Anticipation is in the Eye of the Beholder: Top-Level Managers See Things Differently When It Comes to Crises Preparedness

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This study offers insights on how executives, managers, and employees perceive the likelihood of various major crises or disasters. Findings indicate that natural disasters were perceived most likely to occur while terrorist attacks were perceived as the least likely to occur. Further pairwise comparisons reveal significant differences between the various levels of management for major terrorist attacks, natural disasters, and accidental disasters. Suggestions for future research, management implications, and limitations of the study are also offered.

Crisis management and disaster prevention/preparedness have long been topics of interest in strategy, planning, decision making, and public administration literatures. As pointed out by Mitroff, Diamond and Alpaslan (2006), the crisis management field solidified its modern importance following the Johnson & Johnson Tylenol incident in 1982. Many organizational crises followed. However, more recent devastations such as the Oklahoma City bombing, shootings at Columbine High School, 9/11, Hurricane Katrina, and Virginia Tech shootings have catapulted crisis management into the forefront of many scholarly disciplines. These horrific events have become part of today's reality and as a result, there is an urgent need to understand relationships between crisis management theory and the practice of crisis management beyond a case-by-case basis.

This research assesses the leadership perceptions of being prepared for various types of crises and disasters. More specifically, it establishes the argument that the perceptions of a crisis to occur vary between the leadership levels in organizations. However, before turning the focus on the pre-event crisis constructs, we provide the following review of crisis planning research to establish a context for our findings.

Crisis and Disaster Planning

Heightened Need for Planning

One week after 9/11, at the *Disaster Recovery Journal's* Fall World Conference in Orlando, a significant number of the companies in attendance already had crisis management plans in place. However 97% of these firms also reported a need to have their crisis management plans changed (*Disaster Recovery Journal*, 2001). Even two years after 9/11, corporate security chiefs said nearly half of their companies were still not prepared in basic areas (*Wall Street Journal*, 2003). Intrigued by this lack of preparedness, *The Wall Street Journal* (2003) published an entire section entitled "How Vulnerable Are You?" addressing the issue of workplace security. During this same timeframe, the *Academy of Management Executive* published an interview with Lee Korins, former CEO of the Security Traders Association, in which he recounted his personal experience in escaping from the North Tower of the World Trade Center immediately following the terrorist attack (Clinebell & Rowley, 2003). Many constituents are also asking how events at Virginia Tech could have been handled more appropriately. Universities are now trying to improve their abilities to respond to unexpected crises. As these events suggest, crisis management and disaster preparedness are crucial topics in today's society and opportunities for empirical organizational research are numerous.

Changing Nature of Crisis Events

In the past, crisis events were often defined as low probability, high consequence events that could threaten organizational legitimacy, profitability, and viability (Shrivastava, 1987). They were also characterized by ambiguity of cause, effect, and means of resolution (Pearson & Clair, 1998). Many of the recent tragic events already mentioned have affected our thinking with respect to some of these contentions. The numerous crises that can be readily cited seem to suggest the probability for occurrence is increasing (Lalonde, 2007). Certainly these events have escalated the necessity for better crisis and emergency planning in all types of organizations and the related bodies of literature are being reexamined.

The crisis, disaster, and emergency planning literatures can be categorized generally as theoretical, empirical, and practitioner-oriented articles. Researchers in these areas have debated the theoretical differences among existing disaster-related paradigms, such as the disaster-resistant community, disaster-resilient community, and sustainable development/sustainable hazards mitigation concepts (McEntire et al., 2002). In order to advance crisis management knowledge, other researchers have attempted to integrate crisis concepts and develop better process models (McEntire et al., 2002; Mitroff, Shrivastava & Udwadia, 1987; Pearson & Clair, 1998).

Perception and Organizational Learning

For most crises, the planning process to help minimize the impact of an event is an important strategic concern that must be addressed by senior executives. Therefore, some of the recent work in this area has studied the role of perception in crisis planning by surveying top managers of Fortune 500 firms (Penrose, 2000). This research examined the perception by managers of a crisis being a threat or an opportunity—and the resulting relationship—to a number number of crisis planning variables. As Penrose (2000) and Marra (1998) state, much of the traditional crisis management literature stresses the fundamental importance of implementing an enterprise-wide crisis plan. When organizations practice proactive crisis management, the damage of a crisis can be lessened. Furthermore, when a crisis occurs in organizations that are prepared, learning takes place and those organizations are more prepared for the next crisis. This is due, in part, to accelerated change in organizational processes (Burnett, 1998). In addition, Spillan and Crandall (2002) investigated whether organizations were more prepared if they had crisis management teams in place or if they were more prepared because they had already experienced a crisis. The findings from their study revealed previous experience was more important than crisis management teams (Spillan & Crandall, 2002). When organizations merely respond to a crisis, without a proactive posture, more damage seems to prevail (Nudell & Antokol, 1988). Smits and Ally (2003) also contend that when behavioral readiness is absent, crisis management effectiveness becomes a matter of chance.

Massey (2001) investigated the effects of crisis-response strategies on perceptions of organizational legitimacy. His findings suggest that to maintain legitimacy, organizations must engage in successful crisis management. Prior to 9/11, many organizational decision makers seemed to be either ignorant about the need for their involvement in crisis management and disaster preparedness, and/or reluctant and unwilling to allocate resources appropriately to develop effective crises management and disaster preparedness plans for their employees, in spite of the volumes of practitioner, pedagogical, and theoretical articles on how to plan for a crisis.

Spillan and Crandall (2002) surveyed executive officers of nonprofit organizations and found that the presence of a crisis management team in an organization does not necessarily mean that concern for all types of crisis events exists. Nonprofit managers who have actually experienced a crisis are more concerned about that particular crisis than the managers who have not experienced that crisis. The authors point out that their research sample was comprised primarily of small nonprofit organizations and speculate that smaller nonprofits may be less sophisticated in their crisis management preparations than larger nonprofits.

Decision Making and Leadership

Other researchers have examined the paradoxical nature of crisis (Nathan, 2000), attempted to guide comprehensive government decision making in crisis management (Rosenthal & Kouzmin, 1997), examined public leadership in times of crisis (Boin & Hart, 2003), offered plans for coping with crises in our schools (Perea & Morrison, 1997; Lichtenstein, Kline & Schonfeld, 1994), and described frameworks for ethical decision-making in times of crisis (Christensen & Kohls, 2003). Drabek and McEntire

(2003) provide a thorough literature review and analysis of emergent phenomena and sociological aspects of disaster, pointing out numerous opportunities for further empirical research.

Crisis Management Processes

One of the most comprehensive theoretical treatments of crisis management has been offered by Pearson and Clair (1998). Their crisis management process model provides a comprehensive descriptive model of pre-event environment, perceptual and organizational characteristics, and post-event reactions, responses, and outcomes. As with any crisis event, empirical assessment can be limited. Often researchers do not know what pre-event preparedness was in place, but they can assess visible damage that may have occurred. If no visible damage occurred, researchers may not know about the crisis at all, therefore making any pre-event or post-event assessment impossible. Pearson and Clair (1998) have stressed there is little empirical knowledge available on crisis and disaster planning processes and many of the variables discussed in the literature have yet to be operationalized.

Drawing on Pearson and Clair's model, Hale, Hale and Dulek (2006) empirically studied the complex decision processes employed by executives during their crisis response. While their research was focused on post-event analysis, one finding was particularly relevant to our research. These authors found the presence of a crisis management plan (a pre-event construct) to improve post-event decision making, even if the written plan was dissimilar to the crisis actually faced by the organization.

Pre-Event Constructs

The research presented here focuses on pre-event constructs identified in Pearson and Clair's (1998) work. The three primary pre-event constructs in Clair and Pearson's model include environmental context, such as institutionalized practices, executive perceptions of risk, and adoption of organizational crisis management preparations. As explained by Pearson and Clair (1998), some may perceive a certain event as a potential crisis, while others may see the same event as nonthreatening, thus stressing the critical role of perception. What a person can anticipate, adjust to, and act upon depends on his or her cognitive structure and decision making processes. If top-level managers do not acknowledge the potential consequences of a disaster, they will not do well with preparing the organization's reaction to the crisis. Additionally, a person's comfort level for different events comes from the level of intensity of the event itself as well as the perceived likelihood the event will occur. For example, the more extreme (but less likely to occur) the event (e.g., terrorist attack), the less urgent a top-level manager might respond. Conversely, the less extreme (but more likely to occur) an event, the more prepared an organization will become. Based on Pearson and Clair's (1998) theoretical framework that a manager's perception of a crisis event occurring is critical to an organization's preparedness, our study compares the perceptions of crisis preparedness of different levels of leadership in varying degrees of disaster.

Research Hypotheses

The intent in this research was to assess the perceptions of different levels of leadership being prepared for varying types of disaster. However, unlike other research such as Penrose (2000), Spillan and Crandall (2002) and Hale et al. (2006) (who chose to question exclusively top management and executives), we wanted to survey a broader range of management compared with organizational employees. Our interest was to investigate any differences that might exist between management levels and company employees. The initial prestudy surveys indicated that many organizational employees were not aware of any crisis or emergency preparedness plans in their work environment. However, when investigated further, some of these organizations did, in fact, have plans residing in the organization's security department or on the organization's website. This led us to believe there could be variations in perceptions of being prepared. The problem (as the study saw it), was that existing plans had never been fully communicated nor institutionalized throughout the levels of the organization. Therefore, this resulted in organizational members being unprepared to respond to a crisis or disaster if one did occur. Therefore, the following hypotheses are offered:

Hypothesis 1: Top-level managers will have a higher perception of crisis preparedness than mid-level managers.

Hypothesis 2: Top-level managers will have a higher perception of crisis preparedness than entry-level managers.

Hypothesis 3: Top-level managers will have a higher perception of crisis preparedness than employees.

Hypothesis 4: Mid-level managers will have a higher perception of crisis preparedness than entry-level managers.

Hypothesis 5: Mid-level managers will have a higher perception of crisis preparedness than employees.

Hypothesis 6: Entry-level managers will have a higher perception of crisis preparedness than employees.

Methods

Rank Order on Likelihood of Events Occurring

In order to understand the likelihood of a crisis to occur, we asked participants to rank order the likelihood of different crisis events to occur. The five types of crises that appeared on the questionnaire included:

- secondary terrorist attacks (anthrax in mail, attack on a computer system, etc.)

- natural disasters (flood, tornado, earthquake, forest fire, hurricane, blizzard, etc.)
- major terrorist attacks (bombs, destruction of building, biological attack, etc.)
- accidental disasters (long-term power outage, building fire, chemical spill, radioactive leak, etc.)
- workplace violence

Consensus among statisticians (Minium, 1978) suggests that an order effect was not likely to occur, provided we did not present the crises in any predetermined sequential-type order on the questionnaire. Therefore, the order effect was controlled by presenting them in the order shown above that reflected them as independent events.

Sample

The population selected for this research was the alumni database from a medium-sized, AACSB-accredited college of business at a state university in the Southwestern United States. Every graduate from the college for the past 10 years was included in the population, resulting in an initial population of 2,296 graduates. Thirteen alums were eliminated from the study because they had moved home to foreign countries and mailing addresses were not available. The questionnaire, along with a cover letter explaining the research, was mailed to 2,283 alums. Of the surveys mailed, 104 resulted in incorrect addresses and had to be discarded. The final useable sample consisted of 2,179 alums. Of these, 363 alums completed the questionnaire, resulting in a response rate of 16.5%.

Demographics

The majority of the respondents worked at for-profit organizations (80.4%), employing 100-499 employees at their work location (27.5%), employing over 500 total organizational employees (61.7%), and having over 25 work locations for their organization (43.3%). Respondents' work locations included 25 states with the majority represented by the state in which the college of business was located. The gender of the respondents was evenly split with 50.3% being female and 49.7% being male. The majority of respondents were nonmanagement employees (45.2%), followed by mid-level managers (27.5%), then entry-level management (17.4%). Nearly 10% of the respondents indicated their positions to be top-level or executive-level. This met our objective of surveying all levels of employees in different types of organizations.

Analysis and Results

To compare the perceived readiness for a crisis prior to the actual event occurring, we used analysis of variance (ANOVA) methods for the different leadership levels in varying degrees of crisis preparedness for each of the types of disasters. To calculate the likelihood of each type of disaster, we averaged the rank order (1=most likely to occur to 5=least likely to occur) from each respondent's ranking of major terrorist attacks, secondary terrorist attacks, natural disasters, accidental disasters, and

workplace violence. Therefore, a lower mean ranking score suggests a higher perception that the disaster could occur. For the leadership levels in our sample, the average ranking of each type of disaster is summarized in Table 1. Further analysis shows there was a significant mean difference in the rank order of natural disasters $F(3,359) = 3.287$, MSE 3.916, p=.21 and accidental disasters $F(3,359) = 3.24$, Mse = 3.50 p = .022, as noted in Table 2.

Table 1: *Average Ranking of Disaster Types*

Descriptives

		N	Mean	Std. Deviation
Possibility of a Secondary Terrorist Attack	Top Mgmt/Executive	36	3.67	.676
	Mid-Level Mgmt	100	3.31	1.125
	Supervisors	63	3.38	.991
	Employees	164	3.21	1.150
	Total	363	3.31	1.083
Possibility of a Natural Disaster	Top Mgmt/Executive	36	1.94	.955
	Mid-Level Mgmt	100	2.13	.928
	Supervisors	63	2.52	1.242
	Employees	164	2.38	1.148
	Total	363	2.29	1.102
Possibility of a Major Terrorist Attack	Top Mgmt/Executive	36	4.86	.424
	Mid-Level Mgmt	100	4.60	.974
	Supervisors	63	4.41	1.131
	Employees	164	4.49	1.012
	Total	363	4.55	.986
Possibility of an Accidental Disaster	Top Mgmt/Executive	36	1.75	.806
	Mid-Level Mgmt	100	2.19	1.089
	Supervisors	63	1.75	.933
	Employees	164	2.06	1.089
	Total	363	2.01	1.048
Possibility of a Workplace Violence Event	Top Mgmt/Executive	36	2.78	1.124
	Mid-Level Mgmt	100	2.77	1.294
	Supervisors	63	2.94	1.216
	Employees	164	2.87	1.288
	Total	363	2.85	1.259

Table 2: *ANOVA Analysis of Mean Differences*

		Sum of Squares	df	Mean Square	F	Sig.
Possibility of a Secondary Terrorist Attack	Between Groups	6.421	3	2.140	1.839	.140
	Within Groups	417.778	359	1.164		
	Total	424.198	362			
Possibility of a Natural Disaster	Between Groups	11.748	3	3.916	3.287	.021
	Within Groups	427.712	359	1.191		
	Total	439.460	362			
Possibility of a Major Terrorist Attack	Between Groups	5.431	3	1.810	1.875	.133
	Within Groups	346.569	359	.965		
	Total	352.000	362			
Possibility of an Accidental Disaster	Between Groups	10.489	3	3.496	3.240	.022
	Within Groups	387.467	359	1.079		
	Total	397.956	362			
Possibility of a Workplace Violence Event	Between Groups	1.372	3	.457	.287	.835
	Within Groups	571.989	359	1.593		
	Total	573.361	362			

As indicated in Table 3, further pairwise comparisons using LSD revealed that, consistent with Hypothesis 1, top-level managers had a significantly different ranking of terrorist attacks, natural disasters, and accidental disasters than other managers and employees did. Contrary to Hypothesis 1, however, top-level managers do not have a notably different perception that workplace violence will occur than do the other levels of management or employees. Thus, Hypotheses 2 and 3 are only partially supported with our sample.

In our analysis for mid-level managers, the pairwise comparisons show a significant mean difference when considering natural disasters and accidental disasters, but not in terrorist attacks or workplace violence. Therefore, Hypotheses 4 and 5 are only partially supported.

Investigating the perceptions of entry-level managers, our findings show a significant mean difference regarding accidental disasters. However, when it comes to terrorist attacks, natural disasters, and workplace violence, entry-level managers do not perceive any significant differences than the employees of the organizations used in this study. As a result, Hypothesis 6 is only partially supported.

Discussion and Implications for Future Research

The reality of our world suggests organizations can no longer ignore the possibility that major crises are a distinct possibility. Although it is impossible to predict all the different scenarios, having some plan in place is paramount. Research has demonstrated that having a crisis plan in place, even though it may not be completely spelled out, helps minimize the lasting effect of the disasters (Fink, 1986). The presence of a crisis management plan also improves crisis decision making processes, even when the plan is dissimilar to the actual crisis faced (Hale et al., 2006). The only way to begin the process of planning is by anticipating some of the many possibilities of a disaster. Thus, the awareness by leaders can only facilitate and enhance the overall

preparation and planning.

This research attempted to operationalize constructs previously identified in the crisis and disaster preparedness literature (Pearson & Clair, 1998) and empirically assess variables identified as important to crisis and disaster preparedness. Our research findings demonstrate that Pearson and Clair's (1998) theoretical propositions hold true when tested with empirical data. More specifically, our results focused on the propositions in their theoretical model that "executive perceptions about risk will foster adoption of crisis management programs" and that a "modest amount of crisis preparation likely will lead executives to believe that their organization is no longer vulnerable to a crisis" (Pearson & Clair, 1998, p. 70). Our research demonstrates that, in many cases, top-level managers and mid-level managers showed a higher level of perceived preparedness than employees. Additionally, entry-level managers demonstrated higher perceptions of accidental disasters. This makes intuitive sense because of the very close day-to-day working relationships that entry-level managers have with employees. This finding does not support, however, the contention that all employees in the organization be thoroughly familiar with the crisis or disaster plan. Instead, it supports the notion that management may believe the organization is more prepared than may actually be the case.

Managerial Implications

Practically speaking, the success stories generated on 9/11 garner their own support for the value of getting prepared. The practitioner literature is also abundant with case-specific and generalized prescriptive advice for being prepared. The 1993 bombing of the World Trade Center spurred the Board of Trade and some other firms in and around the Twin Towers to better protect their employees and data. For example, for Morgan Stanley (the World Trade Center's largest tenant with 3700 employees), sticking with the evacuation plan was critical to saving lives. Even though someone on the South Tower's public address system informed workers it was safe to return to their offices, Morgan's security officer kept employees moving down dozens of flights of stairs. All but six employees escaped. Everyone knew about the contingency plan. Oft-repeated drills saved others as well. Employees of the Japanese firm Mizuho had emergency kits with burn cream, smoke hoods, and glow sticks strapped to the backs of their chairs (*Time*, 2001). While all of these examples are unfortunate, they also offer insight into the benefits of being prepared.

Managers who remain unprepared for managing crises or disasters in their organizations increase the likelihood of being faced with potential legal and other complications. They could be held liable for failing to do so, as is similar in cases involving things like unsafe working conditions. Lockwood (2005) stresses that employees want to feel safe at work and that feeling safe at work contributes to an employee's overall job satisfaction. Bordwin (1999) examines the legal aspects of crisis, indicating managers could get sued. His research cites the potential for criminal liability, for example, when poultry packing executives were jailed for manslaughter when workers caught in a plant fire could not escape because the fire exits were bolted shut.

Table 3: *LSD Pairwise Comparisons: Mean Differences Between Mgrs & Employees*

Type of Crisis – Possibility of a Secondary Terrorist Attack				
Position (A)	Comparison Group (B)	Mean Difference (A – B)	Std. Error	Sig.
Top Mgmt/Executive	Mid-level Mgmt	.357	.210	.090
	Supervisors	.286	.225	.206
	Employees	.453*	.199	.023
Mid-Level Mgmt	Supervisors	-.071	.174	.683
	Employees	.097	.137	.481
Supervisors	Employees	.168	.160	.295
Type of Crisis – Possibility of a Natural Disaster				
Top Mgmt/Executive	Mid-level Mgmt	-.186	.212	.382
	Supervisors	-.579*	.228	.011
	Employees	-.440*	.201	.029
Mid-Level Mgmt	Supervisors	-.394*	.176	.026
	Employees	-.254	.138	.067
Supervisors	Employees	.140	.162	.389
Type of Crisis – Possibility of a Major Terrorist Attack				
Top Mgmt/Executive	Mid-level Mgmt	.261	.191	.172
	Supervisors	.448*	.205	.030
	Employees	.367*	.181	.043
Mid-Level Mgmt	Supervisors	.187	.158	.237
	Employees	.106	.125	.395
Supervisors	Employees	.081	.146	.577
Type of Crisis – Possibility of an Accidental Disaster				
Top Mgmt/Executive	Mid-level Mgmt	-.440*	.202	.030
	Supervisors	.004	.217	.985
	Employees	-.311	.191	.105
Mid-Level Mgmt	Supervisors	.444*	.167	.008
	Employees	.315*	.132	.328
Supervisors	Employees	-.315*	.154	.042
Type of Crisis – Possibility of a Workplace Violence Event				
Top Mgmt/Executive	Mid-level Mgmt	.008	.245	.975
	Supervisors	-.159	.264	.548
	Employees	-.094	.232	.685
Mid-Level Mgmt	Supervisors	-.167	.203	.413
	Employees	-.102	.160	.525
Supervisors	Employees	-.065	.187	.730

* p<.05

The tragedy that occurred on 9/11 caused some analysts to reexamine the issues of centralization and decentralization of organizational structures and processes as they relate to crisis prevention and preparedness (*Time*, 2001). Hurricane Katrina may certainly fuel those efforts as well. Trophy buildings, high profile locations, single locations, advertising of brand names on vans and buses, employee uniforms, employee criminal records, air travel, management succession, and organizational size have all come under new and heightened scrutiny. Private jet air travel is booming under the assumption that private airports may be safer. Softer, heuristic forecasting techniques have been thrust back into the limelight. Reexamining team decisions has additionally come into question.

One additional finding from this study highlights a common rank order perception of the different crisis events. In all cases, except for mid-level managers, participants in this study perceived the following rank order (from least likely to most likely) of events to occur: major terrorist attacks, secondary terrorist attacks, workplace violence, natural disasters, and accidental disasters. Mid-level managers had similar perceptions of rank order, except for the last two categories. Future research should investigate these rank orders to see if these findings hold true with larger samples from other parts of the United States and in other industries not represented by our sample.

Future Research

Based on this study, we believe our findings are only the beginning for a better understanding of crisis management. Although we have operationalized part of Pearson and Clair's (1998) model, there are other areas to further investigate. For example, future research should explore the implications of organizational structures. Do certain organizational structures lend themselves to a more effective response to crisis management? Also unanswered is whether or not some industries are better prepared than others. For example, do industries that are classified as hazardous by the Occupational Safety and Health Administration (OSHA) have a more effective crisis management track record? Are these industries required to have a more foolproof system in place because they are closely monitored by OSHA? Another area of research should take an even deeper look into crisis management by exploring "why" the different perceptions exist. Our findings only explored whether or not different levels of management had the same perceptions. Now that we know different perceptions exist, the next logical step is to understand why.

Limitations

As with all empirical research, our study has limitations that should be noted for future research in crisis planning and preparedness. One of the most visible limitations is that the majority of our responses were from the state in which the alumni graduated. Although one could argue the homogeneity of this sample serves as surrogate control for contextual elements and a more rigorous test of Pearson and Clair's (1998) constructs, it is still worth noting a homogeneous sample has its drawbacks for generalizing the findings. By having a high representation from one area of the United States, other perceptions may exist with employees and managers from

different geographic areas. Similarly, the sample in our study represents a strong bias toward the United States. Therefore, perceptions of crisis preparedness may be different in other parts of the world. Future research should include a broader geographical area. Another limitation to our study is the high number of respondents from for-profit organizations. Although for-profit organizations represent a large percent of US firms, crisis research for non-profit organizations, such as schools, may lend different results. Future research should investigate an array of industries, geographical locations, as well as organizational types and sizes, as we attempt to improve crisis and disaster planning and preparedness. The stakes are high.

Summary

This research presents results of an exploratory empirical study that assessed the perceived likelihood of different crises. By analyzing the different levels of leadership and their corresponding anticipation of a major crisis or disaster occurring, we hope this study offers insights into the subsequent planning processes of preparing for the "thinkable." It no longer suffices to refer to recent events as "unthinkable." These events happened and have occurred (in some cases more than once). In most situations, our findings indicate different levels of management have a different perception as to what kind of disaster is more likely to occur. With the insights gained from this study, future research can begin to address other crisis management questions as to why these different perceptions exist and whether these differences cause any conflicts in the execution of crises management plans. Ultimately, these insights can assist organizational decision makers who understand the realities of today's crisis-ridden environment.

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