

This agent-specific orientation might seem logical. Are not chemical threats different from earthquakes? Are not floods different from huge fires in high-rise buildings? The answer, of course, is yes — but in an important sense it is the wrong question. Thus, in the last decade there has been an increasing shift by disaster researchers — especially in developed countries — to a more generic, all-hazards approach.

Disaster researchers at one time approached the field in the same way many disaster planners still do. Four decades ago, in the earliest days of social science disaster studies, most researchers in disaster planning accepted the everyday distinctions between different kinds of disaster agents (such as floods, explosions, hurricanes, and fires). Soon these distinctions tended to be collapsed into two general categories: natural disasters ("acts of God") and technological ones (those supposedly brought about by human actions). Recently, these surface or manifest distinctions are increasingly questioned and the focus is more on whether to take a generic or an agent-specific approach to disasters (Quarantelli 1982).

The agent-specific approach assumes that each type of disaster agent (such as a volcanic eruption or nuclear fallout) or each class of agents (whether natural or technological) has certain
distinctive characteristics that affect what occurs (Baum, Fleming, and Davidson 1983). The generic approach assumes that there are more individual and organizational behavioral similarities than differences for all disaster occasions (Quarantelli 1987b). Most social scientists in disaster research now take a generic approach rather than study different agents or classes of physical agents separately.

There are two main reasons for this shift to a generic approach. One is theoretical, the other (more important) empirical. Theoretically, there has been a shift away from a physical focus toward a more social conception of disasters. This is partly the result of recognizing that an event such as an earthquake or a chemical explosion does not automatically result in a “disaster.” That is, a natural land movement of a certain kind is an earthquake, and the transformation of an inert liquid into an expansive gas is a chemical explosion. But unless there are significant social negative consequences of some kind, these happenings remain only a geophysical event or a chemical process (for example, an earthquake in uninhabited land or a safely contained chemical explosion). From this perspective, a disaster can be identified only in terms of a social occasion, by the characteristics of individuals and groups reacting to a situation. The socially oriented conception of disaster shifts the focus to the common or similar properties of the social happening and away from the physical features of natural and technological agents and their effects.

More important, social science studies reveal that most sociobehavioral features of disasters are not agent- or class-agent-specific, but are generally similar for different types of natural and technological agents (Drabek 1986). For many of the human and organizational problems that come up in preparing for and managing a response to disasters, it does not matter what specific kind of disaster agent is involved. Whatever the agent, the same general activities have to be undertaken, whether the task be warning, evacuation, sheltering, feeding, search and rescue, disposition of the dead, mobilization of resources, communication flow, interorganizational coordination, or public information, and whether the tasks involve individuals or groups.

The same kind of warning system is needed, for example, to get people to evacuate, no matter what agent is involved. It does not matter if the agent is a tornado, an oil spill, a tsunami, or a major fire at a hazardous waste site. What motivates people to heed warning messages, what kind of warning message is effective, what limits the acceptance of a warning, and so on, is the same in all cases (see, for example, Perry and Mushkatel 1984, Perry 1985). The human aspects of disaster behavior do not depend on the type of disaster agent.

Similarly, if there is a need for organized search and rescue or large-scale emergency medical services after a disaster, the specific disaster agent is irrelevant to important organizational issues that must be dealt with. Research consistently shows, for example, that the less seriously injured are likely to be treated first, that one or a few hospitals will take a disproportionate number of the injured victims, and that there will be no overall coordination of the medical-health response (Quarantelli 1983, Auf der Heide 1989). Similarly, studies show that ordinary local citizens quickly undertake most of the initial search and rescue, that the handling of dead bodies is psychologically disturbing, and that formal search-and-rescue teams tend to operate in an uncoordinated way (Miletic and others 1975, Drabek and others 1981). The type of agent involved affects the execution of such emergency tasks very little.

The same is true for different classes or categories of agents. A disaster preparedness primer, for example, notes certain differences between community planning for natural and chemical hazards. But then observes that these differences do not necessarily rule out the application of principles of natural disaster planning to problems of chemical hazards. In fact ... studies on natural disaster planning and response can be of value for persons connected with chemical disaster preparedness. It then states:

Regardless of the characteristics of a particular disaster agent and the specific demands generated by it, the same kinds of community response-related tasks are necessary in both kinds of disaster and for all disaster phases. In any community, for example, the assessment of hazards and
the aggregation of disaster-relevant resources are necessary, regardless of the specific hazards and resources in question. Similarly, post-impact communication and decisionmaking procedures must be planned for and activated in any community crisis.

Then it notes:

To draw an analogy, a battle on land is fought with different weapons, materiel, personnel and support systems than those used in sea battles, but, nevertheless, the general overall battle requirements are the same for both. In both cases, intelligence about enemy strength and movements must be gathered, resources must be collected, trained personnel must be led effectively, and so on. The same is true for disaster planning: although disaster agents and the human and material resources needed to respond to them may vary, the same generic kinds of activities must be performed in the predisaster, preimpact, response, and recovery periods, regardless of the specific threat (Tierney 1980: 18-19).

Questioning of the distinction between technological and natural disasters has accelerated in the last decade. Researchers such as Bolton (1986), for example, note many similarities between natural hazards and industrial crises in developed countries. And operational personnel, such as Wijkmann and Timberlake (1984) indicate in the very title of their volume, Acts of God or Acts of Man?, that the distinction is not meaningful in developing societies. Others looking at particular behaviors such as evacuation have noted similarities in volcanic eruptions, floods, and nuclear power plant accidents (Perry 1983).

Even when social behavior seems somewhat agent-specific, closer examination often indicates a link of a broader nature. The concept of "disaster subcultures," for example, was initially linked to a specific agent. The terms "flood subculture" and "hurricane subculture" (Moore 1964, Osborn 1970) refer to individual and organizational adjustment mechanisms developed as the result of repeated exposures to the same kind of disaster. There is now reason to believe that experiential and other situational factors are more important in the development of ad-

justment subcultures than the characteristics of the agent (Drabek 1986: 339-40). Some even argue that activities such as earthquake prediction are not fully agent-specific. Turner (1980) implies that much of what researchers know about how people respond to threats and warnings for other dangers applies equally to prediction scenarios for earthquakes.

Finally, researchers who argue for a generic approach question whether concrete agents can be identified for all disasters and whether agents can always be easily classified. What is the agent in a famine or drought, for example? Are the sources of forest and brush fires, or of avalanches and landslides, to be found in human actions or natural phenomena? What about physical fatigue in bridges or pipelines that results in structural collapse? What about nondeliberately contaminated food or medical products? What is the source of disaster? Plane crashes and many other transportation accidents can be generated by both natural and technological agents.

Not only social science disaster researchers favor the generic approach. When the U.S. Congress was considering the implementation plan required by the Earthquake Hazards Reduction Act of 1977, the Office of Technology Assessment was asked to develop "Criteria for Evaluating the Earthquake Mitigation Implementation Plan." On the issue of an "earthquake versus an all-natural-hazards strategy," the OTA report concluded that:

While it may be convenient for researchers and the large Federal agencies to handle hazards categorically, the practicalities of State and local government organization and function increasingly required integrated planning and operations for all hazards. Similarly, Federal construction and housing programs also could be responsive to all hazards, not just to one or a few selected hazards (quoted in The Hazard Monthly 1980; see also Coates and others 1979).

Some say the distinction between approaches is operational, not academic — that field personnel dealing with an emergency need agent-specific knowledge such as how far people must be evacuated to avoid toxicity or flying debris if a chlorine tanker threatens to explode. Others
say academic researchers can afford to deal with the more generic questions such as what general factors motivate people to evacuate.

This distinction between operational and academic concern is really a confusion of tactical matters (such as the distance to evacuate), which would vary whether disaster agents are similar or dissimilar, with strategic matters (such as general principles of motivation applicable in all situations). There are strategies for dealing with disasters that cut across disasters. Tactics tend to be more situation-specific, but even the military (from which the concepts of strategy and tactics are drawn) seems to feel that soldiers can be taught tactical principles that apply in most combat situations.

Even so practical a field as medicine proceeds as if disaster planning and response need not be agent-specific. Rarely do disaster medical personnel train and prepare for only one kind of medical treatment. The World Health Organization defines a disaster as “a situation which implies unforeseen, serious and immediate threats to public health” (Lechat 1980: 18). Disaster medicine emphasizes general principles, focusing on such nondisaster-specific aspects of organization as personnel alerting systems, triage, and the allocation of patients to hospitals (Butman 1982).

The generic approach to disasters, by combining dissimilar agents and factors, may appear to violate common sense. In a way, this is correct but not necessarily significant, as this analogy may illustrate: biologists have long classified bats, whales, and human beings as mammals. Despite manifest differences in size, structure, and function among these three creatures, for biological purposes these obvious commonsense differences are far less significant than less overt structural and functional similarities, such as the fact that all mammals are warm-blooded and bear live young. For purposes of studying and applying biological principles, the fact that a whale is bigger than a bat, or that a whale needs a water environment and human beings basically need a land environment, is unimportant. The same principle applies in combining manifestly different physical agents or elements of disaster planning. In fact, disaster researchers have been advised to follow the lead of biologists and distinguish between phenotypes and genotypes, focusing less on manifest surface (phenotypical) features and more on similar underlying (genotypical) characteristics (Quarantelli 1987b: 27).

The generic or all-hazards approach has not always been easy to accept, for several reasons. For one thing, much early work on disasters focused on the physical agent involved, so this became a habitual way of approaching the problem to some—for example, flood control or hurricane prediction specialists. More recently, researchers and operational people in fire research and nuclear risk have shown a similar reluctance to move away from an agent-specific orientation. They have long struggled with questions about those physical agents and their agent-specific characteristics, and they have trouble seeing that sociobehavioral studies of other disaster situations can apply directly to their own areas. They illustrate Kenneth Burke’s statement that “a way of seeing is also a way of not seeing” (quoted in Lindesmith and Strauss 1949: 101).

The possibility of recognizing that the agent-specific perspective may be less valid than another may be limited for people working on disaster problems because many of them live in relatively different professional and intellectual research worlds, between which communication is limited. Some people specialize in one kind of agent (such as fires, earthquakes, nuclear hazards, or landslides); others specialize in topics and questions that cut across disasters (such as systems for warning, search and rescue, medical treatment, and handling of the dead). In a sense, some divide the disaster world horizontally, others vertically. This does not facilitate communication between one axis and another. And it is probably more difficult for a vertical communicator (an agent-specific specialist such as a seismologist) to understand a horizontal communicator (a general disaster specialist such as a sociologist) than vice versa. The sociologist is likely to have a narrower perspective than the sociologist.

**Different dimensions of disaster**

The generic approach does not deny that there are important differences between disaster occasions—only that they are not linked to specific agents. In some cases, for example, warning is possible and in others it is impossible or difficult. In some cases a disaster’s impact is diffuse and in others it is focused and local. The
physical difference between an explosion and an earthquake is less important than the fact that neither usually allows time for warning. Similarly, "a flash flood resulting from a broken dam might have more similarity to a sudden tornado than to a slowly rising Mississippi River flood (Stoddard 1968: 12); and "a flood in Cincinnati for which there may be two weeks' warnings, is simply not a comparable event to a flood in Denver with six hours' warning, or to one in Rapid City where warnings were received as flood waters entered dwellings" (Mileti and others 1975: 5). "The differences between damaging events due to the same natural or man-made agent may be larger than between events initiated by a different agent" (Hewitt and Burton 1971: 124). Some approaches cut across agents and look at different dimensions of the social setting in which disasters occur.

Disaster typologies based on combinations of meaningful dimensions of social occasions would help us understand common social behavior for different agents and different social behavior for the same agent. Such typologies should combine such generic social dimensions as a disaster's predictability, relative loss impact, recurrence, unfamiliarity, and rapidity of onset; the social centrality of the affected population; the proportion of the population involved; and how long they are involved (Quarantelli 1985: 58). All of these dimensions can be seen as characteristics of the social occasion rather than of the physical disaster agent.

These dimensions cut not only different disaster agents (both natural and technological) but also the same disaster agent (such as a flood or chemical explosion). For instance, a chemical explosion may be a familiar threat near chemical complexes but unfamiliar in other communities. The local people's familiarity with chemical complexes will affect their responses to warnings, their probability of evacuating, and their expectations about emergency organization and behavior. Here I suggest that disaster researchers follow the lead provided by biologists who distinguish between phenotypes and genotypes. We should develop typologies of disaster occasions.

Unfortunately no such typologies exist — or none has found wide acceptance in the disaster research community. (For one proposed even before social science disaster research had any vitality, see Carr 1932, for more recent proposed typologies, see Barton 1970 and May 1989.) In the last decade, eight dimensions of a population's response to disaster have increasingly been singled out as important for a typology within the generic approach:

- The relative proportion of the population involved.
- The social centrality of the affected population.
- The length of time the affected population is involved.
- The rapidity of involvement by the population.
- The predictability of involvement.
- The unfamiliarity of the crisis.
- The depth of the population's involvement.
- The recurrence of involvement.

These eight characteristics of a population's response to disasters emphasize characteristics of the social occasion rather than of the physical agent (even if there is one and sometimes, as with a famine, there is not).

1. **The Relative Proportion of the Population Involved**

The proportion of the population involved relative to some base is far more important for planning purposes than absolute numbers (Britton 1987: 35-36). This is true whether the focus is on concrete losses or psychological involvement. For example, 500 dead in a metropolitan area of 5 million involves proportionately far less of the community than does 100 dead in a town of only 1,000 inhabitants. Similarly, in terms of property damage or destruction, the same absolute numbers might mean a catastrophe in some communities but only a bigger-than-usual emergency in others. Generally this disaster characteristic has less to do with the scope of geographic or physical impact than with the social impact of the disaster. The degree of community involvement has to be measured relative to the total social resource base.

Organizational, this dimension has several important implications. For one, the greater the relative social involvement, the more the occasion is a disaster rather than an emergency. It has increasingly been argued that a disaster is both quantitatively and qualitatively differ-
ent from an emergency and necessitates different kinds of planning. A Bhopal gas poisoning incident is not merely at one end of a scale on which a gas leak in a house is at the other end (see Shrivastava 1987a).

Along another line, the huge urban complexes that are coming into being in many developing societies are — contrary to widespread belief — far more likely to accelerate the rate of everyday emergencies than the rate of disasters. But when an urban disaster occurs, it is more likely to be catastrophic. The tip of a disaster is much higher when viewed relatively than in absolute numbers. Handling 250 deaths a day may be a normal statistic in a metropolitan area. Institutional disaster planning must take this into account.

2. THE SOCIAL CENTRALITY OF THE AFFECTED POPULATION

Also important for planning purposes is whether the affected population is central or peripheral to the larger social community. That is, the victims may be from the area or they may not be (see Quarantelli 1985: 60). The identical disaster agent would have a different effect on different population mixes in the same community. If a tornado were to hit a crowded airport terminal, for example, its effect would be different than if it hit a large, local social event. In one case the victims would include many transients; in the other, many closely linked, longtime neighbors would be the victims.

Organizationally, the more mixed the population of victims, the more likely there will be problems. Everything else being equal, homogeneous populations present fewer planning problems. In developing societies, for example, some areas are populated at certain times of the year by many temporary migrant workers, and some are populated mostly by a stable native population. Disaster planning, to be effective, should be different for the two situations, even if the disaster occasion is the same.

3. THE LENGTH OF TIME THE AFFECTED POPULATION IS INVOLVED

The length of time of involvement refers to the crisis response of the population, not to the duration of the threat, which is a dimension of the physical agent. Sometimes the duration of the primary disaster agent is short but the length of crisis involvement is longer because of perceived secondary threats. For example, an accident involving a train carrying chemicals may be over in a few minutes, but the threat or actual slow release of toxic chemicals from the wrecked train may generate a crisis that lasts days — as happened in Mississauga, Canada (see Scanlon and Padgham 1980). Or, as a number of disaster researchers have noted, on an occasion like the 1979 nuclear hazard accident at Three Mile Island, the duration of the accident was relatively short but psychologically the crisis for certain segments of the population continues to this day. The volcanic eruption at Mount St. Helens has had the same effect on some nearby residents.

This dimension of disaster is primarily a matter of perception and the so-called experts and the general population may perceive the risks very differently. Thus, in developed societies some potential nuclear and chemical threats are often viewed differently by interested parties. Citizens generally use different criteria for risk assessment than do workers or specialists in these fields (Slovic, Fischhoff, and Lichtenstein 1980, Covello 1983, Slovic 1987).

The differences are less the result of a technology being involved and more a reflection of different perceptions. Those most intimately involved with a technological threat downplay it with something like the "fatalism" with which native populations in developing countries view such natural threats as volcanic eruptions or floods. Such major perceptual differences can present major planning difficulties for disaster planners, who must get people to agree on definitions of what is or is not safe, must get people to evacuate, and so on. Generally, the longer the perceived involvement, the more criticism disaster response organizations can anticipate.

4. THE RAPIDITY OF INVOLVEMENT BY THE POPULATION

Sometimes a population becomes slowly involved in a crisis, sometimes its involvement is rapid. Populations were quickly involved in the flash flood in Rapid City, many dangerous chemical emergencies resulting from transportation accidents, the false story of a dam collapse at Port Jervis, New York, and the collapse of a hotel walkway in Kansas City (see, for example, Milet 1974, Danzig, Thayer, and Gallanter 1958,
Quarantelli 1984b). Rapidity of involvement is sometimes related to predictability but is independent of it. Predictability has to do with expectedness, rapidity with speed. The two can vary independently. And rapidity of involvement is a characteristic of the disaster occasion, not to be equated with the speed of onset, which is a feature of some physical disaster agents.

The rapidity of the response pattern is viewed from the perspective of those involved. It may or may not correspond with the actual time available for action. This can obviously create planning difficulties. Generally populations and organizations adjust best when they are involved slowly. In some cases there may not even be much of a crisis. Adjustment is much more difficult when involvement is rapid. Problems are often compounded in developing countries where conceptions of social time differ between more Western-oriented emergency groups and the local population.

5. THE PREDICTABILITY OF INVOLVEMENT

Sometimes populations can predict their possible involvement in disasters; other times, the crises are unexpected. Such evidence as exists indicates that the unexpected is much more psychologically disturbing than the expected. If one can predict involvement in a dangerous situation, one is more likely to attribute culpability for the involvement to self. If predictability is low — as seemed to be the case at Mount St. Helens and Three Mile Island — others are more likely to be held culpable. Also, if predictability is high — as when populations live near chemical complexes or on floodplains — there is greater sensitivity to danger cues, more willingness to act upon them, and less trauma in evacuation (Quarantelli 1984a). Finally, if predictability is low, we speculate there would be a tendency toward more affect being expressed in the reaction.

The common thread in all of this is the element of the unexpected, as a result of which people are unable to bring their normal routines and coping mechanisms to bear on a crisis. Most people behave relatively well in an immediate crisis, but there is undoubtedly considerable stress and strain that may have negative psychological consequences. By definition, there are problems predicting the unexpected — and the less a situation is expected, the less likely relevant organizations are to have prepared and trained for the occasion.

6. THE UNFAMILIARITY OF THE CRISIS

Unfamiliarity with a disaster occasion also seems to be psychologically and organizationally disturbing, for many reasons. For one thing, people see different kinds of threats differently. They are clearly most concerned about and afraid of those that are most unfamiliar, such as threats associated with chemicals and nuclear power plants. The actual knowledge populations have of many natural disaster threats may be little better than their knowledge of other threats, but some threats are perceived as more unfamiliar and therefore more worrisome to most people.

Unfamiliarity can be associated with the “statistically unusual.” For example, few people have experience in search and rescue activities. Too, in many disasters many different tasks must be undertaken in very short periods of time. What in normal times is familiar and spread out over time often occurs almost simultaneously on the occasion of a disaster. Often, although not always, there is a strong perception of being unable to control the event to which one is subject. All of these factors affect the reactions of disaster victims.

These are examples from the behavior of individuals, but groups are little better at coping with the unfamiliar. Organizations do have an advantage over individuals in that good disaster planning can often forecast well what problems might arise should disaster strike. Disaster agencies, whether in developed or developing societies, are not totally vulnerable to the unfamiliar.

7. THE DEPTH OF THE POPULATION’S INVOLVEMENT

One can take certain kinds of losses (such as deaths of family members, the loss of homes, forced moves) as an indication of a disaster’s impact. But the relative nature of the loss may be more important than the absolute loss. It is not so much what one has lost in absolute terms, but what one has lost relative to others. In one of the first disaster studies, Prince (1920) noted that victims of the Halifax ship harbor explosion felt less personal loss because they viewed their own losses in the context of about 2,000 dead and enormous property damage. Of course, the perception of deprivation can be relative to other people or relative to one’s own standard of liv-
ing. The same kind of disasters may seem different because of the victims' different depths of involvement.

This is a particular problem for organizational disaster planning. It is generally not a matter for which too many realistic prior scenarios can be projected. But sensitivity to the possibility that the issue could arise can somewhat lessen its impact when it happens.

8. The Recurrence of Involvement

For some populations, involvement in disasters is a recurrent, not a new, experience. There may even be differences among subpopulations. In a number of communities, some groups living on floodplains can almost count on some flooding every year, just as people living near major chemical complexes can expect emergencies. But the fact of prior experience, even of many experiences, appears to be far less important than whether those experiences have been incorporated into attitudes and behaviors. Sometimes the development of a disaster subculture is unrelated to the frequency with which events occur. Disaster subcultures essentially make a quasiroutine of disaster occasions, which makes them much less psychologically disruptive and disturbing. If recurrent experiences do not become a quasiroutine, they can become a source of stress. Whether recurrent disasters harm mental health depends on whether a disaster subculture developed to protect people can also help or handicap organizational involvement in recurrent disasters. Everything else being equal, most organizations plan and respond better the more experiences they have with a type of disaster. But experience with disasters is not automatically good. Some groups learn little and, worse, a few learn the wrong lessons. There is also a strong tendency to take the last disaster, and the needs and problems it creates, as the prototype of future disasters. This can be very important. The next disaster may be drastically different and may create very different demands for the organizations involved. See Forrest (1979) for a study of a community that usually expected a hurricane but instead got a flood.

Other Possible Dimensions

Are these eight dimensions all that should be considered in a disaster typology? Almost certainly not. Another is resource availability: what would be usable for disaster planning. Some societies and communities are simply more resource-rich than others. The distinction is not so much between industrial/urban and agricultural/rural societies, as much as between developed and developing countries (labels and distinctions that leave much to be desired). Everything else being equal, organizations, communities, and societies that have more resources can better prepare for and respond to disasters.

Similarly, there are differences in both degree and kind of disaster preparedness. (There is some correlation between preparedness and development but it is far from a high correlation.) Adding resource availability and degree of preparedness as dimensions for disaster typologies seems both logically and empirically justified — they have been used in an attempt to develop a societal typology for disaster emergency medical service (Quarantelli 1989) — but until typologies based on a generic approach to disasters are systematically generated, used, and evaluated, this is only a suggestion, not a recommendation.

Different Phases of Disaster Planning

The examples given for the eight dimensions relevant to all disasters apply almost exclusively (and equally) to the two middle phases or stages of the disaster planning cycle: emergency preparedness and response. The generic or all-hazard approach is most useful for those two parts of the planning cycle.

The generic approach is also somewhat valid for certain disaster mitigation and recovery issues. Issues about pre-impact individual disaster insurance coverage (Kunreuther 1978) and the longer run demographic consequences of disasters (Ross and others 1983) seem more or less the same whatever the specific disaster agent. Research has shown a widespread reluctance to purchase disaster insurance and relatively few important changes in the demographic structures of disaster-stricken communities and societies. Further studies may reveal significant cross-societal differences in these matters but they would still be a function of the social situation, not the specific agent.

Disaster mitigation behavior might be somewhat more agent-specific than other disaster planning activities, for two reasons. Some mea-
sures that can be taken to prevent disaster or weaken its impact are agent- or agent-class-specific—for example, seeding clouds to prevent the formation of hurricanes or encasing nuclear power plants in building structures to mitigate radiation leaks. And the knowledge bases and specialists needed for such planning are different from those needed for other kinds of preventive or mitigation planning.

Not all aspects of disaster mitigation planning are agent-specific. For example, the general bureaucratic arguments advanced for a physical solution to potential disaster problems, the sources of government and private sector support for and resistance to such measures, popular views of the legitimacy and acceptability of suggested plans, and the willingness to put preventive measures on a political agenda; these tend to be similar whatever the disaster agent. The nontechnical problems of implementing earthquake mitigation measures (Drabek, Mushkatel, and Kiljian 1983) are not so different from the problems implementing preventive measures for chemical disasters (Tierney 1980). In short, human, group, organizational, community, and social aspects of disaster mitigation planning tend to be generic rather than agent-specific.

This is even true of planning for disaster recovery. To be sure, some technical factors will be agent-specific. How to clean up the pollution of agricultural land from saltwater flooding or nuclear radiation are different technical recovery activities. But the social aspects of recovery planning are more generic than agent-specific.

The implications for planning seems clear. Organizations involved in any aspects of disaster management should give priority to the generic approach to planning—especially institutional planning for emergency preparedness and response. More technical aspects of mitigation and, to a lesser extent, recovery activities require some attention to more agent-specific factors.

Apart from theoretical, logical, or experience-based reasons for taking the generic or all-hazards approach to disaster planning, there are practical reasons for doing so. The generic approach is (a) cost-efficient in terms of time, effort, money, and other resources; (b) politically better because it mobilizes a wider range of groups, thereby creating a more powerful constituency for the process; (c) a good way to prevent duplication, conflict, overlaps, and gaps in preparedness and response efforts; and (d) a way to increase the efficiency and effectiveness of organized efforts to cope with disaster occasions (Quarantelli 1982).