

resources. When an organization enters a turbulent environment (such as a disaster) normal exchange links are disturbed (Gillespie and Milet, 1979). An organizational network is therefore a cluster of organizations in an environment, clusters built around stable and repeated exchanges. To understand the complex decision-making process of organizations, the notion of networks can be perceived as an integrative function of resources. (Hellgren and Stjernberg, 1987).

Organizations in a network trying to respond to the demands of a disaster create a mega-organization. A mega-organization is a relatively new theoretical concept (Denis, 1993) created to understand how organizations unite. It does not presuppose any specific types of relationships (conflict, cooperation, etc.) or any dependence. It is used to see that an organization alone cannot respond to a disaster and that links are established between different organizations in a disaster.

Although resources are scarce and concentrated, the organizational environment is a source of uncertainty for organizations. The level of uncertainty is linked to existing dependence and power relationships between organizations (Hellgren and Stjernberg, 1987). Uncertainty is also linked to the perception of the organization that is faced with turbulence. Uncertainty is therefore subjective, according to the diagnostic and the evaluation of the capacity of the organization to respond. A distinction must be made between uncertainty and turbulence. Turbulence is movement and uncertainty is turbulence transformed into a constraint, with a perception of incapacity of action, potential or real (Denis, 1990).

Interorganizational networks are therefore a way in which organizations can obtain resources to face turbulence and uncertainty in the environment. Green, Neal and Quarantelli (1989) from the analytical model of Evan (1976) have established a typology of networks. Five types of networks are identified, according to the degree of centrality of the network (all-channels, circle, chain, Y and wheel).

The position of an organization in the network is an important indicator of the power it has on its environment. Consequently, an organization's influence depends not only on scarce resources, but also on the position it holds in the network (Milward, 1982; Cook, 1977).

Typology of issues in disaster management

All disasters imply issues to be dealt with for recovery. Issues can be categorized in three: technical, socio-political and scientific. Technical issues are relative to dealing with the source of danger, for example firefighting, rescuing victims, etc. Socio-political issues involve social aspects of dealing with needs of the victims and the community: evacuation, shelter, health care and information. The political aspect is between the elected officials and the victims. Finally, scientific issues consist of the fundamental research required to solve problems such as sampling, analysis and interpretation of results. Each of these categories present a certain degree of complexity, turbulence and often uncertainty.

The notion of interorganizational networks is a practical way for analyzing the mega-organization. For each category of problems, an organizational field is created because of an interdependence of resources or because an exchange of resources is necessary. By observing the behavior of organizations in two disasters, we will attempt to demonstrate if the mega-organization was able to respond effectively to the demands created by the disasters.

3. Methodology

This research is exploratory and is based on a qualitative method of analysis. The choice of a qualitative method was imperative because of the complexity and the large quantity of data. Many documents from the provincial emergency office (Direction générale de la sécurité civile) were used for a first analysis. Two monographs of the two disasters were prepared by using the different stages of the disaster, creating a "movie" of the event.

Eighteen semi-directive interviews were conducted with emergency managers directly involved in either disaster. Articles, media releases and internal reports of different organizations complete our sources of information.

A first level of analysis consists of the description of each disaster, using the typology of issues so that in each category can be established interorganizational networks. The second level of analysis is a comparison between the two disasters. Issues are compared to each other in order to explain the differences between the type of coordination used in each disaster.

4. Analysis and finding

The St-Amable fire

May 16th 1990, a fire is discovered in a used tire dump in the small town of Saint-Amable (around 5000 residents). The fire touches about 4 hectares. The

alone. Other organizations had vital resources and exchanges were necessary. For example, this small municipality did not possess all of the resources to conduct an evacuation, many volunteer organizations were asked to help and were directed by the provincial police force. The central role played by the Canadian National Railway (CNR) was important in the exchanges of resources. Although it did not manage the event in an autocratic way, a form of power could be detected. Organizations implicated in technical and socio-political issues were dependant of the re-railing of wagons (by CNR). CNR gave the sequence of its operations and all other activities depended on them, and thus these activities created interdependence between issues.

Comparison between the two disasters and general observations

Comparison between technical issues

Clearly, the two disasters were not managed the same way, although their origins lie both in technology. For technical issues, in the tire dump fire was managed by ministries; in the train derailment the Canadian National Railway managed technical issues with the help of provincial ministries. This situation can be explained by the fact that the rails belong to the CNR. But, the land where the tires were stored also belonged to a private company, and the provincial government intervened in the management of this disaster from the beginning. This small business did not have the same type and amount of resources as the CNR (federal government corporation).

Social acceptability of these disasters

Generally, the management of disasters in Québec are coordinated by the regional director of the provincial emergency services office after a demand from the municipality. The coordination of the St-Amable fire dump was carried out by the deputy minister and not by the regional director. The coordination of the train derailment was handled by the regional director and by the CNR. This difference makes us think that the conditions around the management of the fire were less acceptable socially.

Uncertainty and network types

Uncertainty surrounding the train derailment was less important although the danger was more important. This demonstrates how uncertainty is

subjective to organizations. But this is a partial explanation. For the train derailment, CNR was present since the beginning and cooperated with the municipality, joined the coordinated committee, contributed resources and assured coordination of technical issues. In the tire dump fire, the emergency services office arrived many hours after the beginning of the incident and did not possess the necessary resources. It sought them through other organizations and then assured their coordination. We can say that an all-channels networks can be efficient if the central organization assumes a coordinating role and that it has good coordinating experience.

In both disasters, the technical issues were characterized by all-channels networks. Uncertainty was not as important in the train derailment because the impact was known. Uncertainty in an all-channels network is linked to the perception of organizations, to the roles played by organizations, to the intensity perceived by managers and by the population. An all-channels network could intensify uncertainty if no local organization coordinates resources.

Comparison between socio-political issues

Public and media information

Information for the public was not treated in the same way, even if in both cases press conferences were held regularly with the population and the media. Information was given to the people of St-Léonard d'Aston since the beginning of the event and press conferences were given at the same time each day. At St-Amable, the confusion at the beginning of the event left the population and the disaster managers with a lack of information even if press conferences were held at regular times afterwards. This situation is a partial explanation of the lack of acceptance of the situation by the population of St-Amable. This non-acceptance can also be explained by the lack of information in the beginning. This situation was unacceptable because the government knew the risk the tire dump represented.

The media treatment was very different in both cases. The St-Amable fire received provincial coverage. Because the situation was known by the government, the media looked for the guilty party. Also, St-Amable is closer to Montreal (40 km) than St-Léonard d'Aston (200 km). St-Léonard d'Aston received local attention from the media. Another explanation can be put forward. On December 6th, the massacre of 14 young women took place at an engineering school in Montreal (Ecole Polytechnique). This event was covered intensely for several days, and the train derailment happened on December 12th. This put the train derailment as a secondary event although it