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Toward a systemic crisis management strategy: learning from the best examples in the US, Canada and France

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Abstract

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While managing industrial crises has become a pressing necessity, many managers have not yet developed a substantive effort in the area and/or still focus only on the reactive and technological sides of crisis management. Based on 350 confidential interviews conducted during the last five years in American, Canadian and French firms, we discuss in this article some of the most innovative efforts that managers who have embraced a systemic perspective have implemented in their organizations. We hope that these suggestions will assist managers in undertaking a more systemic crisis management strategy in their organizations in the future.

Introduction

Efforts in crisis management (CM) are currently underdeveloped. For example, in a survey of *Fortune 500* firms in the US, Fink (1986) found that 50% of

these firms did not have any CM plans; Reilly (1987), from a sample of 70 organizations, found that these firms were generally only slightly prepared for a crisis and that their managers complained about their lack of information in the domain; and Mitroff et al. (1988a,b), in a survey of 114 *Fortune 1000* firms, found that only 38% of them had institutionalized a crisis management unit, one of the most obvious first actions to be developed in the area. A similar situation seems to exist in Europe and Canada (Lagadec, 1990, 1991; Pauchant and Cotard, forthcoming).

Further, a number of researchers have observed that, currently, many managers still focus on the reactive and/or the technical sides of crisis management (Nystrom and Starbuck, 1984; Reilly, 1987; Shrivastava et al., 1988; Linstone, 1989; Pauchant and Mitroff, in press). While these aspects are evidently important, they constitute only a part of a total and systemic CM effort. As we will argue in this article, managers focusing only on these two issues confuse crisis management with what could be called "crash management", i.e. what to do *after* a crisis has happened, or with "security management", i.e. the use of technical or technological mechanisms. Challenging these fragmented perspectives, many researchers from different fields have emphasized that the development of human-induced crises as well as efforts in CM were systemic in nature (Maruyama, 1963; Hall, 1976; Morin, 1976; Turner, 1976; Forester, 1979; Nystrom and Starbuck, 1984; Perrow, 1984; Masuch, 1985; Bowonder and Linstone, 1987; Shrivastava, 1987; Hambrick and D'Aveni, 1988; Lagadec, 1988a; Linstone, 1989; Pauchant and Mitroff, 1990; Schwartz, 1990). While these authors often emphasize different aspects of what is meant by "systemic", they share a number of common themes. For example, they argue that the development of human-induced crises has to be seen in a historical context of systemic relationships of tight-coupling and complexity; they stress that crises not only affect an organization globally but also affect its stakeholders and its total environment; they argue that CM should not focus on technical matters only but rather should address the complex interrelationships existing between human and technical systems, both before and after a crisis; they stress that the experience of a crisis challenges a number of strategic basis assumptions and can lead managers to positively modify their behaviors; and so on.

In this article, we summarize a list of CM efforts presently implemented by managers who have taken such a systemic perspective. This list can thus assist managers in evaluating their current CM efforts, judging if they are more "fragmented" or "systemic" in nature. Of course, we are not proposing that this list is definitive, optimal or exhaustive, its use guaranteeing that managers will never experience any crisis whatsoever. Currently, the field of CM is still in its infancy and we lack a rigorous theory in "crisiology", i.e. a grounded understanding of both the origin of crises and of the actions to be implemented in CM (Morin, 1976; O'Connor, 1987; Mitroff et al., 1988a; Shrivastava et al., 1988). Thus, the list should rather be seen as the set of current actions implemented by managers who have adopted a systemic perspective and who at-

tempt with all their might to both reduce the frequency and the impact of industrial crises.

The five "families" of crisis management

In 1988, through a questionnaire sent under the auspices of the US National Manufacturing Association (NAM), we found that CM efforts can be regrouped in five specific but highly interrelated "clusters" or "families", as indicated in Table 1: (1) Strategic efforts; (2) Technical and structural efforts: (3) Efforts in evaluation and diagnosis; (4) Communicational efforts: and (5) Psychological and cultural efforts. This typology was established through the use of very sophisticated statistical analyses and has been discussed in two other publications (Mitroff et al., 1988a,b). Since conducting this research, and in an attempt to better understand the content of each family and its degree of effectiveness, we have conducted a total of 350 confidential interviews with executives, managers, professionals and employees responsible for CM in 120 large, *Fortune 1000*-type organizations. These organizations span the quasi-totality of industries in manufacturing, services and information. Also, our research cut across national boundaries as we have combined our findings from the US (200 interviews), Canada (100) and France (50). Each interview was conducted face-to-face, lasted an average of one hour, and was guided by a questionnaire agenda. While we cannot reveal the names of these organizations for reasons of confidentiality, except when they have been explicitly mentioned in the media, we will identify the specific industry for each example given. The reader will find in-depth discussions of these interviews in four recent books: Lagadec (1990, 1991); Mitroff and Pauchant (1990); and Pauchant and Mitroff (in press).

Strategic efforts

Of the 120 companies in which we conducted our interviews, only 10% could be considered as having developed a "systemic" strategy in CM, i.e. had seriously implemented at least one effort in each of the five families described in Table 1. We have labeled these organizations "crisis-prepared" as opposed to "crisis-prone", where managers have focused their efforts on a limited number of families, if they had implemented any CM efforts at all. What has become increasingly clear from these interviews is that one of the clearest factors that distinguishes the managers of crisis-prepared organizations from those managing crisis-prone organizations is their overall view of CM. Crisis-prepared managers do not consider CM a cost. Rather, they view it as a moral and strategic necessity. This drastic shift in corporate philosophy (see point 1 in Table 1) is perhaps one of the most difficult tasks to be accomplished in developing

Table 1

Toward a systemic crisis management strategy

Strategic efforts

1. Drastic changes in corporate philosophy
2. Integration of Crisis Management (CM) into corporate excellence
3. Integration of CM into the strategic planning process
4. Inclusion of outsiders on board, crisis management unit (CMU), etc.
5. Training and workshops in CM
6. Crises simulations
7. Diversification and portfolio strategies

Technical and structural efforts

8. Creation of a CMU
9. Creation of dedicated budget for CM
10. Developing and changing emergency policies and manuals
11. Computerized inventories of plants' employees, products and capabilities
12. Creation of an emergency room or facility
13. Reduction of hazardous products, services and productions
14. Improved overall design and safety of products and production
15. Technological redundancy, such as computer backup
16. Use of outside expert and services in CM

Evaluation and diagnosis efforts

17. Legal and financial audit of threats and liabilities
18. Modifications in insurance coverage
19. Environmental impact audit and respect of security norms
20. Ranking of most critical activities necessary for daily operation
21. Early warning signals detection, scanning, Issues Management
22. Dedicated research on potential hidden dangers
23. Critical follow-up of past crises

Communicational efforts

24. Media training for CM
25. Major efforts in public relations
26. Increased information to local communities
27. Increased relationships with intervening groups (police, media, etc.)
28. Increased collaboration or lobbying among stakeholders
29. Use of new communication technologies

Psychological and cultural efforts

30. Strong top management commitment to CM
31. Increased relationships with activist groups
32. Improved acceptance of whistleblowers
33. Increased knowledge of criminal behavior
34. Increased visibility of crises' human impact to employees
35. Psychological support to employees
36. Stress management and management of anxiety
37. Symbolic reminding of past crises and dangers

a systemic strategy in CM. Specifically, it means that executives in crisis-prepared organizations not only consider their firms as productive systems but as, potentially, destructive systems as well (Shrivastava et al., 1988; Pauchant and Mitroff, in press). As a consequence of this shift, these executives not only debate issues surrounding success, leadership, growth and excellence, they also debate issues surrounding potential failure, breakdowns, decay and death. Note that we are not saying that these executives have developed a morbid culture in their organizations, mulling endlessly over failures, disasters and catastrophes. But, as we will see reflected in the content of Table 1, these executives have developed a number of specific capabilities for imagining the worst, the unthinkable, the anxiogenic, the unspeakable, in an attempt to manage crises should they occur, or, still better, to prevent, when possible, their happening in the first place.

This shift in corporate philosophy has a major impact on the definition of corporate excellence (see point 2). As stressed by an executive in a chemical company: "We not only have the responsibility of bringing to our customers the best products possible at a competitive price. We also need to protect them from their dangerous sides." Crisis-prepared managers have made substantive changes in the nature of their products and of their productions in order to adhere to this new view of corporate excellence. For example, Johnson and Johnson (J&J) has abandoned the production of Tylenol as a capsule; others in the food and pharmaceutical industries have developed anti-tampering packaging; a chemical firm has divested itself of its production of aerosol products, in view of their negative global impact on the ecology; or chemical companies such as Du Pont are developing a new generation of safer chemicals.

The importance of integrating CM into the definition of "corporate excellence" or "corporate culture" cannot be stressed enough (Nystrom and Starbuck, 1984; Weick, 1987; Lagadec, 1990; Pauchant and Mitroff, in press). Through our interviews we found that when this integration was not done, faulty beliefs in corporate excellence and success could become formidable stumbling blocks for developing efforts in CM. For example, a top executive in a large food company considered that: "A formal program is not necessary for an excellent company ... Our track record is so good that crises are not considered a major risk for us .... Only bad companies need crisis management to cover up their deficiencies." To say that this executive was using the concept of excellence as an excuse for not developing actions in CM is to put the case mildly. In fact, the status of "excellence" does not render organizations immune to crises. The unfortunate examples of J&J (Tylenol), Perrier, or Procter and Gamble (Rely tampons) demonstrate this fact. Crisis-prepared managers have understood that the concept of excellence itself, when pushed to an extreme, can lead to dangerous situations, by not allowing them to prepare for the worst. As a number of authors have noted, success can breed a feeling of over-confidence and omnipotence (Schwartz, 1987, 1990; Starbuck and Milliken, 1988; Miller, 1990).

These managers have also integrated CM into their strategic planning process (see point 3). Echoing several authors in the field of strategic management and business policy, these managers consider CM activities to be strategic in nature (Starbuck et al., 1978; Mitroff and Kilmann, 1984; Smart and Vertinsky, 1984; Dutton, 1986; Reilly, 1987; Shrivastava et al., 1988). As we have discussed at length in a recent publication (Pauchant et al., 1991), CM and strategic management must involve top management; they concern the survival and the development of the entire organization; they are related to how these managers interact with their environment; and they are both emergent and ill-structured, the process of planning and learning being sometimes more important than the plans themselves (Mintzberg et al., 1976). In addition, crisis-prepared executives are using CM as a competitive edge, deriving a number of strategic advantages from their CM efforts. For example, an executive in an insurance company stated that his organization had recently won a large government contract over his competitors, in part due to its extensive contingency capabilities in the area of information technology. Another executive in the banking industry pointed out that during a large telephone outage his company demonstrated that it was "close to the customer". During that crisis, employees in this particular bank operated a mobile unit in the business areas that were affected by the outage, allowing their customers to process their transactions. As this executive put it: "The crisis gave us the opportunity to really extend our services to our smaller clients ... we started with the question 'what can hurt us?' and more recently changed it to 'what can hurt our customers?' " Other managers in different companies, such as AT&T, ARCO, Du Pont or Electricité de France, are also either directly selling their expertise and products in CM to their customers or have established themselves as their industry leader in this domain. For example, according to a recent *Forbes* article, Du Pont predicted that its new environmentally safe products and specialized services in the area such as CM training, could result in an additional $8 billion in annual revenues by 1995.

In order to modify somewhat their corporate philosophy, their definition of excellence or their strategic vision, managers should be able to first challenge some of their own basic assumptions or ideologies, as well as those imbedded in their organizational culture (Mason and Mitroff, 1981; Nystrom and Starbuck, 1984; Van de Ven and Hudson, 1985; Shrivastava, 1986; Mitroff, 1987; Weick, 1987; Pauchant and Fortier, 1990). Some managers have implemented a number of specific mechanisms to facilitate these challenges. For example, some of them have included outsiders in their rank and have implemented a number of workshops in CM (see points 4 and 5); the top management of a firm in the chemical industry has recently included two environmental activists on its board; the top management at Sandoz France has included an expert in ecology in its CM team; others in the oil industry have hired as key executives individuals with no previous backgrounds in this particular industry nor in technology in general; others still have hired outside consultants as "insultants", as coined by Peter Drucker, in the attempt to challenge some of their

basic assumptions. Also, a number of managers have started formal trainings and workshops in CM, going beyond the traditional issues of security management, while others have initiated extensive workshops in crisis simulation (point 6). These managers have understood that, above all, efforts in CM require a personal, organizational and environmental knowledge as well as a number of specific and tested capabilities. Some managers have taken these simulations quite seriously. For example, a top executive in the chemical industry has hired a former FBI agent to head these efforts; others have used professional actors for simulating the actions of the media, government officials or terrorists in crisis situations; still others are simulating the potential responses in the media to the actions implemented by executives; and currently, some managers, such as those at ESSO-SAF, do not even consider that such simulations could be done without the active participation of diverse members of their community, such as local governmental officials, media representatives, emergency personnel, etc.

The last member of the "strategic family" in CM is a strategy of diversification (point 7). This strategy is perhaps the most traditional one to be applied to CM, as it is widely used in fields such as finance or corporate strategy. However, crisis-prepared managers do not only use this portfolio strategy of diversifying their products, services or production processes. They also use this approach to determine their CM efforts as well. Specifically, and as we have already stressed, these managers make a point of implementing at least one effort from each of the five families described in Table 1, determining a "crisis management portfolio strategy" (Mitroff et al., 1988b). Considering that no firm can ever prepare for *all* crises or can even develop *all* capabilities, these managers are thus attempting to develop a systemic strategy in CM by implementing at least some efforts from each family, capturing some of perspectives and assumptions imbedded in each.

Technical and structural efforts

This family of efforts is the one that is, currently, the most developed in organizations. Most managers have started their CM efforts either by reacting to a particular crisis or by focusing on a specific and technical area. For example, an executive in an insurance company explained: "So far, we have focused on obvious stuff ... On events that are in front of our eyes. It doesn't take great insight to realize that a bomb can be placed in your computer system." As emphasized by many authors in the field (see, for example, Smart and Vertinsky, 1977, or Fink, 1986), we have found that one of the first tasks implemented in organizations has been to form a crisis management unit (CMU) (point 8). At first, the primary function of the CMU was to provide a centralized power structure between different departments, allowing a rapid implementation of decisions in the midst of a crisis (Hermann, 1963; Smart and Vertinsky, 1977).

However, CMUs are also increasingly being used outside of crises situations (Lagadec, 1991; Pauchant and Mitroff, in press). In these cases, their functions are to organize CM efforts that are more proactive in nature, i.e. to attempt to diminish the likelihood of crises in the first place, as well as to develop an organizational learning process about crises and CM. This ad hoc structure often regroups executives from different departments, such as legal counsel, governmental and environmental affairs, public relations, security, engineering, human resources and finance, as well as the CEO or COO and the VPs in R&D or marketing in some cases (Mitroff et al., 1988b). Also, in a few firms, this ad hoc structure is complemented with a more formal structure in CM. For example, diverse new departments have been recently created in a few organizations, headed by executives with the titles of "VP of crisis management" or "VP for safety, health and the environment".

Besides its structural existence and its legitimized power base, the CMU's effectiveness is also enhanced by different mechanisms such as the creation of a dedicated budget for CM (point 9); the development of emergency manuals and policies (point 10); the creation of a computerized CM inventory system (point 11); or the creation of specific emergency facilities (point 12). In addition to creating specific CM budgets for training and simulations, R&D or product and production changes, some managers have also decentralized their decisional process to take quick action in times of crises. For example, in an insurance company, information system managers were given the full authority to "declare disaster" and to switch the operation of their information systems to an external firm specializing in computer emergencies, although each use of these firms involves a set-up fee of $25.000. Some managers have also created *useful* emergency manuals and policies. These manuals do not resemble the traditional 1,000-page emergency manuals that generally sit on every shelf of staff personnel. Rather, these manuals are user friendly and are continually updated under the supervision of the CMU. We have also found managers and professionals who had created a number of CM database inventories and computerized decision aids for CM. For example, employees in a large food company are presently constituting a database for each of the company's plants, including information such as key names and contacts, private communication channels, general plant history, number of employees, types of production, potential hazards, detailed product inventory, emergency capabilities developed on the site and in the community, types of health treatments to be administered by types of emergencies, historical track record of the plant's incidents and improvements, contacts and history of relationships with local emergency services, government officials and media, etc. As another example, a group of professionals in an oil company has created a computerized tracking system for accounting all technical incidents in their facilities, evaluating their total costs, such as losses in productivity and environmental costs. As a third example, in an utility company, a group of professionals is presently developing a large computerized decision aid for crisis situations, integrating data for each

of its operation sites, such as transportation and communication infrastructure, topography and hydrography, service infrastructures, demography, environmental data, emergency plans, capabilities and contacts, etc. Lastly, CMU decisions are assisted in some organizations by the creation of dedicated emergency facilities similar to the "war-rooms" developed in the military. For example, the top management in an airline company has created a specific facility, equipped with the most advanced information system capabilities and communication technologies. As another example, the top management at Electricité de France has decided to build exact replicas of several plants' command centers, thus being able to address a crisis from two locations at the same time.

The other technical efforts in CM can be regrouped in four general categories (see points 13 to 16): the reduction of hazardous productions, products and services; the overall improvement of safety; technological redundancy; and the use of outside experts and services in CM. The reduction of hazardous productions can be viewed as an effort to diminish the potential tight-coupling and complexity of a system (Perrow, 1984). These tasks, as well as those involved in the development of design and safety, are often carried out by security management and human resource personnel, including screening of employees, restricted access areas, improved inspection and quality control, the use of security forces, restricted computer access, etc. Technological redundancies are also often implemented in organizations, as it is technical in nature. For example, after a large telecommunication outage, a number of managers, having realized their dangerous vulnerability on the availability of telephone network for their day-to-day operations, have implemented a number of redundancies, such as: the creation of private line networks; the availability of microwave communications; the use of several telephone network companies; the creation of various mobile units; or the decentralization of their facilities (Pauchant et al., 1990). Lastly, to complement their own emergency capabilities, a number of firms are also using outside experts and services in CM. As an indication of this trend, firms specialized in computer back-up and recovery, companies specializing in environmental emergencies or consulting firms and research centers specializing in some aspects of CM have recently become a growth industry.

Evaluation and diagnosis efforts

The third family of CM efforts includes a number of diagnostic tools and processes for guiding CM efforts. The first four of these diagnostic activities (points 17 to 20) are already in place in many organizations, but to various degrees. They include legal and financial audits of threats and liabilities; modifications in insurance coverage; environmental impact audit; and the ranking of activities by their degree of criticality.

Legal and financial assessments of threats and liabilities are standard proce-

dures in many organizations. Often, the managers of crisis-prone organizations focus primarily on these two areas. We have found that in these organizations, lawyers are sometimes the first persons to be contacted in the case of a crisis, even prior to healthy emergency services! The modification of insurance coverage is also a common strategy used in CM. A number of issues in this area are currently highly debated, such as the precise evaluation of the insurance cost and coverage for environmental disasters or the specific responsibilities of insurance companies in the case of crises spread over time, such as in the asbestos case (Mitroff and Kilmann, 1984; Sharplin, 1988). However, what seems to distinguish managers in crisis-prone organizations from managers in crisis-prepared organizations in this area is that the former often confuse the nature of an insurance with the nature of CM itself. For example, as stressed by an executive in a transportation company which we have evaluated as dangerously crisis-prone: "CM is like an insurance policy. You only need to buy so much." In essence, this executive made the simplistic assumptions that CM is solely a reactive strategy, to be used only *after* the occurrence of a disaster, as in the case of an insurance policy; and he assumed that CM was only a *cost*, not considering it a moral and strategic necessity as well as a competitive advantage as stressed previously.

Environmental impact audits are also conducted in many corporations since they are required by law in several industries. However, here again, crisis-prepared managers differ from crisis-prone ones in how they view these audits. Crisis-prepared managers do not consider them only because they are required by the law. Rather, and in addition, they view them as an opportunity to increase their new conception of corporate excellence (see point 2). As stated by an executive in the chemical industry: "In several areas we go way beyond industry standards in safety and those required by the law. These innovations give us a considerable competitive advantage over our competitors and *give us pride in what we are doing*" (emphasis added).

Lastly, echoing the advice of different authors, such as Fink (1986), some managers have ranked their activities in terms of the importance and criticality to their daily operations. This criticality is assessed differently, depending on the specific activities conducted in the firm, and is continuously reevaluated by the CMU. Some have assessed the maximum number of days during which they can sustain their daily activities without the use of diverse resources, such as personnel, cash flow, technologies, inventories or data; others have identified the most important customers or markets for whom they must prioritize their efforts; still others have ranked the critical importance of their various products and services.

The other efforts in this CM evaluation family are currently developed only in a minority of organizations. Early-warning signal detection (point 21) seems to be an advanced feature in CM, while the importance of this effort has been emphasized by many researchers (Smart and Vertinsky, 1977; Dutton, 1986; Fink, 1986; El Sawy and Pauchant, 1988; Starbuck and Millinken, 1988; Quar-

antelli, 1988; Pauchant and Mitroff, 1990). The managers who have developed capabilities in this area understand that most crises and disasters have a history that can be studied with the appropriate process. For example, a total of 29 crises larger than the *Exxon Valdez* disaster took place prior to *Valdez*, outside US waters; crises similar to the 1988 Chicago telecommunication outage happened previously in Brooklyn, New York City and Tokyo; and the *Challenger* disaster was preceded by a trail of memos that precisely warned of the danger (Starbuck and Millinken, 1988; Schwartz, 1989; Mitroff and Pauchant, 1990). Currently, some organizations have a professional staff scanning for examples of crises in their industry or in related areas; others have included this activity in their existing "Issues Management" program (El Sawy and Pauchant, 1988); still others have hired specialized staff to track specific issues, such as a Director of Communication Network assisting the Chief Information Officer (Adler and Ferdows, 1990). In all these cases, findings from this scanning effort are directly communicated to the CMU and are used to orient further CM activities throughout the firm.

Even more rarely, a small minority of managers has started a dedicated research program on potential hidden dangers (point 22). These managers are going much beyond classical strategic analyses of vulnerability, focusing on competitive moves, market fluctuations, regulatory changes or technological innovations (Pauchant et al., 1991). In addition, they also systematically prompt for the dangers hidden in their own products, resources and processes for themselves and their environment. For example, the managers of a large pharmaceutical company have created an "assassin team" which attempts to tamper the company's products and production processes, and a "counter-assassin team" which attempts to protect them. Others, in the insurance industry, are budgeting "dependency costs" of their technologies. These dependency costs are different from traditional evaluations of the purchasing costs, operation, maintenance, training, repair or even emergencies of technological systems, included in traditional cost–benefit analyses. Rather, this cost includes, in addition, the total amount of business losses potentially incurred by the organization and its stakeholders if these technologies were to fail. Recently, this insurance company's top management refused to purchase a multi-million dollar information system on that basis, considering that a too great dependency on that particular system was a competitive *dis*advantage. It should be stressed that to challenge the "invisibility of technologies", i.e. to systematically expose and manage their dangerous hidden sides, is one of most difficult tasks in CM (Mumford, 1966; Lagadec, 1990). Often, these dangerous sides are only revealed through a crisis itself. For example, after a large telecommunication outage we have studied (Pauchant et al., 1990), most of the executives and managers we interviewed reported gleaning a basic insight, however trivial it first appears: they had rediscovered the importance of the telephone! In fact, given the basic assumption that managers held about the availability of the telephone and the current dependency of most corporations on it for both data and voice

communications, it is anything but trivial. One manager summarized it best when he said rather humorously: "We all know where the dial tone comes from ... it comes from God!" It is important to note that firms that had *not* previously challenged the dangerous hidden sides of this technology had focused their CM efforts on a limited and traditional set of security features that did not protect them from that particular outage: they had backed-up their records, protected access to their computers and computer facilities, and they had enhanced their own network. However, and this is the crucial point, they did not consider the total context in which their telecommunication system operates: the telephonic network. As three respondents put it: "We had redundancy before the outage ... but our thinking at that time was that the problem would be in our system, not in the carrier network itself"; "The plans we made before [the crisis] were directed with regard to our system, not the telephone network"; "We took the telephone for granted; we backed-up our own system and our network but not the telephone system itself."

Lastly, the critical follow-up and learning from past crises (point 23) is an effort rarely developed in organizations, while the importance of learning from the experience of crises has been emphasized by many authors in different fields (May, 1950; Lippit and Schmidt, 1967; Meier, 1984; Nystrom and Starbuck, 1984; Slaikeu, 1984; Van de Ven and Hudson, 1985; Reilly, 1987). Often, this learning opportunity is only provided when an investigation is mandated by court order, such as in the case of the *Challenger* disaster. The present refusal by many executives and managers to reflect upon past disasters is understandable. The emotional burden induced by major crises can be extremely painful. In the field of disaster research, it has been found that nearly one-third of the people involved exhibit symptoms of anxiety for a period of three to five years or longer after the occurrence of a crisis, including stress, headaches, nervousness, withdrawal, anger, depression, guilt, physical illness, sexual impotence or increased consumption of drugs or alcohol (Raphael, 1986; Lystad, 1988). Also, factors such as legal battles, political maneuvering and pressures, blames, denial, media manipulations or "defensive mechanisms" after a crisis, can potentially make this follow-up difficult (Kets de Vries, 1977; Caldwell and O'Reilly, 1982; Lagadec, 1982; Gephart et al., 1989; Mitroff and Pauchant, 1990). At present, about half of the managers we have interviewed fully understand that crises are not only negative but that they also provide tremendous opportunities for learning and for changing their strategic behaviors. However, only a minority of managers have so far had the courage to systematically study the effectiveness of their capabilities and actions during their previous crises and have used this knowledge for enhancing their future efforts in the domain. We will come back to this difficult problem when discussing the psychological family of CM efforts.

Communication efforts

This fourth family of CM efforts concerns how executives manage the communications in their organization and what kind of information is processed between them and their stakeholders. It seems that the two first strategies, media training and public relations (points 24 and 25), are presently most popular, as an increasing number of researchers and consulting firms offer a variety of expertise in these areas (Lagadec, 1987; Browning, 1988). Currently, the media strategies used by J&J during the Tylenol crises, i.e. high visibility, congruence, honesty and caring, are seen in North America and Canada as one of the most successful strategies to be followed in crisis situations (Mindszenthy et al., 1988; Lagadec, 1991). However, while crisis-prone managers have the tendency to believe that the sole use of "a good message can resolve a bad crisis", as implied by numerous authors (see, for example, Garden, 1979), crisis-prepared managers view these efforts as only complementary to the other actions described in Table 1. Similarly, crisis-prone managers are often over-concerned with their public image or confuse the content of their message with the reality of crises (Starbuck et al., 1978; Pauchant and Mitroff, 1988; Mitroff et al., 1989). For example, an executive in a chemical company stated that a crisis was solely for its top management "to be in the headlines"; in another example, a public relations director in a gas company defined his job as "making the product invisible", which, while understandable from a public relations perspective, had also the negative effect of increasing the overall ignorance of potential dangers by the general public as well as by the executives managing that company.

Divulging information to local communities (point 26), such as information on the nature of dangerous products or productions, potential hazards, emergency plans, etc., is another effort implemented by some organizations and is required by law in several industries. For example, in the US, the "Community Right to Know" act was further developed for the chemical industry after it was established that members of the Bhopal community believed that this Union Carbide plant was producing some "plant medicine", and thus were neither prepared nor even aware of its potential dangers (Bowonder and Linstone, 1987; Shrivastava, 1987; Bowman and Kunreuther, 1988; Pauchant and Mitroff, 1990). This effort is often coupled in many crisis-prepared organizations with increased relationships with diverse intervening groups (point 27), such as police, health specialists, laboratories, community representatives and officials, emergency services, governmental agencies, media representatives, etc. In these cases, these groups are informed of potential hazards and emergency plans are developed conjointly, *prior* to the experience of a crisis.

Overall, it seems that managers in crisis-prepared organizations collaborate much more often with other stakeholders than managers of crisis-prone organizations (point 28), i.e. firms in the same industry, governmental agencies, suppliers, customers, community members, etc. These managers have under-

stood that secretive attitudes or isolationist tendencies are detrimental to an effective CM strategy (Collins, 1987; Mindszenthy et al., 1988). Also, these managers have become keenly aware of their relative lack of power in managing major crises simply through their own internal knowledge and resources (Trist, 1980; Lagadec, 1990).

Lastly, crisis-prepared managers use different communication technologies for crisis situations (point 29). In the US, for example, some firms have created a network of 800 emergency lines. They are able through these lines to instantaneously track the physical location of the calls received and establish an ongoing "geographical map" of the crisis. Also, while crisis-prone managers have the tendency to focus their efforts on internal communications, i.e. communications between members of the organization itself, and on technical data, i.e. accounting, inventory, or financial and marketing data, crisis-prepared organizations focus on the dual set of *internal and external* communications, as well as on *technical and human* communications, realizing that crisis situations require a "warm" medium (Weick, 1988; Pauchant et al., 1990). For example, as four executives stated after their experience of a communicational outage: "Our plans prior to the crisis focused exclusively on data, not voice communication"; "We had no plans on the voice side; it was a matter of policy to have contingency plans on the data side"; the contingency plans we made before [the crisis] were mostly focused internally"; "How could our customers call us when the telephone was down?"

Psychological and cultural efforts

This fifth and last family of CM efforts is currently the least developed in organizations. This is the most subjective family in CM and often the most difficult to implement as it often deals with less tangible or concrete factors, or with highly emotionally charged issues such as fear, uncertainty, stress and anxiety.

Strong commitment to CM by top management (see point 30), if not by the CEO himself, is obligatory for developing a systemic strategy in this area (Hermann, 1963; Starbuck et al., 1978; Smart and Vertinsky, 1977; Mitroff and Kilmann, 1984; Fink, 1986; Shrivastava et al., 1988; Roberts, 1989). Unfortunately, only a minority of top executives have currently championed these issues in their organizations. In our research, we have found that the single most important factor for convincing senior executives of the strategic necessity of CM was not the recommendations by professional associations, nor the extensive coverage by the media of a major crisis in the industry, nor even the strong insistence of board members; it was the direct experience of repeated crises by top managers themselves (Pauchant and Mitroff, in press). Virtually all the managers and executives in crisis-prone organizations we interviewed, who deplored their current lack of CM efforts, emphasized that a fundamental change in the mind-set of their top management would be necessary before

extensive efforts in CM would be developed and that this change would, unfortunately, require the experience of major crises. As they stated: "In this organization, we will need alot of 'black eyes' before we start anything in the area" (leisure company); "Our top management believes they are 'bigger than life'. They believe nothing bad can happen to them" (health industry); "Our top management does not believe that bad things can happen to us ... Contingency education is not done in industrial and technical companies. It is viewed as a cost, not a profit. However, they do it in the medical profession" (consumer good company); "The mind-set for senior management is cost reduction and productivity. They believe 'if others are not doing anything about it, why should we?' " (information system company); "We cannot keep up with technological innovations. We do not have the people, nor the training, or the time to keep up. Senior management does not understand these issues. We do live on the edge in some areas" (major airline company); "I'm the only executive defending these issues. We will need a major disaster before anything could change" (chemical company).

As we have emphasized at the beginning of this article, the development of systemic efforts in CM requires a fundamental shift in corporate philosophy, an understanding that a corporation can potentially become a *destructive* system in addition to being a productive system. This is to say that CM requires the ethical, moral and political courage, as well as the cognitive and emotional strength, to face and discuss a number of disturbing, uncertain, anxiety-provoking issues (Shrivastava, 1987; Lagadec, 1991; Pauchant and Mitroff, in press). Crisis-prepared managers have understood the necessity to confront their anxiety; some of them have increased the number of their relations with activist groups, despite the conflicts sometimes resulting from these relationships (point 31). For example, managers in a telecommunication company have developed a network of such groups, including minority groups, ecologists, consumer groups, social activists, etc. This firm regularly pools these groups for understanding their views on crucial issues and reports these findings to its CMU. As seen in point 21, others have also integrated some representatives of activist groups in their formal structure. Again, it seems that one of the most important factors that seem to typify managers of crisis-prepared organizations is that they attempt to avoid an "us–them" mentality (Pauchant and Mitroff, 1988). Rather, they try with all their might to understand different perspectives and integrate, when possible, some of them in their corporate strategies, establishing a shared purpose (Trist, 1980). An additional way to detect early-warning signals is provided by some crisis-prepared managers by systematically rewarding whistleblowers (see point 32) who warn of potential threats and dangers that were previously invisible or not acknowledged (Fink, 1986; Boisjoly, 1988). While talking to these managers, it became evident that they had developed an internal culture where the discussion of bad news was not only tolerated but also encouraged. This activity was even sometimes formally recorded in the employees' evaluation files for future promotions. Fur-

ther, a small minority of executives have currently increased their knowledge and understanding of criminal and pathological behaviors (point 33). For example, the top management of a chemical company has sponsored seminars for its managers on subjects such as the social and psychological roots of sabotage, the diagnosis of psychopathology in organizations, or the dynamics of terrorism, hiring experts in psychiatry, psychopathology and criminal behaviors. Unfortunately, these subjects are not currently integrated into the basic curriculum of business or engineering schools and most managers lack basic training in tracking and handling these complex and perplexing behaviors (Mitroff and Kilmann, 1984; Pauchant and Mitroff, in press). Some crisis-prepared managers have also systematically amplified the visibility for their employees of the human impact of crises (point 34). For example, in an aerospace firm, the plant's employees were briefed by a pilot who experienced a technical breakdown which triggered a near-miss accident while testing a new airplane. During two hours, this pilot explained in detail to these employees and managers what he had experienced and felt when the problem occurred. By this process, these managers attempted to render quality control less abstract, i.e. solely stressing the necessity of total quality for competitive advantage. In addition, through this special briefing, these employees become more aware of the direct human implication of technical failures as well of their personal responsibilities for the life of an individual they all knew and respected.

The next two strategies, psychological support of employees and the management of anxiety (points 35 and 36), involve the management of highly emotionally charged issues. The first focuses more on managing the psychological effect of a crisis after it has occurred. As we have mentioned for the critical follow-up of past crises (see point 23), the experience of a disaster has serious psychological consequences for a large number of individuals. To manage these post-crisis traumas, a number of firms have hired external or internal psychotherapists while maintaining a strict confidentiality on who is using these services. For example, NASA opened a crisis hot-line for its employees after the *Challenger* disaster. Also, some managers are increasingly using the services of "post-crisis intervention teams", including psychotherapists, social workers and physicians, which have been created in various communities for managing the medical and socio-psychological effects of large disasters such as earthquakes, floods or fires.

Stress and anxiety management is more concerned with the management of threatening issues *prior* to a crisis (point 36). This strategy is thus more proactive than the previous one. It consists of preparing managers and employees to function relatively well even during a crisis, as well as helping them to surface threatening issues in their organizations on a day-to-day basis. Some managers have presently focused their efforts in this domain on their CMU's members. Literally, all the research conducted on decision making under severe stress indicates various strong cognitive and affective biases which hinder the effectiveness of decisions. These biases include an overall tendency to overact dur-

ing a crisis, as well as the tendency to wish complete control and certainty; a bias for scapegoating and blaming; a shortening of time perspective; a chronic tendency to reduce the number of issues under consideration; an overevaluation of positive news and an underestimation of potential problems; the development of a group feeling of invulnerability; pervasive attempts to hold on to past frames of reference; a tendency to enact reality; or a dangerous tendency to wish to be perceived as the hero or the savior of the situation, or else wishing to be saved by an idealized person or organization (Hertzler, 1940; Bettelheim, 1963; Kets de Vries, 1977; Smart and Vertinsky, 1977; Holsti, 1978; Billings et al., 1980; Staw et al., 1981; Anderson, 1983; Dutton, 1986; Raphael, 1986; Lystad, 1988; Miller, 1988; Weick, 1988; Janis, 1989). Considering these powerful biases, some crisis-prepared managers are formally working on these issues during their CM workshops and crisis simulations (see points 5 and 6).

Others are also attempting to manage the anxiety surrounding CM in general, not only focusing their efforts on their CMU. Through our research, we have found that this effort was perhaps the single most difficult aspect of CM. As we have emphasized throughout this article, developing a systematic plan in CM requires the challenging of a number of basic assumptions, ideologies or frames of reference, including the overall corporate philosophy, the concept of corporate excellence, and the ability to view an organization as both a productive and destructive system. However, considering the emphasis placed today in corporations on notions such as growth, production and progress, to challenge these basic assumptions often triggers a number of powerful defense mechanisms in an attempt to diminish one's experience of deep anxiety (May, 1950; Jaques, 1957; Menzies, 1960; Becker, 1973; Pauchant, 1987). In our research, we have found that crisis-prone managers use a total of 31 defense mechanisms or "dangerous games" for rationalizing their lack of efforts in CM (Mitroff and Pauchant, 1990; Pauchant and Mitroff, in press). We have already mentioned some of them in this article, such as using the concept of corporate excellence as an excuse for a lack of action in CM; other defense mechanisms include the overall denial of the potential of crises typified by the affirmation "this will not happen to us". A variant of this mechanism is the limited acknowledgement of potential crises. For example, an executive in a food company seriously affirmed that the worst crisis that could happen to his customers was "not to find our product in their stores", not envisioning the possibility of a fatal food poisoning. Other managers use the mechanism of projection, attributing to a particular person or a group of persons the causes of their problems. This mechanism seems currently particularly directed toward the media or the government, some crisis-prone managers considering them as "evil", the "bringer of bad news" or their "lifelong enemies", thus stressing again an us–them mentality (Pauchant and Mitroff, 1988). As a last example, other managers are using the mechanism of idealization, attributing to others magical capabilities for rescuing their organization in the case of a crisis (Kets de Vries, 1977; Miller,

1988). For example, an executive in the oil industry declared seriously that "our CEO can handle *any* crisis".

It should be emphasized that defense mechanisms, such as denial, projection or idealization, are normal and healthy responses developed by human beings when confronted by a major threat. In essence, they allow individuals to act even when confronted with a terrifying threat. These mechanisms are at the root of innovation and heroism. However, and this is the crucial point, these defense mechanisms also have the tendency, when too extreme or too frequent, to increase the vulnerability of individuals and organizations alike by not allowing them to evaluate or anticipate a potential danger (May, 1950; Jaques, 1957; Menzies, 1960; Becker, 1973; Starbuck et al., 1978; Lagadec, 1991; Pauchant and Mitroff, in press). Crisis-prepared managers have understood this fundamental difference. In a nutshell, their executives and managers allow themselves to be somewhat anxious, acknowledging the proposition made by existential philosophers and psychologists that one of the most fundamental lesson for human beings is to accept to be "rightly anxious", without succumbing to dread (Kierkegaard, 1844; May, 1950; Tillich, 1952; Becker, 1973). While we are not suggesting that organizations need to develop seminars for in-depths studies of the works by Ernest Becker, Albert Camus, Rollo May, Søren Kierkegaard or Jean-Paul Sartre, the theme of existential anxiety is central in relation to crises (Mitroff and Pauchant, 1990; Pauchant and Mitroff, in press). For example, several managers and executives in crisis-prone organizations who deplored their lack of CM efforts commented on this lack of acknowledgment of anxiety in their organizations: "In this company, we're supposed to be 'macho' enough to take it. It's impossible to get approval on a seminar if it has the word 'stress' in it" (airline company); "This company does not understand how stress is related to bodies and actions. There has never been a formal workshop on stress management in this company" (consumer good company); "We're supposed to be 'winners'. Anybody who would suggest any fear or anxiety is seen as a 'loser' (telecommunication company); "The worst sin you can commit over here is to question our taboo about excellence" (chemical company).

The last member of the psychological and cultural family in CM also concerns this existential dimension. It consists in symbolically remembering past crises experienced by an organization (see point 37). Some crisis-prepared managers have understood that to formally acknowledge these events is healthier than denying them and that, even in the absence of these formal acknowledgements, managers and employees alike painfully somehow remember crises anyway, as seen previously. As examples of these efforts, managers in a large food organization wear black arm bands to symbolize their mourning on the anniversary of their most important crises; other managers have institutionalized mourning ceremonies as well as developing symbols of these events, celebrating both their failures and successes.

Conclusion

To repeat what has been stated previously we did not find any firm which has developed all the CM strategies described in Table 1. Rather, crisis-prepared managers, i.e. managers who have developed a systemic approach in CM, have made sure to implement seriously at least one strategy in each of the five families we have described, depending on their particular situation. The composite list we have proposed in this article should therefore be seen as a non-exhaustive list of potential actions to be implemented if one takes a systemic view of crisis and crisis management. Currently, most CM plans are dangerously fragmented, focusing primarily on one or two CM families. This fragmentation is apparent in both corporate actions and the scientific literature in CM. For example, we have found that the technical family in CM was 200 times more developed in corporations than the psychological and cultural one (Mitroff et al., 1988a), and that only 16% of the scientific articles published in the field of CM even mentioned this psychological domain (Pauchant, 1989). However, as we have stressed in this article, crisis-prepared managers have understood that CM requires a focus on both technical and human actions, as well as on their interrelationship, and have recognized that one of the most difficult issues to be overcome is the experience of deep anxiety, i.e. the existential dimension of CM. On this subject, it is sad to realize that existential issues in organizations have been virtually ignored by management scholars. However, this particular perspective would be especially helpful for understanding better the realities and the actions of executives and managers in relation to crises (Sievers, 1986; Schwartz, 1990; Pauchant, 1991; Pauchant and Mitroff, in press).

Without any doubt, much more research is needed in the field of CM. As we have argued previously, we are still far away from a rigorous theory of "crisiology". However, the field has advanced enough in terms of concepts and models to dismiss the faulty rationalization that managers should not implement any actions in the area for lack of conceptual and "scientific" guidance (Pauchant and Mitroff, in press). Indeed, crisis-prepared managers have already started to implement a number of very innovative and effective actions in the area, based on their systemic and ethical view of crises.

While the content of some of the strategies described in this article can be seen as somewhat strange or unusual in a business setting, we believe that these strategies will become standard procedures in the near future. Fundamentally, CM is *not* to get back as soon as possible to "business as usual", i.e. to come back as rapidly as possible to the situation experienced prior to a crisis (Mitroff, 1987). At the core, CM is the realization that the managers of an organization have a moral and social responsibility toward themselves, their organization, their stakeholders, society in general, and the fragile ecology of the planet. The managers of crisis-prepared organizations have already integrated some of these responsibilities in their corporate philosophy and strategies, and have developed from these efforts a number of competitive advantages over

their competitors. We thus strongly believe that the strategies currently developed in these organizations will be some of the most strident criteria that will characterize an "excellent" company in the 21st century.

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