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Coordination in a Governmental Disaster Mega-organization

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Disasters, natural or technological, involve an interorganizational response that can take a structural form called the disaster mega–organization (DMO). The discussion will show how this concept is related to others in the field, and how the DMO coordination can be problematic, as illusrated by a PCB fire in Quebec, Canada. This case study also demonstrates that coordination is negotiated by those who must respond to a disaster. Finally, the mega–organization in a used–tire dump fire, also in Quebec, two years later, shows that there can be organizational learning and organizational changes in the DMO.

Coordination in times of disasters seems to be a major problem around the world, and this applies to different types of disasters, whether natural, technological or human (massacres, for example). This paper focuses on how different organizations, public or private, can be coordinated in what will be called a disaster mega–organization (DMO). In order to understand the DMO concept, both the scientific literature and two case– studies will be examined to show the dynamics of this form of structuring interorganizational response to a disaster.

The data for this paper come from an extensive research on the management of a PCB fire that occurred in August 1988 and resulted in an 18–day evacuation (research support provided by the Civil Protection Bureau, Government of Quebec, 1988). Interviews (N=84) were conducted with first–responders, elected representatives and some media people, all of whom played a major role in the response (Denis 1990b). There was an enormous convergence of experts, of politicians as well as officials of three levels of government (municipal, provincial and federal).

Problems concerning the myth around PCBs, lack of communication, scientific uncertainty (Denis 1991a) and unclear jurisdictions all contributed to transform the disaster into a crisis, defined as a situation where disaster management is blocked. In the final analysis, it seems that the organizational uncertainty, represented by the lack of coordination or refusal of a coordinator was the worst problem of all. If there had been a clear coordination

mechanism, some of the other questions would have been solved more easily. What the St.Basile PCB fire taught us was that coordination cannot be imposed.

Subsequently, the theoretical grid developed for the PCB fire was tested on other cases of disaster management in Canada (research support provided by the Social Sciences and Humanities Research Council of Canada, grant no. 1859–91–1333). From this second source of data, a number of case studies were completed. Those concerning Quebec disasters were based on information obtained from the files of the Quebec Civil Security Department and on interviews with first–responders and media people. Those concerning other disasters in Canada were based on available data. The second example, the fire in a used–tire dump in 1990, is part of this research, but in addition the author used in this case the method of participant observation.

The Disaster Mega–Organization

The disaster mega–organization (DMO) is a kind of network (Evan 1966; Thompson 1967; Dynes 1974; Gillepsie and Mileti 1979; Streeter et al. 1985; Gillepsie and Colignon 1993) oriented toward managing the response to a disaster. A disaster is defined as an event that occurs suddenly, with very serious consequences in terms of loss (human, material, financial, etc.) for a given collectivity. The network concept introduces the idea of an exchange of resources, whether material objects or symbols (Dynes 1974; Cook 1977; Therrien 1993).

In August 1988, a PCB fire occured in St.Basile, Quebec, Canada. The owner, a small–business entrepreneur, left the task of managing the response to the government. According to Quebec law, the municipality was in charge, with, if necessary, help from the provincial and federal governments. This is why a network of government agencies was formed to manage the disaster. It included:

- Elected representatives from three municipalities, and from the provincial and federal levels of government;
- First–responders from the three municipalities;
- Responders at the provincial level from:

  Agriculture

  Communications

  Environment

  Finance

Civil Protection
Health and Welfare
Police
Health organizations

- Responders at the federal level from:

  Agriculture
  Communications
  Defense
  Labour and Immigration
  Environment
  Civil Protection
  Housing Corporation
  Transport

- Other private and public organizations.

In this paper, the DMO will be restricted to public agencies, mostly at the municipal and provincial levels, where the situation was problematic. These organizations formed a network, in the sense that they had to bring in special services. But they were not forced to exchange resources among themselves. In fact, some agencies acted in an isolated way (Knoke and Kuklinsky 1982), along the lines of traditional bureaucratic secrecy, isolation, etc. Some of them did so quite knowingly, later openly admitting that they wanted to stay as far as possible from what they perceived was a messy situation –and was– in terms of disaster management.

Disaster response organizations are in a relationship of symbiotic interdependence, in the sense that they "complement each other in the rendering of services" to clients (Pennings 1981, p.435). There is at the same time, for some organizations, a relation of vertical interdependence, corresponding to different stages of service production: e.g. power companies are dependent on public works, etc. One factor that characterizes the interdependence between organizations in a disaster is its visibility. Thus, the public or the media will compare the different organizational patterns of response, and the interdependencies will become clearly visible. This is what happened in St.Basile.

Basically, a mega–organization is at times similar in some respects to an "action–set", that is, "a group of organizations that have formed a temporary alliance for a limited purpose" (Aldrich and Whetten 1981, p.387). Obviously, the purpose is the response to the disaster, and the group

of organizations forms a collection of professional responders. The only restriction is that sometimes this group of organizations does not make alliances, as in the case of the PCB fire, where organizations acted side by side without necessarily cooperating. The network was thus very loosely coupled (Weick 1976).

The DMO is not necessarily an "organization–set" either (Evan 1966), although it could be, because there is not always a focal organization (Dynes 1974; Drabek 1987b). In St.Basile, for example, Environment Quebec tried to be this focal point, but without success, due to the resistance of other agencies. And even though the provincial police (Sûreté du Québec) were put in charge of the coordination of information, they were not accepted in this role either, as will be seen later.

There is nevertheless an underlying structure in the mega–organization, contrary to the explanation of the "garbage–can theory" (Cohen et al. 1972). As in the case of networks, this structure is identified by the researcher. It is a real, though sometimes non–formal structure, as can be seen intuitively in a disaster, be it only by its malfunction. As a structure, the DMO must have boundaries. Operationnaly, these boundaries will be limited to the organizations responding directly to the disaster, and to the emergency phase. This means that individuals will be excluded, for example private experts or volunteers, if they are not organizationally affiliated. The exclusion of other disaster phases is influenced by the fact that there can be different coordination mechanisms for the different phases (Power and Wettenhal 1969; Drabek 1987a).

The mega–organization deals with the issues (Denis 1991a) brought about by a disaster. As an unexpected event, a disaster needs a response that, though planned, is always adjusted to the specificities of a situation and includes a large element of uncertainty. In order to cope with uncertainty, organic structures (Burns and Stalker 1961) had been defined as the most appropriate forms of coordination (Britton 1991). Matrix structures were used for this purpose too, both within and between organizations, for example when the engineering projects were so complex that flexibility was required. A parallel can be drawn: coordination in disaster management, as in matrix structures, must respond to the following needs (Davis and Lawrence 1977):

- integrating different types of expertise;
- processing a great deal of varied and complex information, simultaneously, in a tight–coupling relationship (Weick 1976; Comfort and Cahill 1985; Ink 1990);

- sharing resources, particularly human resources, when no slack resources (*Galbraith 1977*) or redundancy (*Streeter 1991*) are available.

The first two conditions are an integral part of disaster management. The third is also very often present in disasters, for example when many disasters strike at the same time, as was the case in the 1989 forest fires in Canada and the western United States. As in matrix structures, the PCB fire DMO required: the integration of different types of expertise, the processing of varied and complex information –simultaneously– and, finally, a degree of sharing of resources, for example government financial resources, in order for the various agencies to be able to rent communications equipment.

Matrix structures are part of a larger category of structures called "adhocracy" (Toffler 1971), with two complementary characteristics: the response to a specific problem and a life span corresponding to this response. The St.Basile DMO, like adhocracies and matrix structures, was temporary. It started when the disaster struck, and ended after the emergency phase of response, although conceptually a larger DMO can be extended to any other phase of the disaster. In fact, the DMO is an adhocracy that is both temporary and very large, which would appear to Mintzberg (1979) to be a contradiction in terms.

This temporary nature of the mega–organization brings about parallels with "emergent" structures (Dynes 1974) or networks (Drabek et al. 1981). The Disaster Research Center typology is difficult to apply as such to the DMO, because one must distinguish between the global level of the DMO and the level of the participating organizations. In this last case, because the concept is operationally restricted to existing organizations, there cannot be emergent organizations as such in the DMO. At the global level, because of emergency planning, a DMO cannot be completely emergent either. What can happen is that the slow mobilization of the DMO, as shown by the 1985 Mexico earthquake (Dynes et al. 1990) or the PCB fire (Denis 1990b), could lead to the emergence of organizations (Stallings 1978).

The PCB fire gives an example of this difficulty: though the DMO was "established" at the municipal level, in the sense that it was defined in emergency planning (Scanlon 1986), at the provincial level it could be said to be nearly "emergent". There, many tasks in the DMO were non–regular, even for the police, and most of the organizations, whatever their formal role, improvised. There was an official DMO structure, but it was new and had never before been tested in a real–life situation. Because any effort to categorize the DMO is almost impossible, the discussion will focus on coordination as such in disaster management.

Coordination in disaster management

Coordination as an organizational design mechanism

Coordination in the mega–organization is not a new issue. In 1969, Wettenhall and Power raised it (p.263), followed by Britton, who called it the "Holy Grail" of disaster management (1991, p.58). Coordination is defined here in the broad sense of the integration of tasks reinforced by accepted behavioral norms (Turner 1976).

When a disaster strikes, the involvement of different organizations comes into play. Each organization acts as a specialist in its area of responsibility, because it is being called on in a disaster to provide certain expertise. For any organization that responds to it, a disaster causes upheavals that will disrupt, to a greater or lesser extent, its routine modes of functioning (Perrow 1984; Dynes 1987). Hence, an organization can no longer consider a disaster as an incident that it can manage alone. It must act with others, and do so in a coordinated way.

It is impossible to talk about coordination and expertise without referring to the work of Max Weber (1958). But contrary to the ideal–type of the weberian bureaucracy, disaster organizational responders no longer work in well–defined domains. For example, toxicologists have to deal not only with other health specialists, but also with firefighters, with the police and civil protection, etc. (Denis 1991b). Different rationales (Liu et al. 1990) underlying the various fields of expertise are partly responsible for the lack of credibility of experts, for example in warning (Tierney 1980), because any given situation can be explained in different ways by different experts (Clarke 1989; Lagadec 1991).

Coordination must take into account these rationales. There are different ways of doing this. Coordination can be spontaneous or imposed, it can be personal or impersonal. Table 1 shows the coordination mechanisms most frequently used and their presence (+) or absence (–) in the case of the St.Basile fire. Needless to say, this is a subjective, qualitative and global evaluation.

Table 1. The Major DMO Coordination Mechanisms in the Case of the St.Basile PCB Fire

Coordination Mechanisms	PCB Fire	
Hierarchy	-	+
Impersonal rule	-	+
Culture		
organizational culture	+	
professionalization	+	
disaster culture	-	
Technology	-	
Planning	+	
*Liaison roles***		
mutual adjustments (feedback)	+	
coordinators	-	+
task force committees	+	
permanent teams	+	
matrix design	-	
Cooptation	+	

*-+: Not present but developed subsequently.
**Adapted from J. R. Galbraith (1977) p. 112.

The fire was characterized first by a vacuum of coordination. The phenomenon of convergence brought numerous experts, government officials and politicians from the three levels of government to the site. Nobody was in charge, everyone waiting for somebody to act as coordinator. Informally, the minister of Environment Quebec acted as the representative of the victims, but he was unable to coordinate other government departments, even at his own provincial level. This authority ambiguity (Drabek et al. 1981) explains why the hierarchy was applied as a coordination mechanism, and this authority rested with the Premier's Cabinet.

Each of the three municipalities concerned by the fire implemented their emergency plans, but it soon appeared that the convergence phenomenon was overwhelming. A committee was formed under the leadership of the Premier's Chef de Cabinet. It was an ad hoc committee because it was not provided for in the emergency plans. This was to become the real decision–

making body, called the "government committee". We have a parallel here with the response to the Exxon–Valdez spill, almost a year later, when numerous responders came to the site and nobody expected that Exxon would act as the global coordinator (Harrald et al. 1992). In this case, as in St.Basile, it took a few days for an accepted way of functioning to emerge. When established, the Quebec government committee acted as a permanent team of the Galbraith typology, in the sense that, even though it was oriented toward a specific problem (coordination) its involvement soon extended to the entire disaster management effort. Its decisions were not only accepted, they were welcomed without apparent resistance (Sanders 1988).

Intermunicipal coordination, in accordance with the emergency plans, was achieved by means of another committee representing the three municipalities and including representatives from the provincial government. The leadership was assumed by the fire–stricken municipality, St.Basile. At this level, information was transmitted, but no important decisions were made. Like the government committee, it was also a kind of permanent team (in terms of the duration of the disaster).

Finally, federal coordination, also covered in the emergency plans, consisted of a third committee made up of federal officials under the direction of their lead department, Environment Canada, which acted as support for the provincial level. This type of coordination caused no problem to federal authorities. It is quite similar to the English model adopted, for example, by the City of London for flood response (Pine 1993).

Would it have been possible to have had the regional level in charge? The answer is not simple. First, the convergence phenomenon added complexity to the management task from the very beginning. Second, the adoption of a top–down coordination model can be explained by the importance of the event, defined in terms of potential danger to public health, potential danger to the political safety of the elected representatives, and by the role of the media (Rosenthal et al. 1989). A third explanation lies in part in the problem of accountability (Sharkansky 1981): Who is going to pay in the end?

The municipalities cannot afford the major expenditures involved in calling in specialists. Even the armed forces in Canada send a bill when they act in times of disaster. This means that the municipal level would have to ask the provincial government for help, which would in turn appeal to the federal government, particularly when the financial burden is heavy. Thus, organizations like municipalities are more controlled than others in terms of limitations to their role (Britton 1984), because of their limited spending power. The federal mode of coordination is an answer to this problem: the

agency acting as the lead department is the one to approve expenditures. This question, in St.Basile, went unanswered at the provincial level, which explains the administrative chaos and the important role of the government committee.

Over–all coordination among the three levels was provided not only through the decisions of the government committee, but also through participation in various committees. The participation in committees is illustrated by the way the mayors of the three municipalities, and a representative of the federal government, sat on the government committee. There were also numerous informal mutual adjustments and informational feedback.

Another question, related to coordination, is the use of volunteers, because whether or not an organization uses volunteers will often depend on policies related to coordination and control (Denis 1987). Volunteers can be an asset or a burden in disaster management, depending in part on their own capacity to organize (Shrivastava 1987; Dynes et al. 1990). In the case of the PCB fire, the Red Cross and ham–radios had a formal structure, while volunteers providing food or transport (municipal level) did not. A sub–type of volunteers could be the victims (Stallings and Quarantelli 1985). In the PCB fire, the victims formed emergent organizations, the citizens committees, one for each municipality, but acting in a coordinated way. The PCB fire being a technological disaster, perhaps were the victims more active in organizing themselves (Kroll–Smith and Couch 1989)?

Experts were at the heart of the crisis, because of the scientific uncertainty concerning the effect of PCBs on health. There was no coordination between the three major areas of expertise: environment, agriculture and health. When it was felt necessary to form an international committee to define acceptable norms in order to analyze the effects of the fire on health, the government appointed a number of experts. Soon, the citizen's committees asked to have experts of their own on this international committee. The request was granted, which can be seen as a particular form of cooptation (Selznick 1949). This cooptation was, in fact, probably the only way to rebuild confidence in the scientific analyses and, subsequently, in the governmental decision to end the evacuation that was based on these analyses.

Technology in the form of technological integrating systems (Denis 1990a) was not considered to be a useful coordination mechanism. This does not mean, however, that technology does not have a support role to play in disaster management. Instead, it suggests that this role does not coordinate behaviors, like a CAD–CAM system could, for example. Imper-

sonal rules were not established –or not known– and the role of the government committee consisted precisely in defining these rules, as for example financial rules.

As far as the role of the organizational culture as a coordination mechanism is concerned (Bardo 1978; Denis 1990a), clearly defined norms of behavior have long been recognized as informally coordinating disaster management (Turner 1976; Gephart 1984; Dynes 1987). But there was no common disaster culture (Turner 1991; Denis 1993) among disaster organizations. Professional norms (Comfort and Cahill 1985) acted as a coordination mechanism within the various organizations (or for the various experts). Finally, this means that informal mutual adjustments, liaison roles and task force groups, in the form of committees developing into permanent teams, were the principal coordination mechanisms.

All this shows that the St.Basile fire presented many of the factors associated with poor coordination, as defined by Fritz and Williams (1957) and summarized in Mileti et al. (1975) and in Drabek (1986):

- convergence;
- great sense of the importance of acting urgently;
- ambiguity about which agency had authority;
- absence of an agreed–upon division of labor;
- rumors;
- lack of central coordination mechanisms.

Is it because the role of the responding organizations was unclear that there was so much confusion? The answer tends to be that it is not. In fact, the specific role of most of the organizations was very clear, though it was not always known to others or accepted by them, as will be seen in the next section. It was also sometimes forgotten, under situational contingencies. For example, the global coordination structure that was formally put in place not long before the fire was forgotten, in part because the role of Civil Protection was not clear. This organization hesitated between a support role and a more direct role. During this time, a vacuum of coordination was left open, and nobody could, or would, fill it.

Coordination as a strategy

Coordination is not a neutral mechanism. Someone has to decide on the appropriate coordination mechanisms, and in this sense coordination is a strategy. For example, in the field of disaster management traditionally influenced by the military (Dynes 1990), a preference for centralization and

the pyramidal model could well appear in the DMO. This model is also frequently preferred by bureaucracies, where it serves as a form of protection (Crozier 1963). But one must remember that a disaster, as defined here, is more a civil event and is far from the routine of bureaucracy (Brouillette and Quarantelli 1971).

When different civil organizations become involved in a DMO, this type of centralized coordination is one of a number of options. In fact, the dilemma is that because of the situational uncertainties, there is a need for a loosely–coupled type of coordination (Weick 1976) on the one hand, but for a centralized type of coordination on the other hand. Could the appropriate answer, like virtue, be found between both alternatives? An interesting example of this last possibility is given by the pattern of coordination for aircraft carriers at sea (Rochlin 1989), where formal authority is complemented by informal mechanisms. The only problem with applying this model to disaster management is that the personnel on these carriers, unlike disaster managers, can practice these modes of coordination every day. And practice, precisely because loose–coupling, is crucial.

If coordination is a strategy, there can be resistance to it when its legitimacy is called into question (Dynes 1974; Comfort 1989). First, an organization can accept or refuse to participate in the DMO (Drabek and Hoetmer 1991, pp. 59–61). Second, official coordination, even when it is clearly stated, can be resisted. The military model of coordination tends to take for granted that a chosen mode of coordination will be applied without any resistance, thus extending their organizational culture to civil disaster managers.

Centralization can be refused and an organization can prefer to isolate itself. This can be so because it wants to keep its organizational autonomy, either because it does not see any uncertainty in a situation that would demand centralization, or because it evaluates its own capacity to respond to this uncertainty as very high (Lawrence and Lorsch 1969; Pfeffer and Salancik 1978). The acceptance of a mode of coordination can also depend on the other organizations expected behavior (Pondy and Mitroff 1979), on the expected place in the DMO, or on what is at stake for an organization.

An example of the last point is, in St.Basile, the Quebec government's appointment of the police forces for on–site coordination, including the coordination of logistics and information. Such a choice was based on the fact that the Premier's Office considered this role as an "extension" of regular police duties, according to the DRC typology, and also because the police were the only formal organization with the training and the resources to accomplish this task. The only thing that this decision failed to consider

was the civil caution regarding police coordination of information, since information is power. On the other hand, logistical coordination was achieved by this police force without any problem, because the autonomy of government agencies was not not called into question to the same extent.

Another point that must not be forgotten when disaster management coordination is seen as a strategy is that the intraorganizational choices of coordination mechanisms are related to the interorganizational coordination choices in the mega–organization. For example, an organization can either centralize (Khandwalla 1972), or opt for internal loose couplings (Weick 1976), when facing a disaster. But it is often forgotten that these choices may contradict the DMO's own choice. In St.Basile, for example, a decentralized agency was forced by the mega–organization to centralize its decisions and its communications with the public. This was difficult for its members to accept because such a move was inconsistent with their organizational culture. On the other hand, another centralized organization was much more at ease with the centralized mega–organization pattern of information–giving that emerged after a few days of chaos.

Organizations can also innovate, opening themselves up to new elements (Weller 1974; Stallings and Quarantelli 1985; Turner 1993). This openness can be influenced by the other organizations in the mega–organization (Haas and Drabek 1973). But this did not seem to happen in the case of the PCB fire, every organization acting alone and submitting itself only to the Premier's Office, as in the pure bureaucratic model. One must remember, here, that the participation to various committees was mandatory, the only exception being the participation to the citizen's committee.

The dynamics of the mega–organization

The functioning of the mega–organization can be modified over time, either during an event or over the course of a number of different events. Here, organizational learning (Hedberg 1981) plays a significant role, particularly when it gives rise to changes in organizations (Weller 1974). This brings us to the relationship between coordination and culture. Every structure has an underlying cultural dimension, often hidden, but which can appear more clearly in certain circumstances, for example when a matrix design is implemented (Denis 1990a). In fact, the organizational learning pertaining to coordination also deals, to a large extent, with culture.

After a disaster, when an organization learns that behaviors and values play an important part in the success or failure of disaster management, the culture can become the target of change (Bardo 1978). Past values concerning rivalry, secrecy or control are then seen as more or less adapted to the

uncertainty and complexity of the situation. This is what happened after the PCB fire. Many organizations realized that their behavior, their culture and their structure had to be adapted to the new reality of disaster management cooperation. There were also personnel changes in two important provincial agencies, namely Environment and Civil Protection (which was reorganized to become Civil Security).

There were many forces bringing in these changes. First, the chaos of St.Basile was so evident that a need for change was quite clear to the organizations themselves (Warheil 1968). Second, this need was reinforced by the public, who in turn put pressure on the political representatives. This means that the changes had the support of both the public and the politicians (Anderson 1969). Third, there seemed to be a growing need for "shared, interorganizational interest and action to meet the problem of disaster preparedness" (Weller 1974, p.8).

So when the St.Amable fire in a used–tire dump occured, two years later, the disaster management pattern was quite different. The St.Amable fire showed very definite coordination, even though there was some convergence and the first response was somewhat slow. Civil Security acted in support of the municipality and as the coordinator for the provincial departments. It also acted as the official liaison for the federal government responders (they, in turn, were coordinated, as in St.Basile, by their lead department, Environment Canada). The Quebec Civil Security department was also in communication, by telephone, with the government committee, in Quebec City, but this time the disaster was managed at the site.

Few political representatives came to the scene, but they maintained their role of being attentive to the needs of the victims without becoming involved in the details of disaster management (in fact, this low visibility was interpreted by the victims as a lack of concern). The information was formally coordinated by Communications Quebec, in order to avoid discrepancies between communications from different provincial departments. In addition, there was spontaneous informal collaboration and coordination among the scientific responders (Agriculture, Environment, Health) concerning, for example, sampling activities.

Certain situational differences nevertheless exist between the two fires that can at least shed more light on the organizational disaster at St.Basile. First, the myth concerning PCBs was not present. Second, there was no scientific uncertainty. This means that, contrary to the case of St.Basile, there was no evacuation except a voluntary evacuation (in which people were given all the information available and left free to decide whether to evacuate in the evening, in order to avoid evacuating in the middle of the

night would the wind change of direction). Finally, the disaster managers of Environnement Quebec had not only the experience of St.Basile, but also of a previous fire in a used–tire dump in Hagersville, Ontario, a few months before.

In addition to these situational contingencies, there was a clear and definite will, coming directly from the Government of Quebec, to avoid a repetition of the St.Basile fiasco in any other disaster in Quebec. This explains the change of personnel in certain government agencies after the PCB fire and the much clearer division of labor between organizations at the provincial level, with a very well–defined role for Civil Security, which acted as coordinator. This was not only a structural change, but a cultural one as well, as an emergency culture had been developed through training sessions and debriefings on the St.Basile disaster. All this added up to "...(1) high domain consensus, (2) multiagency association, (3) frequent simulation exercises, (4) absence of interpersonal cleavages, (5) team approach to decision making" (Drabek 1986, p.185). Even if there were no "frequent simulation exercises", there was nevertheless a strong tendency to develop the DMO into a team, in cooperation with the municipal and federal levels.

Conclusion

On a hypothetical plane, a disaster would represent the ultimate degree of environmental uncertainty and turbulence for a responding organization. In this situation, intraorganizational choices must coincide with the more global choices in the mega–organization, and vice–versa. For example, a very centralized government agency will probably have a problem with working on committees, in the mega–organization, for its delegates would have to continuously go back to headquarters to get a decision approved. On the other hand, the mega–organization is also dependent, at least to a certain extent, on the different organizational preferences that can influence the resistance to certain types of coordination.

Culture seems to be the most important coordination mechanism in disaster management. Shared values, accepted behaviors, norms, all these elements of a disaster culture act to complement the structural coordination mechanisms. This means that planning will be an important element not only for disaster management, but also and maybe more importantly, for preparing the disaster culture by the development of professional norms shared by the mega–organization. In addition, openness to new phenomena occuring in any situation is a basic ingredient of preparation for disaster management.

It is true that whatever the particular organizational choices, each of the organizations in the DMO will lose at least part of its autonomy, but this is the price to be paid for effective disaster coordination. This mutual interdependance is neither easy to acknowledge, nor desired by organizations, to the extent that the old decision–making structure, closed to outside influence, provides them with a protected environment. On the contrary, disaster management increases the permeability of an organization to others.

All this brings us back to the problem of consensus, which is a central issue for organizations. This also brings in the problem of legitimacy, the legitimacy of the coordinator and, more globally, the degree of support in the community for emergency preparedness. In this perspective, organizational coordination and disaster management must be seen as part of a larger system whose culture will permeate, to a certain extent, the choices being made for one mechanism or another. In this sense, the dynamics in the mega–organization will always, at least to some degree, vary from one disaster to another. It is the role of the organizational sciences to arrive, by comparing different disasters, at a clearer view of the problems pertaining to the choice of coordination mechanisms in the mega–organization.

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