SOCIAL BEHAVIOR AND PERSONALITY, 2010, **38**(6), 805-828

DOI 10.2224/sbp.2010.38.6.805

HOW DO GROUPS REACT TO UNEXPECTED THREATS? CRISIS MANAGEMENT IN ORGANIZATIONAL TEAMS

JIN NAM CHOI, SUN YOUNG SUNG, AND MYUNG UN KIM
Seoul National University, South Korea

Despite the increasing dependence on teams, there has been little research on crisis management in organizational teams in the corporate sector. In this study which is based on quantitative and qualitative analyses of 30 crisis cases, the prevalent types of crises were identified and effective strategies used for team crisis coping were explored. The results showed that 90% of team level crises were caused by external or environmental factors rather than internal disturbances. Reflecting the dominant cause of crisis events, the effectiveness of crisis management was strongly affected by teams' external activities. Suggestions based on the results are made for managing contemporary organizational teams operating in highly competitive, uncertain, and threatening environments.

Keywords: team crisis, organizational teams, external environment, external activities, crisis management.

The contemporary organizational environment is often described as more hostile, uncertain, changeable, and complex than it has been in the past (Cascio, 2003). The complexity and the unpredictability of current business environments are liable to induce numerous crisis events for organizations and their subunits (Choi & Kim, 1999; Lampel, Shamsie, & Shapira, 2009; Moynihan, 2009; Snow, Miles, & Coleman, 1992). In fact, in recent years, crises have become a regular or even normal event for most organizations (Ashby & Diacon, 2000; Perrow,

Jin Nam Choi, Associate Professor of Management, and Sun Young Sung, College of Business Administration, Seoul National University, South Korea; Myung Un Kim, Department of Psychology, Seoul National University, South Korea.
This work was supported by a grant from the Management Research Center of the College of Business Administration at Seoul National University.
Appreciation is due to anonymous reviewers.
Please address correspondence and reprint requests to: Jin Nam Choi, College of Business Administration, Seoul National University, Shinlim-dong, San 56-1, Gwanak-gu, Seoul, South Korea, 151-742. Phone: +822 880-2527; Email: **jnchoi@snu.kr**

1984). Thus, it is appropriate that managerial concern should focus not only on whether a crisis will happen but also on when and how it will occur (Guth, 1995; Weick, 1988). Knowing the types and causes of crises and the potential damage that can ensue may become essential for effective crisis coping in organizations and their subunits (Drach-Zahavy & Freund, 2007; Mitroff, Shrivastava, & Udwadia, 1987; Moynihan, 2009).

Although a number of studies have been carried out concerning crises at individual and organizational levels (e.g., Allen & Caillouet, 1994; Duhe & Zoch, 1995; Guth, 1995; Kaufmann, Kesner, & Hazen, 1994; Kim & Choi, 2010; Lalonde, 2007; Lampel et al., 2009; Mallozzi, 1994; Paraskevas, 2006; Taylor, Buunk, & Aspinwall, 1990; Weick, 1988), team level crisis management (e.g., Janis, 1982; Smith, 2000) has been addressed in only a few studies. Researchers have conducted laboratory experiments in order to understand a group's responses to stressful situations (e.g., groupthink; for a review see Aldag & Fuller, 1993), and some scholars have examined crisis management in natural groups based on a case study of an event (Moynihan, 2009; Weick, 1993) or a simulation (Waller, 1999). Nevertheless, there is still very little known about the types of crises that organizational teams may encounter and the strategies they use to cope with these. Given the increasing use of teams in organizations (Belbin, 1993; Choi, 2009; Katzenbach & Smith, 1993; Shulman, 1996), it is important to explore questions such as these. In this study an attempt is made to address these questions. Throughout the paper, the terms *team* and *group* are used interchangeably to refer to *a bounded system comprising a set of interdependent individuals organized to perform specific tasks that affect others* (Costarelli, 2009; Guzzo & Dickson, 1996). The term *organizational teams* refers to *teams operating within business organizations that collectively perform various functions, such as marketing or purchasing*.

THEORETICAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

Definition of Crisis

Scholars have defined the concept of crisis differently (e.g., Aguilera, 1990; Fink 1986; Kanter, 1983; Krackhardt & Stern, 1988; Turner, 1976; Weick, 1988). From these diverse definitions of crisis, Hermann's (1972) definition has been widely accepted as a conceptual ground for understanding crisis (e.g., Guth, 1995). According to Hermann, a *crisis* is *a situation that incorporates* the following three conditions: (a) *a surprise to decision makers*, (b) *a threat to high-priority goals*, and (c) *a restricted amount of time available for response*. Similarly, in their review, Pearson and Clair (1998) defined an organizational crisis by such characteristics as low probability, high impact, and perception

of threat to the viability of the organization. For instance, the Tylenol situation encountered by Johnson & Johnson (Shrivastava & Mitroff, 1987), may cause an unexpected and urgent problem that threatens the high-priority goal of the company. In this study, we adopted Hermann's definition to conceptualize crises in organizational teams.

Previous Research on Team Level Crisis Management

Driskell and Salas (1991) emphasized the importance of understanding group performance during stressful situations for three reasons: (a) the complexity and range of contemporary tasks often require group efforts; (b) group processes affect group outcomes as much as individual processes; and (c) patterns of group processes are affected by external stressors such as time pressure (p. 473). Driskell and Salas' argument is highly relevant for contemporary organizations because their reliance on teams has significantly increased in recent years (Costarelli, 2009; Drach-Zahavy & Freund, 2007; Guzzo & Shea, 1992; Shonk, 1992; Shulman, 1996; Smith, 2000). Therefore, the scope of crisis management research should be expanded to include organizational teams. In fact, crises at this level are becoming more likely because organizational teams today are exposed more directly to highly uncertain environments (Boone, van Olffen, van Witteloostuijn, & de Brabander, 2004; Kanter, 1983). Thus, expanding crisis research at the team level is not only essential but also urgently required.

Extant studies on crisis management in groups have two streams. The first line of research has been focused on group decision making under stress that is often characterized by time pressure, barriers to group goals, or threats to members' self-esteem (e.g., Costarelli, 2009; Driskell & Salas, 1991; Driskell, Salas, & Johnston, 1999). Through a series of laboratory experiments, researchers of this tradition revealed diverse group phenomena under crisis, such as heightened group cohesiveness (e.g., groupthink, see McKenna, 1994), emergence of autocratic leaders, strengthened hierarchical structure, and narrowed information processing (e.g., threat-rigidity effect, see Staw, Sandelands, & Dutton, 1981). The second stream has been focused on crisis-coping processes observed in natural groups. Studies in this category have typically involved an analysis of a single crisis event, such as the Challenger disaster (Starbuck & Milliken, 1988), the Mann Gulch disaster (Weick, 1993), airplane accidents (Gersick & Hackman, 1990), incidents with explosives (e.g., truck bomb; Moynihan, 2009), and national disasters (Hodges, 2000). These case studies also diverged from negative group responses to crisis, including excessive optimism, the collapse of sense making, and habitual routines. On the other hand, in a simulation study of airline crews, Waller (1999) found that, in management of nonroutine events, information collection and transfer are better predictors of team performance than are task prioritization and task distribution.

Despite the many studies on groups under crisis and other stressful situations, there are still gaps in aspects of the research on the crisis management of teams in organizational settings. In particular, extant literature, based largely on laboratory studies and analyses of cases of extreme crisis, does not offer answers to such critical questions as what types of crises organizational teams encounter and what they do to resolve these crises. In this study, we developed hypotheses about these issues and tested those hypotheses empirically.

Types of Crises at the Team Level

The first step toward understanding crisis management in organizational teams is to explore what kinds of crises actually occur in these teams. Mitroff et al. (1987) categorize crises using two dimensions: (a) the locus of the problem (internal crises and external crises) and (b) the nature of the problem (technological/economic crises and human/organizational crises). The first dimension distinguishes whether the source of a crisis is within the team (e.g., conflicts among members, leadership problems, high turnover) or outside the team boundary (e.g., a lack of coordination with other teams, consumer claims, government regulations). This may have profound implications for teams facing crises because the source prescribes the appropriate domain of team functioning for successful crisis resolution.

On the other hand, the distinction between human/organizational and technological/economic crises provides a content-based classification of crises. In some cases, this distinction may be ambiguous because human actors and technology today are often inseparable, and thus technology failure is closely associated with human failure. For instance, Perrow (1984) provided numerous examples of large-scale accidents (e.g., Union Carbide's chemical leak in Bhopal) that can be attributed to both technical errors and human errors and in which locally optimal human actions actually lead to disaster. Likewise, many technical problems are expressed or intensified by human errors (e.g., fire, car breakdown). Nevertheless, this dimension reveals the proportions of soft (human) and hard (technical) issues that may have implications for the training and preparation of organizational teams for crisis management. Overall, the two-dimensional approach seems to have a heuristic value for both developing a theory of crises and identifying mechanisms for dealing with them (Mitroff et al., 1987). For this study this two-dimensional typology of crises was adopted.

Using the distinction between internal and external crises, Thain and Goldthorpe (1989) studied crises in 27 organizations and reported that approximately 65% of crises are caused by environmental events or external conditions. In their study they demonstrated that external actors and the environment constitute the dominant causes of crises at the organizational level. Guth (1995, p. 132) also identified 12 crisis categories that are most frequently experienced by

organizations, 8 of which were external in nature (e.g., intensive scrutiny by regulators, public protests). Similarly, Pearson and Clair (1998) categorized 27 organizational crises and reported that approximately 75% of crises were caused by external conditions. The evidence observed at the organizational level may have different implications for understanding team level crises according to the way the interlevel pattern of this specific issue is conceptualized (cf. isomorphism versus discontinuity, see House, Rousseau, & Thomas-Hunt, 1995, pp. 87-95). With regard to the types of crises, we expect to observe a pattern in organizational teams similar to that reported in organizational level studies for several reasons. In many cases, teams may be as sensitive to their external contexts as are the organizations of which they are part (Staudenmayer, Tyre, & Perlow, 2002; Sundstrom, de Meuse, & Futrell, 1990). Teams, like organizations, have limited resources within their boundaries and thus have dependent or interdependent relationships with external actors, such as executive managers, other teams, and various external constituents outside the organization (e.g., suppliers or customers). In addition, organizational teams are often exposed to their task environments with few buffering mechanisms protecting them from adverse external forces (Doty, Glick, & Huber, 1993; Dutton & Jackson, 1987; Pfeffer & Salancik, 1978; Thompson, 1967). These conditions suggest that organizational teams constitute independent systems that operate largely by themselves. Thus, we hypothesized that, similar to organizations, organizational teams may encounter more external than internal crises.

Hypothesis 1. Organizational teams' crises arise more frequently from the external environment or from external factors than from internal conditions.

Crisis-Coping Strategies of Organizational Teams

In previous studies of group behavior under crisis two kinds of crisis coping strategies have been emphasized. The first strategy focused on the cognitive functioning of groups. Many social psychological studies have been carried out on the topic of how to improve group decision making (for a review, see Hartman & Nelson, 1996). In many of these studies the topic of decision making under crisis was addressed. Various forms of crisis were covered including threats to group performance, potential undermining of members' self-esteem (e.g., Driskell et al., 1999; Turner, Pratkanis, Probasco, & Leve, 1992), intergroup competition, and time pressure (e.g., Drach-Zahavy & Freund, 2007; Neck & Moorhead, 1995). These studies have generated diverse sound decision making practices such as brainstorming, normative group technique, and the use of "devil's advocates" (e.g., Boone et al., 2004; Miranda, 1994). However, for organizational teams that need to both make decisions and implement them, sound decision making processes appeared to have only an indirect impact on team performance via teams' implementation activities (Choi & Kim, 1999).

The second strategy for group crisis coping addresses a more behavioral-based aspect of group functioning where the distinction between internal and external activities provides a balanced perspective on the possible set of crisis-coping activities because a crisis involves both an extraordinary burden of external demands and unusual internal disorderliness. Internal activities are oriented toward the group itself and focus on intragroup interactions (e.g., planning group activities, communication among members). In contrast, external activities are directed toward the team's environment in order to manage its relationships with external actors (Ancona & Caldwell, 1992).

Scholars researching groups have focused on the following internal crisis-coping strategies: team building and close communication among members may save a team from the collapse of the roles of its social structure (Monge & Eisenberg, 1987; Weick, 1993). The role of leadership is also critical because leaders guide the internal dynamics of a group, including members' motivation and communication patterns (Sapriel, 2003; Yukl, 1994). Specifically, for a team that is prone to crises, flexible and participative leaders seem to be more effective than directive leaders (Gersick & Hackman, 1990; Ginnett, 1990). Finally, researchers have claimed that the adequate use of internal resources, such as skills, know-how, personnel, and funds, is critical for crisis coping (e.g., Amburgey & Miner, 1992; Greve, 1998; Ocasio, 1995; Reilly, 1987; Weick, 1998).

In contrast, most crisis coping strategies identified at the organizational level have focused mostly on external relations, such as environmental scanning (Chattopadhyay, Glick, & Huber, 2001; Stubbart, 1987), external communication (Kaufmann et al., 1994; Mallozzi, 1994; Pearson & Clair, 1998), public relations or media management (Duhe & Zoch, 1995; Guth, 1995; Quarantelli, 2002), and impression management (Allen & Caillouet, 1994). At the team level, researchers have reported that, compared with internal activities, external activities better predict the team performance of research and development teams (Ancona & Caldwell, 1992) and airline crews managing nonroutine situations in simulations (Waller, 1999). Nevertheless, there are currently no empirical data that compare the differential impacts of internal and external activities on the effectiveness of team crisis management in organizational settings. However, if most team level crises arise from the external environment as hypothesized earlier, teams may need to conduct external activities because internal activities may not be sufficient, or even relevant, to resolve those externally induced crises. In such cases, teams' external activities that promote the exchange of information and resources across team boundaries may become necessary. Moreover, in order to resolve crises effectively, organizational teams need to mobilize extra resources (e.g., additional staff, money, advice), which are often not available within their boundaries.

Hypothesis 2. The effectiveness of crisis management is affected more strongly by the external activities of organizational teams than by their internal activities.

Overall, the purpose in this study was twofold. First, empirical data were used to reveal the types of crises encountered by organizational teams and their crisis management strategies. To this end, we used participants' reports on both open-ended and closed questions. The second purpose was to compare the impact of internal activities and external activities on the effectiveness of team crisis management using data from organizational teams. The aim of this comparison was to reveal the contributions of different team activities to successful crisis management and, on the basis on these results, to suggest practical guidelines for effective crisis coping strategies for organizational teams.

METHOD

Participants and Procedure

A survey questionnaire was distributed to 220 employees working at five large corporations in Korea. Although 155 employees returned the questionnaire (response rate = 70%), the data from 47 employees were not included in the analyses because they did not fulfill the study criteria. The final sample of 108 participants was composed of 30 teams operating in five large corporations operating businesses in oil refining, electronic device manufacturing, building maintenance, international trading, and large-scale retailing. The 30 organizational teams in the sample performed various functions, including sales, marketing, international trading, stock management, strategic planning, human resource management, and finance.

The participants were instructed to write about a crisis they had experienced as a team and to use that crisis as a reference for answering the subsequent questions about their team activities and crisis resolution. To ensure that all members of the team described the same crisis, we asked the participants to hold a brief discussion to select a crisis they had experienced collectively within the previous year. When the crisis had been selected, each participant individually completed the questionnaire and mailed it back to the researchers.

Instrument

We designed a survey questionnaire to explore the nature of crises and the impact of various team activities on crisis resolution. The questionnaire had six sections: (a) description of the crisis case, (b) description of facilitating and hindering team activities, (c) measurement of crisis perception, (d) measurement of internal activities, (e) measurement of external activities, and (f) measurement of the effectiveness of crisis management. For items that appeared in the last

four sections, we used 6-point Likert scales ranging from *strongly disagree* to *strongly agree*.

Case description In order to induce clear memories of what happened during the crisis, participants were asked for a brief description of the specific crisis that the teams had experienced. Specifically, the participants were asked to identify an event characterized by the following features: (a) having characteristics of threat, surprise, and time pressure (Hermann, 1972); (b) having occurred during the year prior to the study; and (c) requiring team level reactions. Based on a modified version of the Critical Incident Technique (Flanagan, 1951), the case description itself consisted of separate parts in which the participants were asked to describe the causes, developing processes, team reactions, and results of the crisis.

Describing and rating crisis management activities Subsequent to the description of a crisis, the participants were asked to describe specific activities that had facilitated or hindered their crisis management. There were three blank lines for facilitating activities and another three for hindering. Each blank line was followed by a 3-point Likert scale ranging from *slight facilitation* to *high facilitation* or from *slight hindrance* to *high hindrance*.

Crisis perception To measure the intensity of crisis perception, we adopted a 3-item scale developed by Billings, Milburn, and Schaalman (1980). This scale measured the three defining characteristics of a crisis: (a) the amount of threat to team performance; (b) the degree of restriction in the time available for response; and (c) the level of surprise to the team members.

Internal activities Internal activities were examined using three subscales: (a) crisis planning, (b) participative leadership, and (c) use of internal resources. We developed three items for each of these subscales based on Reilly's (1987) crisis readiness framework and Van de Ven and Ferry's (1980) instrument for organization assessment. Three items of crisis planning (α = .71) were designed to measure how much a team anticipated and prepared for crises before the actual crisis (e.g., "Our team prepared concrete action plans for potential threats beforehand."). Using a 3-item index of participative leadership (α = .63), we assessed the extent to which a team leader facilitated members' participation in making decisions and coping with crises (e.g., "During the crisis, the leader of our team encouraged members to suggest ideas and opinions concerning the crisis."). Three items designed for the use of internal resources (α = .61) measured how the technical expertise, material resources, and personnel within the team were used effectively for crisis coping (e.g., "During the crisis, we utilized technical know-how and task-relevant knowledge effectively within our team.").

External activities We developed three scales of external activities, each representing one of the three main targets of the team's external relations: (a) interactions with senior managers, such as general managers or vice presidents (three items, α = .76); (b) interactions with other teams within the same

organization including functionally related departments (three items, α = .75); and (c) interactions with external constituents outside the organization including customers and suppliers (three items, α = .90). These three targets may cover the substantial range of the teams' task environment. Specifically, we developed three items per target (a total of nine items) based on Van de Ven and Ferry's (1980) organization assessment tool. These items measured the extent to which the team communicated effectively with external actors (e.g., "During the crisis, we communicated effectively with other teams within our organization.") and the degree to which the team transacted effectively to obtain resources, such as materials, work time and space, crucial information, and support, with those external actors (e.g., "During the crisis, we obtained endorsement and support from executive managers.").

Effectiveness of crisis management The outcome of the crisis management was measured using four items (α = .95): (a) cost effectiveness ("We could resolve the crisis efficiently at a low cost."); (b) congruence of the outcome with the performance goal; (c) team members' satisfaction with the outcome; and (d) the overall effectiveness of crisis management.

RESULTS

Before data analysis, we screened the collected questionnaires using two criteria. First, we examined whether or not the participants from each team had described the same crisis. This criterion was necessary because the questionnaire asked about team processes and activities during a specific crisis event. In addition, confirming the same crisis reference among team members was critical for the validity of aggregating the data at the team level. For this reason, we excluded participants who had described different crises from other team members. Then we excluded teams in which the team average of the crisis perception scale measuring the degrees of threat, time pressure, and surprise was lower than 3.5 (scale midpoint, i.e., average of 3 and 4) in a 6-point scale. We used this criterion to remove events that were not perceived as disruptions seriously hampering team performance.

After excluding 47 questionnaires that did not meet the study criteria, we compiled data from the responses of a total of 108 participants from 30 teams consisting of 2 to 9 members (average team size = 3.6). With acceptable interrater agreements as presented below, we aggregated the participants' responses at the team level. Although following this procedure leads to abandoning individual information and statistical power, it is a common practice for group studies because it allows inferences to become generalizable at the group level (Klein, Dansereau, & Hall, 1994).

Classification of Team Crises

In order to identify the types of crises identified by the participants, we analyzed the content areas of the collected questionnaires. We analyzed a total of 30 crisis cases using the crisis typology already mentioned (Mitroff et al., 1987). When the cause of a crisis lay within the team (e.g., conflict among members, turnover), it was categorized as an internal crisis. If a crisis occurred outside the team boundary (e.g., lack of coordination with other teams, government regulations), it was counted as an external crisis. On the other hand, the distinction between technological/economic crises and human/organizational crises was judged in terms of whether a crisis involved human-related issues (e.g., conflict, miscommunication) or technological or economic issues (e.g., market changes). Two coders independently categorized the 30 crises (intercoder agreement = 93%), and mutual agreement was achieved through discussion.

The 30 crises were assessed as falling into three categories (see Table 1): (a) human/organizational crises with internal causes (3 cases), (b) human/organizational crises with external causes (8 cases), and (c) technological/economic crises with external causes (19 cases). No technological/economic crises with internal causes were identified in the current sample. It may be inferred from this pattern that organizational teams may rarely encounter internal problems that are purely technological or economic. The results show that 90% (27 out of 30 cases) of team level crises originated from the teams' external environment. This result strongly supports the first hypothesis, demonstrating that external crises are more frequent than internal crises ($\chi^2 = 19.2$, $df = 1$, $p < .001$). Of the 27 external crises, 10 cases occurred within the boundary of the organization of which the team is a part. These crises included failures of interteam coordination and constraints caused by company-wide failures (e.g., overinvestment, budget reduction). The remaining 17 external crises involved other external actors or the general environment outside the organization (e.g., supplier or customer organizations, franchisees, media, consumer organizations).

TABLE 1
Content Analysis of Team Level Crises

Type of crisis	Number of cases	Description of crises
Internal human/organizational crisis	3	Employees' resistance to a new mainframe computer Quality problems owing to frequent turnover of staff Conflicts among team members owing to the lack of group identity
Internal technical economic/crisis	0	

Table 1 continued

Type of crisis	Number of cases	Description of crises
External human/ organizational crisis	8	Transferring wrong information about new branches Conflicts between headquarters and the branches[a] Illegal marketing by a subcontractor Media coverage of price cheating Claims raised by a dissatisfied consumer association Miscommunication among planning teams Conflicts between line and staff teams
External economic/ technical crisis	19	Fires at a franchise gas station Strengthened government regulations in the real estate business Delays in gas shipment due to a typhoon Transportation problems before a major event Oil leakages due to a subcontractor's misconduct Increases in the international price of oil Financial strains due to overinvestment[a] Business environment shifts due to an international conflict Sudden closure of a main bank Sudden cancellation of a business plan by the chief executive Changes in government regulations for retailing Government interventions on land utilization New branch opening by a competitor Government regulations on abnormal consumption patterns Pressure for cost reduction Low sales of a new product leading to a huge inventory back up Unfavorable declines in the cost of gas and electricity Movement of a store to a new location

[a] Described by two teams from the same organization.

The participants' ratings on the crisis perception scale provided another source of data for understanding the characteristics of team level crises. The average of the 3-item scale measuring crisis perception was 4.37 in a 6-point Likert scale. Specifically, while the mean rating on surprise was 3.67, the means of threat and time pressure were 4.68 and 4.76, respectively. The ratings on threat and time pressure were significantly higher than those of surprise ($t = 4.71$, $p < .001$, and $t = 5.68$, $p < .001$, respectively). It may be inferred from this pattern that the typical crises faced by organizational teams may be threatening and require urgent responses by teams, but they may not be highly surprising to team members.

Content Analysis of the Reported Team Activities

After completing the case description, the participants were asked to report various activities that facilitated or hindered their crisis management. Responding

to this open-ended question, 30 teams reported 187 activities (cf. at the individual level, 108 participants reported 381 activities). We conducted a content analysis of these activities using the framework of internal and external activities. Internal activities were categorized by the type of the activity, such as communication, decision making, and so on. For external activities, we focused on the target of the team's external activities (e.g., other teams, external experts) because the participants' description of these activities was too ambiguous to make clear distinctions between different types of external activities (e.g., information gathering, communication, negotiation). Of the 187 activities reported, 92 were internal activities and 95 were external activities (see Table 2). In order to examine the implications of these reported activities in terms of crisis management outcomes, we divided the 30 teams into 2 groups: successful and failed teams. The criterion for this grouping was the team level average rating on the scale of the effectiveness of crisis management. If the team average for this scale was 4 (i.e., the first positive choice in a 6-point scale) or higher, the team was assigned to the successful group. Following this procedure resulted in 17 successful teams (mean rating on the effectiveness scale = 4.67) and 13 failed teams (mean effectiveness rating = 2.90).

TABLE 2
CONTENT ANALYSIS OF CRISIS MANAGEMENT ACTIVITIES

Category of activities[a]	Successful teams		Failed teams	
	Facilitation	Hindrance	Facilitation	Hindrance
Internal activities	**37** (2.24)	**31** (2.05)	**8** (2.13)	**16** (2.45)
Anticipating and planning for crises	6 (2.00)	6 (2.21)		5 (2.83)
Internal communication	9 (2.30)	8 (1.92)	4 (2.50)	3 (2.50)
Use of internal resources	8 (2.29)	12 (2.06)	3 (1.83)	5 (2.17)
Decision making	7 (1.77)	1 (2.00	1 (2.00)	
Speedy response	7 (2.64)	3 (1.67)		
External activities	**37** (2.38)	**20** (2.22)	**18** (1.90)	**20** (2.27)
Senior managers	3 (2.00	1 (1.00	2 (2.20)	3 (2.33)
Other teams/departments	10 (2.67)	6 (2.10)	9 (1.89)	10 (2.14)
Supplier or customer organizations	11 (2.24)	6 (2.00)	4 (1.80)	3 (2.20)
External experts	2 (2.75)		1 (2.00)	
Government	4 (2.43)	3 (2.33)	2 (1.80)	
Consumers/market	2 (2.25)			2 (2.25)
Public	3 (2.33)	2 (2.50)		1 (2.00)
General environment	2 (2.670	2 (2.63)		1 (3.00)
Total frequency	74 (2.31)	51 (2.10)	26 (55)	36 (2.34)

Note: Numbers in boldface are the total frequencies for each cell. Numbers in parentheses are the ratings of degree of facilitation or hindrance of the corresponding activities in a 3-point Likert scale.
[a] All activities listed in this table facilitated crisis resolution. The frequencies of hindrance are counted when a lack of the corresponding activities is reported.

Table 2 presents the resulting frequencies of team activities used for crisis management by successful teams and failed teams. Among internal activities, the use of internal resources (e.g., personnel, expertise, information) or the lack of such activity were most frequently reported. Among external activities, the interaction with other teams within the organization or the lack of it were most frequently mentioned. As can be expected, successful teams reported more facilitating activities than hindering activities (74 versus 51), while the reverse was true for failed teams (26 versus 36). In addition, successful teams reported external activities more often as facilitating than hindering (37 versus 20), while failed teams labeled internal activities more often as hindering than facilitating (16 versus 8).

Table 2 also shows the participants' ratings on each activity in terms of the degree to which the activity was facilitating or hindering on a 3-point scale (3 = high facilitation or high hindrance). The members of successful teams reported a greater impact of external activities, either facilitating or hindering, as compared to internal activities (2.34 versus 2.14, $t = 2.42$, $p < .05$). In particular, successful teams provided high facilitation ratings on such external activities as interacting with other teams (mean rating = 2.67), getting external experts' help (2.75), and scanning the general environment (2.67). In contrast, they offered low facilitation ratings for most internal activities, particularly decision making (mean rating = 1.77) and anticipating and planning for crises (2.00). The only exception among internal activities was a speedy response to the crisis (mean rating = 2.64). On the other hand, the members of failed teams perceived that internal activities had a greater impact, either facilitating or hindering, on crisis management than did external activities (2.32 versus 2.07, $t = 2.21$, $p < .05$).

Overall, the participants' reports on the open-ended questions about their crisis management activities seemed to support the second hypothesis that external activities have more impact on effective crisis management. First, external activities were mentioned more frequently as facilitating rather than hindering, while the reverse pattern was observed for internal activities. Second, successful teams rated the impact of external activities as greater than that of internal activities in facilitating or hindering the team's crisis management. In contrast, failed teams reported that internal activities had a greater impact on their crisis management. A statistical test of the second hypothesis based on quantitative data is presented below.

Correlations among Variables

For a quantitative testing of the second hypothesis, we developed six scales measuring internal and external activities. Table 3 presents each scale's means and standard deviations computed at the team level ($n = 30$) along with the zero-order correlations among the variables. Unfortunately, these correlation coefficients

are prone to same-method bias because each participant rated all the variables at one point in time. For this reason, the correlating pattern appearing in Table 3 can reflect the participants' implicit model of team performance (Gladstein, 1984). This model represents each individual's belief about the potential linkages between certain modes of group processes and the group's performance.

TABLE 3
MEANS, STANDARD DEVIATIONS, AND RELIABILITIES OF EACH SCALE AND THE INTERCORRELATIONS AMONG SCALES

	M	*SD*	α[a]	1	2	3	4	5	6
1. Crisis planning	3.69	.63	.71	-					
2. Participative leadership	4.18	.58	.63	.15	-				
3. Use of internal resources	4.24	.54	.61	.33	.41*	-			
4. Interactions: Senior managers	4.27	.69	.76	.16	.65***	.55**	-		
5. Interactions: Other teams	3.99	.65	.75	.24	.45*	.48**	.70***	-	
6. Interactions: Other organizations	4.15	.85	.90	.00	.75***	.10	.63***	.43*	-
7. Reported effectiveness of crisis management	3.90	1.02	.95	.16	.43*	.54**	.80***	.48**	.37*

Note: Unit of analysis is the team (n = 30).
[a] Cronbach alpha coefficient of internal consistency.
* $p < .05$, ** $p < .01$, *** $p < .001$. All tests are two-tailed.

TABLE 4
INTERCORRELATIONS AMONG VARIABLES: RANDOM ASSIGNMENT OF RATERS FROM THE SAME TEAM TO TWO SUBGROUPS

	1	2	3	4	5	6	7
1. Crisis planning	*.56*	-.36	-.06	-.06	.09	-.26	-.17
2. Participative leadership	-.23	*.76*	.57	.85	.50	.61	.44
3. Use of internal resources	-.03	.30	*.37*	.36	.23	-.29	.52
4. Interactions: Senior managers	-.04	.69***	.20	*.87*	.42	.20	.86
5. Interactions: Other teams	.06	.39*	.12	.34	*.78*	.49	.49
6. Interactions: Other organizations	-.17	.47**	-.16	.16	.11	*.78*	.47
7. Reported effectiveness of crisis management	-.12	.39*	.30	.76***	.42*	.40*	*.91*

Note: Unit of analysis is the team (n = 30). Zero-order correlations are shown in the lower diagonal. Italicized numbers are the interrater agreements of each scale. The correlation coefficients corrected for rater unreliability are shown in the upper diagonal.
* $p < .05$, ** $p < .01$, *** $p < .001$. All tests are two-tailed.

In order to reduce same method bias, members from the same team were randomly assigned to two subgroups, and for each variable, the mean scores of the two subgroups were computed. Then the two sets of mean scores were correlated (see Table 4). This procedure may partially remove the same method

bias because the raters of the two correlated scores were from the same team but were still independent from each other. Nevertheless, it should be noted that these correlations are partially dependent on each other because the same scores are used more than once, and different sets of coefficients can emerge from the same procedure depending on the way each group is divided into two subgroups. In Table 4 the correlations corrected for rater unreliability are also reported (for a computation formula, see Pedhazur & Schmelkin, 1991, p. 114). Interrater agreements were computed using the upped Spearman-Brown reliability (Rosenthal & Rosnow, 1991, p. 51) and are presented in the diagonal of Table 4. The correlations corrected for rater unreliability may provide relatively unbiased estimates of population parameters. The following discussion of the results is based on the correlations presented in the lower diagonal of Table 4.

Of the three internal activities scales, only participative leadership showed a statistically significant association with the effectiveness of crisis management ($r = .36$, $p < .05$). In contrast, all three external activities were significantly correlated to the reported team effectiveness. The importance of external activities corresponds to earlier results that most crises (27 out of 30 cases in the current sample) were caused by external factors. To resolve such crises, teams may need to interact with external actors, including other teams ($r = .48$, $p < .01$), senior managers ($r = .80$, $p < .001$), and other organizations ($r = .37$, $p < .05$).

Hierarchical Regression Analysis

In order to examine the unique contribution of each activity in predicting the reported effectiveness of crisis management, we conducted stepwise blocked hierarchical regressions. Again, the two sets of independent mean scores generated for Table 4 were used to reduce the same method bias by separating the raters of predictors (each activity) and the criterion (the effectiveness of crisis management). Three internal activities comprised the first block of predictors, and three external activities were added to the equation in the second block (see Table 5). The second block included all the variables in the first block to create a nested model that makes the test of R^2 change significant.

The first regression equation in Table 5 shows that three internal activities accounted for 23% of the variance of the criterion, but the explained variance was not statistically significant. In the second step, three external activities were added to the equation. These external activities made significant contributions even after controlling for internal activities (change in $R^2 = .45$, $p < .001$). It is interesting that when the order of variable entry was reversed (i.e., external activities into the first block, then internal activities into the second block), external activities alone accounted for 67% of the criterion variance ($p < .001$), while internal activities added only 1% to the explained variance. Together with the stronger correlations

of the external activities with the reported effectiveness of crisis management (see Table 4), these stepwise regressions demonstrate that external activities are more critical for crisis resolution than are internal activities. Overall, these results provide empirical evidence supporting the second hypothesis.

TABLE 5
HIERARCHICAL REGRESSION ANALYSIS PREDICTING THE REPORTED EFFECTIVENESS OF CRISIS MANAGEMENT

Variables in the equation	Model 1	Model 2
Crisis planning	-.27	-.23
Participative leadership	.31	.06
Use of internal resources	.29	-.08
Interactions: Senior managers		.97***[a]
Interactions: Other teams		-.17
Interactions: Other organizations	-.04	
R^2	.23	-.6***[b]
Adjusted R^2	.14	.60
Change in R^2		.45***

Note: Unit of analysis is the team ($n = 30$).
[a] Significance level from the *t*-test of standardized regression coefficients (Beta)
[b] Significance level from the *F*-test of *R* squares
* $p < .05$, ** $p < .01$, *** $p < .001$. All tests are two-tailed.

In the second block of Table 5, the only significant predictor of the criterion was interactions with senior managers, a scale which included being aware of senior managers' expectations, communicating with them, and obtaining their support and endorsement. The strong effect of this activity appears to override the teams' interactions with other external actors, such as other teams and other organizations (e.g., suppliers or customers). Furthermore, the effect of interactions with senior managers suppressed the effects of interactions with other external actors and actually changed the direction of the effects of such interactions from positive to negative (classical suppression, see Tzelgov & Henik, 1991). Although the observed suppression is a statistical artifact of high associations of a variable (interactions with senior managers) with both the criterion variable and other predicting variables, this pattern may have substantive significance. Perhaps senior managers' support constituted the necessary condition for effective team functioning, particularly under unusual threats. Alternatively, senior managers, as gate keepers, might actually control teams' interactions with other teams and other organizations.

DISCUSSION

In this study empirical data were provided on the types of major crises facing organizational teams and the strategies used for managing such crises. The results showed that about 90% of crises arose from outside the team boundary, and about two-thirds of crises involved technological/economic rather than human/organizational problems. Data from the present sample demonstrated that external crises are more common than internal crises. Although both organizations and organizational teams are more likely to encounter external crises, in this study the proportion of external crises was higher in organizational teams than in organizations (90% versus 65%). Perhaps, compared with organizations, teams are more often less self-sufficient and more dependent on external actors for resources because teams are smaller systems operating within the constraints imposed by the organization. In addition, in most cases, because of their manageable size, organizational teams can closely monitor and easily control the development of internal problems. For these reasons, compared with organizations, teams may be more prone to external crises than to internal crises. In addition, rather than surprising the team members, team level crises seemed to threaten their pursuit of goals and impose time pressure on team operations. It may be inferred from this pattern that the lack of time and obstacles to normal operations constitute the main sources of difficulties for teams managing crises.

Our second hypothesis related to the relative importance of external activities compared to internal activities. Similar to the successful management of organizational level crises (e.g., Allen & Caillouet, 1994; Duhe & Zoch, 1995), managing team level crises seems to require external focus rather than the more natural, but often problematic, internal focus (e.g., threat-rigidity effect, see Staw et al., 1981; groupthink, see Janis, 1982; McKenna, 1994). Content analysis of the reported team activities revealed that organizational teams used both internal and external strategies to manage crises with almost identical frequencies. However, participants reported external activities as more frequently facilitating crisis resolution, while internal activities were more often reported as hindering. Moreover, successful teams reported the impact of external activities as being greater than that of internal activities. Statistical comparisons of internal and external activities also supported our hypothesis that external activities are more strongly related to the effectiveness of crisis management in organizational teams. These converging results suggest that crisis management in organizational teams may be more effectively and successfully managed by using external strategies that operate to manage relations with other teams, senior managers, and other external constituents.

One striking difference between organizational level and team level crisis management was the relative value of crisis planning. In most organizational

level crisis studies it has been consistently emphasized that anticipating and preparing for major threats is important and that tactics such as crisis scenarios or contingency planning should be used (Hardy, 1992; Hodges, 2000; Shrivastava & Mitroff, 1987; Weick, 1988). However, in the present sample, crisis planning did not have any significant association with the effectiveness of crisis management. In fact, after removing the method variance, crisis planning had a weak negative relationship with effective crisis resolution (see Table 4). This result appears to be counterintuitive because crisis planning, of itself, is a beneficial function that prepares a system for potential threats. However, if crisis planning reflected the team culture of thorough decision making orientation rather than action orientation, a high crisis planning tendency could impede decision implementation. This can be true especially for organizational teams because as implied in the work of Choi and Kim (1999), teams' decision making function may have an impact on team performance only when the decision is actually implemented. In fact, incomplete contingency plans can introduce another source of rigidity (Staw et al., 1981) and impede organizational teams' competence in improvisation. In addition, crisis planning was not a frequent activity in organizational teams either because they were too tightly bound by everyday routines or because they did not have enough extra resources on hand in case of mistakes or emergencies.

However, the present findings should be interpreted with caution. First, the small sample size (30 teams) does not allow any definite conclusion regarding the overall patterns of the phenomena in question. The present sample may be subject to the low representativeness of the whole population of organizational teams and thus it can be difficult to generalize the findings. The source of data should also be taken into account. We tried to reduce same method bias by creating two independent subgroups from the same team, but the results cannot be completely free from fundamental attribution errors or the implicit theory of group performance held by participants (Gladstein, 1984; West, 2002). The reason is that participants' responses could be affected by the retrospective reconstruction of their experience. Thus, it will be necessary to validate the current findings using more objective approaches with multiple sources of data collected from larger and more representative samples.

Nevertheless, the results of this study offer a preliminary understanding of how organizational teams manage crises, and several avenues for further research are suggested. First, it has been shown in several studies that external activities can play a more critical role for team performance than do internal activities (e.g., Ancona & Caldwell, 1992; Moon et al., 2004). Expanding this line of thought, researchers have revealed a series of structural and contextual factors that make external activities more critical for team performance (Conner & Douglas, 2005; Lewis, Welsh, Dehler, & Green, 2002). For example, a team that occupies a central location in the task flow is highly interdependent in its environment

and thus needs to conduct more external activities to achieve its goals (Schein, 1990; Van de Ven & Ferry, 1980). On the other hand, a team's temporal stage in performing tasks (Ancona, 1990; Gersick, 1988) and the task characteristics themselves (Ancona & Caldwell, 1992; Drach-Zahavy & Freund, 2007) have also been to determine the relative importance of external activities. A situational factor is presented in this study – that is, threatening and urgent situations – that may increase the importance of a team's external function and make boundary spanning activities more beneficial to team performance (Drach-Zahavy, Somech, Granot, & Spitzer, 2004; Moon et al., 2004; Sundstrom et al., 1990).

However, teams facing uncertain and threatening events might also need a high level of internal activity to satisfy their members' heightened need for the sense of order, comfort, or stability by providing a strong social assurance of shared beliefs (Costarelli, 2009; Hackman, 1992; McIntyre & Salas, 1995). Therefore, even when a team faces extreme demands from its environment, a minimal level of internal activity is required for maintaining team identity. In this regard, further investigations on factors that determine the optimal point of balance between internal and external activities appear to be a fruitful direction for future research. For instance, Sundstrom et al. (1990) enumerated the contextual factors affecting the degree of teams' interdependence and the need for external integration, such as organizational culture, technology, task design, and autonomy. In addition, the dynamics and possible trade-offs between internal and external activities are also open to further research.

In practical terms, the findings of this study suggest desirable strategies for crisis management in organizational teams. For successful crisis management, organizational teams may need participative leaders who can promote each member's contribution and thus maximize the utilization of internal resources (e.g., technical expertise, information, effort). Moreover, participative leaders may facilitate the team's external activities, a function which is crucial for crisis management. External activities for managing teams' relationships with senior managers, other teams, and other external constituents may need to be the real focus of crisis management. In particular, in this study, obtaining the support of, and resources from, senior managers apparently played a key role in overcoming the crises.

However, it should be noted that the overwhelming importance of the interactions with senior managers may reflect organizational teams' serious dependence on their senior managers in obtaining needed resources. In fact, most large bureaucratic organizations are likely to induce teams' dependence on senior managers (Jackall, 1988). Moreover, even in organizations characterized by a high degree of autonomy or empowerment, senior managers tend to intervene when teams face unusually serious problems (cf. management by exception, Bass, 1985). Unfortunately, the strict control of executives, even during crises,

may impede the effective operations and long-term viability of organizational teams. Intensive and close supervision by senior managers can distract teams unduly from direct, speedy, and timely responses to crises. Thus, it may be important to maintain a delicate balance between the necessary intervention of senior managers during critical periods and team empowerment that allows timely responses to urgent problems. By so doing, organizations can maximize team capacity and readiness for managing crises.

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