

MODELS OF EMERGENCY PLANNING:
CONTRIBUTIONS FROM THE SOCIAL SCIENCES

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Introduction

In modern societies, there is increasing attention given to planning for emergencies. Emergencies, simply defined, are those events which cannot be dealt with by ordinary measures or routines. Some types of events, which occur with frequency, such as fires or accidents, do evoke the development of types of social structure within community systems to deal with such "emergencies" in a routine manner. This institutionalization of day-to-day emergencies generally has narrowed the role of emergency planning to those types of events which are periodic, rather than routine, and which are community extensive, rather than institutionally focused. The prototype for most emergency planning, then, would be such events as earthquakes, hurricanes, floods, etc., which affect total community systems. While such events have a relatively low frequency, they often have the potentiality for extensive community disruption.

Emergency planning usually has focused on four interrelated phases-organized along a time continuum. The first phase, mitigation, generally refers to any activity which would eliminate or reduce the probability of occurrence of an emergency event. Such examples would be the development and implementation of building standards or land use practices which might forestall future structural damage. The next stage, generally termed preparedness, focuses on planning activities which would minimize disaster damage and which would make an emergency response more effective and efficient. Examples might be the development of monitoring systems which can be channeled into warning systems to provide emergency information on appropriate behavior to avoid injury. It also might involve the development of training emergency workers and the establishment of stockpiles of materials and equipment. In general, the activity is oriented to assisting organizations and individuals to respond to the consequences of certain disaster agents. The third stage, generally termed emergency response is designed to provide assistance for types of disaster casualties, e.g., search and rescue, emergency shelter, etc.: to reduce the possibilities of secondary damage, e.g., shutting down equipment which might produce further damage, providing security measures to inhibit access to dangerous areas; and to provide measures which would speed up recovery measures, e.g., damage assessment. The fourth stage, recovery, centers on those activities which continue beyond the emergency phase and move toward the reestablishment of the community system. Some of these activities are short-term ones, such as reestablishing vital community systems, such as utilities, transportation

systems, food distribution systems, etc., to minimum operating levels. It would also include such activities as debris clearance and temporary shelter. There is, of course, a longer term recovery phase to stabilize all systems at normal or improved operating levels. This can involve, of course, extensive city planning, changes in land use, as well as changes in traditional notions of financing such developments. Recovery can also include the development of new mitigation measures. In many ways the process is circular.

The potential contributions of the social sciences to emergency planning can be suggested along the following lines:

1. The notion of emergency is basically a social science concept, since it refers to a disruption of a social system, rather than to physical and material damage.
2. The planning process itself is social.
3. The notion of mitigation measures involves some idea about a future, and organizing behavior in reference to that future. These are complex cultural notions, rather than universal human assumptions.
4. The notion of preparedness involves ideas of risk, value and appropriate anticipatory behavior.
5. The notion of emergency response is predicated on the social system as the primary responding unit.
6. The notion of recovery is predicated on reestablishing some form of balance between the demands made and the capabilities of the social system to deal with these demands over time.

In effect, then, the whole notion of emergency planning, although usually oriented toward abrupt changes in the physical environment, is based on actions and activities in the social environment--the proper focus for research and knowledge drawn from the social sciences.

The Dominant Model Currently Utilized in Emergency Planning

The intent here is not to detail the contributions to knowledge which are already incorporated in current emergency planning nor is the intent to develop a research agenda for "needed" knowledge. Instead I would like, first, to identify what I see as the dominant model used for emergency planning and, second, to critique that model on the basis of the assumptions that model makes about individual and social units in various types of "emergencies". This model is most evident in the two middle phases of emergency planning--preparedness and emergency response, although its assumptions also permeate, in certain ways, the mitigation and recovery phase.

On the basis of examining many different disaster plans and from discussion with a number of persons involved in disaster planning, I would characterize the dominant normative mode for planning as the "command and control" model.¹ That the descriptive terminology bears some resemblance to military usage is not surprising since many of the assumptions undergirding emergency planning had wartime and national security roots. Many emergency planners have had previous military experience and much of the planning occurs in organizations with para-military structures.

In general, this command and control model is based on the assumption that emergencies create a severe disruption in social life which lowers the effectiveness of individual behavior and that reduces the capacities of

social systems. Given that basic assumption, planning efforts center on the development of mechanisms to control widespread maladaptive behavior and on the creation of ad hoc structures to replace "natural" structures. Planning efforts also are directed toward the creation of strong authority to overcome the disintegrating effects created by the disaster agent. Hence, the characterization here in terms of "command and control".

In general, planning under this model is oriented toward creating new norms for individuals marking out appropriate emergency actions. For example, "spontaneous" evacuation is often seen as inappropriate, or as manifesting a "failure of will" on the part of "disorganized" individuals but "real" evacuation is something to be ordered by authorities who are capable of making rational decisions for others. Planning also makes extensive provisions for mass care of populations based on the assumption not only that resources will be depleted but also that individuals and other units, such as families, would be incapable of coping or remedying such situations. Thus, new structures are needed to replace the old ones which will be demoralized or ineffective. Planning is also preoccupied with the development of a centralized communication and information system which can evaluate information and thus create "official" and, thus, correct messages. Such messages then are to be communicated only through correct and official channels. Decision making for the collective good is designed to be centralized and then such decisions communicated to induce the compliance of the affected populations.

The planning efforts seem to be oriented around creating an "artificial" and authoritarian structure to replace "natural" behavior and structure since these "natural" units are incapable of functioning effectively in the stress conditions which are created by the disaster event. In effect, plans are created and people are assumed to fit into such plans as parts of the rational "clockwork".

An Alternative Model for Planning

It is perhaps more effective to present a critique of the "command and control" model in the context of presenting an alternative model, called here the "emergent human resources model". That critique and the logic behind the alternative model will be based on the existing research tradition which has examined reactions to and adaptations to a wide variety of crisis events. That research tradition, which has been developed primarily, but not exclusively in the United States, suggests that the behavioral assumptions for the command and control mode are inadequate.² It further asserts that the planning effort should be based on existing behavior and structures (that is, pre impact) as the primary base for planning. In effect, it suggests that, instead of adapting people to plans, it should adapt plans to people.

The alternative model suggests that a much more appropriate set of assumptions would be that there is no severe and dramatic break in the continuity of behavior and social structure. Thus, the rationale in planning would be to utilize that "existing" base and to capitalize on these emergent qualities in the emergency, rather than to create an "artificial" set of norms and structures. This idea of the "continuity" and persistence of behavior and structure is evidenced in the following ways.

1. Rather than experiencing emergencies as a distinct break in "experience", there is a widespread tendency to normalize threat to define situations as normal and to continue habitual patterns of behavior.
2. Rather than exhibiting irrational and abnormal manifestations of behavior, individuals exhibit traditional role behavior--maintaining occupational and familial obligations. Irrational and anti-social behaviors do not, in aggregate, increase and, in fact, probably decrease.
3. Traditional social structures, such as families, maintain their viability and can be utilized to assume additional emergency responsibilities. For example, there is good evidence that almost all search and rescue activity is done by kin and neighborhood groups. In addition, there is evidence that "warning" messages are mediated through traditional social structures, rather than through impersonal media. There is evidence that kin and neighborhood groups provide "mass shelter" for the vast majority of affected populations and thus mass shelter is useful for only a small segment of the population.
4. Rational social structures, such as community organizations, maintain their viability and can be utilized to assume additional emergency responsibilities. For example, almost all emergency medical care is carried out in traditional health care institutions. Health care offered by "first-aid" stations or by hastily constructed emergency facilities tend to be ignored and rejected.
5. The way that people define the situation and determine appropriate behaviors require heightening, rather than restricting, communicating. The command and control model places great faith on "correct" information, officially decreed. What are officially defined as rumors to be controlled are in effect part of the definitional process. Messages and channels of communications need to be increased rather than restricted.
6. Rather than seeing self-initiated helping action as disruptive because such actions were not "planned for", it is more appropriate to see planned action as supplemental to such self-initiation.
7. Rather than attempting to centralize authority, it is more appropriate to structure a coordination model. The fact that emergencies have implications for many different segments of social life, each with their own pre-existing patterns of authority, and each with the necessity for simultaneous action and autonomous decision making, indicates it is impossible to create a centralized authority system. In addition, it is probably not necessary. The centralization of authority is usually predicated on the image of disintegration of social life. The evidence of viability of behavior and the adaptability of traditional structures suggest that authority is more of a problem in the minds of planners than a problem of life under emergency conditions. Planning should focus on the development of communication and coordination rather than on the creation of authority.

Specific Planning Implications from the Alternative Model

The basic assumption in the emergent human resources model is that the local social system provides the logical and viable base for emergency action, rather than assuming the necessity for the local social system to be held together by strengthened centralized control. Given that basic assumption, there are certain derivative implications for the direction of emergency planning. These would include the following:

1. Utilize existing habit patterns as the basis for emergency action. Knowledge of the patterns of social life and their routines is essential in facilitating planning. For example, in making plans for evacuation, it is best to utilize usual patterns, e.g., school bus routes, or usual transportation patterns, e.g., easily designated and usually traveled routes.
2. Utilize existing social units, rather than create new ad hoc ones. If families are the major point of resource allocation within the community, utilize that system. This is a particular problem in Western disaster assistance to Third World countries. Western notions of equity are often embodied in individualistic terms and in bureaucratic forms. That form may be appropriate in the Western world and thus consistent with the principle outlined above but, in other societies, different social forms may be the appropriate locus for emergency action.
3. If outside resources are needed, they should be consistent with local socio-cultural practices. This is perhaps a variant of the previous idea and could be illustrated by the importation of new building materials to replace damaged structures which require a technological base not present within the community.
4. Utilize the existing authority structure, rather than create new ones. The speed with which decisions are made can be more easily increased by the use of a traditional structure than by creating a new structure. The establishment of authority, which involves not only power but the acceptance of that power, takes time, and it is not reversed easily or quickly. It is better for outsiders to supplement local leadership than to assume locals are incompetent and incapable, or that outsiders are wise and competent.
5. Utilize existing channels of communication, and increase them, rather than restrict and narrow them to "official messages". Information about potential risk, potential threat and potential preventative action are not disorganizing, but the lack of information, in the quest for certainty, may be. Any effective emergency plan is based on the autonomous and independent decision of many to take appropriate action. These actions are more effective when communication is enhanced, rather than restricted.
6. The aim of any emergency planning is to move back to "normal" as quickly as possible. This means the reestablishment of commerce; the reopening of schools; the reinstatement of usual community patterns. Inconvenience is more easily adapted to than absence. And the therapeutic process, both for individuals and communities, is enhanced by the reestablishment of habitual actions.

7. The recovery stage should not be seen as the opportunity for massive (and directed) social change. Nor should possible mitigation opportunities during the recovery be implemented so as to alter drastically the traditional social structure of the community. This does not imply that there are no opportunities for mitigation during the recovery period but it does suggest that they be approached with humility rather than enthusiasm. Mitigation efforts can be effective if adapted to local community practices.

Summary

Emergency planning is a characteristic activity in modern societies to deal with infrequent but disruptive events, such as earthquakes. Such planning focuses on certain phases along a time continuum--mitigation, preparedness, response and recovery. It is suggested that since emergency usually implies disruption of social systems that research in the social sciences would provide one major knowledge base for emergency planning.

The predominant model currently used in emergency planning was identified and characterized as the "command and control" model. That model is based on certain assumptions about the response of individuals and social systems to emergency which imply such responses are maladaptive. Social science research on behavior in crises suggest that evidence for those maladaptive responses is lacking.

An alternative model, the emergent human resources model, is presented as a more realistic basis for planning. That model is based on the idea of the importance of the continuity of behavior, both individually and organizationally, from pre-emergency into the emergency period. A number of specific implications for planning were indicated based on that model.

FOOTNOTES

1. The analysis of some of those plans can be found in Dynes and Quarantelli, [1979], and Dynes et al., [1979]. For a more general view of disaster planning, see Dynes, Quarantelli and Kreps, [1972].
2. Some of this research background can be found in Dynes, [1975], Quarantelli, [1978], Dynes and Quarantelli, [1977], Baker and Chapman, [1962], and Barton, [1969].

I am fully aware that much of the work has been based on American society and that certain features of this analysis might be modified by particular cultural differences. See, for example, McLuckie, [1977]. On the other hand, most of the argument here rests on a general principle of the continuity of behavior and on certain common structural effects in emergencies. See Dynes, [1975].

REFERENCES

- Baker, George W. and Dwight W. Chapman. Man and Society in Disaster. New York: Basic Books, 1962.
- Barton, Allen. Communities in Disaster: A Sociological Analysis of Collective Stress Situations. New York: Doubleday, 1969.
- Disasters: Theory and Research, Enrico L. Quarantelli, ed. Beverly Hills, California: Sage Publications, 1978.
- Dynes, Russell R. "The Comparative Study of Disaster: A Social Organizational Approach," Mass Emergencies, Vol. 1, No. 1 (October 1975), pp. 21-31.
- Dynes, Russell R. Organized Behavior in Disaster. Columbus, Ohio: Disaster Research Center, Ohio State University, 1975.
- Dynes, Russell R., et.al. Report of the Emergency Preparedness and Response Task Force, prepared for the President's Commission on the Accident at Three Mile Island. Washington, D.C.: U.S. Government Printing Office, 1979.
- Dynes, Russell R. and Enrico L. Quarantelli. Organizational Communications and Decision Making in Crises. Columbus, Ohio: Disaster Research Center, Ohio State University, 1977.
- Dynes, Russell R. and Enrico L. Quarantelli. The Role of Local Civil Defense in Disaster Planning. Columbus, Ohio: Disaster Research Center, Ohio State University, 1977.
- Dynes, Russell R., Enrico L. Quarantelli, and Gary Kreps. A Perspective of Disaster Planning. Columbus, Ohio: Disaster Research Center, Ohio State University, 1972.
- McLuckie, Benjamin F. Italy, Japan and the United States: Effects of Centralization on Disaster Response 1964-69. Columbus, Ohio: Disaster Research Center, Ohio State University, 1977.