

When Leadership Matters More Than Leaders: Developing a Processual Perspective on Leadership during Organizational Crises

## ABSTRACT

The purpose of this doctoral dissertation is to examine leadership in ad hoc mobilized structures during organizational crises. Unlike most other crisis researchers, who focus on broad conceptual frameworks and examine the effect of different individual leadership styles in crisis situations, I address this phenomenon from a contextual and processual perspective. The three empirical papers in the dissertation are the result of unique access to a multinational corporation during crisis scenario simulations and during an ongoing, real-time crisis—a terrorist attack and siege in a corporate foreign subsidiary production plant. To examine crisis leadership in these settings, I used several methodological approaches, including a quantitative, quasi-experimental design known as the internal referencing system (IRS) and a qualitative field design using real-time data. A key contribution of the dissertation is the development of a processual perspective on crisis leadership. First, the findings indicate that during organizational crises, leadership matters more than leaders: what leaders *do* matters more than who leads, and leadership functions can be developed through training. Second, the sources and functions of leadership are emergent and dynamic depending on situational needs and demands; leadership is heterarchical rather than hierarchical, exhibited by the hallmark of dynamic power transitions in leader roles and structures. Third, while executing critical functions, leaders contribute to collective leadership by engaging in role transgressions—stepping out of their roles—to align overall efforts. The findings have implications for how leadership is understood theoretically, methodologically, and practically in these exceptional events and contexts as well as in other similar settings.

Keywords: Crisis leadership, functional leadership, emergence, dynamics, power

## AKNOWLEDGEMENTS

This doctoral project would not have been possible without support from several people and organizations. I would like to begin by thanking Falck Nutec for giving me the opportunity to pursue an industrial PhD while I was employed there. I would also like to thank the department of Strategy of Management (SOL) at the Norwegian School of Economics (NHH) for providing me with doctoral education, supervision, and office space. I am grateful to Falck Nutec, Statoil, the Norwegian Research Council (NFR), NHH, the Center for Applied Research (SNF), and the Future Oriented Corporate Solutions (FOCUS) research program for funding the project. In addition, I am grateful that NFR funded four research stays abroad. I would particularly like to thank former CEO Eli Sætersmoen and director Ragnar J. Værnes at Falck Nutec, as well as associate professor Therese E. Sverdrup at NHH for encouraging me to enroll in the PhD program and for ongoing support throughout the PhD period.

I would further like to express my deepest gratitude to my supervisors Inger Stensaker and Vidar Schei at NHH for their continuous encouragement, scholarly guidance, and personal support during the PhD process. In particular, Inger, you became my supervisor later in my project, at a point at which I had collected qualitative data and needed guidance on how to work with them; you provided that advice so wonderfully. I would also like to thank the academic staff at SOL for their support, and especially Marcus Selart, Knut J. Ims, Therese E. Sverdrup, Alexander M. Sandvik, Siv Skard, Eirik S. Knudsen, Ingeborg Astrid Kleppe, Rune Lines, Einar Breivik, Sigurd V. Troye, Herbjørn Nysveen, and Kjell Grønhaug. I would further like to thank the research scholars for creating a great peer-to-peer climate, and I extend special thanks to Mads Nordmo and Hallgeir Sjøstad, with whom I shared an office the first years, and to Jie Zhang and Natalie Drozdova, with whom I shared an office in the following years. Importantly, I would like to thank Paal Fennell, Liz-Beth Lindanger, May-Britt Rød, and Elaine Pettersen, the administrative staff at SOL, for their support. A big thanks also to Tom Kvitnes from IT.

Several of my colleagues in Falck Nutec not only cheerfully supported my research but also took part in preparing training and collecting data. Thanks to Ragnar J. Værnes, Ann-Elen Sævaried, Christine Danielsen, and Martine Austad Langberg in particular, but also to the many colleagues who contributed to the crisis simulation video used in the training study. I would also like to thank my colleagues Per Sjøberg, Borghild Bøe, and Evelyn Rose Saus for stepping in as psychologists during the real-time crisis so I could collect data while assuring that psychological support was given to those in need of it. Leo Kant, who pursued a PhD in Falck Nutec at the same time as I, has also been a great friend and support.

This research project would not have been possible without Sigmund Husøy and his colleagues in Statoil Åge Nøkland, Tom Pettersen, Marianne Brodtkorp, Einar Lund and Bjørn Otto Sverdrup. You entrusted me with access to carry out research in Statoil not only during training but also during a real-time crisis. Thanks also to the CEO at the time, Helge Lund, for your approval and helping me with additional access. It is not possible to thank everyone that contributed to this project in Statoil, but I am grateful to several hundred people that took part in training and met me with openness during the terrorist attack in 2013 in which five Statoil employees tragically died. Your courageous efforts to help your colleagues have inspired me to work hard and stay motivated throughout this project.

During my PhD project, I also had the benefit of several research stays abroad. First I had three stays at the Institute for Simulation and Training (IST) at the University of Central Florida (USF), Orlando, in 2013 and 2014. Eduardo Salas, Shawn Burke, and Shirley Sonesh at IST, thank you for supervision, inclusion in the lab's social life, and your friendship. I also had a research stay at Berkeley at the Center for Catastrophic Risk Management (CCRM), Haas School of Business, University of California (UC), Berkeley in 2014. I would like to thank Ian Mitroff, Karlene Roberts, and Rune Storesund at CCRM, for welcoming me not only into the CCRM research community but also into your homes and lives during my stay in Berkeley. Ian Mitroff you and Donna, Dana, John, and Jonah have become my "American family."

Others who deserve special thanks are Øyvind Engan, for role-playing the crisis leader in the training video; Sigurd W. Hystad, for checking my statistics in the first study; Silje Grastveit, for connecting me with the Impact HUB for social innovation in Bergen; and especially Elisabet Kolbrun Hansen, who so beautifully illustrated my research findings in Studies 2 and 3. In addition, I would like to thank my advisory board who provided an opportunity to discuss my findings and their relevance to research and practice along the way: Eli Sætersmoen, Ann-Elen Sævareid, Mimi Berdal, Synne Syrrist, Bjørn Otto Sverdrup, Sigmund Husøy, and Inger Stensaker. Ann-Heidi Nebb, thank you for your empathy and care; you inspire me to be a better person every day.

Finally, I am profoundly thankful to my family and friends. Mom and Dad, Anne and Reidar, thanks for your endless love and for encouraging me to pursue meaningful work. To my sister Kathrine and her partner Bjørn, thank you for sharing your time and wonderful children Julie, Andrea, Louise, and Theo with me. To my extended family on both sides, and particularly grandma Aud, aunts Heidi and Bodil, and cousins Malene, Selma, Miriam, and Sara, thank you for cheering me on during tough times. Thank you also to my friends, Berit, Lisbeth, Inger, Malene, Marianne, Veronica, Frode, and Øyvind. Special thanks goes to Lisbeth for Tuesdays evenings in your home—it is a sanctuary to me! To my Swedish friends, Anders, Elisabet, Cajsa, Tove, Pia and Karin, you have been there for me in many ways throughout these years. To my love, Fredrik, thank you for being my closest friend, for sharing your family and especially Theodor with me, and for taking care of my dog Smilla and cat Snoopy during intensive working periods. Without you, I would not have been who I am today.

Bergen, Nov 30<sup>th</sup> 2016, Synnøve Nesse

## **TABLE OF CONTENTS**

1. Introduction
2. Literature Review
3. Positioning the Study and Developing a Tentative Process Perspective
4. Methodological Choices
5. Presentation of Papers
6. Discussion: Overall Contribution and Implications
7. Conclusion
8. References

## LIST OF PAPERS

### Paper 1

“On the Fly” Leadership in Strategic Crisis Management Teams:

A Quasi-Experimental Study

Nesse, S.

### Paper 2

Letting Go to Gain Control:

Heterarchical Leadership and Dynamic Power Transitions

during an Ongoing Organizational Crisis

Nesse, S.

### Paper 3

Collective Leadership during an Organizational Crisis:

The Centrality of Role Transgressions in Aligning Efforts

Nesse, S.

## 1. INTRODUCTION

Organizational crises have pervasive consequences within and beyond organizational boundaries (Pearson, Roux-Dufort & Clair, 2007; Mitroff, 2004). Whether triggered by industrial accidents, natural disasters, or malicious acts, these events involve high stakes, ambiguity, and time pressures (Pearson & Clair, 1998). The organizational context typically reaches a capacity threshold in terms of structural fit and resource availability (Hannah, Uhl-Bien, Avolio & Cavarretta, 2009). In these situations, leadership is critically important because of the pressure to solve rapidly evolving and ill-defined problems (Sommer & Pearson, 2007) in ad hoc mobilized temporary structures (James, Wooten & Dushek, 2011; DeChurch, Burke, Shuffler, Lyons et al., 2011).

To date, crisis research has emphasized the framing of crisis leadership (James et al., 2011; Pearson & Mitroff, 1993) and the effectiveness of specific leader styles during crises (Sommer, Howell & Hadley, 2016; DuBrin, 2013). However, although valuable insights into crisis leadership have been developed, there are still several concerns related to existing research. First, the research tends to examine individual crisis leaders, rather than collective efforts carried out by multiple leaders (Boin, Hart, Stern & Sundelius, 2005). Second, although crisis leadership typically occurs in temporary structures such as ad hoc mobilized teams and larger, meso-level structures, researchers tend to overlook context as central to effectiveness (DeChurch et al., 2011). Third, the research typically does not address the processual and dynamic aspects of crisis leadership, especially with regard to leadership capacities and power distributions over time (Hannah et al., 2009). The aim of this doctoral dissertation is to improve understanding of how crisis leadership emerges and evolves in these exceptional events and contexts.

I will examine the processual and contextual aspects of organizational crisis leadership by focusing on the interplay between leadership actions across time and levels. To achieve this aim, I leverage the “functional leadership perspective” (Morgeson, DeRue & Karam, 2010; Mumford, Zaccaro, Harding, Jacobs et al., 2000; Fleishman, Mumford, Zaccaro, Levin et al., 1991). Rather than focusing on individual leadership styles, this perspective recognizes situational demands and the collective needs of those being led. By allowing for an understanding of leadership as the processes and actions carried out by one or more individuals, it fosters a more comprehensive understanding of both who leads, and what leaders do, during crises and at various points in time. I ask the following overarching research question: **How does crisis leadership emerge and evolve during organizational crises?**

Gaining access to organizations is of utmost importance for reaching a deeper understanding of crisis leadership (Sommer et al., 2016; Pearson & Clair, 1998). My research is the result of a unique opportunity to carry out research in a multinational energy corporation during both crisis simulation training and a real-time crisis. This opportunity was made possible by a trusting relationship with key organizational stakeholders that I established before carrying out the research. I use a multi-method approach with both quantitative and qualitative research designs to address different aspects of crisis leadership. My first study uses a quasi-experimental design to address the effectiveness of two leadership functions in strategic crisis management teams (S-CMTs). The second and third studies use rich qualitative data collected in an ad hoc mobilized corporate crisis management organization during a terrorist attack, to examine crisis leadership across time and levels in larger, meso-level crisis management structures.

The central finding of this dissertation is that during organizational crises, leadership matters more than leaders. I find that leader roles and structures do not need to be formal; leadership can be informal and emergent if it meets situational demands and collective needs. In the first study, I show that key leader functions in ad hoc mobilized S-CMTs can be developed before crises and that engaging in these functions positively affects follower trust, psychological safety, and performance. In the second study, I show that during the response phase of an organizational crisis, leadership is heterarchical; that is, it involves dynamic transitions of leadership power, driven by the competency and legitimacy of different leader roles and structures at different times. Finally, in the third study, I show that during the response phase, multiple emergent leaders engage in role-transgressing leadership functions that, despite specialization of efforts, foster alignment across time and levels. Together, the empirical studies highlight a more emergent, dynamic, and situationally contingent nature of crisis leadership than most prior research has acknowledged.

I make several contributions to the literature on crisis leadership. First, I develop a processual and contextual perspective on crisis leadership that researchers have been calling for, for nearly twenty years (Pearson & Clair, 1998) but that has rarely been undertaken in contemporary crisis research (Sommer et al., 2016). Second, because crisis leadership has, for quite some time, been dominated by research that emphasizes the effectiveness of generally applicable individual leadership styles (Hadley, Pittinsky, Sommer & Zhu, 2011), I leverage a functional leadership perspective to offer a contrasting perspective that identifies leadership functions particularly

pertinent to the response phase. My findings contribute to a more finely grained and temporally sensitive understanding of effective leadership during crises and acknowledge the importance of specific contexts (particularly ad hoc mobilized teams and meso-level structures). They also address how these contexts influence the role of leadership. I provide novel insights into crisis leadership across levels and time—for example, role transgressions and power transitions that take place in critical response phases—by using a longitudinal design and collecting real-time data that would be impossible to obtain using more traditional methodological designs.

This overview of my doctoral dissertation begins with a literature review of three research streams that provide the background for and insight into the research questions posed. I then discuss methodological choices, after which I present the three empirical papers that resulted from my studies. Thereafter, I discuss the overall contributions and implications of the doctoral project, and present some potential avenues for future research.

## **2. LITERATURE REVIEW**

In the following section, I present three streams of literature that are imperative in assessing where crisis leadership research stands today, how it got there, and how it will move forward. I refer to these streams as ‘crisis leadership as exceptional event and context leadership,’ ‘individual crisis leader effectiveness,’ and ‘re-contextualizing crisis leadership.’

The first stream of research, crisis leadership as exceptional event and context leadership, frames organizational crises and provides practical and normative advice with regard to how organizations and their leaders may prevent, manage, and learn from crises (James et al., 2011; Pearson & Mitroff, 1993). This stream is predominantly conceptual, descriptive, and normative. It claims that responding to organizational crises is different from responding to other managerial concerns. Although it has provided little empirical testing of leadership, it is central to helping us appreciate the field’s origin and status and informing us of the exceptional challenges that must be addressed to advance future crisis leadership research.

The second stream of research, individual crisis leadership effectiveness, focuses on determining which leadership styles are most effective during crises. Authors in this stream believe that individual leaders make a difference (Bligh, Kohles & Meindl, 2004), particularly in crisis conditions (Mumford, Friedrich, Caughron & Byrne, 2007). This research is predominantly theory-driven; it tests theories empirically. It claims that crisis leadership is emergent and that transformational leadership is more likely to be effective than other styles during crises. While there is a need for more finely grained examination of the proper mix of

effective styles during crises, this stream of research is important in acknowledging the role and emergent nature of crisis leadership. However, it does not take context into account.

The third stream, re-contextualizing crisis leadership, pertains to research that adopts the position of the first stream—that is, that context matters—but focuses more explicitly on the exceptionality of various structural contexts and how they influence effective crisis leadership (Hadley et al., 2011). This research can be described as conceptual and theory-building. The core claims of this stream are that leadership during crises must be understood in relation to specific contexts, such as ad hoc mobilized crisis management teams or larger, meso-level structures, and the needs of those being led. Although this stream of research underscores the importance of time in crisis leadership, it does not typically explore temporal aspects.

The following review shows that crisis leadership research has evolved from a perspective that frames organizational crises and crisis management activities as exceptional, to addressing individual crisis leadership effectiveness, and finally to a revival of the understanding of crisis leadership as leadership in exceptional contexts. Table 1 illustrates the central dimensions of each stream. For each stream, I identify topics, dominant disciplinary perspectives and types of research, methodological approaches, key contributors, contributions, findings, limitations, and critiques. After describing these three streams separately, I show how prior research has informed and inspired the research in this doctoral dissertation. Although it builds on all three streams, my work is primarily a contribution to and extension of the first and third streams.

Table 1. Three Streams of Research on Crisis Leadership

	<i>Crisis leadership as exceptional event and context leadership</i>	<i>Individual crisis leader effectiveness</i>	<i>Re-contextualizing crisis leadership</i>
<i>Topic</i>	Examines crisis leadership as a broad set of activities related to managing exceptional events and contexts	Examines effectiveness of general leadership styles in crisis situations	Examines crisis leadership as role-based functions that vary over time and in different contexts
<i>Dominant disciplinary perspectives</i>	Strategy, management, technology, psychology, sociology	Leadership, organizational behavior	Leadership, organizational behavior, human resources
<i>Methodological approaches</i>	Conceptual papers, cross-sectional surveys, and case studies	Quantitative surveys, experiments, and field experiments	Conceptual papers, case studies, experiments
<i>Key contributors</i>	Mitroff, Pauchant & Shrivastava (1988), Pearson & Mitroff (1993), Pearson & Clair (1998), Hannah, Uhl-Bien, Avolio & Cavarretta (2009)	Pillai & Meindl (1998), Halverson, Murphy & Riggio (2004), Mumford (2001, 2006), Yun, Faraj & Sims (2005)	James et al. (2011), Hadley et al. 2011, Klein et al. (2006), DeChurch et al. (2012)
<i>Type of research</i>	Conceptual, descriptive, normative, critical	Empirical, predictive, descriptive, conceptual	Conceptual, descriptive, explorative
<i>Contributions and findings</i>	Organizational crises represent exceptional events and contexts for crisis leadership	Crisis leadership is about effectiveness of an individual leader	Crisis leadership is contextually embedded and temporally sensitive
	The role of leadership differs in different phases of crisis management	Charismatic and transformational leadership styles are more effective overall	Crisis leadership is a role consisting of varying functions
	Highlights the centrality of top management to crisis management success	Directive and transactional leadership may be more effective in certain situations	Crisis contexts vary and include ad hoc mobilized teams and larger, meso-level structures, which has implications for leadership effectiveness
<i>Critiques and limitations</i>	Distinguishes between phases, but does not address leadership effectiveness in the response phase	Recognizes that different styles may be useful at different times, but the proper mix of styles has not been not disentangled	Who emerges as leaders and what leaders do—especially over time—is not fully understood
	Aims to contribute to a general framework and does not fully differentiate between different types of structural contexts	Focuses on a single leader and does not acknowledge that crisis leadership typically involves multiple leaders	Power dynamics across and between leadership roles and structures remains overlooked
	Assumes that what constitutes effective leadership can be deduced from normative advice, not empirical testing	Pays scant attention to different phases and contexts of leadership	Scarce in empirical sampling and testing of leadership in different structural settings

### **Stream 1: Crisis Leadership as Exceptional Event and Context Leadership**

Crisis research in this stream originated after a series of disastrous events in the 1980s that included accidents at Three Mile Island (1979), Bhopal (1984), and Chernobyl (1986). The severe and unforeseen consequences of these events led researchers to address the underlying causes of large-scale industrial crises, as well as other critical events such as the Tylenol capsule-tampering case (Mitroff, Pearson & Pauchant, 1992; Mitroff, Pauchant & Shrivastava, 1988; Shrivastava, Mitroff, Miller & Miclani, 1988). The research was centered on the need to understand how to prepare for and prevent such events from occurring in the future (Pearson & Mitroff, 1993; Mitroff et al., 1992). Researchers pursued three objectives. First, they set out to differentiate between types of events by providing crisis typologies. Second, they attempted to define common characteristics of organizational crises, and third, they focused on describing crisis management efforts in different phases. I review these objectives in turn.

*Crisis typologies.* Mitroff and colleagues (1988) were among the first to present an organizational crisis typology. They examined the sources and causes of various crises. They further provided normative advice about what managers should do to lessen an organization's crisis potential. Their typology, built on their own work related to man-made industrial crises (see, e.g., Mitroff et al., 1992; Srivastava et al., 1988), was extended to involve a range of organizational crisis types. The authors described crises as originating either internally or externally and stemming from technical/economic or people/social organizational domains. See Figure 1.

		<i>Domain of Event</i>	
		<i>Relational (Human/Social)</i>	<i>Structural (Economic/Technical)</i>
<i>Origin of Event</i>	<i>External</i>	Criminal and malicious acts (e.g., terrorism, kidnapping, immoral competition (e.g., negative rumors, reputation infringement), hostile takeovers (e.g., undesired mergers)	Natural disasters (e.g., earthquakes, floods, hurricanes), economic system failure (e.g., economic recessions, fraud), political and social instability (e.g., governmental structure breakdown, war)
	<i>Internal</i>	Criminal and malicious acts (e.g., corruption, product tampering), management or personnel misconduct (e.g., failure to adapt to safety standards, sexual harassment), reputational mismanagement (e.g., ethical breaches)	Industrial accidents (e.g., explosions, fires, crashes), service and product failures, financial distress (e.g., unable to manage debt, bankruptcy)

Figure 1. Crisis Typology Example Adapted from Mitroff et al. (1988) and Pearson & Mitroff (1993).

Further refinement of this typology is present in the work of Pearson and Mitroff (1993), who referred to crises as either normal or abnormal and emphasized the psychological dimension of understanding crises. Mitroff and Alpaslan (2003) extended Pearson and Mitroff's typology by presenting three clusters rather than two, including natural (e.g., earthquakes, floods, fires), normal (e.g., economic recessions, industrial accidents, product failures), and abnormal crises (criminal crises such as terrorism, kidnappings and cyber-attacks). The three crisis clusters included seven subtypes that organizations need to prevent and prepare for. The authors further suggested that executives establish a crisis center that reports directly to their CEOs, to prepare for and manage crises in all three clusters.

Researchers in this stream have since made several extensions and amendments of crisis typologies. For example, Gundel (2005), dissatisfied with past typologies, called for a re-classification of crisis types based on expectedness and ability to prepare for different events. He proposed that a crisis typology must contain mutually exclusive types and must be exhaustive, relevant, useful, and pragmatic (by including a manageable number of types for scholars and practitioners). He went on to present a two-by-two typology that distinguishes

between events that are easy/difficult to predict and influence. Gundel's (2005) typology appears to be the most recent with regard to organizational crises, but it has been criticized as being less sophisticated than earlier typologies (James et al., 2011).

A recurrent problem in typology research, both in early and more recent studies, is related to the idiosyncratic nature of crises once they unfold. Although crisis typology research has informed literature that focuses on the prevention of crisis—such as high-reliability organization (HRO) research (Hannah et al., 2009; Roberts, 1990)—it may be less useful during unfolding crises. Furthermore, while some researchers advocate the perspective that crises are non-preventable and recurrent (e.g. Gephart, 1984; Perrow, 1984), others have focused on providing more general definitions and frameworks of crisis management that address the challenges involved once a crisis occurs, regardless of crisis type (James et al., 2011). Therefore, I next examine definitions of organizational crises, beginning with event characteristics and proceeding to contextual characteristics.

***Exceptional events.*** The characteristics that define a crisis have changed over time, but from the outset, researchers have agreed that the exceptional nature of these events negatively influences management responses (Quarantelli, 1988; Dutton, 1986; Smart & Vertinsky, 1977; Hermann, 1972; Hermann, 1963). In their classic article, Pearson and Clair (1998) reviewed and synthesized the research to date and proposed that crisis events involve complex problems that span the psychological–relational, structural–technological, and socio–political domains. They further described crisis events as having pervasive consequences both within and beyond organizational boundaries, involving multiple and potentially conflicting stakeholder interests (Pearson & Clair, 1998).

Although a plethora of definitions of organizational crises exists, there is convergence around the definition by Pearson and Clair (1998), with an organizational crisis defined as a “low-probability, high-impact event that threatens the viability of the organization and is characterized by ambiguity of cause, effect, and means of resolution, as well as by a belief that decisions must be made swiftly” (Pearson & Clair, 1998, p. 60).

More recent research has tended to highlight the characteristics of high stakes, ambiguity, and a sense of urgency (Waller, Lei & Pratten, 2014; Hadley et al., 2011; James et al. 2011; Sommer & Pearson, 2007). According to the first characteristic, high stakes, a crisis is a threat to an organization's high-priority goals such as health and safety, environmental sustainability, operational, reputational, financial viability, and ultimate survival (Alpaslan, Green & Mitroff,

2009). According to the second characteristic, ambiguity, the underlying mechanisms of crisis events—that is, cause, effect, and resolution—are poorly understood; because information flows rapidly, inconsistently, and unpredictably (Sommer & Pearson, 2007), the sensemaking process during crisis events may break down (Weick, 1988). The third characteristic, sense of urgency, describes a situation that requires immediate, complex problem solving in the midst of evolving circumstances. Together, these characteristics evoke pressure that may cause emotional reactions, cognitive stress, and behavioral responses that are detrimental to performance (Sommer & Pearson, 2007).

Although Pearson and Clair's (1998) definition of organizational crisis is generally accepted, there are three factors to consider. First, in an increasingly volatile, interconnected, and globalized world, crises are no longer perceived as improbable or unexpected (Mitroff, Alpaslan & Connor, 2015; James et al., 2011). Second, the onset of a triggering event may be both sudden and smoldering (James & Wooten, 2005). For example, industrial accidents may be normal and expected, while other types of crises such as malicious acts are abnormal and unexpected (Mitroff & Alpaslan, 2003). Third, critics of the broad definition have stressed that without further specification, an organizational crisis could be anything from an internal work conflict to a media scandal in which the personal affair of a top manager becomes public entertainment (Hannah et al., 2009).

Therefore, it is important for researchers to differentiate organizational crises from other organizational events, that is, to separate research on crisis management from research on management of 'everyday' critical issues in organizations (Hannah et al., 2009). The most important aspect of distinguishing organizational crises from other critical events is that an event that is exceptional in one context may not be exceptional in another context. For example, an airport security company is more likely than a commercial bank to expect a terrorist attack; therefore, the preparedness levels of the two organizations are likely to differ.

***Exceptional contexts.*** The notion that a shift from critical event to organizational crisis depends on the interplay between the event and the context is not new, but it has received increased attention (Hannah et al., 2009; Boin et al., 2005). Pauchant and Mitroff (1988) and Mitroff, Pauchant, Finney, and Pearson (1989) showed that some organizations are more likely than others to cause their own crises and thereby to be more crisis-prone. Prepared organizations have comprehensive preventive and response measures in place, while crisis-prone organizations carry out less integrative crisis management efforts (Mitroff et al., 1988). Furthermore, organizations vary depending on psychological defense mechanisms such as

denial of risks; this affects the likelihood of experiencing crises (Mitroff et al., 1989). For example, although pharmaceutical companies are at risk of experiencing product tampering, some companies prepare for such evil acts by using seals that can reveal tampering attempts while others do not.

Context has also been highlighted in literature that focuses on high-reliability organizations (HROs), that is, organizations within sectors such as the oil and gas industry (LaPorte & Consolini, 1991; Roberts, 1990) that depend on managing critical operational risks through both technical and human risk-control systems. Human risk is for instance effectively managed through fostering of a safety culture (Weick, 1987), heedful interrelating (Weick & Roberts, 1993), and collective mindfulness (Weick, Sutcliffe & Obstfield, 2008). The awareness of crisis potential in these organizations makes them not only more likely to prevent critical events but also to manage them more effectively if they become crises. Researchers suggest this happens through a more deliberate sensemaking process; Weick (1988, p. 315) proposes that “enactment” contributes to contextual control of events: “An enactment perspective suggests that crisis events are more controllable than was first thought.”

Drawing on this literature, Hannah et al. (2009) argue that differences in capacity are important, particularly with regard to how well prepared organizations are for different events. They describe four types of organizations: trauma (e.g., hospital emergency wards), critical action (e.g., military combat units), HROs (e.g., firefighting units, risk industry firms), and naïve (e.g., entrepreneurial and service industry firms). These organizations differ in their levels of crisis preparedness in terms of structural fit, professionalism, training of responders, and resource availability. In more prepared organizations (e.g., trauma and critical action organizations), critical events can be managed at a level below the organizational level, while the opposite is true for organizations the authors refer to as naïve.

From a contextual-characteristics perspective, a triggering event becomes a crisis only when the response capacity within existing structures reaches an inadequacy threshold. Although some events have such pervasive impact that they are unmanageable—regardless of the preparedness level (Hannah et al., 2009)—manageability is regarded as a question of fit between a pending crisis and preparedness. Organizational crises, therefore, include two features: an exceptional event and an exceptional context. Organizational crises occur only when both features are present.

**Crisis management.** Crisis management is referred to as the systematic attempt to avert or mitigate organizational crises or to effectively manage those that do occur, in relation to key stakeholders (James et al., 2011; Pearson & Clair, 1998). Crisis management is perceived as effective when potential crises are averted or when key stakeholders believe that the success outcomes of short- and long-term impacts of crises outweigh the failures (Pearson & Clair, 1998). Although specific outcomes appear to be unique to each crisis, reputation (e.g., media coverage), viability (e.g., financial performance), and organizational survival are the overall indicators of success (James et al., 2011, Pearson & Clair, 1998).

Since the early days of crisis research, scholars have provided practical advice about how leaders manage crises in various phases. Such advice prevails today (Mitroff et al., 2015; Wooten & James, 2008). Researchers generally refer to five crisis management phases: prevention/preparation, signal detection, response/containment, recovery, and learning (Wooten & James, 2008; Pearson & Mitroff, 1993). The first phase entails taking preventive action towards risks and addressing residual risks through preparedness plans. The second phase entails being able to sense early warning signals of a pending crisis, for example, through a crisis-notification system. The third phase involves taking immediate action towards a pending crisis and keeping it from spreading to other parts of the organization. In the fourth phase, recovery, normal organizational activities resume. The fifth and final phase entails incorporating critical lessons from the crisis into the organization (see Figure 2).

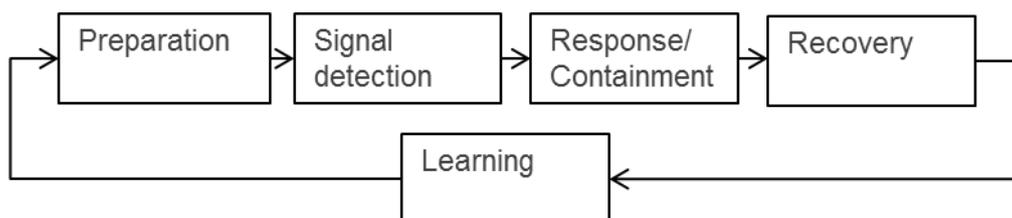


Figure 2. The Phases Of Crisis Management (Adopted from Mitroff & Pearson, 1993, Wooten & James, 2008)

While researchers agree that prevention and preparation is the most important phase before any crisis, many also emphasize that the response/containment phase is the most challenging to manage (Hannah et al., 2009; Wooten & James, 2008; Sommer & Pearson, 2007). This phase involves a heightened risk of enactment failures (Weick et al., 2008; Weick, 1988) because of

the pressure to perform immediately to avoid an escalation of the situation. Regardless of preparedness activities, it is only in situ that the idiosyncrasies of pending crises are revealed and both planned responses and impromptu actions are called for (James et al., 2011; Hannah et al., 2009; Quarantelli, 1988).

In this response phase, with regard to providing direction and orchestrating collective action among followers (Yukl, 2012), the role of leadership is particularly important. This phase requires more adaptable and flexible behaviors than other phases of crisis management (Hannah et al., 2009). Although researchers emphasize that what constitutes leadership effectiveness may vary substantially in different phases (James et al., 2011; Hannah et al., 2009), there is still a need to specify the role of leadership during crisis response (James et al., 2011). To date, researchers in this stream have tended to approach the role of leadership broadly, providing general and normative advice to top managers and leaders responsible for managing crisis response efforts.

***Summary: Towards a conceptual understanding of crisis leadership.*** Overall, the first stream of research provides a comprehensive framework for understanding the nature of organizational crises and the various phases of crisis management. It identifies two factors that have implications for leadership. First, crisis situations are exceptional events, characterized by high stakes, ambiguity, and time pressure. Second, these situations take place in exceptional contexts, characterized by structural inadequacy, non-professional responders, and resource constraints in the organizations in which they occur. The insights revealed by this stream of research advance understanding of organizational crisis leadership as characterized by phased crisis management of exceptional events in exceptional contexts.

However, while research in this stream provides useful conceptual frameworks as well as practical advice to managers, it has been criticized for being normative, non-cumulative, and dispersed with regard to providing empirical evidence (James et al., 2011; Roux-Dufort, 2007). For example, it does not examine phases and contexts in depth. Furthermore, it appears to offer little distinction between general management practices and leadership behaviors; notions of what constitutes leadership effectiveness are derived from normative advice. Therefore, the next stream of research presented in my review is important in that it examines crisis leadership effectiveness empirically. Scholars in this stream address crisis leadership from a different angle. Rather than using the phenomenon-driven approach, they take general leadership theories as their starting point.

## **Stream 2: Individual Crisis Leader Effectiveness**

The second stream of crisis leadership research relates to the effectiveness of individual leader styles in crisis situations. This stream has typically focused on person-oriented leadership such as transformational and charismatic leadership, or on task-oriented leadership such as the transactional directive style (DuBrin, 2013; Hannah et al., 2009). I begin by reviewing charismatic and transformational leadership studies because such studies outnumber other studies with regard to evidence of effective leadership in crisis situations (Dubrin, 2013). I thereafter turn to studies of directive and transactional leadership; although they are fewer in number, they indicate when such styles are effective. Finally, I address the issue of finding the proper mix of styles.

***Charismatic and transformational leadership.*** Transformational leadership has been found to be effective across several settings, including crisis situations (Sommer et al., 2016). This style of leadership includes the leader behaviors of idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Bass & Avolio, 1997; Bass, 1985). Idealized influence is a subset of charismatic leadership; it is often regarded as a separate leadership style (Mumford & Van Doorn, 2001; Pillai & Meindl, 1998). In crisis situations, these leadership styles are effective when leaders present a vision, energize followers to look for solutions, and engage followers in collective efforts beyond self-interest for the sake of the organization (Sommer et al., 2016; Pillai, 2013). Because most crisis studies have focused on charismatic leadership, I review them first, before turning to studies that include a wider range of behaviors associated with transformational leadership.

In their two studies, Pillai and Meindl (1998) were probably the first to empirically examine the emergence and effectiveness of charismatic leadership in crisis situations. One study examined leaders and groups; the other was carried out at the meso-level. Both studies found that charismatic leaders are more likely to emerge during crises. However, performance outcomes for leader effectiveness, satisfaction with the leader, team satisfaction, and work unit performance were negative. Pillai has since suggested (2013) that the negative findings were due to flaws in the research design.

In a later study of crises and presidential campaigns, Bligh, Kohles and Pillai (2005) confirmed that charismatic leaders emerge during crises, but found that such situations are negatively related to perceptions of charisma of the incumbent leader and positively related to perceptions of charisma of the challenger leader. Other researchers have confirmed the emergence and

effectiveness of charismatic leaders in crisis situations. For example, Bligh et al. (2004) showed that charismatic political leadership emerges during crises and that charismatic leaders are perceived as more effective.

Halverson, Murphy, and Riggio (2004) carried out a laboratory investigation of charismatic leadership, stress, and crisis in teams. Their findings indicated that leaders in stressful situations were more charismatic and effective than leaders in non-stressful situations. Their ratings converged after the crisis, indicating that perceptions of charisma are related to followers rating leaders as more charismatic in crisis situations.

Some studies have delved more deeply into the effectiveness of different forms of charisma in crisis situations. For example, building on Boal and Bryson (1985), Hunt, Boal, and Dodge (1999) showed that there are at least two forms of charismatic leadership in crisis situations: visionary and crisis-responsive. The former refers to communicating about a favorable future state, while the latter refers to communicating about current problem-solving. They found that both forms were equally efficacious during crisis, but in the absence of crisis, the effects of crisis-responsive charisma decayed faster than the effects of visionary charisma. Thus, there is a difference not only with regard to when each form of charisma is more effective but also with regard to how charisma emerges and is maintained.

The findings of Hunt et al. (1999) inspired a series of studies by Mumford and colleagues (Mumford, 2006; Strange & Mumford, 2002; Mumford & Van Doorn, 2001) in which three visionary styles of charismatic leadership were developed and examined using historiometric data. According to the authors, visionary leader styles differ depending on the types of crisis situations in which they are most effective. The first style, charismatic vision, is associated with situations requiring future orientation and planned change. The second style, ideological vision, is associated with orientation towards the past and reformation, and the third style, pragmatic vision, is associated with a present-focus and response situations.

The propositions outlined in early studies of charismatic vision have continued to be refined. There appears to be support for the notion that though the charismatic visionary style is the most effective overall, the pragmatic style is more effective in certain situations (Hunter, Bedell-Avers & Mumford, 2009; Bedell-Avers, Hunter & Mumford, 2008) and more likely to be effective in response to pending crisis situations (Yammarino, Mumford, Connely & Dionne, 2010), that is, the response phase of a crisis (James et al., 2011). For example, it would be more

effective to introduce a new health care plan using a charismatic visionary style and more effective to respond to a hurricane or wildfire using a pragmatic visionary style.

While most studies have focused on charismatic leadership, which is a subset of transformational leadership, a few have measured transformational leadership behaviors more broadly. For example, Pillai and Williams (2004) tested their proposition that transformational leaders can build commitment and high performing work groups by enhancing employee self-efficacy and cohesiveness among fire rescue personnel. Their study showed that transformational leadership is effective.

In five separate experimental studies, Halevy, Berson, and Galinsky (2011) used a sample of undergraduate students to examine leadership in a political elections setting. They showed that transformational leaders attract more followers and promote identification, intrinsic motivation, and collective action. Such leaders also regulate emotion and crisis reactions better than representative leaders.

More recently, Zhang, Jia, and Gu (2012) confirmed the effectiveness of transformational leadership during crises in the context of leaders and team members in hospitals that had experienced an earthquake disaster. In addition to confirming previous findings of a large-scale study of 146 leaders and 526 team members that examined the effectiveness of transformational leadership, their study was novel in its finding of a moderating effect of value congruence and leader–member relationship quality.

***Directive and transactional leadership.*** Research also indicates that task-oriented leadership styles, such as transactional leadership, are effective in crisis situations. Transformational leadership includes “contingent reward” for meeting performance expectations, as well as “active” and “passive” management by exception (MBE) (Bass & Avolio, 1997, 1994; Bass, 1985). “Active” MBE involves monitoring follower performance and taking preventive action, while “passive” MBE entails waiting until follower performance is problematic before taking action. A task-oriented leadership style is typically associated with directive leadership, though definitions and characteristic behaviors vary (Yukl, 2012).

Faced with the time pressures, uncertainty, and high stakes that crisis situations represent, leaders are expected to provide direction, display authority, and take action to foster follower performance (Sommer et al., 2016). Task-oriented styles have therefore been perceived as a prototypical ideal in crisis situations (Boin et al., 2005). Furthermore, the more exceptional a crisis (e.g., high levels of stress, proximity of threat, intense time pressure), the greater the

leadership need (Hannah et al., 2009; Boin et al., 2005; Wong, Bliese & McGurk, 2003). However, empirical evidence about leadership styles has tended to be scarce. I will review the few, but important, contributions that describe how and when the task-oriented leadership style is more effective.

First, Bigeley and Roberts (2001) examined crisis leadership using ethnographic data from fire departments organized as Incident Command Structures (ICS). They assessed self-reports from respondents who had vast experience in mission-critical crisis management situations and proposed that in high-impact, ambiguous, and urgent situations, leadership must be formal, hierarchical, and based on subordinates taking directives.

Useem, Cook, and Sutton (2005) arrived at similar findings in their study of leadership during a wildfire. Using retrospective qualitative data, they found that during a firefighting disaster in which 14 men and women lost their lives, leaders were underprepared, acutely stressed, and ambiguous in their authority. The authors argue that leaders in crisis situations need to learn to operate with clear authority by acting in a directive manner, focusing on executing tasks, and rewarding desired behaviors in followers.

However, studies have found that that directive leadership is effective only when the leader is trusted and perceived as competent. Weick's (1993) work on leadership, sensemaking, and trust during the Mann Gulf disaster uses a single, vivid case to illustrate this point: when a firefighting situation escalated, the leader was suddenly perceived as incompetent. Trust decreased and followers began disobeying their leader, causing the deaths of everyone except the leader himself, who followed his own directions. Sweeney, Thompson, and Blanton (2009) and Sweeney (2010) studied leaders and brigades during military combat; their findings confirm the importance of trust in competence. Together, these studies indicate a link among directive leadership, competence, and a sense of trust in crisis situations. In all three studies, a lack of trust in leader competence, evidenced by a reluctance to display authority, led to negative performance outcomes.

Studies have also examined directive leadership over time. For example, Tschan et al. (2006) examined teams treating a sudden cardiac arrest in a high-fidelity simulator setting. They hypothesized that directive leadership behavior enhances group performance. Their prediction was supported initially and at midpoint, but at the third and final point in time, directive leadership behavior was effective only during the first 30 seconds, when situational urgency

was still high. Their study confirms that a directive leadership style is more effective under time pressure.

In an ethnographic, multiphase study, Yun, Faraj, and Sims (2005) investigated leadership and effectiveness of trauma resuscitation teams. The teams operated in a high-velocity environment, characterized by time pressure, critical life and death tasks, and ambiguity. The researchers proposed that the influence of leadership on team effectiveness during trauma resuscitation differs depending on the situation. By comparing directive leadership with empowering leadership, they found that directive leadership was more effective when trauma severity was high or when the team was inexperienced, but that empowering leadership provided more learning opportunities than directive leadership.

Similar findings appear in research by Klein, Ziegert, Knight, and Xiao (2006). The authors found that when the pressure to perform urgent, critical tasks increased in emergency medical teams, a directive leadership style was appropriate. However, they also found that learning—particularly, the training of novice doctors—required delegation of authority to more junior leaders. Thus, it appears that swift performance relies on leaders being directive, while learning is related to leaders being empowering.

Building on their own work, Sims, Faraj, and Yun (2009) summarized research in the medical emergency field and other settings. They concluded that in urgent, novel situations in which the pressure to perform is high, leaders need to be directive. Their conclusion supports the dynamic approach to leadership style: leadership should be more directive when performance pressure is high and less directive when performance pressure is low.

To date, few studies have examined the full range of transactional leadership behaviors in crisis situations. However, Sommer et al. (2016), in a recent study on transformational leadership in CMTs, included measures of “active” and “passive” management by exception. Perhaps unsurprisingly, they found transformational leadership to be effective in promoting team performance and “passive” management by exception to have the inverse effect. However, they also found that “active” management by exception, in terms of anticipating and correcting wrong behaviors, did not affect performance negatively. The researchers explain the latter finding by stating that followers probably perceive that is appropriate to actively correct potential errors when stakes are high.

In a cautionary note, researchers warn that task-oriented leadership styles such as authoritarian leadership can be quite harmful in crisis situations; see, for example, Allison’s (1969) work on

the Cuban missile crisis, and a recent study of the faulty effects of directive leadership during the Fukushima nuclear plant crisis (Kushida, 2014). Although evidence shows that transactional leadership—particularly directive leadership—is effective in certain situations during crisis, the evidence to date indicates that these behaviors should be carried out with great care.

***Summary: Towards an understanding of the proper mix of individual styles.*** Overall, the second stream of research shows that person-oriented leadership styles such as transformational leadership are likely to emerge and that they are perceived as effective in crisis situations. With regard to in-situ crisis leadership, evidence is particularly strong that it produces a variant of charismatic leadership that provides a pragmatic vision. However, a few studies also reveal the effectiveness of task-oriented leadership when the pressure to solve a problem is urgent and the leader is perceived as competent and trustworthy. These insights are valuable in that they emphasize not only the importance of leadership but also the emergent nature of leadership in crisis situations.

However, the findings are inconclusive, and researchers have noted that in crisis situations, a mix of leadership styles may be more effective than separate styles. There is an argument that the “augmentation effect” should be examined more closely to find the “proper mix” of styles (Hannah et al., 2009). However, a question arises from these findings: Does that proper mix need to be more contextually embedded and specific than a general leadership perspective can provide? This question is regarded as the key limitation of this stream of research; current research suggests that crisis leadership is likely to involve multiple leaders and is a phenomenon that an individual leadership perspective cannot account for (DeChurch et al., 2011; Boin et al., 2005). I review this literature next.

### **Stream 3: Re-Contextualizing Crisis Leadership**

The third stream of research represents researchers that to some extent reject general leadership theories (e.g., transformational and transactional leadership styles) when examining leadership in crisis situations. Their research revives the first research stream by assuming that crisis leadership is essentially different from leadership in non-crisis situations (Hadley et al., 2011). In my review of this research, I begin with work that regards crisis leadership as a role, rather than a fixed set of general leadership behaviors or styles. I then review research that recognizes that crisis leadership tends to occur in specific contexts, particularly in temporary structures such as ad hoc mobilized crisis management teams (CMTs) and larger, meso-level structures (Waller et al., 2014; Dechurch et al., 2011).

***Leadership role rather than style.*** An important aspect of perceiving crisis leadership as a role rather than a style is that effective leadership behaviors may vary as crises evolve from pre-crisis, to in situ, to post-crisis (James et al., 2011). Authors propose that in-situ crisis leadership in particular has more in common with dynamic or contingency-based leadership that is adaptive, flexible, and functional (Uhl-Bien, Marion & McKelvey, 2007; Klein et al., 2006) than with leadership that applies to most or all leadership situations. However, although such dynamic perspectives are appealing, there is a lack of empirical study of such leadership styles (Dinh, Lord, Gardner, Meuser et al., 2014), particularly with regard to organizational crises.

However, the concept of leadership as a role has much in common with the functional leadership perspective (Morgeson et al., 2009; Mumford et al., 2000; Fleichman et al., 1999), in which leadership behaviors are expected to vary over time depending on situational demands and the needs of those being led. For example, some research shows that crises represent opportunities for leaders to foster change and growth (Brockner & James, 2008), but others believe that crisis leadership in situ involves controlling, rather than exacerbating, the negative effects of an escalating crisis and mitigating circumstantial effects; crisis leadership in situ means solving complex problems in a timely manner, without sacrificing quality for speed (Sommer & Pearson, 2007).

Researchers argue that crisis leadership effectiveness includes certain knowledge, abilities, and skills (KSAs) that are unique, or at least uniquely configured, in different phases of a crisis (James et al., 2011). However, Wooten and James (2008, p. 353) observed: “There has been little research to systematically identify crisis leadership competencies that are necessary in crisis management. Previous research has focused largely on framing crisis management activities.” The authors conducted a grounded theory analysis using a sample of 20 businesses with 59 cases extracted from a crisis management database consisting of businesses that had experienced accidents, employee-centered scandals, and product safety and health incidents. They presented six crisis leadership competencies: (1) building a foundation of trust, (2) creating a big-picture mindset, (3) identifying firm vulnerabilities before a crisis, (4) making wise and rapid decisions, (5) taking courageous action during crises, and (6) learning from the crisis to effect change when the crisis is over. Their research was temporally sensitive, in that it defined which phases of crisis leadership each competency addressed.

Research has also focused on crisis leadership during the crisis response phase. Hadley et al. (2011) conducted a multi-method study of how leaders effectively respond to a crisis, and how the capabilities of leaders can be developed in advance of a crisis. First, the authors carried out

a literature review and interviewed experienced crisis leaders. Their initial findings determined that decision making and assessment of information are the two key leadership functions during crisis response. Second, they validated a scale for measuring self-efficacy within these dimensions and showed that self-efficacy differs from leadership efficacy in general. Their contribution includes a tool for assessing and developing crisis leadership.

More recently, Haddon, Loughlin, and McNally (2015) explored what employees want from leaders during organizational crises. They used a novel mixed-methods approach to determine employee preferences, comparing leadership during crisis and non-crisis times. They combined qualitative interviews with a questionnaire used by Avolio and Bass (2004) to measure transformational and transactional leadership. Their interviews showed that employees expect leaders to take action quickly and engage in continuous communication with employees during crisis. The researchers argued that transformational leadership, though effective, does not capture the importance of taking quick action and communicating continuously during crises. A key implication of their findings is that widely used and accepted measures of leadership do not adequately capture leadership in a crisis context.

***Leadership in crisis management teams.*** With regard to contexts, researchers have long recognized that crisis leadership occurs in teams (King, 2002; Smart & Vertinsky, 1977). Typically, however, researchers rely on general leadership theories and regard leadership as only one factor that fosters effectiveness in these teams (Flin, O'Connor & Crichton, 2008; King, 2002). Therefore, the argument that studies of leadership are carried out in team settings, but rarely take a team-centric perspective (Morgeson et al., 2009), appears to apply to the crisis context. While several studies focus on crisis management teams—for example, examining antecedents of creative decision-making (Sommer & Pearson, 2007), the effect of early interaction patterns (Zijlstra, Waller & Philips, 2012), and effective team training (Waller et al., 2014)—they do not explicitly address the role of leadership.

Furthermore, crisis management teams are typically mobilized ad hoc (Waller et al., 2014) and therefore represent a type of team known as a “swift-starting action team” (STAT) (McKinney, Barker, Davis & Smith, 2005). Such teams face many challenges, including unfamiliarity with the task and team (Wildman et al., 2012; Sommer & Pearson, 2007). A few researchers have begun examining how these teams can interact more effectively from the outset, using methods such as establishing swift trust to foster performance (Wildman et al., 2012) and promoting a sense of psychological safety to foster learning (Edmondson, 2003).

Nevertheless, the role of leadership both initially and over time has rarely been examined, even though it is deemed to be central to the management of crises (Edmondson, 2012). A notable exception is a study by Klein et al. (2006) that examined leadership in emergency trauma teams. Using qualitative interview data, the researchers identified four key leadership functions that foster reliable performance and learning in these teams: (1) providing direction, (2) monitoring, (3) providing hands-on treatment, and (4) teaching team members. Note that two of the four functions (monitoring and providing hands-on treatment) appear to be transactional; the other two (providing direction and teaching team members) appear to be both transformational and transactional. The researchers also observed that leaders varied the use of each function depending on the criticality of a patient's status rather than the criticality of team member development, a finding that highlights the importance of adaptive leadership and alignment with situational needs and demands.

***Leadership in larger, meso-level crisis management structures.*** Another contextual factor that comes into play during crises is the use of larger, meso-level structures such as incident command systems (ICSs) and multi-team systems (MTSs). The ICS was originally developed for managing wildfires, but has since been used in settings that involve organizational crises (Moynihan, 2009). MTS structures, comprised of “teams of teams,” have been found to be particularly useful in response to crises (DeChurch et al., 2011). These forms of organizing are typically temporary structures mobilized ad hoc as a crisis unfolds. Most leadership theories are based on the assumption of stable organizational environments; the increase in temporary forms of organizing poses specific challenges to leadership theories (Zaccaro, Marks & DeChurch, 2012).

Two studies serve as examples of pertinent issues in a crisis context. Bigley and Roberts (2001) carried out an inductive case-study of a fire department ICS, examining the relationship between management control and adaptive response. Their findings show that the ICS combines formal leadership and preplanned but ad hoc mobilized structures in response to crises. This hybrid form of leadership uses structural flexibility to capitalize on the control and efficiency benefits that bureaucracy represents, while avoiding its tendency towards inertia. The study is among the first to address a recurrent topic in crisis research, that is, how leaders balance administrative, strategic, control, and operational responses in crisis situations (Hannah et al., 2009).

In an inductive, historiometric study, DeChurch et al. (2011) examined leadership in crisis response MTSs. Arguing that the role of leadership is to orchestrate collective efforts, the

authors identified three leadership points of impact: across, between, and within the system. They also identified two leadership functions: strategy development and coordination. Within each of the two functions, they identified sub-tasks, some of which occur in action and others that occur in transition phases, according to the cyclical nature of crisis response. They further noted that in-situ leadership can be carried out by multiple leaders who align strategic and operational level interests over time.

***Summary: Leadership role in different crisis contexts.*** Overall, the third stream of research is important in that it re-contextualizes crisis leadership. The framing of leadership as a situational role rather than a generic style allows for a more finely grained and time-sensitive understanding of leadership in crisis situations. Note, for example, that a core aspect of transformational leadership—inspiring motivation—does not appear to be a key leadership function in the response phase. A possible explanation for this is that crisis situations, compared with more mundane situations, tend to self-motivate responders (Klein et al., 2006). This stream further acknowledges that crisis leadership occurs in structures that are typically mobilized ad hoc and have a temporary nature, involving multiple leaders executing functions aimed towards to orchestrating overall efforts.

Although it acknowledges the need for a more contextually and temporally embedded understanding of the leadership, this research stream has only begun to address the processual aspects of crisis leadership. It examines leadership in different phases, but does not address the challenges of mobilizing an ad hoc crisis management team. Furthermore, only a few studies focus on crisis leadership in larger, meso-level, ad hoc mobilized structures. Much remains to be understood about leadership in these structures, with regard to the emergent nature of leadership, what leaders do, how leadership power dynamics are dealt with, and how the interplay between leadership roles and functions occurs across time and levels.

### **3. POSITIONING THE STUDY AND DEVELOPING A TENTATIVE PROCESS PERSPECTIVE**

The foregoing literature review of each research stream highlights several issues that are important in advancing crisis leadership research. The first stream of research frames organizational crises as exceptional events and contexts and presents the response phase as the most challenging with regard to leadership. The second stream supports the effectiveness of transformational leadership in crisis situations overall but indicates that there are times when transactional leadership may be more effective. Although this may indicate the proper mix of effective leadership styles, it illustrates the emergent and situationally contingent nature of crisis leadership. The third stream of research extends this notion by drawing on the first research stream to address crisis leadership in a more time-sensitive and contextually embedded manner while focusing on ad hoc and temporary structures.

The review further illustrates that the field has evolved from framing crisis leadership broadly, to examining individual crisis leader effectiveness using general leadership theories, and finally to re-contextualizing crisis leadership as a role occurring in specific temporal and structural settings. Building on prior research, and responding to the call of Pearson and Clair (1998) of nearly two decades ago, I propose that moving crisis leadership research forward requires a more processual perspective. Specifically, I regard crisis leadership as a phenomenon that is emergent, involves multiple leader roles and functions, and plays out not only over time but also across levels. The main concepts from each of these streams and perspectives, and key concepts in the tentative process perspective developed in this study, are shown in Figure 3.

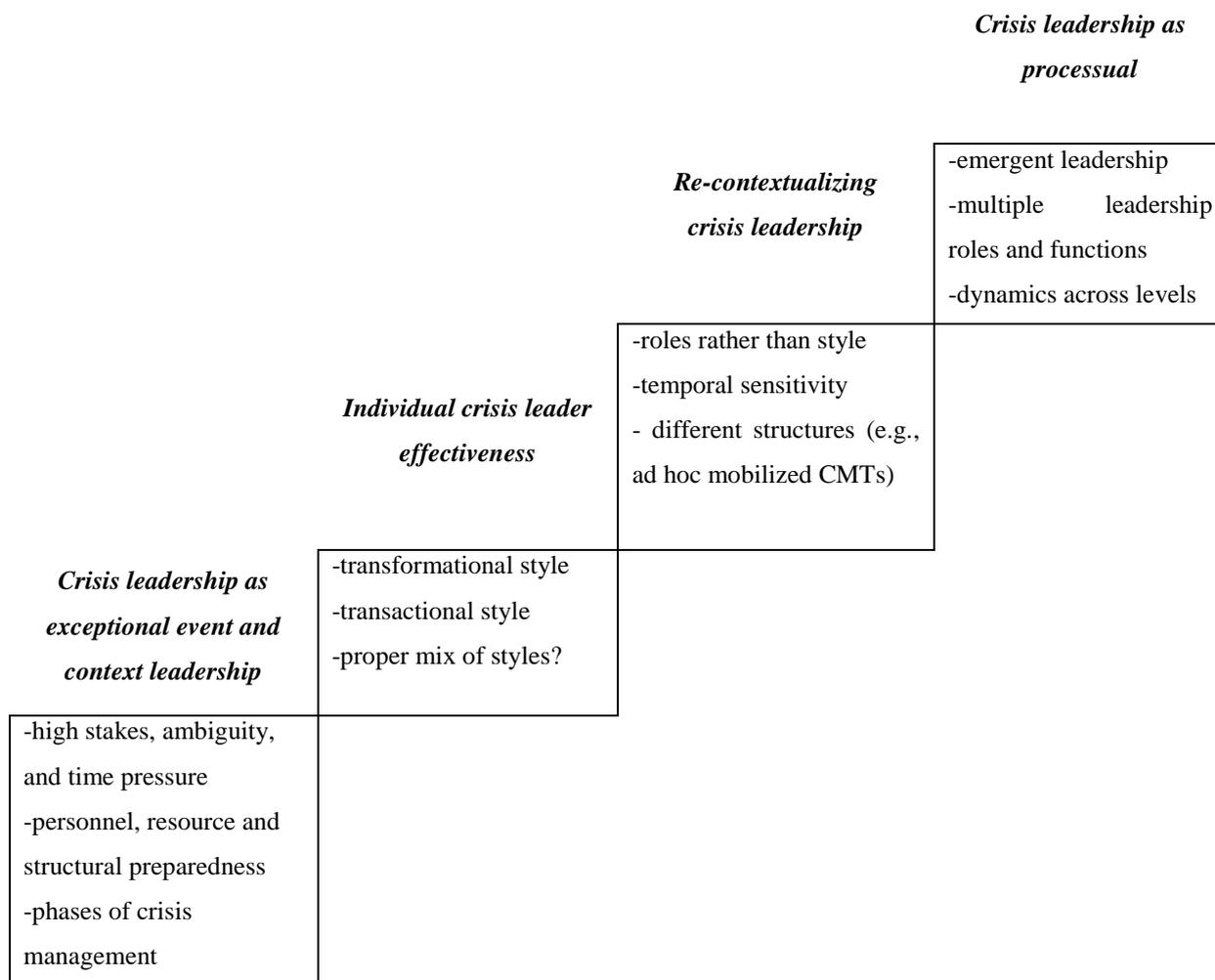


Figure 3. Prior Crisis Leadership Research Streams and a Tentative Process Perspective

In developing a tentative process perspective, I use conceptual building blocks from the first stream that include crisis leadership as an exceptional event and context leadership that occurs in distinguishable phases. Given that evidence for the most effective mix of transformational and transactional leadership styles remains inconclusive, I build on the second stream to regard crisis leadership as emergent and situationally contingent. From the third stream, I regard crisis leadership as a role-based function that can change over time in different and evolving structures, depending on situational needs and demands. Thus, although my work builds on all three streams, it primarily contributes to and extends the first and third streams.

My exploration of crisis leadership as processual requires me to narrow my focus and limit the scope of my research. I explore organizational crises as events characterized by high stakes,

ambiguity, and time pressure in contexts characterized by non-professional responders, resource inadequacy, and ill-defined structures. I also focus on leadership in the response phase, in which the exceptional event and context features are the most prominent. In contrast with existing research, I remain open to various sources and forms of leadership, rather than expecting that one leader takes charge. Therefore, I regard leadership as a role that includes actions intended to orchestrate overall efforts. Finally, because crisis leadership is under-researched in the context of ad hoc mobilized CMTs and larger, meso-level structures, I limit my scope of research to these contexts.

To address the overarching research question about how crisis leadership emerges and develops over time, I find it useful to leverage a functional perspective (Mumford et al., 2000; Fleishman et al., 1999). This perspective is more elaborately described in the empirical papers, and is only briefly described here. According to this perspective, leadership is about complex problem solving through collective efforts; effectiveness depends on how successful leaders are in meeting the situational needs and demands of those being led. Leadership becomes a role—a set of interacting leadership functions and actions—rather than a collection of general and fixed leader traits, styles, and positions. According to the systems view of organizations, what constitutes leadership effectiveness varies over time and in different events and contexts (Fleishman et al., 1991; Katz & Kahn, 1978). Therefore, this perspective resonates well with a processual and contextually embedded perspective on crisis leadership.

With regard to more specific research questions, various streams of extant literature are relevant in the two research settings I have chosen to study: leadership in crisis management teams (CMTs) and larger, meso-level structures. In these settings, the relevance of literature varies depending on which challenges appear to be the most important to address. With regard to CMTs, pertinent questions are how leaders enable ad hoc mobilized, cross-functional teams to perform from the outset, despite being faced with challenges such as unfamiliarity with the task and the team, and how such leadership competencies can be learned before a crisis. To address these questions, I draw not only on crisis leadership literature but also on literature related to team leadership (Bell & Kozlowski, 2002; Zaccaro, Rittman & Marks, 2001) and leadership training and development (Day et al., 2014; DeRue, Nahrgang, Hollenbeck & Workman, 2012; Salas, Tannenbaum, Kraiger & Smith-Jentsch, 2012).

With regard to ad hoc, larger, meso-level structures, questions relate to changing leader roles and leader structures. There is a paradox in how leaders gain control while adapting to developing situational demands and needs. To address this paradox, I draw on two competing theoretical perspectives: heterarchical power (Boin, Kuipers & Overdijk, 2013) and distributed power (Uhl-Bien et al., 2007). I also draw on a more recent hybrid power perspective (Klein et al., 2006; Bigeley & Roberts, 2001). Furthermore, I use recent extensions of a functional leadership perspective, that identifies multiple sources, forms, and levels of leadership (see, e.g., DeChurch et al., 2012; Morgeson et al., 2011) to address how leadership emerges and how functional roles and patterns varies over time and across levels.

Relying on this tentative processual perspective on crisis leadership, I ask the following research questions (RQs) in three empirical papers; RQ 1 is explored in CMTs, and RQ 2 and RQ 3 are explored in larger meso-level structures.

*RQ 1: What are the key leadership functions in strategic crisis management teams, and how does training contribute to the development of these before organizational crises?*

*RQ 2: How do leaders balance strategic control and adaptive response during an organizational crisis?*

*RQ 3: Who emerges as leaders, what are the critical functions of leadership, and how does leadership develop over time and across levels during an organizational crisis?*

To advance research in this field, it is important not only to situate the study in the crisis leadership literature and to indicate the relevance of extant literatures. It is also important to make methodological choices to address the questions in a suitable manner. I discuss these choices next.

#### **4. METHODOLOGICAL CHOICES**

This section is devoted to the methodological choices I made overall and in relation to the three empirical studies included in this doctoral dissertation. I begin by outlining my stance on the philosophy of science and how it informed my methodological choices. Thereafter, I present the research context as well as the research designs in the empirical papers. I continue by presenting the research evaluation criteria and conclude by addressing the ethical aspects of the study.

##### **Philosophy of Science and Methodological Fit**

A researcher's ontological and epistemological worldview, or "philosophy of science" stance, relates to how the researcher perceives the nature of the world and obtains knowledge about it (Guba & Lincoln, 1994). The researcher's stance is important in that it informs the researcher's overall methodological choices. In this dissertation, I take the stance of a critical realist (Archer, Bhaskar, Collier, & Lawson, 2013; Bhaskar, 1979). Central to this post-positivist paradigm is that while an objective reality exists independent of our knowledge of it, it is only imperfectly or partially available to us. Furthermore, although objectivity it is not fully possible to achieve, it is maintained as an ideal for how knowledge is obtained, and through it we might get an approximate understanding of the world. According to this stance, the purpose of research is explanation, which is ultimately aimed towards the prediction and control of phenomena over time (Guba & Lincoln, 1994).

With regard to research methodology, quantitative and qualitative researchers are often perceived to "belong" to opposing worldviews—positivist or social constructivist (Guba & Lincoln, 1994). However, according to the stance of critical realism, exploring and explaining phenomena of interest in a complex reality necessitates using multiple methodological approaches (Archer et al., 2013). This stance bridges some of the differences we typically associate with quantitative or qualitative research by perceiving the two types as complementary. Critical realism is open to using multiple methodological approaches to explain important phenomena for which we have limited understanding and for which gaps in existing research exist (Guba & Lincoln, 1994).

Both the conceptual and the empirical rigor of prior knowledge are key determinants of choosing the appropriate research methodology, whether it is quantitative or qualitative (Eisenhart & Graebner, 2007; Guba & Lincoln, 1994). This aligns with work on "methodological fit" by Edmondson and McManus (2007), who argued, in a critical realist vein,

that the maturity of our understanding of a phenomenon should inform our methodological choices. Accordingly, research might be “nascent” (theory-building), “intermediate” (preliminary theory-testing), or “mature” (theory-testing) depending on the maturity of existing research and where the gaps are in literature. Edmondson and McManus (2007) state that “nascent” research is traditionally qualitative, “intermediate” research is either or both, and “mature” research is quantitative.

The apparent lack of plausible existing theory and empirical evidence related to crisis leadership as contextual and processual appears to support phenomenon-driven research, which is typically associated with qualitative research (Eisenhart & Graebner, 2007). However, while placing the phenomenon in the forefront in the current study, the literature review discloses a difference in maturity with regard to understanding crisis leadership in the chosen research settings, CMTs and larger, meso-level collectives. Therefore, by taking a critical realist stance, and applying the concepts introduced by Edmondson and McManus (2007), I aim to identify not only where a gap in literature exists and why it needs to be filled (Pratt, 2009) but also how to move understanding forward methodologically. This requires different approaches for each setting.

With regard to leadership in CMTs, there is considerable extant literature on team leadership that can be integrated with existing literature on crisis leadership to explore the chosen research questions. I therefore consider the maturity of research in this setting “intermediate.” In line with Edmondson and McManus (2007), this calls for preliminary theory-testing research. However, with regard to crisis leadership in larger, meso-level structures, both existing literature on crisis leadership and extant leadership literature are under-researched domains (Zaccaro et al., 2012; DeChurch et al., 2011). Therefore, the maturity of research in this setting is “nascent,” supporting the importance of theory-building research. This leads to the choice of a mixed-methods approach that includes both quantitative and qualitative designs, when looking at the study as a whole.

Because I was guided by the call for conducting more contextually embedded and phenomenon-driven research related to crisis leadership, I aimed to carry out research in or close to the field rather than the laboratory settings that are often used because of limited access or other constraints such as design issues. Examining organizational crisis leadership from within may seem ambitious—if not impossible—given that it has rarely been done before (Sommer et al., 2016; Pearson & Clair, 1998). In the next section, therefore, I describe the research context of

a multinational energy corporation, my relationship with the corporation, and how I was given the access and opportunity to carry out my research.

### **The Research Context**

I carried out all three empirical studies in a multinational energy corporation in the oil and gas industry. The corporation has six divisions and more than 20,000 employees worldwide; it was ranked among the 15 most profitable companies in the energy sector in 2014. Managing operations in the oil and gas industry entails managing risks, given that the high energy potential of hydrocarbons can cause explosions and leakages with tremendous negative effects on health, safety, and sustainability. The industry's economy of scale, both nationally and internationally, also involves risks related to political and economic instability, with security risks such as terrorism and cyber-attacks becoming more prominent.

The corporation in my study is an example of a high-reliability organization (HRO). This means that risk-control systems are in place to ensure reliable operations and zero errors in relation to most of its activities. However, with regard to residual risks, particularly large-scale industrial accidents, the corporation relies on crisis management efforts geared towards averting and mitigating effects. Because it is also increasingly aware that events other than industrial accidents may cause crises, it has included additional crisis scenarios in its risk assessments in the past few years. The company's crisis management scenario portfolio is the basis of its crisis management efforts.

Specifically, the corporation uses crisis preparedness plans, structures, and training geared towards mobilizing ad hoc, temporary crisis management teams and larger, meso-level structures based on various crisis scenarios. Preparedness plans indicate that such structures are to be mobilized in the event of crisis situations that exceed the organization's day-to-day organizational capacity. While the plans dictate that such situations should be managed at the lowest possible level, they include provisions for moving to the operational and strategic organizational levels. Signals of a pending crisis are communicated through a notification system. While duty personnel are on watch 24 hours a day, managers and others are also on call to fulfill assorted functional duties. Officially designated leaders internal to the crisis management structure are responsible for mobilizing efforts in a flexible and scalable manner; they report to the CEO, who is the formal, but external leader of crisis management in the corporate organizational structure.

Crisis management is part of a separate corporate department, though it is also a line responsibility. I was granted access to carry out research in the corporation as the result of a pre-established relationship with key contacts in the department. Before pursuing a doctoral degree, I had worked closely with those contacts as a consultant and psychologist within the realms of crisis preparedness, training, and development, at levels ranging from operational to strategic. Through my work, I had become familiar with the organization in many ways. I had been entrusted with sensitive and confidential information about the corporation's risk and crisis management systems, which gave me the chance to show that I was worthy of such trust. When I decided to pursue a PhD, this relationship served to facilitate both funding and access to study the corporation from within.

The corporation, Falck Nutec (the consultancy company I worked for at the time), the Norwegian Research Council, and the Future Oriented Corporate Solutions (FOCUS) Program at Centre for Applied Research where I currently work agreed to fund my doctoral project as an 'Industrial PhD project.' Upon acceptance by my key contact person and the CEO, I also received permission in writing to study the corporation's crisis management efforts more broadly. Note that neither the funding organizations nor the studied corporation directly influenced what I chose to study, apart from their expectation that the research would inform both theory and practice with regard to managing organizational crises.

From the outset, the corporation and the consultancy company were interested in learning more about the subject of my first study, the training and developing of S-CMT leaders. The second and third studies, however, were not planned. Circumstantially, my key contact in the corporation invited me to study how an ongoing crisis—a terrorist attack and siege in one of the corporation's foreign subsidiaries—was managed at the corporate headquarter crisis management facilities. The motivation was to derive learning about how the crisis was managed that would be useful to both the corporation and other organizations. Many other contacts, including the CEO, gave me additional access. Therefore, although my first study was planned, serendipity gave me the opportunity to carry out the unplanned second and third studies.

### **Research Designs**

The research design refers to the overall strategy used to integrate different aspects of the study to ensure that it coherently, logically, and effectively addresses the research problem (de Vaus & de Vaus, 2001). Importantly, it refers not only to whether it is a qualitative or quantitative study but also to the research setting, data sources, data collection, measures, interventions

(when relevant), and analysis of data (Cassell & Symon, 2004; Shadish, Cook & Campbell, 2002). Because one of my studies is qualitative and two are quantitative, I address these design topics separately.

***The quantitative study.*** The first study on leadership in CMTs was perceived as “intermediate” with regard to the maturity of the RQ. It encouraged a research design that allowed for preliminary theory testing. Intermediate-maturity studies may be either quantitative or qualitative (Edmondson & McManus, 2007); the nature of the RQ in this case guided my choice of a predominantly quantitative approach. The design was quasi-experimental, which means that it had much in common with true experiments that aim to test causal hypotheses and includes controls. However, it lacked the experimental requirement of true random assignment, which requires making additional efforts to rule out alternative explanations for findings (Shadish et al., 2002).

***The Internal Referencing System.*** Specifically, I used a design known as the Internal Referencing Strategy (IRS) (Haccoun & Hamtiaux, 1994), also referred to as a Non-Equivalent Variables Design (NEDV) (Shadish et al., 2002). This within-subjects design includes both training-relevant items and training-irrelevant items at pre- and post-test, in which the training-irrelevant items serve as proxies for a control group. The relevant and irrelevant items are chosen from the same field, and when the difficulty level is high, both the risk of ceiling effects and the risk of Type I errors is reduced. This design deals effectively with the threats associated with between-subject designs, including history and maturation effects. If present, such effects are observed in both trained and untrained (control) variables. The IRS also allows for deriving findings about other effects, assuming that training also accounts for the difference from pre- to post-training.

An additional reason for choosing this design was that it allowed for training all relevant leaders with controls, which was a unique benefit compared with alternative designs without controls or that conduct only post-tests (Antonakis, Bendahan, Jaquart & Lalive, 2010). Furthermore, training some leaders and not others could have been perceived as impractical and unethical in the event of a crisis occurring when an untrained leader was on duty. Several researchers have identified this ethical issue as an important reason for choosing the IRS design (Antonakis et al., 2010; Frese, Beimeel, Schoenborn, 2003; Haccoun & Hamtiaux, 1994). Another consideration was that using the entire sample to estimate effects would strengthen the power

of the statistics. For these reasons, I judged this design to be suitable and have several advantages for the leadership training and development study.

***Data sources (setting, sample and intervention).*** I carried out the study in the aforementioned multinational energy corporation. It included a unique sample of 29 top managers and their teams, amounting to a total of 187 members. One day of training took place in the corporation's strategic crisis management facilities at the corporate headquarters. The leaders were all pre-selected by the corporation owing to their role as crisis leaders in the event of a crisis in their business area; team members were part of crisis management teams on duty during the particular week of each training session. Carrying out the study in the corporate crisis management facilities ensured physical fidelity (Rosen et al., 2009).

I designed the leadership intervention for this study on the basis of a literature review, a training needs analysis (Salas et al., 2012), and a well-developed instructional strategy known as behavioral modeling (Taylor, Russ-Eft & Chan, 2005). I exposed leaders to the intervention, which was intended to develop crisis leaders in two crisis functional competencies. I measured the training transfer from the intervention by exposing leaders to scenario-based crisis simulations before and after the intervention with their crisis management teams. This approach provided psychological fidelity (Rosen et al., 2009).

***Data measures, collection, and analysis.*** I collected data from multiple sources including leaders themselves, team members, and expert observers, upon their arrival at the crisis management facilities and during the crisis-scenario based simulations, both before and after the training intervention. The measures included two leadership scales that I developed for the study (building on a procedure guided by Sommer et al., 2011), one performance scale, a single item developed for the study, and well-established indicators of leader trustworthiness, behavioral trust, psychological safety, and satisfaction to measure affective states and other outcomes.

I carried out the data analysis in several steps and included descriptive and inference data. I found correlation tables for all variables using Spearman's non-parametric correlation coefficients with two-tailed p-values. Furthermore, I tested all measures for reliability using Cronbach's alpha as well as several forms of interrater agreement including rWGs, ICC(1), and ICC(2) scores (Biemann, Cole & Voelpel, 2012). In line with recent recommendations, I further aggregated data related to team members and expert observers, to avoid the risk of inflated results (Biemann et al., 2012).

To further analyze inferences, I used the Wilcoxon signed rank test, a non-parametric within-subject test preferred when data are not normally distributed. Finally, I used the Friedman test, and a Bonferroni adjusted value as an additional test, to examine difference scores between training and training-irrelevant pre-test and post-test scores, including significance levels and effect sizes.

***The qualitative studies.*** The research designs used in the second and third studies are based on prior literature indicating that crisis leadership in larger, meso-level collectives is “nascent” with regard to maturity, indicating a theory-building qualitative approach. However, both qualitative studies took place as a result of serendipity and opportunity, which influenced the choice of research design. An organizational crisis occurred while I was doing research on crisis leadership. I was given the opportunity to access the headquarter crisis management facilities while a corporation was experiencing a terrorist attack and siege of one of their foreign subsidiary production plants. Because the two qualitative studies are based the same crisis event and context, and are part of the same data set, I describe them together, noting design differences when relevant.

***Emergent and explorative design.*** Given that I had access to gather rich data and explore crisis leadership in a field setting rarely available to researchers, I used an emergent and explorative research design that serves such data well (Edmondson & McManus, 2007). Although there are many forms of emergent and explorative designs, a common feature is that though the research topic may be known before carrying out the study, the specific research questions may change along the way. Data collection and analytic procedures may also change over the course of the study in response to what is learned during the process. This was the case in both my studies. Compared with studies that are deductive, consisting of hypotheses or propositions geared towards theory testing, explorative studies are inductive, meaning that their goal is to generate new theory from the data. However, I was guided by a ‘third’ research approach, known as “abduction” (Alvesson & Sköldbberg, 1994).

An abductive form of exploration acknowledges that theory does not neatly “emerge” from data, and that deliberative reasoning, creativity, and “conceptual leaping” is necessary to bridge data and theory in a meaningful way (Klag & Langley, 2013). Abductive research is by definition processual in that it involves iterating between the empirical data and analyzing data and existing literature—an approach that was central to the way I approached my studies. Throughout the process, I was further guided by two well-established approaches in qualitative research that are compatible with both the critical realist stance and abduction in their quest for

explanation and mixed inductive-deductive research: grounded theory (GT) (Glaser, 1998; Glaser & Strauss, 1967) and process analytic strategies (Langley, 1999).

***Grounded Theory.*** GT is an approach for collecting and analyzing data in which generating new theory relies on staying close to the data without being informed by prior theory in the early phases; prior theory may be introduced in later phases (Glaser & Strauss, 1967). The researcher engages in what is referred to as “constant comparison” between the empirical data provided by research participants and the analysis of these through a coding procedure. Coding begins with “open” or first-order coding in which the researcher tries to stay as close to the participant’s wording as possible and moves on to “selective” or second-order coding in which emerging themes are labeled (Glaser, 1998). Over the course of data collection, the researcher engages in “theoretical sampling” based on framing questions around a set of focus themes. In later phases, the researcher brings prior literature into the analysis. Data collection continues until the themes appear to reach a level of “saturation” at which the researcher can arrive at overarching conceptual categories and formulate a theoretical story to explain the empirical story that has emerged from the data.

Although I was guided by this approach, it is important to clarify that I did not follow all GT recommendations. First, I have a preference for the more general approach of Glaser and Strauss (1967) and Glaser (1998), rather than the more prescriptive and structured steps described by Strauss and Corbin (1990). I used Strauss and Corbin (1990) in another study in which I found the approach limiting; I felt it caused me to ‘miss the forest for the trees’ because of my preoccupation with following the steps. Furthermore, I believe that researchers are not able to stay uninformed by theory, whether this includes one’s own personal theorizing or close reading of the literature. Although I attempted to stay close to the data in the early phases of data collection and analysis, and remain open to alternative explanations in later phases, I do not expect anyone to believe that I was free of pre-conceptions. Further, when fully applied, theoretical saturation requires researchers to revisit the context until a phenomenon is fully captured; however, because the crisis response phase that I studied lasted only eight days, the period of real-time data collection lasted only that long. In addition, although GT is described as useful in analyzing longitudinal data (Langley, 1999), I find it to be related more to sampling data over time than addressing how time matters. Therefore, I combined a GT approach with process data collection and analysis.

***Process analytic strategies.*** Although they are open to many ways of collecting data, process researchers prefer real-time data collection to retrospective data collection, because neither the

researcher nor the respondents know the outcome of the ongoing process (Langley & Stensaker, 2012). This preference is in line with crisis researchers who state that real-time data collection is less vulnerable to distortion by unconscious or conscious efforts, for example through impression management or the framing of crisis management as successful in retrospect (Pearson & Clair, 1998). A processual approach encourages the use of multiple sources of data to capture relationships and patterns among events, activities, choices, and levels over time (Langley, 1999). In addition, it is useful in the early phases to iterate between data and analysis; later, theory can be part of this iteration process, as it is in the GT approach (Langley & Stensaker, 2012). Process analysis is not a specific approach; rather, it is an overarching term used to describe various sensemaking strategies for longitudinal data (Langley, 1999). This openness to different strategies implies that there are many legitimate ways to make sense of the same data.

In my process data analysis, I was primarily guided by the sensemaking strategies of “visual mapping” and “temporal bracketing”; I also formulated brief narratives. Visual mapping graphically illustrates the passage of time and provides a chronology of which events and activities occur before others. Although visual mapping is not a distinct ‘strategy for theorizing,’ it represents an intermediate step between the raw data and more abstract conceptualization by providing patterns of occurrences (Langley, 1999). Temporal bracketing is a more theoretical concept in which phases are not necessarily empirically defined; rather, episodes are identified in which the mutual shaping between agents and structures is used as an anchor for making sense of what is going on (Langley, 1999). Bracketing is useful for disclosing mechanisms such as power, authority, and influence between people. Finally, I also used a narrative strategy, collecting stories from various groups of responders to give voice to different perspectives.

**Data sources.** I collected data from multiple data sources. My primary data sources were interviews with respondents and observations carried out in the corporate crisis management facilities over the course of the eight-day period in which the ad hoc and temporary crisis management organization was mobilized. Complementary data sources included documents such as preparedness plans, crisis management logs, schedules, time lines, and evaluation reports. See Table 2 for an overview of primary and complementary data sources.

Table 2. Data Sources

<i>Observation hours in situ</i>	<i>Interviews in situ</i>	<i>Preparedness plans</i>	<i>Crisis management logs/schedules /timelines</i>	<i>Evaluation reports</i>
65–70	46	6	3	4

Additional data sources informed my research in more subtle ways. For almost four years before the crisis, I was present as a consultant and psychologist in training sessions, workshops, and meetings related to crisis management, I had also read widely about the corporation—corporate background, statement of purpose, yearly revisions, code of ethics—as well as many internal confidential documents such as risk analysis and crisis preparedness plans.

I also carried out five interviews before and five interviews after the crisis that I did not transcribe and listened to only later. In addition, I recorded personal memos several times a day during the crisis, though I did not treat the recordings as ‘formal’ data in my analysis. I used them after the fact, together with the audio recordings, to revive my memory and ‘get back into the situation’ when needed. Over time, as I worked with my data in an analytic way, and after little contact with interviewees and victims, the initial sense of complexity, chaos, and threat of the crisis situation began to wane, even though it was important to understanding as well as portraying what was going on during the crisis response.

**Data collection.** As mentioned, I was invited to carry out research during the crisis by my primary contact person in the corporation. I received the invitation in the form of an instant message and a follow-up phone call. Upon my arrival at the facilities, my contact person informed the crisis responders that I was there to collect research data. I was given full access to approach any personnel and enter any room in the crisis management facilities, as long as those involved were in agreement. I respectfully agreed to be sensitive to what was going on, and to not interfere with crisis response or interrupt respondents who were busy. Interviews were sometimes short, sometimes long, and sometimes simply brief information updates; they were often interrupted by events, particularly at the beginning of the crisis response.

Because I had not planned the study before having the opportunity to carry it out, I did not have the list of interview questions that is typical of emergent and explorative designs. However, I made respondents aware that I was conducting a broad examination of the crisis management response, and that I had a specific interest in crisis leadership. After asking respondents to give

a free account of their experience of the crisis and crisis response, I asked probing questions about what leaders did, and who was leading at the time. Importantly, respondents often referred me to people to interview to get more information about the topic. This spurred me to do so and to move my focus from formal leadership to enacted leadership. This unplanned, informal approach proved to be key to my understanding of the situation.

Respondents often acted as ‘gate-openers’ rather than ‘gate-keepers,’ literally unlocking doors to parts of the crisis management facilities, including adjacent facilities in the corporate headquarters and in another city in which the CEO had his office. These enablers included not only respondents internal to the crisis management organization but also leaders in the corporate organization. None of the respondents I approached refused to be interviewed; therefore, there are no missing data, other than data that I missed because I was not aware of the possibility of interviewing a particular participant, or because I, on my own, did not have the time to pursue more interviews. In addition, I ended in-situ data collection when the temporary crisis management organization was demobilized and remaining tasks were transferred to a follow-up project and the line organization. Many of my contacts were also helpful in providing complementary data before and after the crisis response phase. I received most documents as a result of meeting them in person.

An important issue that I do not address in my empirical papers is that as a clinical psychologist, I offered psychological support when responders requested it. I did not record these sessions and did not treat them as data. I further supported several leaders in carrying out response personnel defuse sessions, but did not use the data. In addition, because there was a need for more psychological support than I could provide, and because my supportive role conflicted with my role as a researcher, three of my clinical psychologist colleagues from the consultancy company took over most of this work by Day 4, in agreement with the corporation. This enabled me to focus on my role as a researcher.

***Data analysis.*** My data analysis strategies are described in detail in the two empirical papers; therefore, I will simply indicate where I approached the data differently in the two empirical papers. First, it is important to clarify that the facts about the crisis situation and crisis response are the same in both. Second, the transcribed interviews I used during the initial coding in the software program Atlas.ti7 are the same. However, because I used a GT approach, I split the data set into two sets after I carried out second-order coding; there appeared to be two distinct but important accounts to address in more depth.

I assigned the second-order codes to one or the other paper. This ensured that I would not use the same interview quotes in the different papers, which was important to avoid empirical self-plagiarism. I did this while acknowledging that these could potentially at the same time represent aspects of both accounts depending on how the content was coded. Furthermore, to remain open to developing new conceptual ideas, I began probing for conceptual categories without specific theoretical concepts in mind. However, in later phases of analysis, I brought in various extant theories to further refine my findings. For example, I borrowed the concept of “heterarchy” from McCulloch (1945) in one study and an account of different sources of leadership from Morgeson et al. (2009) in the other study.

Furthermore, there are differences in how I approached the data using process analytic strategies. Although I used visual mapping in both study timelines, I used empirical as well as theoretical bracketing in one of the studies, while in the other I use only empirical while focusing on the narratives of different sources of leadership in relation to time perspectives. Therefore, my approach differed depending on how I iterated among the empirical data, my preliminary findings, and various streams of literature.

Importantly, when I examined the data more visually and longitudinally, I also refined the categories I had found using a GT approach. This resulted in the analysis, as well as the findings of one of the studies, being more related to an underlying ‘mechanism’ and in one study, being more related to underlying ‘patterns.’ Together, the results indicate the usefulness of combining two well-established data analysis strategies, particularly when addressing different accounts of the same empirical setting.

### **Research Evaluation**

Given that one of the empirical studies is quantitative and the two other studies are qualitative, I used different evaluation criteria to assess the quality of the research. I evaluated the quantitative research by the criteria of statistical inclusion validity, internal validity, construct validity, and external validity and reliability (Shadish et al., 2002). To evaluate the quality of the qualitative research, I used the following criteria by Lincoln and Guba (1985): credibility, transferability, dependability, and confirmability. In the following, I review these criteria briefly before addressing how I ensured that the quality criteria were met in the empirical studies.

***The quantitative study.*** First, statistical conclusion validity relates to whether and how strongly the presumed cause and effect co-vary. A researcher may conclude that they co-vary when they

do not (Type I error) or incorrectly conclude that they do not co-vary when they do (Type II error). Furthermore, the magnitude and confidence of a co-variation can be over- or underestimated. Threats include low statistical power, violation of test statistics assumptions, fishing expeditions, error rate problems, unreliable measures, restriction of range (high or low ceiling effect), unreliable intervention implementation, experimental setting variance, heterogeneous respondents, and inaccurate effect size estimation.

Because these threats can lead to acceptance of the null-hypothesis when it should be rejected and to declining the null-hypothesis when it should be rejected (Shadish et al., 2002), I address the most relevant threats. I ensured statistical validity primary through choice of design and statistical methods. A benefit of the IRS design is that it is more likely to cause a Type II error, which is important because a Type I error is generally regarded as more critical than a Type II error (Haccoun & Hamtiaux, 1994). I examined descriptive data for respondent differences as well as the difficulty level of crisis scenarios. Furthermore, I tested all the measures for reliability using Cronbach's alpha, rWG, and ICC (1) and ICC(2) scores. I checked correlations, aggregated data when relevant, and chose statistical tests used with non-parametric data when these met test assumptions. Statistical testing allowed for estimating confidence of co-variation and error rates, but I also calculated effect sizes using an appropriate formula for non-parametric data.

Second, internal validity relates to whether the inferences about an observed relationship from A to B reflects an underlying causal relationship; it requires that A precedes B in time, that A co-varies with B, and that no other explanations for the relationships are possible. Threats to internal validity include temporal ambiguity, selection, history, maturation, regression, attrition, testing, instrumentation, and combinations of these threats. They could be alternative causes of the observed relationship and the proposed relationship should therefore be controlled for. I addressed these threats by collecting data using specific procedures, two points in time, and different respondents. The IRS design deals effectively with threats that most between-subject designs do not, and with threats to many within-subject designs through the proxy controls. Although there may be alternative explanations for some of the affective states and other outcomes in the study, such explanations are not likely given the strong explanatory effect of the intervention on leadership from time 1 to time 2.

Third, construct validity relates to whether the inferences made on the basis of measurements actually measure the construct they were intended to measure. Threats to construct validity include inadequate construct explication, construct confounding, operationalization bias,

common methods, levels of constructs confounding, reactivity in self-reports or experimental situation, experimenter expectancies, novelty or disruption effects, compensatory strategies (equalization/rivalry), resentful demoralization, and treatment diffusion. First, the study is well grounded in prior literature. Most measures used in the study are well-established concepts operationalized and tested for their psychometric properties. Although I developed the study's measures in line with prior conceptual work, sample size hindered factor analysis; I addressed this partly through satisfactory Cronbach's alpha scores. I attempted to address expectancies by using raters other than the experimenter, which also addresses common methods issues related to raters. Furthermore, the IRS design, which allowed all relevant leaders to take part in training, dealt effectively with compensatory strategies. Finally, I used the same setting, protocols, and procedures during each training session, which met threats of novelty, disruption, and treatment diffusion.

Fourth, external validity relates to inferences about the extent to which a causal relationship holds or can be generalized across populations, contexts, or settings. Threats are interactions between the causal relationship and sample, treatment variations, outcomes, and context-dependent mediating factors. They can be avoided primarily through random selection, avoiding attrition in the sample selection, and identifying contextual similarities. Although this study did not involve random selection, the sample selection is representative of all potential participants in the chosen setting and there was no attrition. In addition, I ensured transferability to a real crisis setting through physical and psychological fidelity. However, the ability to generalize the findings to other settings may still be constrained, and internal validity is likely to be stronger than external validity.

Reliability is the fifth criterion. It is the extent to which a study's operations can be repeated and replicated—that is, the extent to which another researcher could use the same research design and obtain similar findings. I attempted reliability by explaining in detail how I designed the study and how I carried out the research in practice, including information about samples, measures, procedures, and analyses. I addressed this previously and further explain it in the empirical paper.

***The qualitative studies.*** I address the evaluation criteria for both of the qualitative studies together, focusing on each of the four criteria. 'Credibility' pertains to whether the relationships, inferences, or patterns represent an account of reality that is congruent and reasonable to others. Establishing credibility includes using well-established research methods, obtaining familiarity with the research setting, triangulation of data sources, and involvement of participants and

other researchers. To ensure credibility, I was guided by two well-established approaches representative of ‘good practice’ in qualitative research, GT (Glaser, 1998) and process analytic strategies (Langley, 1999). I spent four years becoming familiar with the research context before actually entering the research setting. To triangulate data, I relied on, compared, and contrasted multiple data sources, including observations, interviews, and documentation. Importantly, I chose interviewees in an emergent ‘snowballing’ manner to ensure that I had covered different points of view. Furthermore, during crisis response and directly after, I facilitated participant validation or ‘member checks’ by approaching each interviewee more than once to allow them to withdraw, correct, or complement the information they provided. In the following years, I presented my research eight times during corporate crisis leadership training sessions and received feedback; I also presented it four times to my doctoral project advisory board, which consists of two independent board directors of companies I have no relationship with, company representatives from the financing parties, and my supervisors. Finally, I involved another researcher (my main supervisor) in the data analysis by presenting raw data as well as preliminary findings and receiving and incorporating feedback along the way.

‘Transferability’ refers to the extent to which the findings of the study can be applied in other settings and includes providing information about the organizational context and the research setting, types, number of and restrictions in data sources, length and duration of data collection, and boundary conditions of the findings. I addressed this criterion by providing ‘thick description’ of the organizational context and setting in the methods sections of the empirical papers. I further provided information about various sources of data such as types of observations, interviews, and documents. I did not experience any restrictions in data sources, (e.g., there were no participants who refused to be interviewed), and I was granted access to all the documents I requested. However, I chose to rely on interviews carried out during the response phase, rather than those carried out before or after, as I found the response-phase interviews to be more congruent with each other as well as with my own observations. Other boundary conditions were that data collection occurred during the eight days the temporary crisis management organization was mobilized, and data were collected in a single organization.

‘Dependability’ pertains to whether others can ‘trace’ how the researcher arrived at his or her findings. This involves being able to document the research process from the gathering of empirical data to the presentation of findings. The purpose of explaining my procedures is to

offer a transparent account that could be repeated by others, even though they might not get the same findings. I have retained all data that has been possible to store, including the interviews transcribed verbatim and other documentation, in an Atlas.ti7 database. I have also stored Word files from the different steps of data analysis, drafts of visual representations in handwriting, software editions, and pictures, on my computer. I am therefore able to provide more information if needed, such as a more detailed account of how I carried out data reduction, and tables with a minimum of six to eight quotation examples for each of the concepts I have introduced. In presenting my findings, however, I have chosen to use the quotes directly in the text rather than in separate tables. This approach increases readability, ‘shows’ the empirical data, and ‘tells’ my interpretation of the data as closely together as possible. The visual illustrations of facts, events, and responses over time offer additional richness and give others the opportunity to understand how I moved from data collection and analysis to more abstract findings.

‘Confirmability’ involves ensuring that the research is carried out in good faith and is not overly representative of the researcher’s or other stakeholders’ values, interests or preferences, apart from those the researcher discloses intention to represent. I attempted to address confirmability by reviewing prior literature, positioning the study, clarifying research questions, following well-established methodological approaches and procedures, and presenting the findings as transparently as possible. Furthermore, during data analysis, I maintained distance from my key contacts by being at a physical distance in the United States. Notably, I was a consultant and psychologist in crisis management in the energy industry as well as other sectors for several years before conducting research in the field. Many of my findings have implications that tend to contradict advice I have given before; they have caused me to challenge such advice. In addition to discussing the research process as well as findings with research participants, other researchers, and practitioners, my acknowledgement of such contradiction and challenge indicates a willingness to assess and evaluate my own work critically.

## **Research Ethics**

When conducting research, one should be guided by ethical principles or norms, particularly related to communication, participation, confidentiality, and how data are used and stored. First, when communicating with others about the research, I was clear that though my purpose was

to “do no harm” (Symon & Cassel, 2012), my intention was to have the courage to seek and convey findings that might seem disturbing to others in a quest for better explanations of the phenomenon under study. I further attempted to communicate in a way in which I listened to and respected other people’s perspectives and points of view and took them into account when they were relevant. I further attempted to share with participants, researchers, and practitioners as much as possible about my role, background, and findings. This has helped others decide what, and how much, information they would like to share with me, and showed that I am approachable if others have any concerns and questions.

Furthermore, participation in the studies was voluntary (stated both orally and in writing). Specifically, participants were asked to sign ‘informed consent’ forms that clearly stated that participation was voluntary, identified the study topic, and clarified that interviews could be retracted at any time. This may be perceived as a risky approach, but I found it to be the only way to address the issue of voluntary participation (Cassell & Symon, 2004). It also must be noted that though interviews were voluntary, and no one objected to being observed in either of the studies, there was an element of uneasiness about this issue on my part. I think many members of the corporation that I studied would have found it difficult to refuse being observed when their leaders had approved my research in the organization. This is an issue that is difficult to resolve, though I have not received any information that it was a factor.

I have attempted to keep information about the participants confidential to the degree that it is possible (Cassel & Symon, 2006). I did this primarily by removing participants’ names and other information that could identify them in the data files and by replacing the information with numbers that make individuals unidentifiable. The names and numbers were, however, listed in separate documents until I was able to link internally all participant interviews and data files. The ‘code’ file that I used was destroyed when this work was completed. Nevertheless, it is possible to identify the corporation studied in several ways, according to descriptions of the corporation and common knowledge of the terrorist attack and siege they experienced. Another issue is that *not* revealing the organization’s identity could lead others to believe it is a different organization (which occurred when I presented the research). I therefore discussed with the corporation the disclosure of the corporation’s name, which would lead to the disclosure of identities of the CEO and several others. The participants were made aware of this risk when they agreed to take part in the studies; to date, I have not received any objections to this decision.

Finally, using and storing data involves both legal and ethical concerns. Before carrying out the research, I applied to the Norwegian Centre for Research Data (NSD) for permission to collect and store data in accordance with their requirements. I was further guided by the ethical principles of the Norwegian Psychological Association with regard to assessing the vulnerability of potential study participants, using my expertise as a crisis psychologist. For example, interviewees who were displaying negative affective states or stress reactions could have been too vulnerable to take part in interviews. I excluded two interviews because they contained mostly personal and private experiences. Furthermore, I did not audio record or use any notes that were specifically related to my role as a psychologist for the involved personnel. Note that none of the studies were clinical studies and therefore did not require approval from Norwegian health authorities.

## **5. PRESENTATION OF EMPIRICAL PAPERS**

The study undertaken in this doctoral dissertation consists of three empirical papers. An overview of the papers including topic, type of research, nature of research question, research design and data collection, data analysis, and contribution is provided in Table 3. A summary of each paper follows next.

Table 3. Overview of Empirical Research Papers

	<i>Paper 1</i>	<i>Paper 2</i>	<i>Paper 3</i>
<i>Topic</i>	Leadership in strategic crisis management teams (S-CMTs) during the first performance cycle	Leadership power transitions in temporary crisis management structures	Leadership emergence and dynamics in temporary crisis management structures
<i>Type of research</i>	Quantitative, intermediary, quasi-experimental study	Qualitative, nascent, exploratory field study	Qualitative, nascent, exploratory field study
<i>Research question</i>	Preliminary test of hypotheses about how the two leadership functions ‘strategizing’ and ‘relating’ influence trust, psychological safety and performance at the outset of the team’s life.	Examination of changes in leadership roles, structures, and power dynamics in a temporary mobilized crisis management structures	Examination of the emergent sources, functions, and dynamics of leadership over time and across levels in temporary crisis management structures
<i>Research design and data collection</i>	Leadership intervention in which training transfer is measured pre- and post-intervention with real teams in scenario-based crisis simulations using the Internal Referencing System (IRS)/Non-equivalent variables design (NEDV)	Real-time observations and interviews with leaders and personnel in a temporary mobilized crisis management organization. Data were collected longitudinally during an ongoing organizational crisis (terrorist attack) in a multinational corporation	Real-time observations and interviews with leaders and personnel in a temporary mobilized crisis management organization. Data were collected longitudinally during an ongoing organizational crisis (terrorist attack) in a multinational corporation
<i>Data analysis</i>	Non-parametric test for inferential statistical analyses in repeated measures, within-subject designs	A combination of Grounded Theory and longitudinal process analytic strategies known as visual mapping and temporal bracketing	A combination of Grounded Theory and longitudinal process analytic strategies known as visual mapping and temporal bracketing
<i>Contribution</i>	Provides support for notion that strategizing and relating leadership functions can be developed before crises through training and that leaders displaying these functions foster team member trust in leaders, psychological safety, and performance	Develops a heterarchical crisis leadership perspective in which dynamic power transitions, influenced by two in-situ drivers and three contextual enablers, contribute to balancing the tension between control and adaptiveness	Presents a typology of emergent sources and functions of crisis leadership, and shows that both collective capacity and alignment is supported by role transgressions when examining leadership dynamics over time and across levels

**Paper 1:****“On the Fly” Leadership in Strategic Crisis Management Teams:****A Quasi-Experimental Study of Performance Before and After Training**

The purpose of this study was to examine key leadership functions in ad hoc mobilized strategic crisis management teams (S-CMTs). Members of these teams, charged with resolving ill-defined, high-stakes tasks in ill-defined structures under pressure, typically have little familiarity with the task and the team. Despite the importance of identifying specific leadership competencies in these teams and how such competencies can be developed before crises, prior research has tended to focus on the effectiveness of general leadership styles in crisis situations. Therefore, I leveraged a functional leadership perspective, crisis leadership literature, and team leadership training and development literature to identify key leadership functions that can be trained before a crisis occurs. I used the internal referencing strategy (IRS), a novel quasi-experimental research design in which non-equivalent dependent variables are used as a proxy control group, to train 29 top managers and teams from a multinational corporation taking part in the study. I exposed the leaders to their teams before and after training in the two key leadership functions, ‘leader strategizing’ and ‘leader relating.’ I measured training transfer using scenario-based crisis simulations. Findings show that crisis leadership can be developed through training. Furthermore, leaders who exhibited more functional S-CMT leadership influenced the two affective states of trust in leaders and psychological safety, as well as the performance outcomes of high-quality/high-speed performance and satisfaction. The study contributes to a more specific and temporally sensitive perspective on crisis leadership in S-CMTs. It also provides guidance on how to train and develop crisis leaders to influence important emergent states and performance outcomes.

**Paper 2:**

## Gaining Control by Letting Go:

## Heterarchical Leadership and Dynamic Power Transitions

## During an Organizational Crisis

The purpose of this study was to explore leadership across time and levels in an ad hoc, mobilized, meso-level crisis management structure during an organizational crisis. The study was based on the unique opportunity to collect real-time data at the headquarters of a multinational energy corporation while a terrorist attack and siege of a production plant in a corporate subsidiary was ongoing. The rich data include interviews, observations, and documents such as logs, reports, and preparedness plans that were analyzed using a combination of well-known qualitative approaches such as grounded theory and process analytic strategies. Contrary to dominant perspectives of how leaders gain control—perspectives that emphasize hierarchical structures and formal leadership—the findings show that leadership roles and structures change depending on situational needs and demands, but not in an entirely emergent and distributed manner. At the core of this type of crisis leadership practice, which I label as ‘heterarchical crisis leadership,’ are dynamic power transitions driven by the competency and legitimacy of different leaders and structures, and enabled by three contextual factors: procedural training, preparedness plans, and norms, values, and culture. Although it has more in common with hybrid crisis leadership perspectives, this practice is more emergent and informal than prior research has shown. Heterarchical crisis leadership is valuable in balancing the tension between strategic control and adaptive response. The study contributes to a more processual understanding of power dynamics over time between different roles and structures and at multiple levels during organizational crises.

**Paper 3:**

## Collective Leadership during an Organizational Crisis:

## The Centrality of Role Transgressions in Aligning Efforts

The purpose of this study was to explore how collective crisis leadership emerges and evolves in temporary crisis management structures during an organizational crisis. It used rich data collected at the corporate headquarters of a multinational corporation while a terrorist attack and siege of a foreign-subsiary production plant was ongoing. The data analysis of interviews, observations, and written documentation used well-known grounded theory and process analytic strategies. The findings contradict much prior literature, in which crisis leadership is often depicted as formal, planned, and individual; they reveal that though multiple sources of leadership are involved in crisis management, including both formal and informal leaders, the emergence of informal leaders provides much-needed leadership capacity. Furthermore, leaders carry out four critical leadership functions in different domains: strategizing, structuring, developing, and relating. This allows for more specialized efforts, at the risk of misalignment of overall efforts. This risk appears to be overcome by leaders who act as ‘role transgressors,’ stepping out of their roles to achieve alignment. Using rich data from a situation that researchers rarely have access to, the study contributes to understanding the collective nature of crisis leadership. It identifies multiple leadership sources and a typology of leadership functions, and shows how leaders who transgress their roles to align efforts cause leadership to become collective over time and across levels.

## 5. DISCUSSION: OVERALL CONTRIBUTION AND IMPLICATIONS

The overall purpose of this study was to develop a processual perspective on crisis leadership. More specifically, I was interested in examining leadership during organizational crises in two specific contexts, ad hoc mobilized CMTs and larger, meso-level crisis management structures. I used a mixed-methods approach with one quasi-experimental study design and two emergent and explorative qualitative field studies. Each of the three empirical studies focuses on different aspects of crisis leadership, including leadership training and development, leadership power dynamics, and the emergence of multiple leaders transgressing their roles to align collective efforts. The findings show that crisis leadership is a more emergent, dynamic, and situationally contingent phenomenon than empirical research to date has been able to show.

In general, the findings illustrate that in these exceptional events and contexts, leadership matters more than leaders. What leaders *do* is more important than who they are—that is, whether they are formally appointed or emergent and informal leaders. The studies show that leadership arises from multiple leaders engaging in role-based leadership based on the situational needs and demands of those being led. While this finding is in line with recent extensions of the functional leadership perspective (Morgeson et al., 2009), it contradicts the general and individual style perspectives on leadership (Bass, 1985). Furthermore, the conceptualization of leadership as a ‘role’ allows for the training of leaders in specific role-based functions and shows that these functions can be developed before the occurrence of crises (Hadley et al., 2011). In addition, the studies show that both leader roles and leader structures are emergent and that they change dynamically over time and across levels; this finding extends and contributes to a more processual crisis leadership perspective (Pearson & Clair, 1998).

The key findings of the three empirical studies serve to illustrate this perspective. In the first study, leaders engaged in more ‘functional’ crisis leadership after training than before, which in turn influenced important outcomes such as trust in leaders, psychological safety, and performance in S-CMTs. The leaders were the same before and after training, supporting the notion that *what* leaders do, is more important than *who* leads. In the second study, both leader roles and structures were shown to vary over time and across levels in a manner in which leaders stepped up and down, driven by the legitimacy and competency of leaders and structures in meeting critical situational needs and demands. The third study identified multiple formal and informal sources and forms of leadership are identified, but leadership was predominantly emergent and informal. Therefore, although I identify role-based functions, the centrality of

role transgressions illustrates the collective nature of crisis leadership residing in the interplay between actions by multiple leaders aligning overall crisis management efforts.

These findings allow for the development of a processual crisis leadership perspective. Throughout all three studies, the response phase of managing an organizational crisis featured exceptional events and contexts for leadership. Furthermore, regarding leadership as a role in which situational contingencies are pivotal to leadership effectiveness provides more specificity than relying on general theories about individual leadership styles. For example, motivating followers appears to be not as important during organizational crises as it is in other organizational settings. In addition, the findings resonate with recent extensions of a functional leadership view (Morgeson et al., 2009) by acknowledging that multiple formal and informal sources of leadership emerge, vary over time, and involve more levels than one in these settings. Therefore, the study challenges the relevance of examining the effectiveness of individual but general leadership styles in crisis situations (Sommer et al., 2016); it also extends research that frames crisis leadership as a situationally contingent role occurring in exceptional events and contexts (Hadley et al., 2011; Hannah et al., 2009).

Second, the studies contribute to the development of an empirically grounded understanding of the emergent and dynamic nature of crisis leadership. This understanding contradicts existing literature in many ways, particularly with regard to the emphasis on planning, formality, and hierarchy (Boin et al., 2005). For example, in the studies, although there were planned leader roles and structures, these predominantly came into being in an unplanned manner in response to a developing crisis situation. Furthermore, collective leadership came about as leaders transgressed roles and structures as a way of aligning collective efforts. This emphasizes the importance of understanding the ‘becoming’ of crisis leadership and seeing this phenomenon as having *both* relational and structural emergent properties, in line with complex adaptive system (CAS) perspectives (Uhl-Bien et al., 2007). In addition, the studies showed that leaders struggled with the tension of balancing strategic control and adaptive response. The dialectic and often paradoxical aspects of crisis leadership resonate with process theory perspectives (Langley, Smallman, Tsoukas & Van de Ven, 2013).

Beyond contributing to developing a more processual perspective on crisis leadership overall, the findings provide particular insights into crisis leadership in the two studied settings. For example, in the first study, I focused on leadership in the initial phase of the life of S-CMTs. Although the study is a variance study (Langley, 1999), it includes measurements at two points in time in a team setting, providing contextual and temporally sensitive account of crisis

leadership. Therefore, it answers a recent call by crisis researchers to delve more deeply into the specifics of crisis leadership KSAs and how they can be developed before crises occur (Hadley et al., 2011; Wooten et al., 2011). In particular, the study indicates that leadership along the interpersonal dimension (leader relating) is more important than has been shown in previous crisis research (DeChurch et al., 2012; Hadley et al., 2011).

The second study addresses an issue that few studies have grappled with, that is, leadership power dynamics over time during crisis response in larger, meso-level structures. By conceptualizing leadership as heterarchical rather than hierarchical, it sheds new light on how leaders gain control through letting go in these events and contexts and addresses drivers and enablers of a different power order. These findings both extend and contradict prior research, by showing that relational and structural aspects of leadership that are more emergent than other hybrid perspectives have found them to be (Klein et al., 2006; Bigley & Roberts, 2001).

The third study shows how leadership through multiple leadership sources that are predominantly emergent and informal not only takes on critical role-based leadership functions but also fosters collective alignment through role transgressions along a temporal dimension. While this is a more specific characterization, it is also more holistic than Morgeson et al.'s (2009) descriptive account of leadership sources and functions; it examines the interplay over time and across levels and complements the insights of DeChurch et al., (2012), drawn from a similar setting. Overall, the findings contribute to and extend prior theory with regard to crisis leadership in general, and also in specific ways.

### **Implications and Future Research**

There are some theoretical implications of a processual crisis leadership perspective. First, crisis leadership is conceptualized as a phenomenon that differs from leadership in general (Hadley et al., 2011; Wooten et al., 2011). In particular, examining only one source of leadership provides an inadequate account of crisis leadership (Boin et al., 2005). Second, if the factor of time is not addressed, a certain leadership style may be rendered effective when it is not or involve a mix of styles that is not typically examined in crisis research. That crisis leadership is something other than the style of an individual (Hadley et al., 2011), such as a role (Morgeson et al., 2009), is an understanding that was adopted in the current study. Several adaptive and dynamic theoretical approaches need further refinement before they can actually be tested empirically (Hannah et al., 2009; Uhl-Bien et al., 2007), but a functional perspective (Morgeson et al., 2009) is useful in exploring how crisis leadership emerges and unfolds over time. In

future studies, continuing to leverage the assumptions of functional leadership may provide further refinement of a processual perspective on crisis leadership and help researchers grapple with criticisms related to dispersion, fragmentation, and lack of shared theoretical basis in crisis research (Pearson et al., 2007).

A processual perspective influences not only how crisis researchers understand the emergent and dynamic nature of crisis leadership but also how they conceptualize outcomes. Broadly, crisis leadership has been deemed effective when stakeholders perceive crisis management successes to have outweighed failures (Pearson & Clair, 1998). While this definition is broad, it is also notable, because it shows that organizational crises inherently tend to involve successes as well as failures. This dialectic is one of many aspects of understanding the potential outcomes of crisis leadership. The study reveals several other potential tensions and opposites, including the issues of balancing the interpersonal dimensions and task dimensions of crisis leadership, balancing the need for stability with the need for adaptiveness, and the need for addressing both short- and long-term time perspectives as crises unfold. Both CAS perspective researchers (Uhl-Bien et al., 2007) and process researchers (Langley et al., 2013) have called for addressing the finding that outcomes are more complex than previous perspectives have supposed. The three empirical studies taken together reveal the importance of remaining open to the complexities of examining outcomes of crises leadership in future studies.

The studies also have methodological implications. I have emphasized ‘how’ questions in the empirical studies. Such questions are powerful in that they serve to provide more elaborate explanations than when questions are implicit, taken for granted, or derived from prior theory—or when researchers simply do not include such questions. The studies show the usefulness of asking ‘how’ questions and choosing designs accordingly; they provide insights into how leaders enable team performance, gain control, and align efforts during an organizational crisis. Arriving at rich and novel findings requires an interest in how a phenomenon develops over time; such interest is uncommon in most quantitative, cross-sectional, qualitative, and merely descriptive research and is an approach that requires longitudinal data.

Furthermore, the studies underscore the importance of collecting real-time data in the field, in which the messiness and complexity of the phenomenon comes in to play (Wildman et al., 2011). Information distortion based on memory decay and impression management can be expected when crises occur (Pearson & Clair, 1998), but I was surprised that data collected during, rather than before and after the crisis, differed substantially in accounts of how events, actions, and activities came about and occurred over time. There was more overlap between my

own real-time observations, interviews, and logs than between interviews, preparedness plans, and reports from before and after the crisis. Therefore, it should be noted that findings such as these would probably not emerge using common qualitative approaches such as retrospective critical incident techniques or historiometric data analyses.

In addition, the studies show that collecting data at multiple points in time is important because it fosters a deeper understanding of what is going on. However, repeated data collection must occur for a reason, such as measuring change in leadership before and after an intervention, or observing developments in leader roles and structures at different times. Importantly, the data analysis must allow for making sense of data along a temporal dimension; otherwise, collecting data over time cannot inform theory development. Thus, combining data analysis strategies, such as strategies that are suitable for conceptualizing with strategies specifically related to time, appears valuable. In this case, collecting data at a single point in time would probably not have captured any of the key findings; time is treated as more than a variable and as a dimension that cannot be ignored.

Finally, despite the studies being inclusive with regard to which information is considered data and remaining open to including multiple level of analysis, there are boundaries. For example, the studies were limited by ‘natural’ time constraints, such as how long the temporary response organization was mobilized and the interest in focusing on the response phase. When addressing crisis leadership in the future, and contributing to more precise conceptual frameworks, researchers who are interested in a processual approach should be clear about their boundaries. Furthermore, given the insights generated by a mixed-methods approach, in which different aspects of crisis leadership are examined in three separate studies, researchers should not limit their work to either quantitative or qualitative designs. According to my experience, I encourage the use of multiple methodologies in future crisis leadership research—preferably those that incorporate time as an inherent aspect of the phenomenon.

### **Implications for Practice**

There are many practical implications of a processual crisis leadership perspective. My studies portray crisis leadership as far more emergent and dynamic than prior research has indicated. This finding should encourage practitioners to incorporate a more processual understanding of crisis leadership effectiveness into their practice.

For example, organizations could benefit from drawing on several crisis leadership perspectives to recruit, select, and develop crisis leadership competencies (Nesse, 2016). However, a

functional perspective is perhaps the most suited to training leaders. Most leaders are recruited and selected for more general leadership knowledge, skills, and competencies; they become crisis leaders regardless of whether they reflect crisis leader effectiveness (Hadley et al., 2011). When combined with crisis-scenario based simulations, training transfer to a real setting is more likely to be ensured by targeting role-specific functions that enable collective crisis management efforts.

Furthermore, although the findings show that crisis leadership is emergent and stems from multiple sources in evolving structures, most organizations rely on formal leaders and preparedness plans with seemingly static organizational structures (Selart, Johnsen & Nesse, 2013). According to the findings of these studies, organizations may benefit from engaging in “planned improvisation” (Nesse, 2015). Preparedness—including a pool of trained personnel, and values, norms, and cultures—is vital, but organizations seem to rely on improvisation based on situational needs and demands in the response phase of ongoing crises, and paradoxically, for this to occur the organization needs to be prepared.

Finally, as Mitroff and colleagues have stressed, the complex challenges of crisis leadership are multidisciplinary and systemic (Mitroff, 2004; Pearson & Mitroff, 1993). The greatest remaining challenge to crisis leadership effectiveness is overcoming the denial of these complexities, particularly the paradoxes and dialectics related to process and outcomes addressed in this study. This should involve addressing crisis leadership effectiveness in different settings and particularly in the most common ones, that is, ad hoc mobilized teams and larger, meso- level temporary structures.

Organizations that intend to survive in a crisis-prone world may find that in addition to managing risks and preventing crises, they must manage crises as they unfold. A contextual, processual, and theory-to-practice informed approach to crisis leadership effectiveness will be a viable source of competitive advantage.

### **Strengths and Limitations**

The studies have important theoretical, methodological, and practical implications but it is important to be aware of their limitations. Most of these are discussed in the empirical papers, hence, I address a concern that related to all studies here. The studies were carried out in a single organization, which is the most important limitation to interpreting and evaluating the findings overall. The findings may not be generalizable or transferable to other settings because of idiosyncratic organizational factors that represent unexplored alternative explanations.

However, being deeply embedded within an organization gave me intimate knowledge about how that organization was both similar to and different from other organizations. To address this limitation, I sought physical distance from and had limited contact with the studied organization during data analysis and received feedback from other experienced researchers as well as practitioners.

I would probably not have been able to study crisis leadership in depth if I had not been able to spend a considerable amount of time and effort building trust and thereby gaining access to the organization. There appears to be more acceptance among crisis researchers than among researchers in other fields that gaining new insights requires spending time with one or only a few organizations to build trust and gain access (Sommer et al., 2016; Pearson & Clair, 1998). However, the importance of embeddedness appears to have become more accepted recently in the organizational sciences. Researchers are carrying out more phenomenon-driven research and paying more attention to the particular, context-specific, situationally contingent and processual aspects of the phenomena they study (Langley et al., 2013). As such, studies that aim to contribute to the ‘general’ may be more limited than many researchers claim, in that they cannot predict and explain important aspects of the ‘particular’ that matter profoundly to how organizations cope and survive today. Thus, what appears to be the main limitation of these studies is also their strength.

## 6. CONCLUSION

This doctoral dissertation contributes to a contextual and processual perspective on leadership during organizational crises. Specifically, by exploring crisis leadership in ad hoc mobilized crisis management teams and in larger, meso-level crisis management structures, the three studies included offer an account of crisis leadership in two under-researched settings. The research questions in each empirical study differ depending on the level of maturity of prior research, which is informed by using multiple methodological approaches. The findings lend support to the view that crisis leadership is more about what leaders *do* than who they are; they also show that leadership is more emergent and dynamic than prior research has indicated. In the first empirical study, I show that specific leadership functions can be developed before crises occur and that these may influence certain affective states as well as performance outcomes in a strategic crisis management team’s first performance cycle. The second study illustrates that crisis leadership in larger, meso-level structures in the crisis response phase is

heterarchical rather than hierarchical, but this power order is not entirely distributed and emergent. I identify two drivers and three enablers of the dynamic power transitions that are the hallmarks of heterarchical crisis leadership. Furthermore, I identify multiple, predominantly emergent sources of leadership and critical leadership functions, while showing that role transgressions are central to aligning specialized crisis management efforts overall during crisis response. Taken together, these empirically grounded studies shed light on the complex, dialectical, and often paradoxical aspects of crisis leadership from a contextual and processual perspective—important aspects to incorporate in future crisis research and in research in similar settings.

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## **“On the Fly” Leadership of Strategic Crisis Management Teams: A Quasi-Experimental Study of Performance Before and After Training**

### **Abstract**

*During organizational crises, many top managers are responsible for setting up an ad hoc mobilized strategic crisis management team (S-CMT) to perform highly consequential but ill-defined tasks under pressure. This study examines two key leadership functions — ‘leader strategizing’ and ‘leader relating’—to determine how they influence trust in leaders, psychological safety, and performance. It employs a novel research design, known as the internal referencing strategy, which uses non-equivalent dependent variables instead of a control group. Top managers (N = 29) and team members (N = 189) of a multinational energy corporation participated in a quasi-experiment. Before and after training, leaders were exposed to scenario-based crisis simulations with their S-CMTs. Leaders, when trained in the two leadership functions, exhibited more functional S-CMT leadership, which positively influenced trust in leaders, psychological safety, and performance.*

**Keywords:** Functional leadership; crisis management team; trust; psychological safety; quasi-experiment

### **INTRODUCTION**

Organizational crises, whether triggered by industrial accidents, natural disasters, or malicious acts, pose an immediate call for effective team leadership. In response to such events, many organizations mobilize strategic crisis management teams (S-CMTs) led by top managers to orchestrate overall crisis management efforts (Waller, Lei & Pratten, 2014; Pearson & Mitroff, 1993). However, while there is a sense of urgency for such teams to respond swiftly to surprising, high-impact, ambiguous events (Pearson & Clair, 1998), team composition is likely to vary depending on team member relevance and availability (Waller et al., 2014; Zijlstra, Waller & Philips, 2012). These conditions challenge the development of key characteristics of high-performing teams, such as familiarity with task and team (Sommer & Pearson, 2007). Team leaders become responsible for setting up ‘practically new’ teams to perform consequential but ill-defined tasks under pressure.

Prior research has emphasized the tremendous need for capable leaders during organizational crises (Wooten & James 2008) but has not focused on team leadership "on the fly." Research has tended to be conceptual (Hannah, Uhl-Bien, Avolio & Caravetta, 2009; Pearson & Clair, 1998) or case-based (Bateman, 2008; Vaughan, 1996), or it has focused on the effectiveness of charismatic and transformational leadership styles (Zhang, Jia & Gu, 2012; Halverson, Murphy & Riggio, 2004; Pillai & Meindl 1998). Although such research has contributed to a broad understanding of crisis leadership, research argues that leadership effectiveness may change qualitatively in different phases of a crisis (James, Wooten, & Dushek, 2011; Hannah et al., 2009) or vary depending on team needs (Zaccaro, Rittman & Marks, 2001). Despite these possibilities, however, virtually no research has examined crisis leader knowledge, skills, and abilities (KSAs) in crisis management teams (CMTs) and how such skills can be learned before crises (Wooten & James, 2008).

While it is important to advance understanding of leadership in S-CMTs, it is also important to expand understanding of how crisis leadership can be developed before crises occur (Hadley, Pittinsky, Sommer & Zhu, 2011). The current research aims to contribute to this goal by identifying key leadership functions in S-CMTs and examining how training contributes to leadership development before crises occur. To identify what constitutes effective crisis leadership in S-CMTs and understand how it can be developed, I draw on a functional leadership perspective (Morgeson, DeRue & Karam, 2009) and literature on leadership training and development (Salas, Tannenbaum, Kraiger & Smith-Jentsch, 2012).

This research contributes to crisis leadership literature in several ways and has particular relevance to the leadership of swift-acting S-CMTs. First, I identify key leadership functions during the team's first performance cycle (Marks, Mathieu & Zaccaro, 2001), which is a critical phase in S-CMTs (Sommer & Pearson, 2007). Second, I take a team-centric perspective (Morgeson et al., 2009) by proposing that leader effectiveness is evident in leader influence on affective states such as trust, psychological safety, and performance outcomes. Specifically, I identify two key functions—leader strategizing and leader relating—that contribute to the fulfillment of performance and interpersonal needs in S-CMTs.

Third, I contribute to literature on how crisis leadership can be developed through training (Waller et al., 2014; James et al., 2011). Because leaving the emergence of effective leaders to chance is both impractical and potentially unethical with regard to crisis leadership (James et

al., 2011), organizations rely on using other forms of leadership learning experiences such as training. In line with Salas et al. (2012), I propose that training designed to target specific behaviors facilitates the transfer of those behaviors to a real setting. To examine this proposal, I trained top managers from a multinational corporation in two leadership functions and exposed them to scenario-based crisis simulations with real, on-duty S-CMTs. I then asked multiple respondents, including leaders, team members, and expert observers, to rate changes in leader behaviors and other outcomes before and after training.

This study answers a call to use more quasi-experimental designs in investigations of leadership development (Antonakis, Bendahan, Jacquart & Lalive, 2010). I use the internal referencing strategy (IRS), a within-subject design in which non-equivalent dependent variables are used as controls (Haccoun & Hamtiaux, 1994). Although this design is recommended, it is underutilized in leadership development studies, which tend to use less rigorous designs (Antonakis et al., 2010; Frese, Beimel & Schoenborn, 2003).

This article is organized as follows: First, I discuss leadership effectiveness in S-CMTs by drawing on a functional leadership perspective to identify two key leadership functions: ‘leader strategizing’ and ‘leader relating.’ Next, I present hypotheses with regard to the effective use of these functions before and after training (H1), functional S-CMT leadership and team member states and processes (H2/H3), and performance (H4). Figure 1 provides an overview of the proposed relationships in the study.

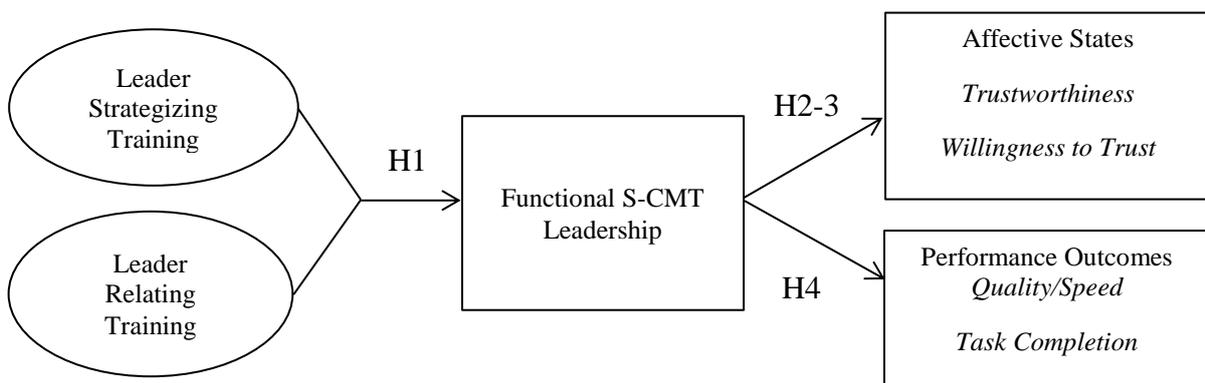


Figure 1. S-CMT Leadership Training and Proposed Effects

## **THEORETICAL BACKGROUND**

### **Leadership in Strategic Crisis Management Teams**

S-CMTs are distinct from other CMTs in that their purpose is to orchestrate overall crisis management efforts. This involves taking a strategic, proactive perspective (Mumford, Friedrich, Caughron & Byrne, 2007; Mitroff, Pearson & Pauchant, 1992), addressing a broad range of issues and stakeholder needs, and coordinating activities across domains. It is essential for leaders to capitalize on the expanded cognitive-emotional capacity provided by cross-functional teams (Kovoor-Misra, Zammuto & Mitroff; 2000). Despite the emphasis on cognitive tasks, however, leadership in S-CMTs, just as in swift-starting action teams (Klein, Zeigert & Knight & Xiao, 2006), is about enabling teams to function despite the presence of challenges that impede performance.

Many of these challenges are immediate. First, team members are likely to be new to one another because ad hoc teams are mobilized according to expertise and availability (Waller et al., 2014). Second, despite preparation, each crisis is likely to involve unique problems; an absence of familiarity with teams and tasks has been associated with poorer performance of teams in general and S-CMTs in particular (Sommer & Pearson, 2007). Third, the need to perform quickly during crises is associated with the risk of choking under pressure (Adams, Scott, Dust & Piccolo, 2013). There is perhaps no other time that team members are more vulnerable to their leaders than when managing crises (Mishra, 1995).

These challenges have implications for leadership effectiveness in S-CMTs. First, without gaining team members' trust, leaders are unlikely to reap the many benefits that cross-functional teams may provide (Zijlstra et al., 2012). Second, leaders need to instill a sense of psychological safety for members to interact effectively (Edmondson, 2004). Finally, although a crisis is managed effectively when key stakeholders perceive that success has outweighed failure, teams must solve problems step-by-step until the crisis is resolved (Pearson & Clair, 1998). Therefore, leaders need to promote task completion without sacrificing quality for speed (Sommer & Pearson, 2007). It is also important for members to feel satisfied with being on a team (De Dreu & Weingart, 2003) because a crisis may last for a long time (Sommer & Pearson, 2007).

### **The Functional Leadership Perspective**

The functional leadership perspective is especially useful in understanding the role of leadership in S-CMTs. It posits that a leader's job "is to do, or get done, whatever is not being adequately handled for group needs" (McGrath, 1962, p. 5). The leader's role is to translate critical demands and needs into a pattern of leader behaviors that enable team success (Morgeson et al., 2009; Zaccaro et al., 2001). However, because the behaviors a leader needs to focus on are not specified (Fleishman, Mumford, Zaccaro, Levin et al., 1991), the leadership setting must be taken into account.

In a team setting, effective leaders address team needs along task and interpersonal dimensions (Bell & Kozlowski, 2002). They align their behaviors with the developmental needs of the team (Kozlowski, Gully, McHugh, Salas et al., 1996; Kozlowski, Gully, Salas, & Cannon-Bowers, 1996). They also consider whether their team is in the planning or action phase (Marks et al., 2001). Their role at the outset is to reduce ambiguity by sharing with the team how to contribute to the team's purpose and how to work together (Morgeson et al., 2009).

Effective leadership influences both short-term and long-term performance (Hackman, 2002; Gersick, 1998). Mathieu and Rapp (2009) and Marks, Zaccaro and Mathieu (2000) find that focusing on both task and interpersonal dimensions leads teams to outperform other teams both immediately and over time. Therefore, in this study, I integrate crisis leadership literature with the functional leadership view and identify two key leadership functions—leader strategizing and leader relating—that fulfill team needs along the task and interpersonal dimensions of the team's first performance cycle. I refer to this type of leadership as functional S-CMT leadership.

### **Development of Hypotheses**

Consistent with prior research, I define leadership development as a positive change in the effective use of leadership behaviors (DeRue, Nahrgang, Hollenbeck & Workman 2012). This infers that leadership development goes beyond simply training leaders in behaviors associated with particular leadership perspectives, such as transformational leadership, to use a clear set of criteria to evaluate effective leadership (Day, Fleenor, Atwater, Sturm et al., 2014). Therefore, my first hypothesis pertains to changes in functional leadership behaviors and subsequent hypotheses pertain to the effect of leader behaviors on two affective states—trust

and psychological safety—and performance. Table 1 provides an overview of trained leadership functions.

Table 1. Summary of Functional S-CMT Leadership in Team's First Performance Cycle

<b>Dimension</b>	<b>Function</b>	<b>Subtasks</b>	<b>Examples of Leader Behaviors</b>
<i>Task</i>	Leader Strategizing	Provide direction Initiate structure Develop a strategy	-Communicate the team's purpose -Inform team that they will transition through planning and action phases -Coach team members through a crisis assessment
<i>Inter-personal</i>	Leader Relating	Set norms Address climate	-Encourage cross-functional cooperation -Explain stress reactions and how to cope with them

**Leader strategizing.** Leader strategizing is proposed to be a key leadership function of S-CMTs. There are three important leader strategizing dimensions: providing direction, initiating structure, and developing strategy. First, leaders are important in providing direction (Mumford et al., 2007; Hackman, 2002); they do so by summarizing plans, setting priorities, and aligning priorities with crisis management values (especially important when multiple priorities appear equally critical) (Pearson, Misra, Clair & Mitroff, 1997). Leaders also give direction by sharing top management perspectives, using strategic linkages to protect the team's boundaries, and ensuring that teams have access to the resources they need (Mitroff et al., 1992).

Second, although team members are important contributors to strategy development, they rely on their leaders to initiate procedures that allow the flexibility to address the ill-defined, ill-structured problems that crises represent (Stachowski, Kapler & Waller, 2009). Leaders foster this flexibility by informing team members that they will cycle through planning and action phases (Marks et al., 2001). S-CMTs in particular benefit from engaging in such rhythms, because these aid in understanding when to engage in cognitive tasks and when to engage in behavioral tasks (Zijlstra et al., 2012). This approach supports teams in completing their tasks during each performance cycle.

Third, S-CMTs respond effectively to crises by formulating proactive, future-oriented plans (Mumford et al., 2007; Mitroff et al., 1992). This involves assessing the potential 'worst case' and predicting the strategic implications or 'big picture' of a pending crisis (Mitroff et al., 1992; DeChurch & Marks, 2006). Although all crises involve idiosyncrasies, leaders are proposed to

be able to speed up strategy development by coaching teams through sets of proactive ‘what if/then what’ questions that are useful across all crises and by encouraging all members to participate in this assessment (Pearson et al., 1997). Overall, leader strategizing addresses team needs along the task dimension.

**Leader relating.** Leader relating is proposed to be another key function of S-CMTs. There are two dimensions of leader relating: setting cooperative norms and addressing the socio-emotional climate. First, leaders who communicate norms for social interaction make team members’ responses predictable and meaningful and speed up team familiarization (Koslowski et al., 1996a). Crisis leaders derive particular benefit from engaging team members in open, cross-functional problem solving, even when it involves questioning others (Pearson & Mitroff, 1993).

Second, by addressing stress reactions and showing members how to cope with them, leaders can take the edge off psychological reactions that may occur during crises (Adams et al., 2013). When cognitive coping strategies are insufficient, leaders can foster a climate of care and empathy by communicating about it (Pearson & Clair, 1998). When confronted with the risk of failure that a crisis poses, the promotion of a calm and optimistic working climate can be effective (James et al., 2011). Leaders are central to fostering a socio-emotional climate that promotes coping with crisis stressors. Such leader relating addresses team needs along the interpersonal dimension.

Together, these two leadership functions address the role of leaders in facilitating team needs along both task and interpersonal dimensions. Therefore, training of leaders in the strategizing and relating functions should result in more functional S-CMT leadership.

*Hypothesis 1: Crisis leaders exhibit more functional S-CMT leadership behaviors after leader strategizing and leader relating training (Time 2) than before training (Time 1).*

**Trust in leaders.** Trust is an affective state typically defined as the willingness to be vulnerable to another party, according to positive expectations of the other’s intentions and actions (Rosseau, Sitkin, Burt & Camerer, 1998; Mayer, Davis & Shoorman et al., 1995). Leaders are deemed trustworthy along the dimensions of ability, benevolence, and integrity depending on how effective their leadership behaviors are perceived to be in addressing both task and team

needs (Burke, Sims, Lazzara & Salas, 2007). Although trust is a relatively stable perception, it may be reappraised if leader behaviors change (Mayer et al., 1995). Accordingly, when leaders engage in more functional S-CMT leadership, team members reappraise their leaders and perceive them as more effective and, as such, more trustworthy.

However, perceptions of leader trustworthiness alone are not enough to predict whether team members will behave in a trusting manner toward their leaders (Gillespie, 2003). It is important to assess whether a change in leadership behavior influences team members' intentions or willingness to rely and depend on their leaders, who are representative of their behavioral trust (Lee, Gillespie, Mann & Wearing, 2010; Gillespie, 2003). Engaging in the two leadership functions indicate that the leader is someone team members can share information with as well as rely on. Therefore, when leaders engage in more functional S-CMT leadership, team members should be more willing to engage in trusting behaviors with their leaders.

*Hypothesis 2: Teams a) perceive their crisis leaders as more trustworthy and b) are more willing to engage in trusting behaviors toward the crisis leaders when leaders exhibit more functional S-CMT leadership behaviors (Time 2) than when leaders exhibit less functional S-CMT leadership behaviors (Time 1).*

**Psychological safety.** Psychological safety refers to a team member's belief that the team is safe for interpersonal risk taking (Edmondson, 2004). The promotion of clear guidelines and the fostering of a participative and interpersonally non-threatening interaction climate are likely to increase the willingness of team members to speak up and challenge one another. Such actions reduce team members' fear of being intimidated or intimidating others and lower the risk of conflict between team members. Accordingly, when leaders engage in more functional S-CMT leadership, team members should feel psychologically safer.

*Hypothesis 3: Teams experience more psychological safety when crisis leaders exhibit more functional S-CMT leadership behaviors (Time 2) than when crisis leaders exhibit less functional S-CMT leadership behaviors (Time 1).*

**Performance outcomes.** Crisis researchers contend that though efforts to manage crises must be timely, quality should not be sacrificed for speed (Sommer & Pearson, 2007). Leaders are efficient insofar as they facilitate high-quality/high-speed task performance while effectively

achieving task completion. Furthermore, satisfaction is important in sustaining motivation to stay on the team over time (De Dreu & Weingart, 2003; Gladstein, 1984); leaders are vital to promoting satisfaction (Miles & Mangold, 2002). Effective leaders achieve high-quality/high-speed performance, task completion, and satisfaction by addressing team needs along the task and interpersonal dimensions. Thus, when leaders engage in functional S-CMT leadership, these performance outcomes should improve.

*Hypothesis 4: Crisis leaders and teams perceive a) problem solving as of higher quality and speed, b) tasks as more likely to be completed, and c) themselves as more satisfied with being on the team when crisis leaders exhibit more functional S-CMT leadership behaviors (Time 2) than when crisis leaders exhibit less functional S-CMT leadership behaviors (Time 1).*

## METHODOLOGY

### Research Design

Research has called for applying more quasi-experimental designs in the study of leadership development in commercial settings (Antonakis et al., 2010). The ‘gold standard’—experimental design—is often not feasible in commercial organizations. Furthermore, the no-control group, post-test only with no-control group, and pre-test/post-test design often applied in these settings is regarded as unsuitable for drawing inferences about training effects (Frese et al., 2003; Shadish, Cook & Campbell, 2002). The IRS (Haccoun & Hamptieux, 1984) used in this study is a stronger design than the alternatives for evaluating leadership development (Antonakis et al., 2010).

The IRS, also referred to as a non-equivalent dependent variable design (Shadish et al., 2002), is a single-group, within-subject pre-test/post-test design in which training-relevant and training-irrelevant behaviors are included in the pre-test and post-test (Haccoun & Hamptieux, 1994). Training-irrelevant behaviors are used as a proxy control group to the training-relevant behaviors, and effectiveness is inferred when the increase in training-relevant behaviors is greater than the increase in training-irrelevant behaviors. The design avoids threats associated with between-subjects designs and rules out threats associated with within-subject designs, such as history, maturation, and testing effects. If any such effects are present, they should have an effect on both relevant and irrelevant items (Haccoun & Hamptieux, 1994; Frese et al., 2003).

An IRS design requires both training-relevant and training-irrelevant items to determine the effect of training. Thus, I followed the procedure used by Hadley et al. (2011) to review crisis leadership and team leadership literature and identify the crisis leadership behaviors to be included in these measures. I generated training-irrelevant items from the same general domain as training-relevant items. These items consisted of behaviors that could have been trained but were not trained in the intervention; they served as control items. An additional benefit of the IRS is that when a differential effect of training-relevant and training-irrelevant items is inferred, the effect is likely to be the cause of change in other constructs. Thus, I used the IRS to examine the effect of leadership on affective states and performance outcomes.

### **Participants and Research Setting**

I conducted the study in a multinational energy corporation with approximately 29,000 employees worldwide. The sample consisted of 29 top managers (38% female), including 5 executive vice presidents (17%), 18 senior vice presidents (62%), and 6 vice presidents (21%), with a mean age of 50.81 ( $SD = 4.8$ ). Furthermore, 189 team members (31% female), with a mean age of 45.11 ( $SD = 8.62$ ), took part in the scenario-based crisis simulations. The leaders were assigned to training due to their role as CMT leaders in the case of a crisis in their respective business areas. CMT members were part of the corporate CMT pool on duty at the time of the training intervention. Teams consisted of seven roles, including crisis leader, operations leader, human resources, communications, legal, insurance, technical support, and a medical doctor.

The training was carried out during a one-day crisis management session that consisted of four parts. First, the leaders and team members were given a general lecture on strategic crisis management. Second, leaders and their teams were exposed to the first scenario-based simulation. Third, crisis leaders received a 1.5-hour leadership training intervention. Fourth, crisis leaders were exposed to a second scenario-based crisis simulation with their teams. While leaders were exposed to their teams twice (pre- and post-training), the same team was exposed to each leader twice and thus took part in four simulations per session (pre- and post-training with leader 1, and pre- and post-training with leader 2).

As a trained psychologist, I designed and delivered the training. All other aspects, such as common lectures, scheduling, and delivery of the crisis-scenario simulations (e.g. simulation staff), were provided by three internal consultants from the studied corporation and two external consultants from a firm that specializes in crisis management. It is important to note that the purpose of the study was not to validate a specific training program.

### **Assessment Procedure: Crisis-Scenario Simulations and Training Transfer**

Salas, Wildman and Piccolo (2009) suggest that scenario-based simulations are a viable solution when training transfer cannot be measured on the job for practical or ethical reasons. Simulations have an advantage over other settings that measure training transfer in that they can be designed to achieve a high degree of psychological and physical fidelity, in a safe environment (Waller et al., 2014). Therefore, before and after training, crisis leaders and their teams were exposed to scenario-based crisis simulations designed to resemble real organizational crises. This occurred in the corporation's crisis management facilities where leaders and teams were seated around a table with access to crisis management software and documents such as preparedness plans.

The crisis-scenario simulation included a sequential, four-point narrative story with dynamic external information delivered to the participants at predetermined times, a procedure guided by Waller et al. (2014). Although the unique scenarios, drawn from the trained leaders' business areas and the corporation's scenario portfolio, included industrial accidents (oil rig explosion, helicopter crash), criminal acts (corruption, terrorist attack) and natural disasters (earthquake, flood), they were designed to develop in a similar manner. Each scenario began with a threat to two of four priorities stated in the preparedness plans (health and safety, environmental pollution, material assets, and reputation) and evolved to include two more threats. Three subject-matter experts (SMEs) rated the scenarios. The average difficulty level (range of 1–5), was 4.5 (SD = 0.5) for pre-training scenarios and 4.7 (SD = 0.3) for post-training scenarios, indicating that the scenarios were equally difficult even though the triggering event varied.

During the simulation, the crisis leader received a phone call from simulation staff in which she learned there had been a triggering event (e.g., an oil rig explosion with four people suspected killed). About ten minutes later, the S-CMT was assembled and the leader began to brief the team members. Eight minutes later, the leader received more information about the

development of the event (e.g. four people confirmed killed and the oil spill increasing). Thirty minutes later, the crisis leader learned that the triggering event was escalating (e.g., asset damage to oil rig and negative media coverage). Finally, 45 minutes into the scenario, the crisis leader learned that the CEO needed information about both the situation and the team's priorities. Each scenario lasted a maximum of 55 minutes.

Upon mobilizing their teams, leaders were instructed to conduct a first meeting, that is, an initial assessment of the crisis with their team, in accordance with preparedness plans. This instruction was repeated in both the first and second scenario-simulation. However, during training, leaders were told they could engage in leader-strategizing and leader-relating behaviors upon team mobilization and were asked to do so in the subsequent scenario-simulation and exposure to the teams. Apart from that variation, leaders were given the same general instructions before both crisis-scenario simulations with regard to how the simulation would be delivered.

### **Training Intervention and Delivery**

The 1.5-hour intervention included instructing leaders in how to carry out the behaviors associated with the two the leadership functions, leader strategizing and leader relating (see Table 1 and Appendix A for more detailed information about the specific behaviors). The intervention was based on behavior modeling training, the most widely used and well-researched psychologically based training intervention (Taylor, Russ-Eft & Chan, 2005). The key elements of behavior modeling training provide trainees with four learning strategies: information, demonstration, practice, and feedback.

Specifically, the training intervention began with leaders being informed about the crisis leadership functions and associated behaviors (information) before seeing a video of a scenario-based simulation video in which the behaviors were performed by an actor playing a crisis leader interacting with a CMT (demonstration). Next, leaders were given the opportunity to enact these behaviors (practice) and get reviews of their performances (feedback) from a psychologist as well as a colleague, before being exposed to their teams.

The information and demonstration aspects of training were video-recorded to ensure that all leaders would receive the same information. The two latter parts of the intervention were tailored to each leader. However, all feedback was given following the same guidelines, which

involved ensuring that each leader could express all the behaviors targeted during training. I carried out the training from an instruction manual and an instructional video with actors playing crisis leaders and teams (both developed for this study; all material used to train leaders is available on request).

### **Data Collection**

All data were collected during the one-day crisis management session for leaders and teams, who provided descriptive information and informed consent forms at the beginning of the session. Baseline data for all measures related to change in leadership behaviors were collected before the leadership intervention (after the first crisis-scenario simulation) and after the leadership intervention (after the second crisis-scenario simulation), allowing for a pre-/post-comparison (Taylor et al., 2005). Thus, data were obtained from respondents on three occasions.

Inferences about leadership development are more likely to be valid when similar evaluations are reported by multiple raters (Day et al., 2014). Therefore, in this study, leaders, team members, and expert observers assessed changes in leader behavior. It is important to note that the items were both behaviorally and situationally anchored, following Rosen, Bedwell, Wildman, Fritzsche et al. (2011). This means that each item began with “In this scenario...,” followed by a specific behavior. This ensured that not only expert observers but also leaders and team members could easily observe leadership behaviors during the crisis scenarios.

Despite the involvement of multiple raters, only team members rated affective states (trust and psychological safety), because the focus was on team members’ subjective experiences of their leaders. Furthermore, only team members and leaders rated the performance outcomes of performance quality and speed, task completion, and satisfaction. This approach is recommended when outcomes are likely to be dependent on factors that only those familiar with the scenario context are suited to evaluate (Waller et al., 2014).

Before data collection, the experts in crisis management psychology received a one-day video-based training course in leaders assessment, according to functional S-CMT leadership behaviors. This was done according to the observation of DeChurch and Marks (2006) that trained external observers are able to make more accurate observations. The experts carried out

ratings without being informed about the IRS design. Three research assistants collected all data in real time.

## Measures

***Strategic CMT leadership.*** I developed the training-relevant leadership measure for this study; it consisted of two sub-scales. The 14-item leader strategizing scale included items such as “The crisis leader communicated the team’s purpose and task clearly.” The 10-item leader relating scale included items such as “The crisis leader encouraged the team to work cross-functionally.” The 7-point response scale ranged from 1 (*Not at all what the leader did*) to 7 (*Exactly what the leader did*). For leaders, Cronbach’s alphas for leader strategizing were 0.89 at Time 1 and 0.82 at Time 2; for leader relating, they were 0.82 at Time 1 and 0.83 at Time 2. For team members, Cronbach’s alphas for leader strategizing were 0.92 at Time 1 and 0.88 at Time 2; for leader relating, they were 0.90 at Time 1 and .86 at Time 2. It was not possible to use Cronbach’s alpha for expert observers because of minimal variation; the scores of rWG (J), ICC1, and ICC2 apply to this group.

***Training-irrelevant strategic CMT leadership.*** This untrained behaviors control measure consisted of six items including “The crisis leader talked to each member to check how they were doing several times during the meeting,” and “The crisis leader made sure to say that all decisions of importance were his/hers to make.” I used the same 7-point response scale as previously. Because the use of items from the same general domain was not intended to measure a specific construct, I did not generate Cronbach’s alpha.

***Leader trustworthiness.*** I measured this aspect with a 9-item measure with good psychometric properties (Mayer & Davis, 1999, Mayer et al., 1995), using rewordings of three subscales (Ability, Benevolence, Integrity) to match a crisis context. Items included “I felt very confident about the crisis leader’s skills” (Ability), “The crisis leader was concerned with my welfare” (Benevolence), and “Sound principles seemed to guide the crisis leader’s behaviors” (Integrity). I used a 7-point response scale that ranged from 1 (*Strongly disagree*) to 7 (*Strongly agree*). Cronbach’s alphas were 0.88 for Ability, 0.91 for Benevolence, and .78 for Integrity at Time 1; they were 0.90 for Ability, 0.93 for Benevolence, and 0.93 for Integrity at Time 2.

**Behavioral trust.** I measured this aspect using the 9-item Behavioral Trust Inventory (Gillespie, 2003) with two sub-scales of Reliance and Dependence, which have good psychometric properties (Lee et al., 2010). Items included “How willing are you to rely on your leader’s task related skills and abilities?” (Reliance) and “How willing are you to confide in your leader about personal issues that are affecting your work?” (Dependence). I used a 7-point response scale that ranged from 1 (*Not at all willing*) to 7 (*Completely willing*). Cronbach’s alphas for Reliance were 0.95 at Time 1 and 0.96 at Time 2; for Dependence, they were 0.95 at both Times 1 and 2.

**Psychological safety.** I measured this aspect using a 7-item measure with good psychometric properties (Kivimäki, Kuk, Elovainio, Thompon et al., 1997). Although the measure is labeled as “participatory safety” by Kivimäki and colleagues (1997), Edmondson (2004) refers to the scale as a measure of psychological safety. Items included “We shared information generally in the team rather than keeping it to ourselves.” I used a 7-point response scale that ranged from 1 (*Strongly disagree*) to 7 (*Strongly agree*). Cronbach’s alphas were 0.93 at both Times 1 and 2.

**Quality and speed.** I measured this aspect using a 4-item scale developed for this study. Items included: “In regards to speed, the first meeting analysis (task-work) was performed quickly,” and “Norms for team functioning (cooperation, climate) had a high quality.” I used a 7-point response scale that ranged from 1 (*Strongly disagree*) to 7 (*Strongly agree*). Cronbach’s alphas for leaders were at .078 at Time 1 and 0.76 at Time 2; for team members, they were 0.80 at Time 1 and 0.77 at Time 2.

**Task completion.** I measured this aspect using a single item: “We completed the first performance cycle,” according to a 7-point response scale that ranged from 1 (*Strongly disagree*) to 7 (*Strongly agree*).

**Satisfaction.** I used a 3-item scale by Gladstein (1984). Items included “I am very satisfied with working in this team.” I used a 7-point response scale that ranged from 1 (*Strongly disagree*) to 7 (*Strongly agree*). Cronbach’s alphas for leaders were 0.88 at Time 1 and 0.67 at Time 2; for team members, they were 0.76 at Time 1 and 0.73 at Time 2.

As Table 2 shows, leaders, team members, and expert observers rated S-CMT leadership (leader strategizing, leader relating, and training irrelevant measures). Team members rated leader trustworthiness, behavioral trust, and psychological safety, and both team members and leaders rated the performance measures of quality and speed, task completion, and satisfaction. All measures are available in Appendix A.

Table 2. Overview of Measures and Raters

Variable	Raters		
	Leaders	Team members	Expert observers
1. Leader strategizing	x	x	x
2. Leader relating	x	x	x
3. Training-irrelevant	x	x	x
4. Leader trustworthiness		x	
5. Behavioral trust		x	
6. Psychological safety		x	
7. Task completion	x	x	
8. Quality/speed	x	x	
9. Satisfaction	x	x	

### Level of Analysis and Data Aggregation

It has become common in many settings to aggregate data when raters are expected to share the same experiences (such as in CMTs) (Sommer, Howell & Hadley, 2016), though authors disagree on when and how data should be aggregated (Biemann, Cole & Voelpel, 2009; Kozlowski & Klein, 2001). With regard to teams in particular, there is a concern that not aggregating data could lead to reporting inflated results. The same concern applies when multiple observers rate the same leaders, as was the case in this study (Sommer et al., 2016). For this reason, I calculated rWG(J) and ICC(1) and ICC(2) scores to examine whether aggregation could be justified for the expert observer and team member data sets. I used common guidelines in assessing rWG scores (James, Demaree & Wolf, 1984) and ICC(1) and ICC(2) scores (Biemann, Cole & Voelpel, 2012; LeBreton & Senter, 2008; Bliese, 2000; Shrout & Fleiss, 1979).

First, I calculated rWG(J), ICC(1) and ICC(2) scores for leader strategizing and leader relating, because the expert raters were the same across leaders. The rWG(J) scores were 0.99 at Time 1 and 0.97 at Time 2 for leader strategizing and 0.98 at Time 1 and 0.96 at Time 2 for leader

relating. The ICC(1) scores were 0.33 at Time 1 and 0.33 at Time 2 for leader strategizing and 0.25 at Time 1 and 0.26 at Time 2 for leader relating. The ICC(2) scores were 0.71 at Time 1 and 0.73 at Time 2 for leader strategizing. They were 0.70 at Time 1 and 0.73 at Time 2 for leader relating. These results justified aggregating the scores.

Second, I calculated scores for the team member data set, in which the rWG(J) scores were within the ‘strong agreement’ range for all measures (0.83–0.96), justifying aggregation to the team level. However, although some of the ICC(1) scores were satisfactory, some were in the lowest range (0.00–0.30) at both Times 1 and Time 2. Similarly, most ICC(2) scores were in the lowest range (0.00–0.54). Table 3 provides the calculations of rWG(J), ICC(1), and ICC(2) scores for team members. The lower range scores are usually not recommended for aggregation. However, aggregation could improve robustness of data and reduce the risk of inflation of data. Therefore, for precautionary reasons, I aggregated team member data to the team level, though the results at the individual level were quite similar. Accordingly, the number of observations for leaders is  $n = 29$ . For expert observers, it is  $n = 29$ , and for team members, it is  $n = 29$ .

Table 3. rWG(J) and ICC(1) and ICC(2) for Team Member Measures

Variable	rWG(J)		ICC(1)		ICC(2)	
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
1. Leader strategizing	.89	.95	.04	.03	.22	.20
2. Leader relating	.91	.89	.04	.20	.23	.38
3. Leader trustworthiness	.92	.92	.30	.07	.36	.25
4. Behavioral trust	.78	.78	.09	.00*	.42	.00*
5. Psychological safety	.95	.95	.00*	.00*	.00*	.00*
7. Quality/speed	.84	.86	.09	.08	.41	.38
8. Satisfaction	.83	.83	.14	.02	.54	.15

\*In some cases, ICC(1) and ICC(2)s could not be calculated because of missing data, so the value .00 is used.

### Statistical Analysis

I used the Wilcoxon signed-rank test to conduct inferential statistical analyses. This non-parametric test is used in repeated measures/within-subject designs in which data violate the assumptions of a paired sampled t-test (Shadish et al., 2002) but still meet assumptions, including normality of difference scores, equal variance across groups, and dependent samples. Reports associated with the test include mean (M), standard deviation (SD), median (Mdn), Z-scores, and significance levels (Hollander, Wolfe & Chicken, 2013).

Furthermore, I used the Friedman test, a non-parametric alternative to the one-way repeated analysis of variance, to examine the difference among leader strategizing, leader relating, and training irrelevant leadership. After establishing a statistically significant difference among the three, I followed up with Wilcoxon signed-rank tests using a post hoc Bonferroni-adjusted alpha value of 0.025 to control for Type 1 error, comparing the pre-/post-trained and pre-/post-untrained variables.

I calculated the effect sizes ( $r$ ) by dividing the standardized test statistic ( $Z$ ) by the square root of the number of observations ( $N$ ), interpreted with criteria established by Cohen (1988), in which 0.1 indicates a small effect, 0.3 a medium effect, and 0.5 a large effect. Correlations and descriptive statistics for the variables are available in Tables 4–9.

Table 4. Descriptive Statistics and Correlations for Leaders Rating Themselves (Time 1)

Variable			Correlations				
	M	SD	1	2	3	4	5
1. Leader strategizing	2.87	1.01					
2. Leader relating	2.94	0.82	0.70**				
3. Training-irrelevant	1.91	0.84	0.65**	0.56**			
4. Task completion	4.17	1.23	0.63**	0.58**	0.20		
5. Quality/speed	3.96	1.13	0.49**	0.60**	0.32	0.69**	
6. Satisfaction	5.08	1.00	0.22	0.37	-0.01	0.71**	0.60**

\*\* significant at 0.01 level

Table 5. Descriptive Statistics and Correlations for Leaders Rating Themselves (Time 2)

Variable			Correlations				
	M	SD	1	2	3	4	5
1. Leader strategizing	4.80	0.71					
2. Leader relating	4.77	0.89	0.81**				
3. Training-irrelevant	2.60	1.07	0.53**	0.54**			
4. Task completion	4.72	1.19	0.60**	0.55**	0.38*		
5. Quality/speed	4.70	0.87	0.74**	0.70**	0.43*	0.62**	
6. Satisfaction	5.30	0.94	0.55**	0.55**	0.39*	0.64**	0.71**

\*\* significant at 0.01 level

Table 6. Descriptive Statistics and Correlations for Team Members Rating Leaders (Time 1)

Variable			Correlations							
	M	SD	1	2	3	4	5	6	7	8
1. Leader strategizing	3.69	1.05								
2. Leader relating	3.31	1.03	0.77							
3. Training-irrelevant	2.72	1.09	0.7	0.79**						
4. Leader trustworthiness	4.37	1.00	0.69	0.64**	0.53**					
5. Behavioral trust	4.82	1.07	0.49**	0.42**	0.28**	0.62**				
6. Psychological safety	5.22	0.96	0.49**	0.48**	0.26**	0.67**	0.50**			
7. Task completion	4.59	1.17	0.50**	0.48**	0.36**	0.60**	0.36**	0.58**		
8. Quality/speed	4.47	1.04	0.58**	0.54**	0.46**	0.71**	0.41**	0.56**	0.69**	
9. Satisfaction	5.03	1.18	0.52**	0.47**	0.31**	0.70**	0.56**	0.75**	0.71**	0.65**

Reported at the individual level \*\* significant at the 0.01 level

Table 7. Descriptive Statistics and Correlations for Team Members Rating Leaders (Time 2)

Variable			Correlations							
	M	SD	1	2	3	4	5	6	7	8
1. Leader strategizing	5.44	0.85								
2. Leader relating	5.13	0.99	0.67**							
3. Training-irrelevant	3.62	1.30	0.50**	0.61**						
4. Leader trustworthiness	5.13	1.00	0.77**	0.67**	0.48**					
5. Behavioral trust	5.10	1.17	0.66**	0.49**	0.35**	0.67**				
6. Psychological safety	5.67	1.10	0.71**	0.49**	0.26**	0.73**	0.60**			
7. Task completion	5.26	1.03	0.66**	0.58**	0.43**	0.64**	0.50**	0.66**		
8. Quality/speed	5.31	0.98	0.67**	0.56**	0.37**	0.67**	0.58**	0.69**	0.82**	
9. Satisfaction	5.49	1.09	0.68**	0.52**	0.32**	0.75**	0.65**	0.74**	0.79**	0.82**

Reported at the individual level \*\* significant at the 0.01 level

Table 8. Descriptive Statistics and Correlations for Experts Rating Leaders (Time 1)

Variable			Correlations	
	M	SD	1	2
1. Leader strategizing	2.03	0.96		
2. Leader relating	1.85	0.91	0.82**	
3. Training-irrelevant	1.05	0.16	0.28*	0.25*

\*\*significant at the 0.01 level

Table 9. Descriptive Statistics and Correlations for Experts Rating Leaders (Time 2)

Variable			Correlations	
	M	SD	1	2
1. Leader strategizing	5.62	1.07		
2. Leader relating	5.22	1.40	.76**	
3. Training-irrelevant	1.16	0.38	0.10	0.06

Reported at the individual level \*\* significant at the 0.01 level

## RESULTS

### Functional S-CMT Leadership and Training

The first hypothesis (H1), regarding the effect of training on functional S-CMT leadership is supported. There was a significant increase in both *leader strategizing* as rated by leaders ( $Z = -4.68, p < 0.001, r = .62$ ), teams ( $Z = -4.62, p < 0.001, r = .62$ ) and expert observers ( $r = .62, Z = -4.70, p < .001$ ) and *leader relating* as rated by leaders ( $Z = -4.71, p < 0.001, r = .62$ ), teams ( $Z = -4.60, p < 0.001, r = .62$ ), and expert observers ( $Z = -4.70, p < 0.001, r = 0.61$ ) from pre-test (Time 1) to post-test (Time 2) with large effect sizes. Table 10 and Figure 2 depict these results.

### Controls and Difference Scores

The results confirmed the expectation that the training-irrelevant leadership proxy control items would increase less from pre-test (Time 1) to post-test (Time 2) than the trained behaviors. However, the analysis yielded significant results for leaders ( $Z = -3.39, p = .001$ ) and teams ( $Z = -4.17, p < 0.001, r = 0.56$ ), with a medium effect size for leaders ( $r = 0.44$ ) and a large effect size for teams ( $r = 0.56$ ). For expert observers, the analysis yielded no significant results ( $Z = -0.83, p < 0.406, r = 0.11$ ). Importantly, however, there was a statistically significant difference among leader strategizing, leader relating, and training-irrelevant leadership pre-test and post-

test scores as rated by leaders ( $\chi^2(2, n = 29) = 27.40, p < 0.001$ ), teams ( $\chi^2(2, n = 28) = 31.14, p < 0.001$ ), and expert observers ( $\chi^2(2, n = 29) = 43.66, p < 0.001$ ).

The post hoc test (using a Bonferroni-adjusted alpha value of 0.025) showed that the change in *leader strategizing* was significantly greater than the change in *irrelevant leadership* as rated by leaders ( $Z = -3.98, p < 0.001$ ), teams ( $Z = -4.17, p < 0.001$ ), and expert observers ( $Z = -4.70, p < 0.001$ ), with large effect sizes for leaders ( $r = 0.52$ ), teams ( $r = 0.56$ ), and expert observers ( $r = 0.62$ ). The change in leader relating was also significantly greater than the change in irrelevant leadership, as rated by leaders ( $Z = -4.04, p < 0.001$ ), teams ( $Z = -4.47, p < 0.001$ ), and expert observers ( $Z = -4.70, p < .001$ ), with large effect sizes for leaders ( $r = 0.53$ ), teams ( $r = 0.60$ ), and expert observers ( $r = 0.62$ ). This indicates that training was effective and that the change in trained behaviors was greater than the change in untrained behaviors. Table 10 and Figure 2 depict these results as well.

Table 10. Functional S-CMT Leadership rated by Leaders, Teams, and Experts (Time 1 and Time 2)

	Mean	S.D.	Median	r	z	p-value
<i>Leaders</i>						
Leader Strategizing				0.62	-4.68	<0.001
Time 1	2.87	1.01	2.69			
Time 2	4.80	0.71	4.91			
Leader Relating				0.62	-4.71	<0.001
Time 1	2.94	0.82	2.80			
Time 2	4.77	0.89	4.70			
Training-Irrelevant Leadership (Untrained behaviors)				0.44	-3.39	0.001
Time 1	1.91	0.84	1.67			
Time 2	2.60	1.07	2.33			
<i>Teams</i>						
Leader Strategizing				0.62	-4.62	<0.001
Time 1	3.68	0.46	3.65			
Time 2	4.44	0.36	5.42			
Leader Relating				0.62	-4.60	<0.001
Time 1	4.30	0.46	3.23			
Time 2	5.10	0.57	5.17			
Training-Irrelevant Leadership (Untrained behaviors)				0.56	-4.17	<0.001
Time 1	2.72	0.49	2.65			
Time 2	3.62	0.71	3.59			
<i>Expert Observers</i>						
Leader Strategizing				0.62	-4.70	<0.001
Time 1	2.38	0.74	2.40			
Time 2	6.02	0.69	6.02			
Leader Relating				0.62	-4.70	<0.001
Time 1	2.19	0.74	2.25			
Time 2	5.78	0.86	5.96			
Training-Irrelevant Leadership (Untrained behaviors)				0.11	-0.83	0.406
Time 1	1.67	0.16	1.00			
Time 2	1.16	0.30	1.00			

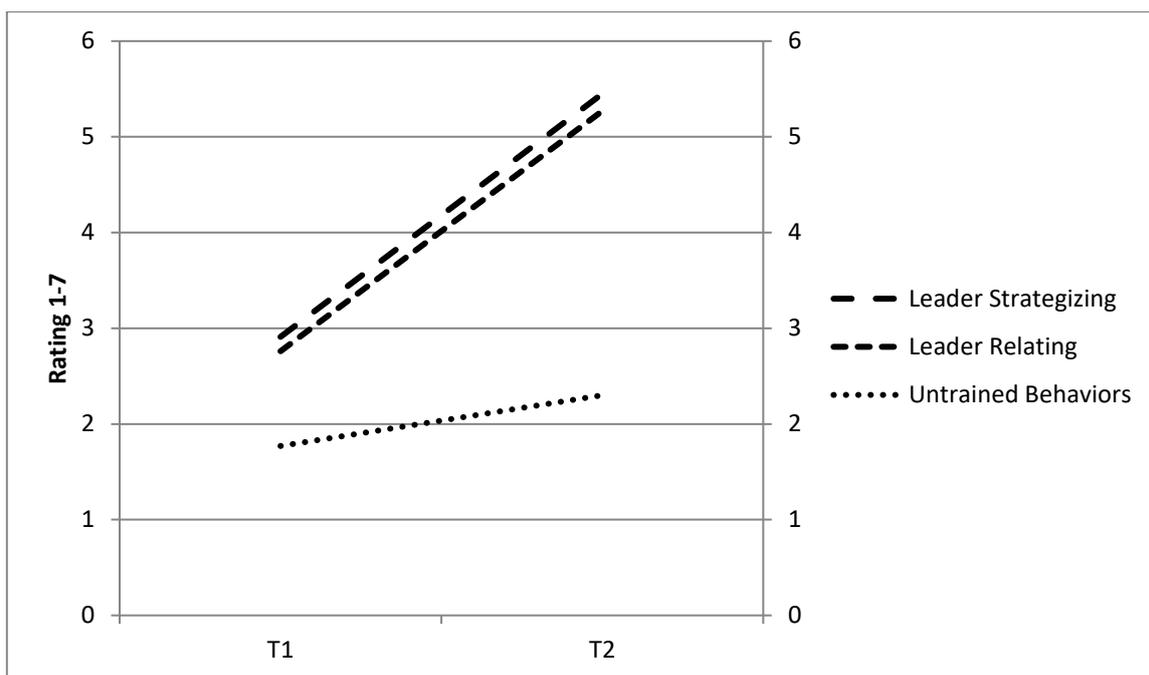


Figure 2. Leader Strategizing, Leader Relating, and Untrained Behaviors as Rated by Leaders, Team Members, and Experts based on Average Scores at Pre-test (Time 1) and Post-test (Time 2)

### Trust and Psychological Safety

The second set of hypotheses related to team perception of leader trustworthiness (H2a) and willingness to engage in trusting behaviors toward the leader (H2b). H2a was supported, suggesting that team perception of crisis leader trustworthiness significantly increased (Ability,  $Z = -4.34$ ,  $p < 0.001$ ,  $r = 0.58$ ; Benevolence,  $Z = -4.62$ ,  $p < .001$ ,  $r = 0.58$ ; Integrity,  $Z = -4.60$ ,  $p < 0.001$ ,  $r = 0.61$ ) from pre-test (Time 1) to post-test (Time 2), with large effect sizes. H2b, corresponding to behavioral trust in terms of Reliance ( $Z = -3.47$ ,  $p < 0.001$ ,  $r = 0.46$ ) and Dependence ( $Z = -3.53$ ,  $p < 0.001$ ,  $r = 0.47$ ), was also supported with a significant increase from pre-test (Time 1) to post-test (Time 2) and medium effect sizes.

The third hypothesis was related to team member perception of psychological safety on the team. Psychological safety significantly increased ( $Z = -3.71$ ,  $p < 0.001$ ,  $r = 0.50$ ) from pre-test (Time 1) to post-test (Time 2) with a large effect size, in support of H3. Table 11 depicts the results.

Table 11. Trustworthiness, Willingness to Trust, and Psychological Safety rated by Teams (Time 1 and Time 2)

	Mean	S.D.	Median	r	z	p-value
<i>Trustworthiness</i>						
Ability				0.58	-4.34	<0.001
Time 1	4.99	0.71	4.95			
Time 2	5.80	0.59	5.84			
Benevolence				0.62	-4.62	<0.001
Time 1	3.11	0.50	3.13			
Time 2	3.95	0.66	4.10			
Integrity				0.61	-4.60	<0.001
Time 1	4.98	0.48	5.02			
Time 2	5.61	0.39	5.61			
<i>Behavioral Trust</i>						
Reliance				0.46	-3.47	<0.001
Time 1	4.92	0.52	5.01			
Time 2	5.28	0.53	5.26			
Dependence				0.47	-3.53	<0.001
Time 1	4.68	0.54	4.80			
Time 2	4.95	0.49	4.98			
<i>Psychological Safety</i>						
Psychological Safety				0.50	-3.71	<0.001
Time 1	5.23	0.50	5.27			
Time 2	5.64	0.49	5.62			

### Performance Outcomes

Hypotheses 4a, 4b and 4c pertain to performance outcomes as rated by leaders and team members. First, both leaders' ( $Z = -3.40$ ,  $p = 0.001$ ,  $r = 0.45$ ) and teams' ( $Z = -4.52$ ,  $p < 0.001$ ,  $r = 0.43$ ) perceptions of problem-solving quality and speed increased from pre-test (Time 1) to post-test (Time 2), with medium effect size for leaders and a large effect size for teams, in support of H4a. Second, leaders ( $Z = -1.91$ ,  $p < 0.056$ ,  $r = 0.25$ ) and teams ( $Z = -3.33$ ,  $p < 0.001$ ,  $r = 0.35$ ) perceived task completion to be higher at post-test (Time 2) than at pre-test (Time 1),

in partial support of H4b. Finally, although both leader ( $Z = -1.25, p = 0.132, r = 0.25$ ) and team ( $Z = -3.34, p < 0.001, r = 0.44$ ) satisfaction increased from pre-test (Time 1) to post-test (Time 2), the change in satisfaction was significant for team members with a medium effect size but not significant for leaders. This result provides support for H4c for teams but not for leaders. Table 12 depicts these results.

Table 12. Performance Rated by Leaders and Teams (Time 1 and Time 2)

	Mean	S.D.	Median	r	z	p-value
<i>Leaders</i>						
High Quality/High Speed				0.45	-3.40	0.001
Time 1	3.96	1.13	4.25			
Time 2	4.70	0.87	4.75			
Task Completion				0.25	-1.91	0.056
Time 1	4.17	1.23	4.00			
Time 2	4.72	1.19	5.00			
Satisfaction				0.16	-1.25	.210
Time 1	5.08	1.00	5.00			
Time 2	5.30	0.94	5.67			
<i>Teams</i>						
High Quality/High Speed				0.60	-4.52	<0.001
Time 1	4.46	0.10	4.59			
Time 2	5.31	0.09	5.37			
Task Completion				0.35	-3.33	<0.001
Time 1	4.59	1.17	5.00			
Time 2	5.26	1.03	5.00			
Satisfaction				0.44	-3.34	<0.001
Time 1	5.03	0.11	5.17			
Time 2	5.48	0.09	5.47			

## DISCUSSION

The purpose of this study was to identify key leadership functions in S-CMTs and determine whether training of leaders in these functions could contribute to leadership development and improve performance. Accordingly, I carried out a quasi-experimental within-subject study using an IRS design in which leaders were exposed to CMTs in scenario-based crisis-simulations before and after training. Overall, the results suggest that functional S-CMT leadership can be developed through training and that a change in leader behaviors influences teams' affective states as well as overall performance outcomes.

First, leader display of functional S-CMT leadership significantly changed from before to after training, as rated by leaders themselves, teams, and expert observers. This change was greater for trained than untrained leadership items. There was a change in untrained behaviors for leaders and team members—a finding that was expected (Haccoun & Hamptieux, 1984) and has been found in other studies (Frese et al., 2003). Importantly, expert observers did not report a significant change in untrained items. Furthermore, teams and expert observers rated the change in leadership higher than leaders, likely because they had a greater ability to observe actual change in behaviors in leaders. This verifies the utility of using multiple raters in leadership development studies (Day et al., 2014). In addition, pre-test/post-test differences in scores between trained and untrained measures were significant, with large effect sizes for leaders, teams, and expert observers supporting the effectiveness of the training.

Second, when leaders engaged in more functional S-CMT leadership, their behavior significantly affected perceptions of leader trustworthiness and willingness to trust the leader. Although trust is a stable trait (Mayer et al., 1995), this study indicates that a change in behaviors may lead to a reappraisal of leader trust. Although it has been suggested that trust in swift trust situations is shaped differently (e.g., by matching leaders with stereotypical ideals) (Wildman et al., 2011), this study indicates that trust conceptualized in a traditional way can serve to measure trust in leaders who are also in such situations.

Third, the study showed that engaging in more functional S-CMT leadership significantly affected team members' sense of psychological safety. Although research has proposed that leadership is an antecedent to psychological safety, empirical support for the idea is limited (Edmondson, 2012). This study lends support to the notion that leadership influences

psychological safety. In particular, it implies that leaders may be more influential with regard to psychological safety at the outset of a team's life, when members turn to their leaders for guidance on how safe it is to interact with other team members. To my knowledge, this is the first study to prove this notion empirically.

Fourth, performance outcomes improved from pre- to post-training for leaders and team members. Because ad hoc mobilized S-CMTs depend on performing effectively from the outset, it appears that leaders benefit from engaging in functional S-CMT leadership. In particular, a positive change in satisfaction indicates that team members are likely to stay committed to their leader and team over time. Although immediate performance is important, satisfaction is also important, given that it is not known at the outset how long a crisis will last. Note that satisfaction did not improve for leaders.

### **Theoretical and Methodological Implications**

This study has important theoretical and methodological implications. First, the leadership framework developed in this paper offers a complementary perspective to the leadership theories that dominate crisis research (Hadley et al., 2011). Most leadership theories used in crisis research are not sensitive to time, context, or the needs of those being led (Zaccaro et al., 2001). Therefore, although crisis research literature acknowledges the team dimension (Waller et al., 2014), it does not include an articulation of leader KSA's in S-CMTs (James et al., 2011). The identification of the two leadership functions, leader strategizing and leader relating, and associated behaviors can be used as building blocks to expand a functional leadership framework to other performance cycles and developmental stages of S-CMTs.

Second, this study contributes to the literature on how crisis leadership can be developed before crises. Researchers suggest that training is a valuable means of developing crisis leaders (Hadley et al., 2011; James et al., 2011), but scant research explains which KSAs to develop. In this study, I apply a theory-based leadership perspective that includes specific behaviors to target during training. Furthermore, I incorporate instructional strategies with regard to how to train leaders effectively and how to measure training transfer. The study indicates that both behavioral modeling instructional strategies and crisis-scenario simulations are useful tools for expanding theoretical understanding of crisis leader development.

Third, team researchers have argued that leadership is effective only insofar as it influences affective states in addition to performance outcomes (Day et al., 2014). Although outcomes of crisis leadership are difficult to assess from one crisis to the next (Pearson & Clair, 1998), distal outcomes are related to more proximal outcomes in team research (Salas et al., 2012). In this study, I show that leaders influence targeted affective states as well as other performance outcomes, which is likely linked to proximal outcomes. Moreover, I collect data from multiple sources, thereby increasing predictive relevance (Day et al., 2014). The study addresses several ways to measure effectiveness with regard to crisis leadership.

Fourth, I use a novel methodological approach and research design. Researchers have suggested that the IRS is valuable in evaluating leadership development, particularly in commercial settings, when sample sizes are typically low and when other evaluation designs may be rejected for practical or ethical reasons (Antonakis et al., 2010, Frese et al., 2003). Despite its superiority to the designs that are typically used, this design is rarely applied in leadership development studies. Apart from a study by Frese et al. (2003), this study appears to be the only leadership study based on IRS. It supports the usefulness of this alternative quasi-experimental design (Antonakis et al., 2010) in leadership studies.

In addition, the study contributes to extant literature on functional leadership. Santos, Caetano and Tavares (2015) find a lack of empirical studies using this framework; they note that there are few assessments of the effect of leadership training based on functional leadership, other than their own study and the study by DeChurch and Marks (2006). The current study appears to be one of the first empirical tests of leadership training using a functional leadership framework in a non-military context. As such, it contributes to empirical testing of this approach in a different setting.

### **Practical Implications**

The study has some important practical implications. First, it outlines how organizations can develop crisis leaders through training. It does so by targeting specific behaviors and using well-developed instructional strategies and simulations that promote transfer to real settings (Salas et al., 2012). In as little as 1.5 hours, leaders were able to learn KSAs that influenced all outcomes of subsequent simulations. Training is clearly an efficient approach to developing crisis leaders (Day et al., 2014).

Second, in line with prior research, the study shows that leaders have minimal experience in actually engaging in crisis leadership (James & Wooten, 2011). This is illustrated by the low degree of functional S-CMT leadership observed before training. Leaders are more likely to engage in behaviors they themselves perceive as effective. A leader's self-efficacy as a crisis leader is more likely to predict crisis role taking than self-efficacy as a leader in general (Hadley et al., 2011). Therefore, training efforts should target the S-CMT leader's role specifically, and not just provide leadership training based on general leadership theories (e.g., transformational or charismatic leadership).

Third, although organizations invest billions of dollars in leadership development interventions, these interventions often are not evaluated. Thus, their effect remains unknown (Salas et al., 2012). Using an IRS design can inform organizational leaders of the effect of leadership interventions. Furthermore, organizational leaders may be more willing to engage in research when study designs require less accommodation to the needs of researchers (Frese et al., 2003). Thus, using an IRS design may not only inform research but also measure effects and guide the selection of organizational training programs.

Overall, the findings of this study imply that this form of leadership training is valuable to organizations when other developmental opportunities are not feasible. However, I would caution that leadership development should not be limited to one-time training interventions because such limited exposures are subject to learning decay (Salas et al., 2012). In line with other crisis researchers, I recommend using different forms of preparedness training that together build overall crisis management capacity (Waller et al., 2014; Hadley et al., 2011). Leadership training based on a functional S-CMT leadership perspective appears to be a viable, capacity-building approach.

### ***Limitations and Strengths***

Although this study helps advance understanding of crisis leadership in S-CMTs, some limitations should be noted. First, I used a single-group, within-subject research design. Although I used non-equivalent dependent variables as a proxy control, using a control group may have yielded more robust findings. However, other research shows that the IRS produces similar results with regard to effectiveness as a pre-test/post-test with a control group design (Haccoun & Hamtieux, 1994). Frese et al. (2003) conjecture that the IRS might be more suited

to studying leadership development than between-subject designs, as the latter are susceptible to other internal validity threats.

Second, according to Haccoun and Hamtieux (1994), the IRS is more vulnerable to Type II errors (inferring no effect when there is in fact an effect) than Type I errors (inferring effect when there is in fact no effect). To reduce the risk of Type I errors, training-irrelevant items must be drawn from the same domain as the relevant items, but not to the degree that they may be confounded with the trained items (which may cause Type II errors). Setting the difficulty of pre-test items at a fairly high level reduces the risk of Type II errors. Although I did this by checking item difficulty on SMEs verbally, a statistical pre-test of item difficulty could have strengthened the study's validity.

Third, a benefit of the IRS is that a larger increase in training-relevant than training-irrelevant behaviors is likely to be the cause of change in other constructs of interests. Because the leadership measures are both behaviorally and situationally anchored and split into trained and untrained items, the findings regarding the training effect on leader behavior are quite robust. However, the other measures (affective states and performance outcomes) are only situationally anchored because they cannot be meaningfully divided into relevant and irrelevant items. Therefore, alternative interpretations of these outcomes cannot be entirely ruled out; exposure may have led to familiarization with the teams and tasks over time, causing change in these variables.

A key argument against this limitation is that leaders are likely to be particularly influential in the first performance cycle (Hackman, 2002, Marks et al., 2000)). In this study, between each session, the teams were demobilized; each time they reconvened, they were exposed to alternating leaders and new scenarios, indicating that each problem-solving situation was unique. Yet there might have been a learning effect. According to Haccoun and Hamtieux (1994) however, these effects were likely to have been minimal because they also would have been observed in the untrained leadership behaviors.

Finally, organizational idiosyncrasies may have influenced the findings in the study because I examined only one organization. This limits claims of external validity. Alternative explanations for the study's findings cannot be ruled out, even though I used non-equivalent items as proxy controls and carefully monitored the quasi-experimental research setting for

factors that could influence the results. Note, however, that the study involved real top managers and on-duty team members, an approach that adds ecological validity.

***Future research.*** There are several potential avenues for future research. First, the functional leadership perspective is largely unexplored in the crisis context. Future qualitative studies could examine leader functions in more depth, for example, through real-time or historiometric analyses. Furthermore, studies using larger samples and between-subjects designs could allow for regression, mediator, and moderator analyses. For example, researchers could explore the possibility that crisis leadership influences trust and psychological safety, which in turn influences performance.

Moreover, using more controls to distinguish the explanatory effect of leadership from other factors, such as task and team familiarity, could refine understanding of how leadership influences performance. It would also be worthwhile to explore the effect of leadership on team performance over time. Finally, it would be useful to validate scales to improve the validity of the behavior measures, particularly to distinguish between the two leadership dimensions and examine their separate effects on outcomes.

## CONCLUSION

Both scholars and practitioners have called for additional research to shed light on effective leadership in S-CMTs and to determine how it can be developed before organizational crises. This study answers this call. It shows a positive relationship between functional S-CMT leadership and training and between functional S-CMT leadership and outcomes such as trust, psychological safety, and performance. A unique feature of the study is that it involves real top managers and on-duty team members. The functional leadership perspective is ripe for further exploration in contexts in which leadership involves helping a ‘practically new’ team perform highly consequential tasks under immense pressure.

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## APPENDIX A

### Functional S- CMT leadership (Trained Leadership) and Control (Untrained Leadership) Scales (Developed for this study)

#### Leader Strategizing items

In this scenario the crisis leader...

- ... communicated the team's purpose and task clearly.
- ...communicated his/her intention to act in accordance with crisis management values.
- ...explained how our crisis management values were aligned with the set priorities.
- ...summarized an overall plan and clear priorities before moving into the action phase.
- ...communicated major shifts in direction to the team and provided redirection.
- ...explicitly shared his/her top management perspective with the team.
- ...said he/she would communicate with top management and externals (i.e., about resources).
- ...explained that external pressures could create disruptions or an elevated sense of urgency and set some rules against it (i.e.. no phone calls during meetings).
- ...communicated the team's performance cycle to the team (first meeting, action phase, regular status meetings).
- ...communicated that we would work as a team using proactive crisis management method
- ...explained the purpose of using the proactive management method.
- ... clarified how to conduct the first meeting (i.e., clarified what is meant by context analysis).
- ...communicated each team member importance individually and as a team member.
- ...coached team through first meeting analysis.

#### Leader Relating items

In this scenario the crisis leader...

- ... encouraged the team to work cross-functionally.
- ...encouraged the team to challenge one another's input.
- ... encouraged the team members to speak up.
- ...rewarded team members who spoke up (i.e., said "thank you, good point").
- ...coached team members to recognize what it is relevant to speak up about.
- ...explained that we can experience stress reactions in a crisis.
- ...expressed examples of stress-reducing actions.
- ...did caring acts such as saying "have some coffee, or take a break when you can."
- ...explained that the team would need to have a calm and optimistic coping environment.
- ...monitored and managed the team stress level.

#### Training-Irrelevant Leader items

In this scenario the crisis leader...

- ...communicated his/her intention to let the CEO set priorities.
- ...explained that team members need to raise their hands in order to talk during meetings.
- ...made sure to say that all decisions of importance were his/hers to make.
- ...asked different team members to thoroughly explain how each would do their tasks.

...communicated that the team may not work together for very long as the crisis may quickly normalize.

...talked to each member to check how they were doing several times during the meeting.

**Leader Trustworthiness Scale items** (Mayer, R. C., & Davis, J. H. , 1999)

In this scenario...

...I felt very confident about the crisis manager's skills.

...the crisis manager was very capable of performing his/her job.

...my crisis manager had specialized capabilities that increased our performance.

...the crisis manager was very concerned with my welfare.

...my needs were very important to the crisis manager.

...the crisis manager really looked out for me.

...the crisis manager tried hard to be fair in dealing with others.

...I liked the crisis manager's values.

...sound principles seemed to guide crisis manager's behavior.

**Behavioral Trust Inventory items** (Gillespie, N., 2003)

In this scenario, were you able to...

... rely on your leader's work-related judgements?

... rely on your leader's task-related skills and abilities?

... depend on your leader to handle an important issue on your behalf?

... rely on your leader to represent your work accurately to others?

... depend on your leader to back you up in difficult situations?

... share your personal feelings with your leader?

... confide in your leader about personal issues that are affecting your work?

... discuss honestly how you feel about your work, even negative feelings and frustration?

... discuss work-related problems or difficulties that could potentially be used to disadvantage you?

... share your personal beliefs with your leader?

**Psychological Safety Scale items** (Kivimäki et al., 1997)

In this scenario...

...we shared information generally in the team instead of keeping it to ourselves.

...we had a "we are together" attitude.

...we all influenced each other.

...people felt understood and accepted.

...everyone's view was listened to, even if it was in minority.

...there were real attempts to share information throughout the team.

...there was a lot of give and take.

**Performance efficiency scale items** (Scaled developed for this study)

In this scenario...

...in regards to speed, the first meeting analysis (task-work) was performed quickly.

...norms for team functioning (cooperation, climate, how to work together) were established quickly.

...the first meeting analysis (task work) had a high quality.

...norms for team functioning (cooperation, climate, how to work together) had high quality.

**Task completion item** (Developed for this study)

In this scenario...

...we completed the first performance cycle.

**Team satisfaction scale items** (Gladstein, 1984)

In is scenario...

...I would like to continue working in this team.

...I feel satisfied working on this team.

...I feel energized and uplifted from working on this team.

## **Gaining Control by Letting Go: Heterarchical Leadership and Dynamic Power Transitions during an Organizational Crisis**

### **ABSTRACT**

In this paper, I develop a heterarchical perspective on organizational crisis leadership, based on observations and interviews carried out while a terrorist attack was occurring in a multinational corporation. In contrast with the hierarchical control and formal power emphasized in most crisis leadership research, the leadership I observed was characterized by a different power order, which I refer to as “heterarchical.” This type of crisis leadership involves dynamic power transitions. Throughout the crisis, power was dynamically transferred from one leader to another and one structure to another, driven by the competency and legitimacy of different leaders and structures in addressing unfolding situational needs and demands. I identify three factors that seem to have enabled the heterarchical leadership: procedural training; preparedness plans; and norms, values, and culture. The findings reveal how heterarchical leadership allows leaders to grapple with the inherent tension of balancing strategic control and adaptive response during an organizational crisis.

**Keywords:** Organizational crisis leadership; dynamic power transitions; heterarchy

### **INTRODUCTION**

Perhaps at no time is leadership more pivotal than during an organizational crisis (Dubrin, 2013; Mitroff, 2004). Whether triggered by terrorist attacks, industrial accidents, or natural disasters, any organizational crisis presents the need for exceptional leadership in relation to both the event and the context (Hannah, Uhl-Bien, Avolio, & Caravetta, 2009). These types of events are characterized by high stakes, time pressure, and ambiguity (Sommer & Pearson, 2007; Pearson & Clair, 1998). In addition, the complex problem solving required in these situations tends to fit poorly with existing structures in the organizational context (Bigley & Roberts, 2001).

To date, the literature on crisis leadership has proposed two primary ways for leaders to effectively address crises. One stream of research emphasizes hierarchical, formal leadership (Boin, Kuipers, & Overdijk, 2013), while another stresses the necessity of emergent and

decentralized leadership, thus emphasizing adaptiveness rather than control (Uhl-Bien, Marion, & McKelvey, 2007). However, both perspectives are increasingly perceived as inadequate, as leaders need to handle the “adaptive tension” of balancing strategic control with adaptive response in crisis situations (Hannah et al., 2009). Thus, recently, a third stream of research has begun exploring hybrid leadership. This research emphasizes combining formal control with structural adaptiveness (Boin, Hart, Stern, & Sundelius, 2005; Bigley & Roberts, 2001).

Notwithstanding, to date, much remains to be learned about power and control in these leadership situations. Prior studies tend to ignore that crises occur when a trigger reaches a threshold at which existing problem-solving approaches and structures become inadequate (Hannah et al. 2009; Boin et al., 2005). Furthermore, they overlook the idea that as a result of the limited ability of managerial control during crises, attempts to maintain such control may give rise to response inertia (Bigley & Roberts, 2001). These factors influence both how control is achieved and how power dynamics unfold. In particular, crises are likely to challenge the existing power order and require more improvisation than existing research is able to adequately describe and explain. Thus, in this research I ask the following question: How do leaders balance strategic control and adaptive response during an organizational crisis?

This study offers a unique vantage point as I was given the opportunity to collect data during an ongoing organizational crisis, a major terrorist attack, and the siege of a production plant in a subsidiary of a multinational corporation. I base the qualitative data analysis on real-time observations and interviews I undertook while a temporary crisis management organization (CMO) was being mobilized at the corporation’s headquarters. This kind of access is rare not only in the context of organizational crises (Sommer, Howell, & Hadley, 2015; Pearson & Clair, 1998) but also in other settings in which leadership is closely tied to exceptional events and contexts (Klein, Ziegert, Knight, & Xiao, 2006). Thus, in addition to answering a call for more field studies of crisis leadership, this study may inform leadership research in other dynamic settings.

The analysis yielded several important findings. Specifically, I develop an alternative perspective on crisis leadership, conceptualized as heterarchical crisis leadership. A key feature of this perspective pertains to dynamic power transitions, a process that involves fluid and repeated shifts in both leadership roles and structures. I show that effective power transitions are pivotal to how leaders meet situational needs and demands—and thus gain control—during organizational crises. Successful transitions are enabled by the competency and legitimacy of different leaders and structures in response to critical situational needs and demands. I also

identify three enablers of power transitions: a pool of procedurally trained personnel, preparedness plans and procedures for a CMO, and crisis management values norms and culture.

The study makes three contributions to the literature on crisis leadership. First, in contrast with research emphasizing hierarchy and formality during crises, the study shows that leaders paradoxically seem to gain control by relinquishing control and enabling others to lead. Because this does not occur in an entirely self-organized and distributed manner, the findings underscore the usefulness of examining hybrid perspectives on crisis leadership. However, I document a more emergent power order than described in prior research on hybrids. To this end, this study's second contribution is a heterarchical crisis leadership perspective, for which I draw on extant literature on heterarchies (e.g., McCulloch, 1945). Third, I identify dynamic power transitions as the core process underlying heterarchical leadership and illustrate how two sets of influencers facilitate these. Taken together, this study proposes that heterarchical leadership contributes to a "checks-and-balances system" that addresses the "adaptive tension" of balancing strategic control with adaptive response during crises.

The article proceeds as follows: I begin by reviewing three perspectives on leadership and power during organizational crises and present the construct I use to analyze the leadership I observed in the field. Then, I describe the research design and context as well as the data collection and analysis. Thereafter, I present my findings, providing an overview of the perspective I develop, after which I delve into more specifics, examining key processes and constructs. Last, I discuss my findings and their transferability, boundaries, and limitations and offer suggestions for further research.

## **THEORETICAL FOUNDATION**

### **Hierarchical power perspective**

The notion that organizational crises require top-down, command-and-control leadership is pervasive in both research and practice (Hannah et al., 2009; Bigley & Roberts, 2001). A hierarchical leadership perspective assumes as a starting point that formal authority and lines of responsibility are the most effective strategies to employ during organizational crises (Hannah et al., 2009; Boin et al., 2013). When confronted with urgent, threatening, complex, ill-defined, and ill-structured problems, centralizing power is a means for leaders to take control over important outcomes (Boin et al., 2005). Furthermore, crisis preparedness plans typically

include formally defined roles and structures (Selart, Johansen, & Nesse, 2012), indicating that organizations perceive this course of action to be effective.

The hierarchical perspective highlights aspects of crisis leadership that are important. For example, it suggests that organizational leaders cannot be expected to let go of control entirely during crises, as they are certainly expected to take action (Wooten & James, 2008; Boin et al., 2005). However, the preference for control over adaptability favored by the “power over” perspective may be counterproductive to successfully managing crises (Hannah et al., 2009; Uhl-Bien et al., 2007). Indeed, hierarchical leadership is associated with crisis-response inertia, in relation to the coordination and cooperation failures between units, both in experiments and field studies (Hannah et al., 2009). Furthermore, the assumption that hierarchical leadership is the most appropriate fails to acknowledge that situational needs and demands may not be aligned with the expertise and availability of those in formal power (Pearce & Conger, 2002). Despite its dominance, other forms of leadership may be more appropriate during organizational crises.

### **Distributed power perspective**

Taking a contrasting stance on organizational crisis leadership, the distributed power perspective emphasizes the usefulness of emergent, collective, and distributed leadership (Boin et al., 2005; Weick, 1993). Central to this point of view is the idea that organizations facing crises rely on their ability to improvise and adapt to dynamically changing circumstances. This is considered more important than formal leaders steering an organization toward a known future (Marion & Uhl-Bien, 2002; Weick & Roberts, 1993). The notion that crisis leadership emerges from the bottom up, is shared, and occurs in flatter organizational structures is not unusual among crisis researchers (Boin et al., 2013). This perspective is, however, more pluralistic than the hierarchical view of crisis leadership. While some favor self-organizing and hardly distinguish leadership from followership, others consider it a temporary role-based arrangement in which experts only become leaders for a limited time (Comfort, Sungu, Johnson, & Dunn, 2001).

A key observation underlying the distributed power perspective is that managerial discretion and control over outcomes seem to be limited during crises. This “power to,” in contrast with the “power over,” perspective indicates that leadership is about enabling rather than controlling response. Thus, it is more in line with adaptive and complex views of leadership (Uhl-Bien et al., 2007). Yet there are some caveats and concerns with this

perspective. First, what is actually being distributed? The relationship between power and who controls its distribution is typically not addressed. Second, the relationship between formal and informal leaders remains elusive. Furthermore, both researchers and practitioners have warned of the risk of chaos occurring or escalating in the absence of formal leadership and planned structures (Bigley & Roberts, 2001). Thus, not surprisingly, this perspective has had little impact on how organizations prepare for responding to crises (Selart, Johansen, & Nesse, 2013). Similar to the case with hierarchical leadership, a purely distributed form of leadership might not be beneficial during crises.

### **Hybrid power perspective**

The hybrid power perspective challenges the previous perspectives' notion of a polarized power structure. Its key argument is that responding to crises requires capitalizing on the advantages of both hierarchical and distributed power (Hannah et al., 2009; Boin et al., 2005). Although empirical research in this area is limited, two studies have explored hybrids. First, Bigley and Roberts (2001) illustrate how the incident command system (ICS) combines formal leadership with flexible structures in a fire department. By flexibly scaling preplanned structures depending on situational relevance, the response is proposed to be adaptive without reducing formal control. Second, Klein et al. (2006) show how an emergency response organization develops leaders while providing urgent care, through dynamic delegation. When senior leaders delegate power to junior leaders, to teach them to lead, while retracting power depending on criticality, both critical care and development of new leaders are achieved.

In general, hybrid power perspectives favor a form of crisis leadership in which formal leaders relinquish power to execute specific tasks to informal leaders, while retaining power over the distribution of leadership (Boin et al., 2005). However, this preference does not acknowledge that the distribution of power is not always a choice (Denis, Langley, & Sergi, 2012). Furthermore, it ignores the idea that informal leaders may carry out more purposeful leadership than formal leaders (Pearce & Conger, 2002). In addition, the exemplar studies were carried out in organizations in which formal leaders are typically professional crisis responders. However, such skills may not coincide with formal leadership in other settings, such as in commercial businesses. The leaders in these types of organizations tend to be less prepared when it comes to crisis response (Hannah et al., 2009). Thus, most organizations are likely to primarily rely on improvisation in crisis situations, which is at odds not only with stable, formal hierarchies but also with hybrids combining formal power and structural flexibility.

The three perspectives previously depicted provide a foundation for linking leadership and power during an organizational crisis. The perspectives on hybrid leadership begin to explore how formal and emergent leadership can be combined to achieve both strategic control and adaptive response during crises. Yet my own observations while studying crisis leadership real-time in actual circumstances in real time would not be adequately explained by the hybrid perspective just described. In such situations, leadership involved power being distributed ad hoc and including both formal and informal leaders and structures. In the absence of crisis literature that adequately explains the leadership I observed, I turn to extant conceptual work.

### **Developing an alternative perspective: heterarchy as an enabling construct**

The primary concept I draw on, heterarchy, dates back to McCulloch's (1945) description of the brain's dynamic neurocognitive structures, in which the researcher shows that a structure becomes dominant based on situational relevance. Crumley, Levy, and Ehrenreich (1995) expand the concept by presenting it as a form of organizing that competes with hierarchy in complex social systems. A key assumption is that power does not need to be hierarchically or formally ordered for there to be a power order. Instead, *the power order among actors and structures may shift depending on situational needs and demands*. Recently, Aime, Humprey, DeRue, and Paul (2014) used the concept of heterarchy to explore power transitions in cross-functional teams. In the current research, I use the concept to explain the crisis leadership I observed taking place in real time.

## **METHODOLOGY**

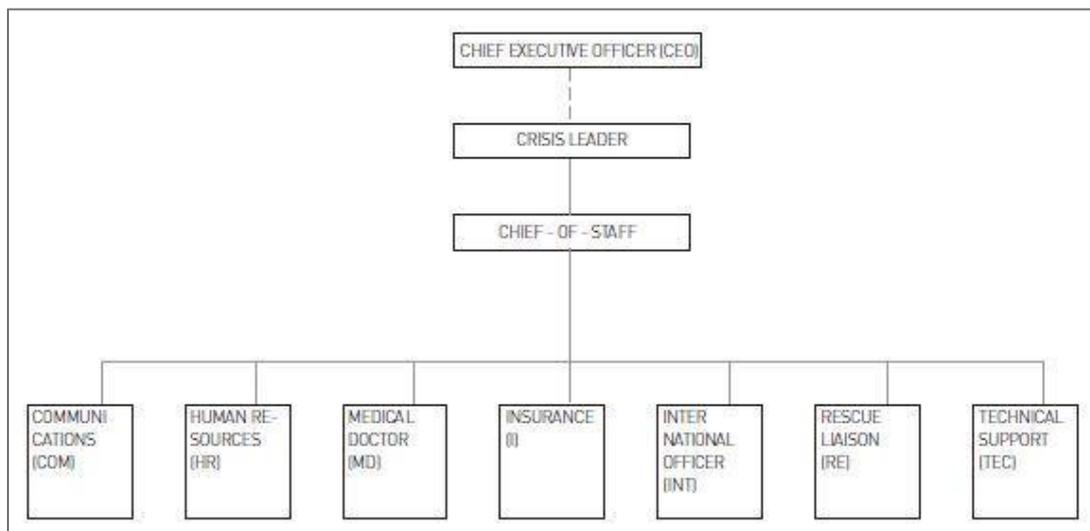
This research was spurred by an unexpected opportunity to collect data about crisis leadership while an organizational crisis—a terrorist attack and a siege of a production plant—was occurring in a multinational energy corporation. A long-standing and trusting relationship with key actors in the corporation was crucial to gaining such access. Because I had asked to observe crisis management upon signals of a pending crisis, I early on received a phone call from a corporate contact where I was invited to conduct research during the crisis. Given that I had the chance to collect rich data in a situation rarely accessed by researchers, I used an emergent and explorative qualitative research design (Edmondson & McManus, 2007). The primary data are observations and interviews carried out at the corporate-headquarter crisis management (CM) facilities. Additional data include observations and interviews before and after the crisis, as well as preparedness plans, reports, and logs. I analyze the data by using a combination of grounded

theory (Glaser & Strauss, 1967; Strauss & Corbin, 1997) and process analytic strategies (Langley, 1999).

### Research context

The study was carried out in a multinational energy corporation ranked as one of the 40 most profitable corporations in the world regardless of industry. In 2013, when the terrorist attack was happening, the corporation operated in six business areas and had 25,000 employees worldwide. The corporation is a high-reliability organization (HRO), meaning that it acknowledges that it is exposed to crises. Preparedness plans, procedures, and structures exist for the mobilization of a temporary crisis management structure should any event exceed the capacity of existing structures and become an organizational crisis. The company outlines the procedures for potential crises, including industrial accidents, natural disasters, criminal- and other malicious acts. When signs of a pending crisis are perceived, on-duty personnel as well as line leaders, experts, and support staff are notified and mobilized. Figure 1 shows that at the outset, the basic crisis management structure at the corporate level consists of a single team. However, the crisis leader is also expected to mobilize a temporary structure depending on an assessment of potential crisis developments.

**Figure 1:** Crisis management team mobilized in response to most triggering events



**Crisis event.** On an early January morning in 2013, 32 heavily armed terrorists attacked and besieged a production plant owned by the corporation and two other joint-venture partners. When the terrorists struck, there were nearly 800 employees at the site of the attack, 130 of

whom were foreigners of nearly 30 different nationalities. While most nationals were released immediately, the foreigners were taken hostage by the terrorists. The siege of the plant lasted for four days, and despite significant efforts by the corporation and the national authorities, 40 people were eventually killed. Immediately afterward, the *Financial Times* (Pfeifer, 2013) referred to the event as “the worst tragedy of its kind in living memory despite the energy industry’s presence in many unstable regions.”

Five employees from the corporation were killed during the attack, while an additional 12 employees and their families sustained physical and psychological trauma from the event. Plant operations were shut down for almost two years. In addition, the corporation’s international strategy was questioned by several parties such as the media and one of the major owners, a government. The event has been described as the most serious international crisis the corporation had experienced throughout its 50 years of existence.

**Crisis response.** When the personnel in the corporation perceived the first signs of a terrorist attack, they mobilized a temporary crisis management team (CMT) at the corporate headquarters. The CEO, who was overseas on business travel at the time of the attack, relied on the on-duty crisis leader to initiate efforts according to plans. However, it instantly became clear that the unfolding event did not quite resemble anything the organization had prepared for or expected. Although plans and procedures existed for several scenarios, the plans did not include terrorist attacks in which a two-digit number of employees would be captured at the same time as an entire production plant was besieged.

The mobilized personnel’s most obvious task was to assist national and international governments in preventing employees who had been taken hostage from getting killed and avoiding exposing them to more risks, such as those occurring during medical evacuation. However, the personnel in the CMT quickly become responsible for additional tasks. For example, they evacuated more than 2,000 employees in the region of the attack to avoid a further escalation of the situation. Furthermore, efforts were geared toward mitigating potential circumstantial effects of the event. For example, the personnel were aware that the event—as well as their response—might influence the corporation’s future international strategy.

What started out as an intervention of a single CMT evolved into a situation necessitating the mobilization of an entire temporary CMO structure, including at its peak 125 people and six units. The structure included units of response, human resources, communication, corporate communication, business continuity, and recovery. The backdrop for

the qualitative data analysis in the current research is the leadership that occurred during the eight days when a temporary CMO was mobilized and operating.

### **Data collection**

Collecting real-time data may reveal processual insight that is not easily obtained retrospectively, as the latter is likely to be influenced by factors such as impression management and memory decay (Langley & Stensaker, 2012). The presentation of selective impressions may particularly apply in crisis situations, in which leaders may wish to give the impression that they were effectively able to control the crisis as well as related efforts (Pearson & Clair, 1998). To guard against a fading memory of the event as well as retrospective impression management, it was of utmost importance to conduct observations and interviews as early as possible. Thus, I began observing and interviewing immediately on arrival in the crisis management facilities at the corporate headquarters.

To collect data, I was allowed to move around freely, sitting in on meetings and interviewing anyone from the personnel. During high-intensity periods, I conducted snapshot interviews from 5 to 20 minutes in length, as recommended by Wildman et al. (2012). In less intensive periods, I conducted long interviews lasting up to two hours, as guided by McCracken (1998). In total, I observed the crisis-response efforts for 65 hours and carried out 46 interviews, about half of which were snapshot interviews. In addition, I contacted each interviewee at least twice both for ethical reasons, to ensure that interviewees felt that they were respected and understood properly, and for data validation purposes.

Before the crisis, I carried out five interviews, obtained six preparedness plans, and gathered three other forms of documentation about crisis management in the corporation through a broader research project with the corporation on the topic. This enabled me to gain an understanding of potential crisis events and the context of crisis management. After the crisis, I carried out five more interviews and obtained access to the internally made electronic log, schedule and time lines, and four internal and public reports. These data sources were useful in complementing my understanding of what was going on during the crisis.

### **Data analysis**

For the sake of simplicity, I present the analytic steps sequentially, although, in reality, multiple iterations occurred, as is common in qualitative research (Langley & Abdallah, 2011). I initially transcribed and coded the interviews verbatim using the software program Atlas.ti 7. I began

by coding the texts at the lowest level of meaning, using labels or words as close to those used by interviewees as possible. This resulted in a set of more than 500 first-order codes such as “informal leaders”, “flatter structures than outlined in plans”, “pressing situational needs and demands”, “changing roles”, “changing structures”, “he was removed as a leader”, “she didn’t know what to do”, “support from multiple others”, “training, training, training”, “used plans but had to improvise”, and “top management respect for the CMO”.

Next, through constantly comparing and refining these codes, I reduced their number, subsuming them under a set of second-order codes including “formal versus informal and emergent leadership”, “situational needs and demands”, “leadership competencies”, “leadership legitimacy”, “procedurally trained personnel”, “plans, procedures and basic structures”, “values, norms and culture”. Then, I arrived at a set of overarching conceptual codes, which I began linking together, including “dynamic power transitions”, “drivers of power transitions” and “factors that enabled power transitions”. I proceeded to consult prior literature to provide a comparison with the data set.

After performing these grounded theory steps, I continued analyzing the data, using a more processual, top-down approach in a fifth step. To this end, I brought in the additional data sources and used them to outline a timeline of event developments and situational needs and demands as well as crisis-response efforts. I then began to bracket the core constructs I had identified temporally, which enabled me to illustrate daily episodes of dynamic changes in an empirical storyline. The last step involved making a “conceptual leap” (Klag & Langley, 2013), in which I arrived at an overarching theoretical story based on the empirical data. At this point, I not only compared the findings with prior work but also evaluated how the findings were substantially different from the previous work, sometimes in surprising ways, and focused on what these aspects could reveal.

## **FINDINGS**

In this section, I draw on the empirical material to show that, over time, influence on personnel as well as other resources is dynamically transferred from one leadership role to another and one leadership structure to another depending on situational relevance. The changes in who actually leads seem to be driven by two factors: the competency and legitimacy of different leadership roles and structures in addressing critical situational needs and demands. In addition, these power transitions are facilitated by some key contextual enabling factors. In Figure 2, I use visual mapping to illustrate the shift in the power order from hierarchy to heterarchy, the

dynamic power transitions in leader roles and structures based on competency and legitimacy, the leadership role and structure changes, the link to situational needs and demands, and crisis event developments.

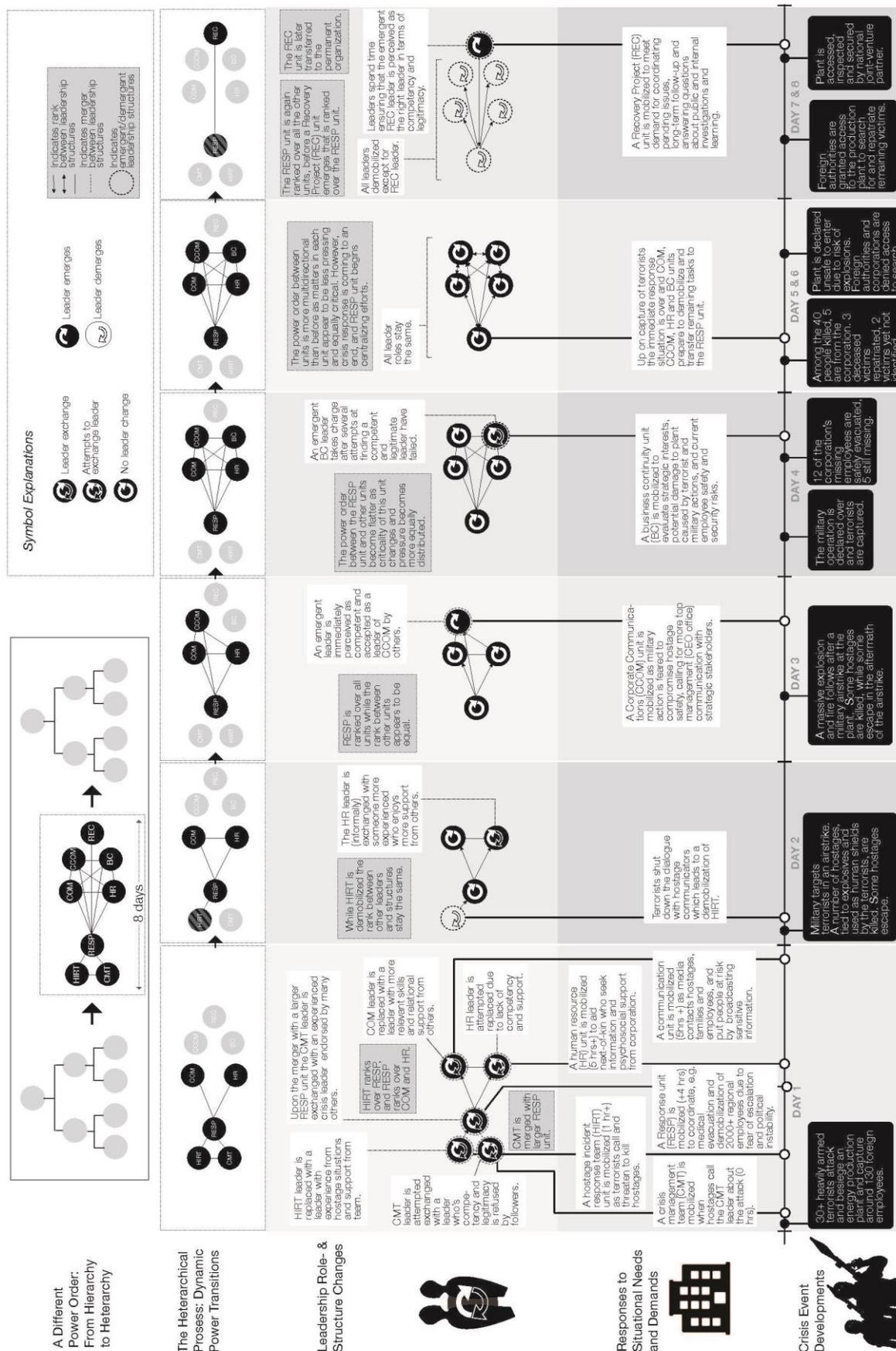


Figure 2: The Heterarchical Crisis Leadership Process and Dynamic Power Transitions

Figure 2: The heterarchical crisis leadership process and dynamic power transitions

### **Crisis leadership as heterarchical rather than hierarchical**

On arrival in the crisis management facilities, I began the qualitative examination of crisis leadership by asking: Who leads? However, interviewees quickly indicated that the answer to this question was far less straightforward than I had expected it to be. They insisted that to understand crisis leadership as it unfolded, I needed to talk to people who were not necessarily formal leaders according to plans. I refer to these people as emergent and informal leaders. Furthermore, interviewees made it clear that though the purpose was to contain the crisis, this was not only done by formal leaders. Under the pressure to respond quickly to critical and potentially life-threatening concerns, taking charge mattered more than formality. As one leader explained it:

*I am actually not quite sure how I became a leader, if that role was there [described in preparedness plans] already, or if it emerged ... I need to find out if it's mentioned in our routines. I am not sure. But I found it necessary to take charge. (I:10)*

Although it may seem surprising that leaders at times did not know whether their role was formally vested in plans or not, it confirms that formality was considered less important than taking charge and addressing immediate situational needs and demands. Indeed, those leading “in the heat of the moment” gave an entirely different picture of leadership in situ than personnel interviewed before and after the crisis. The more distant in relation to time or the crisis situation, the more likely leaders were to refer to plans and formal leadership roles. Yet any leader I talked to while the crisis was taking place described leadership as much more purpose driven, emergent, and informal than any plans could account for.

Indeed, containing the crisis involved replacing formal leaders with informal leaders if the latter were more suited to handle mission-critical tasks. As an interviewee explained, this was done without much concern for formality or the reactions of those being exchanged:

*I don't know what the guy who was appointed the job according to plans thought [when he was replaced]. I mean it's important, but it's secondary, we needed to use the person most suited to handle the task. (I:13)*

Furthermore, there was an immediate need for leadership across several domains. A leader reflected back on the first few chaotic hours of responding to the terrorist attack in the following way:

*The situation ... it was boiling ... it was extreme. One thing was the phone calls from terrorists. One guy and a group with him with special competency appropriately took that responsibility ... but there was a bunch of other things. Medical evacuation, logistics, communication, political negotiation ... we needed multiple leaders within multiple domains to take charge of things ... [to] take [the] lead. (I:15)*

In addition to recognizing the widespread need for leadership, the first people who arrived in the crisis-response facilities quickly realized that there was a poor fit between the event that unfolded and the structures outlined in plans. Although two plans were used to get the crisis-response process started—one general and one for hostage-taking situations—interviewees explained that they immediately had to merge the plans; yet this was still not enough. The situation called for mobilizing structures beyond those outlined in plans to meet an array of critical needs and demands. As one of the leaders explained it:

*We mobilized a quasi-organization ... we were able to adapt in a way ... we got resources and we worked on the basis of this, and that, and this...different needs. (I:7)*

Thus, improvising was a more prominent part of leadership than a planned response, and it involved not only who led but also how leadership was structured.

Another prominent feature of the leadership I observed was that the distribution of power could be unranked or ranked in different ways. This, for instance, included bypassing formal lines to achieve a common purpose in both the permanent and the temporary organization. As one emergent leader put it:

*[My leader] erased the lines [between me and the CEO]. I just walked right over to him [the CEO] and told him what we needed. (I:15)*

Despite the presence of more distributed leadership than anyone had expected, the power order was not arbitrary, random, or uncontrolled. Instead, it was based on situational needs and demands being considered the most critical - urgent and novel.

Another leader described the flatter power order as positive when it came to crisis management, but also pointed out that it was important to know who was in charge:

*I find the flatter structure positive, but when the pressure increases I need to rein things in, and I need to know immediately—who do I assign to this task? I don't want to search then. I need to know who's in charge. (I:5)*

Thus, according to this respondent the combination of a flatter structure and pressure to perform meant that it was more important to know who was in charge, not less. This power order involved multiple leaders and structures, and because criticality of the situation influenced their

relative power, there were changes. An interviewee confirmed that while structure was flatter, the underlying power order remained clear to the people involved:

*It's quite obvious that we've had a flat structure [while managing the crisis]. There haven't been many barriers before you get access to the top [management]. That said, there's still a power order. (I:12)*

In addition to the emergent power order, the bypassing of lines occurred in the “shadow of hierarchy.” This was a temporary system that fit with the situation—and lasted until the exceptional event was handled.

In summary, preparedness plans often assign leadership in a strict, formal chain of command, with leaders and units hierarchically ranked and power remaining aligned within formal roles and structures. However, the crisis leadership I observed in the field involved a more dynamic power order, influenced by critical needs and demands. First, emergent and informal leadership was more prevalent than formal leadership. Second, impromptu responsiveness was considered more important than sticking with roles and structures outlined in the plans. Third, leadership was unranked or ranked in different ways and changed over time. These findings correspond to those in extant literature about heterarchies. I therefore conceptualize the leadership I observed as heterarchical. At the core of this concept are dynamic power transitions, which I describe next.

### **Dynamic power transitions**

Throughout the crisis response, the leadership was characterized by shifts in leadership roles and structures over time. While some leaders were prompted to step up, others were prompted to step down. Likewise, while some leadership structures were mobilized, other structures were demobilized. Importantly, with leadership came the power to influence the use of personnel as well as other resources within a domain. Equally important, this power to influence the use of resources ceased once leadership roles and structures were changed. Furthermore, such transitions occurred rapidly, frequently, and continuously throughout the response. I refer to these changes in leadership roles and structures as dynamic power transitions.

The most obvious power transition occurred when the temporary CMO was mobilized, and responsibilities normally held by corporate leaders were transferred to the crisis management leaders. This, for instance, included a transfer of responsibility from corporate line leaders to crisis management leaders regarding the health and safety of hostages, production plant security, and communication with next of kin. The CEO reflected on this transition and how he perceived himself as a tool for the leaders of temporary organization during the crisis:

*I try to signal that in some situations I'm the decision-maker ... but in other situations ... I ask them to think of me as a tool. How can you make use of me? I'm part of the team. In that role, I do not feel like I am the CEO, I am a tool who can be leveraged to deliver on the objectives. I feel like that's how it is during a crisis. It's the leaders of the crisis management organization that actually lead the operational response. (I:1).*

Although the CEO here refers to the transfer of leadership from the corporate organization to the CMO, he indicated that he also perceives himself as a tool for the crisis management leaders. This temporary inversion of power relations is also reflected in comments by many leaders, and it seems to have gone two ways. Oftentimes crisis leaders would use the CEO and other top managers to achieve the goals of crisis management. As one interviewee from the CMO explained, the CEO was the best person to carry out a specific task on the organization's behalf:

*What is our priority? It is to save the lives of these five. We can't get access [to the production plant]. OK. Which lines can we use? What can we get? What's the quickest line? Well, it is to use the CEO and have him talk to the minister. We'll use him for that. (I:7)*

Power transitions occurred not only between leaders in the permanent and temporary organizations but also within the CMO. These transitions involved stepping up or down, changing roles, or being replaced or dismissed as a leader. For example, four hours into the crisis, a new leader of the response unit took over for another leader. The new leader had more experience with crisis management and explained to the first leader that he would take over. An interviewee explained how this happened:

*They ran a status meeting and then transferred the responsibility from the initial leader to another leader. We had to do it. It was the best way to solve the task. (I:37)*

Simultaneously, members of the initial CMT were demobilized and replaced with another group of people that commenced a larger response unit. Thus, there was a switch in the leader and most of the team members, indicating a change in both leadership roles and structures. This was a common feature of many of the dynamic power transitions that occurred.

Descriptions of transitions of power were given by all interviewees. During the crisis, interviewees explained in detail how they and other people took charge in response to different challenges:

*I took the lead first, and then others stepped up: Are there any challenges; is there anything we need to help you out with? (I:43)*

This quote illustrates how leaders would step up to become a leader. Oftentimes “taking power” did not involve taking power from someone else; it simply meant that leadership was distributed among many leaders. However, it could also mean that a leader allowed another person to lead in his or her place. Thus, apart from “taking power,” leaders “gave power.” In this example, one leader explained that she transferred leadership to another person, despite this not being described in plans:

*I think it's natural that [another leader] takes the lead...: I've said: 'Now, you'll take lead.' We've had a kind of ... I feel like we've worked well together. It's not really how it's described in preparedness plans, but that's how it has worked. (I:13)*

It is important to note that it was not only formal leaders that initiated such changes in leadership; this also happened without much concern for formality or who was initially in charge.

As mentioned, the dynamic power transitions involved changes in both the roles and structures of leadership. In some cases, only leadership was transferred or passed around, but the most significant changes included structural transitions as well. For example, one leader explained how his role and unit, as well as other leaders and units, would soon be redundant, as new needs had been identified:

*We have identified our needs and clarified different work streams—we'll change roles and responsibilities around now. (I:7)*

Thus, the way leadership roles and structures were altered was dynamic, not only in the sense that they changed over time but also in that the changes were clearly linked to shifting situational needs and demands.

In the following quote, the interviewee described how the capture of the terrorists triggered changes in structural as well as leadership roles:

*The immediate response situation is over; the next-of-kin center has served its mission and is transferred to another system ... A new set of questions, what happened, why it happened, and who is accountable ... I think that the recovery process ... requires other leaders. (I:2)*

While the first power transition had to do with shifting responsibilities from the permanent organization to the temporary organization, these responsibilities were successively transferred back to the corporate organization. A leader described the situation as follows:

*I've just been in a meeting with a [corporate] line leader to discuss which tasks the [permanent] line [organization] should take lead on right away and which we'd better keep a little longer. (I:11)*

In summary, throughout the eight days of the crisis, I observed the personnel shifting leadership around, as if it were the most natural thing to let go of power and pass it on to someone else. During the crisis, leadership was like a torch that was only in the hands of a specific leader for a limited period before being passed on to another leader that would step in and continue “running” the process of leadership. Thus, these dynamic transfers of power enabled the leaders—whoever they were—to make use of the resources they felt they needed, as long as their leadership activities were in line with the overall purpose of crisis management. Leaders, formal and informal, were actively involved in these dynamic power transitions.

### **What drives power transitions**

The power transitions that occurred during the crisis were influenced by situational needs and demands related to containing the incident. In particular, leadership roles and structures seemed to shift when the pressure to respond was critical, meaning that the situational needs and demands were urgent and novel. *Urgency* refers to the need for immediate response (e.g., medical evacuation), while *novelty* refers to the extent to which a need is non-routine or particularly unfamiliar to formal leaders (e.g., communicating with terrorists). The greater the criticality of a need or demand, the more likely a shift in leadership roles and structures will occur. Importantly, shifting needs and demands required different leaders, and a person would not become or stay a leader unless he or she was perceived as having the competency or the legitimacy to lead in that situation. I more closely examine the two driving factors of power transitions next.

**Competency.** The first factor that drives power transitions is leader competency. Interviewees made it clear that a leader’s ability to make use of his or her own as well as other people’s knowledge, skills, and abilities (KSAs) was central to how leaders both emerged and stayed in power. Conversely, leaders were likely to be replaced if a more competent leader became available, if their competency was or became irrelevant or inadequate, or if they failed to unite the personnel’s efforts within a domain. In other words, leaders had to be capable of the task at hand—right there and then. As one interviewee said:

*You need the right competency at the right place, at the right time. (I:33)*

The importance of timeliness is underscored by the previous quote. All the interviewees reported that urgent and important situational needs and demands played a key role in who became leaders. Thus, from the beginning, the requirements of responding to the terrorist attack had a critical impact on which task-specific competency was most in demand. One interviewee explained it as follows:

*This hostage situation, it's such a unique field of expertise. We needed to do our utmost to prioritize that kind of competency. Those judgments, that competency, greatly influenced the actions and priorities we made thereafter ... and who led. (I:5)*

Apart from task-specific expertise, leaders needed to have cognitive and procedural skills as a crisis leader. Being a good crisis leader as opposed to a good leader in general seems to have been a requirement, as evident in this quote:

*It's key that these leaders know how to lead during a crisis on all fingers and toes. (I:44)*

Knowing how to lead meant that leaders needed to be familiar with carrying out key leadership functions, such as coming up with a strategy, structuring entities, developing personnel, promoting coping, and cooperating with others, all of which needed to be done while working under pressure. Thus, neither task-specific expertise nor general leadership experience was enough to become a leader. These competencies needed to be accompanied by practical know-how regarding how to lead during a crisis.

The availability of a leader with the relevant competency varied over time. Oftentimes, one leader would be replaced when a more competent person arrived in the crisis management facilities. Competence was often paired with a person's willingness to take charge and use his or her KSA's. In one instance, a phone call from a terrorist prompted a hostage communication expert who had just arrived at the facilities to step up and take the lead. As he explained the situation:

*I didn't think the hostage communication was going well. We [the special incident response team] took over control and all of a sudden I was responsible for communicating with the hostage takers. (I:10)*

The leader who stepped up assumed that he could handle communicating with the hostages better than the person currently in the role. He perceived himself as the most competent person to assume the responsibility based on his training and experience, and so he mobilized a hostage communication unit. After the terrorists had been captured, his competency was no longer as sought after or relevant. Thus, this leader and his unit's members stepped down. Throughout

the crisis response, many leaders stepped up and then stepped down depending on the relevance of their competency at the time.

Beyond having competency and self-confidence, leaders were likely to stay in charge depending on their confidence in and ability to use their and other people's expertise. Such leaders were likely to delegate tasks, allowing subordinates to self-organize and thereby enabling their capacity. Leaders who were able to bring experts together and orchestrate collective efforts were likely not only to stay in charge but also to take on more tasks, as explained by this interviewee:

*[Leaders maintain leadership] when they see the whole task. Work in line with the overall purpose within the domain they're responsible for. When those in your group solve more and more tasks you're able to keep up [your leadership]. (I:26)*

Conversely, leaders who could not build or maintain an entity's capacity to meet new tasks or an increasing workload simply lost power, either immediately or gradually. These leaders seem not to have had either the confidence or capacity, or both, to make use of their own and others' KSAs. As one interviewee described it:

*If you compare [leader x] and [leader y], they have different capacity. [Person y] just didn't have the capacity to lead ... I don't know ... maybe its confidence ... or ability to trust others' [competencies]. We had to go in ... and replace [leader y]. (I:34)*

Throughout crisis response there were several changes in which competencies appeared to be the most in demand. However, it was also obvious that there was a need for multiple different competencies at the same time. There could for instance be a need for expansion of efforts in a specialized domain. As the following leader explained, this was the case when a top management communication unit was mobilized:

*We saw a critical need for being clearer about top management communication, so we mobilized [an additional] unit responsible for preparing the CEO, manned with people with specific skills in relation to that need.*

(I:22)

In summary, leader competency was reflected in the general and specific KSAs of the crisis leaders and their ability to use other people's competencies. Furthermore, leadership was typically transferred if a more competent leader emerged, if the competency was no longer needed, or if leaders failed to use others' competencies. The last is an important factor in that it explains how some leaders were able to stay in charge longer than others by effectively delegating tasks to other personnel.

**Legitimacy.** The second factor that drives power transitions is leader legitimacy—that is, the perception of others that a person had the right to lead and exercise power. Leaders' legitimacy was evident in others trusting them with responsibilities and acting in a manner that supported their leadership. The opposite occurred when others either made clear that they would not trust the person with leadership responsibilities or acted in a manner that did not support the leadership of a person in charge. In other words, leaders depended on others allowing them to lead.

Most often, leaders were perceived as being right for the role if they were appointed as a leader, or confirmed as a leader by someone else after taking leadership initiative. Getting approval as leaders was often based on having a formal role and others' prior experience of their ability to perform in similar circumstances. However, it also had to do with their ability to relate to others in the way that made them empathic or approachable. One of the interviewees described his experience with a favorable leader as follows:

*I've seen her deliver all those times [in the past], and I know she's very empathic. ... I knew I needed her [in that role] and [another leader] too. (I:1)*

He also described another leader in a similar manner:

*He's a great and very approachable leader. Those things ... influenced [which leaders were given] responsibilities. (I:1)*

In contrast, people who were given the right to lead explained that they felt that it had to do with gaining other people's trust. This was accomplished by showing that the motivation to lead was based on an intention to serve the interests of others as well as the overall purpose of crisis management. One leader explained how he became a legitimate leader upon replacing another leader as follows:

*I think it has to do with that he trusts me. I am not here to tell him that he's doing a poor job and therefore I have to do it. It's not like I am challenging him to take over his job. And he has a cool relationship with me. [I think he realizes] I'm only doing this [taking the lead] to relieve him. (I:12)*

As is evident in this quote, legitimacy entailed being perceived as considerate and non-threatening to others, even when taking over someone's role or transferring who was in charge. For example, in this example, the emerging leader actually took over the role of the other leader.

However, he indicated that he did it to relieve the other person, and therefore the person who stepped down supported it.

Acknowledgment of a leader typically depended on a person being perceived as a worthy leader across multiple relationship ties. This meant that leaders needed to work well with both the people they led and those they were led by, as well as other parties. When asked about what made a specific leader in the facilities the right one to lead, an interviewee said:

*Really, everything [about him]. Early on, he showed that we could work well together, which makes it easier. He also controls his unit and he has all the right contacts upwards.*

(I:10)

Although who actually led was typically determined by others' acknowledgment, the opposite could also occur. Leaders could be replaced despite their own and others' perceptions that they were competent and despite their being appointed as a leader and wanting to lead. For example, the following employee had been trained in crisis leadership and held a formal leadership role in the crisis management roster system. However, her qualifications as well as her motives were doubted by those she was set up to lead. In addition, the others did not trust her to understand what was going on. As an interviewee explained the situation:

*It would have been totally ridiculous if she had continued as leader. And it's like... She has not trained. She does not know what she's talking about. No operational experience. This will go to hell. But then she began to worry and chat and asked: Is this an exercise? Luckily [another leader] came in and took over for [this leader]. When the right leader was in place, we never let her assume leadership again. (I:13)*

The leader being referred to had a reputation as someone who only cared about her own position and not about others. In addition, she acted in a manner that indicated that though the crisis was real, she did not get it. The people reporting to her replaced her by assigning her tasks to another person. Although the description of this incident might seem rather harsh, it underscores the importance of being perceived as the right leader in being able to get and retain power not only by other leaders but by followers as well.

Although a leader's legitimacy could be linked to having formal authority, it seems that it did not get the person very far if he or she was not perceived as acting with integrity or caring about the well-being of others. It is not surprising, then, that a transfer of leadership was typically accompanied by seeking commitment towards a leader from many people, to guarantee that people were "on board" with the leadership changes. The following leader

recounts the process of determining which people would be assigned to different roles to handle the duration of the crisis:

*How are we going to handle this over time, and who's going to assume the different positions? I was involved in [deciding] ... when there would be transfer. We spent over an hour, when we had the time, to get the commitment. To make sure the new leader was perceived as the right leader. (I:2)*

The new leader mentioned in the previous example was intended to lead the last unit that was mobilized in the CMO, the recovery unit. Therefore, he needed to be trusted not only by the people in the temporary organization but also by the leaders in the permanent organization. While the transfer of leadership might seem time-consuming, it is important to note that it mostly happened in an hour or shorter and was often accompanied with a change in structures. Furthermore, there was often a need for multiple leaders to cooperate, which may explain why seeking commitment from many people across multiple ties seems to have been so important.

In summary, legitimacy was reflected in a leader's concern for the well-being of others, integrity, and ability to work well across multiple relational ties. The right to lead could be "terminated" and transferred to another person if others perceived a leader as not behaving in such a way, regardless of a formal assignment. Legitimacy was also gained and lost depending on which "system" was in charge overall. When the CMO was demobilized, legitimacy again seemed to be a question of formality, and leaders in the permanent organization regained power.

### **Enablers of dynamic power transitions**

The ongoing, rapid, and frequent power transitions from one leader to another and one structure to another could easily have led to power struggles, conflicts, and tensions in many organizational contexts. However, power struggles and conflicts were rarely observed or reported. Although some tension occurred in the crisis management facilities, leaders described themselves as focusing on situational needs and demands and working through tensions for the sake of the overall purpose. Three collectively held enablers seem to have facilitated power transitions: (1) a pool of procedurally trained crisis management personnel; (2) crisis preparedness plans and procedures; and (3) crisis management values, norms, and culture. I now illustrate how these enablers supported and maintained the dynamic power transitions that were the hallmark of the unfolding leadership.

**Procedurally trained personnel.** The first factor that facilitated power transitions is a pool of procedurally trained personnel. Across the corporation, leaders, experts, and support personnel

took part in regular training sessions that involved crisis-scenario simulations. Interviewees were quick to emphasize that the focus of training was to develop familiarity with procedures, not content. Rather than limiting flexibility, procedural training promoted it, by providing the personnel with a mental model of how to think, act, and cope in response to crises.

A key element in the sessions was cross-training, in which individuals would exchange roles and responsibilities, enabling them to understand their peers' roles. Having met one another and switched roles many times during training, the personnel had a sense of familiarity not only with the procedures but also with other people's expertise and experience. Therefore, they knew whom to assign which roles and responsibilities and where to seek advice. More important, they were confident that other employees knew what was expected of them as well as of others regardless of which role they were assigned to. As one interviewee noted:

*What's most important is that this organization is very well trained. We have routines and we're staffed with competent people. There is a training roster system and things like that. Training makes you more confident about what you know and don't know. That way you can act more instinctively. (I:33)*

The pool of trained personnel had an additional value. Being able to draw people from a pool provided easily accessible replacements. For instance, when the CEO was travelling abroad for the first 12 hours of the crisis, the director of the affected business area was able to quickly fill his role in the meantime. As one interviewee recalled the situation:

*It took a whole day for the CEO to arrive. The good part, I think, is that we have learned that we do not depend on the CEO being in town. It works without him, and that's important. (I:12)*

Formally appointed leaders could be replaced by other formal leaders when they were unavailable or if they could not handle the pressure. For example, some people did not cope well with the crisis as a result of cognitive overload, emotional reactions, and fatigue. In these cases, new people were drawn from the pool, and tasks were reassigned to them. Thus, training, apart from familiarizing leaders with procedures and people, served to de-individualize leadership by placing an emphasis on roles rather than positions. This served to make it clear that changing roles and being replaced were "part of the game," thereby reducing the risk of tension and conflict related to power transitions.

**Plans, procedures, and basic structures.** The second factor that enabled power transitions is the preparedness plans and procedures for the temporary CMO. The plans defined the key responsibilities, procedures, and basic structures involved in organizing crisis management efforts. Furthermore, the crisis management facilities and technological crisis systems supported the emergence of a temporary structure. The plans and procedures were particularly helpful in achieving rapid mobilization during the initial phase. They also served to justify that a new set of leaders would temporarily take charge, as this interviewee explained:

*I think some people in the [permanent organization] felt excluded, so I tried to give them a context, say that we actually have a procedure for this where it says that I have formal responsibility for human resources [in the event of a crisis]. (I:5)*

Furthermore, after mobilization was accomplished, the structure was given considerable authority to access human as well as other resources across the corporation:

*We have back up if we suddenly need more resources. We have a system for calling others and delegating tasks—and they'll chip in. In that sense you have confidence that you won't be overloaded ... in any way ... with work you cannot complete. (I:28)*

In addition, the crisis management structures were meant to be scalable and flexible according to situational needs and demands. Depending on the potential magnitude, duration, and complexity of the situation, leaders were expected to assess which kind of structures they needed and for how long. As one leader described the need for flexibility:

*Plans are okay, but you cannot be so concerned with following the plan that you cannot do your tasks. Planning and improvising; that's what we're set up to do. (I:14)*

Although plans outlined formal and hierarchical lines it was understood that the leaders would organize the response depending on the requirements of the pending crisis. Thus, leaders found support for improvising and adjusting power relations in a flexible manner in the very same plans.

**Crisis management values, norms, and culture.** The third set of enabling factors is the values, norms, and culture that guided crisis management efforts, not only within the CMO but also within the corporation as a whole. These ideas were not only stated in corporate documentation; they were also clearly conveyed to everyone involved in crisis management. As one of the interviewees explained:

*I think it is difficult to achieve something like this without sharing some basic values throughout the organization. (I:2)*

Several times throughout the crisis, leaders reminded others of these values, showing that they clearly influenced norms. Leaders would, for example, state the values and act in accordance with them, as one interviewee explained:

*It is in line with our values that we shall prioritize actions that save people first, then environment, then assets, and then reputation. (I:11)*

Thus, a compliance culture permeated the organization when it came to crisis management. The respect for an emergent power order seems to have been nearly “religious.” As one leader described the adherence to the organization:

*Having a system with a crisis management organization and a crisis leader makes this corporation very disciplined. We’ve said that the crisis management organization and its leaders’ evaluations are sacred. (I:33)*

As another leader said, this is not always a given:

*You have a triggering event, you have an organization that has trained, and there is a clear line between the corporation and the leader of the crisis management organization ... I don’t think that is necessarily a given in other places. (I:40)*

In summary, the values, norms, and culture of crisis management seem to have contributed to a commonly held understanding of the exceptionality of leadership during crises. This notion was both individually and systemically engrained.

## **DISCUSSION**

In this section, I develop a heterarchical perspective on crisis leadership. Overall, the findings indicate it is only by relinquishing control and allowing others to lead, that formal leaders can facilitate an adaptive response. Paradoxically, when multiple leaders and structures are allowed to emerge, more complex problems can be addressed at the same time, which in turn allows formal leaders to regain strategic control. At the core of this phenomenon are rapid, frequent, and continuous shifts in who leads and how leadership is structured. Such dynamic power transitions are driven by the competency and legitimacy of different leaders and structures at any given time. Three enablers facilitate and support the dynamic transitions of power.

### **A heterarchical perspective on crisis leadership**

To develop a heterarchical perspective, I draw on the concept of *heterarchy*, coined by McCulloch (1945) and further developed by Crumley et al. (1995) and Aime et al. (2014). As

I conceptualize it, heterarchical leadership is characterized by being purpose driven, informal, and emergent; by the ad hoc mobilization of multiple leaders and structures; and by a power order that changes and may be unranked or ranked in multiple ways. This description challenges both a purely hierarchical and a purely distributed view of crisis leadership. Rather, this perspective has features in common with hybrid forms of crisis leadership.

Yet, in several ways this perspective goes beyond prior work on hybrids and challenges some of its key assumptions. First, it suggests that the distribution of power is not a matter of choice but rather the “nearest available option” to which formal leaders have access for gaining control. Second, it proposes that power is not only distributed by formal leaders (Boin et al., 2005), and leaders do not seem to be able to suddenly retract leadership as a means of exercising control, as depicted by Klein et al. (2006). Third, this perspective suggests that, in many instances, several leadership roles and structures emerge without any reference to plans, which is in contrast with Bigley and Roberts’s (2001) conception of a leadership practice in which formal roles are melded with structural flexibility.

On this basis, I argue that the leadership I observed has more in common with a heterarchical perspective than with any of the hybrids described in the crisis leadership literature. However, I expand the use of the heterarchical concept in specific ways. First, I focus on heterarchy from a leadership angle, as opposed to McCulloch (1945) and Crumley et al. (1995). Second, in contrast with other recent work, I examine heterarchy at the meso-organizational level—a level higher than the unit but lower than the organizational level (DeChurch, Burke, Shuffler, Lyons et al., 2012). This approach differs from that taken by Aime et al. (2014) in their study of heterarchies in cross-functional teams. In addition, I delve more into the processual and dynamic aspects of heterarchy than researchers have done in prior research.

### **Centrality of dynamic power transitions**

Heterarchical leadership is a processual phenomenon focusing on the “becoming” of leadership roles and structures, rather than the more descriptive characteristics identified in prior research. The core processual element, which I refer to as dynamic power transitions, involves frequent, rapid, and repeated alterations not only in leadership roles but also in how leadership is structured.

Although Aime et al. (2014) also refer to power transitions, their work does not reflect the level of dynamism observed in the current study. Specifically, the occurrence of power

transitions is an ongoing practice. Furthermore, despite resembling dynamic delegation (Klein et al., 2006), these transitions involve power being transferred by both formal and informal leaders, making it a two-way process. In addition, power transitions pervade leadership more substantially than other types of distribution of power, by including shifts not only in leader roles but also in leader structures at multiple levels. Furthermore, though resembling the structural flexibility described by Bigley and Roberts (2001), most structures of power transitions are ad hoc and emergent, representing a level of structural dynamism not reflected in prior work.

Last, dynamic power transitions are influenced by shifting situational needs and demands. The more critical the situational needs and demands are, the more likely a change in leadership will occur. This sharply contrasts with the findings of Klein et al. (2006), in which formality and rigidity increase with the criticality of a situation. Without this constraint, however, response efforts can occur relatively immediately and impromptu, reducing the risk of response inertia.

### **Drivers and enablers of power transitions**

The findings suggest that competency and legitimacy are the two key drivers of power transitions. Power transitions are facilitated by a set of contextual enablers. Although competency and legitimacy mirror the two drivers identified by Aime et al. (2014), the additional contextual enablers highlight an aspect of leadership that can be overlooked without taking a complexity leadership perspective (Uhl-Bien et al., 2007; Marion & Uhl-Bien, 2002). This distinction between the qualities of *drivers* and *enablers* indicates that while competency and legitimacy are in situ factors influencing power transitions, the other factors are more likely to be embedded in the broader organizational environment.

Without the presence of both forms of influencers, actual transfers of power would probably not have occurred. In particular, without the contextual enablers, the attempts to transfer power would probably have led to substantial tension, conflict, and potential response inertia (Hannah et al., 2009). Thus, the enablers seem vital to the unfolding of emergent leadership, as they offer considerable “concertive” control (Barker, 1993), which refers to “soft” power not rooted in hierarchy or formality. This form of control is, for instance, neglected by Bigley and Roberts (2001). Overall, the influencers underpin a power order that is dynamic, fluid, and flexible, yet not arbitrary or random.

### **Balancing concerns: control versus adaptability**

A heterarchical leadership practice is simultaneously controlling and adaptive. When strategic control is not attainable through traditional means, the in situ drivers and contextual enablers work together as an emergent checks-and-balances system, in which, within certain constraints, an adaptive response is allowed. Gaining control relies on those who have the relevant competency and legitimacy to lead effectively being allowed to do so. This “modern” role of formal leaders allowing others to lead is in line with the findings on leadership in complex, adaptive systems, as described by Marion and Uhl-Bien (2002) and Uhl-Bien et al. (2007). Power being passed around depending on response should accordingly be placed at the forefront of our understanding of crisis leadership.

Yet giving up in situ control does not happen just like that. The contextual enablers that facilitate this form of leadership serve to maintain a form of strategic control that is deeply rooted. By preparing the organization for a loss of control by promoting certain contextual factors that inform, shape, and facilitate certain behaviors, there is sufficient guidance for formal leaders to temporarily let go of control. Furthermore, power transitions occur “in the shadow of hierarchy,” as this practice is only valid as long as an exceptional event and in situ criticality are present. When criticality recedes, traditional means of managerial control again become relevant. Taken together, heterarchical leadership seems to foster both adaptive response and strategic control, by enabling leaders to grapple with the “adaptive tension” of balancing the two concerns simultaneously but in diallel (sequentially and iteratively as opposed to in parallel), depending on situational relevance.

### **Theoretical, methodological, and practical implications**

The current study has important implications for how researchers theorize about leadership control and power during organizational crises. First, although it is often taken for granted that command-and-control leadership is necessary to avoid chaos and disorder, the findings indicate that alternative forms of crisis leadership are worth exploring further. Second, the perspective I develop complements and extends recent hybrid perspectives. In particular, drawing on extant literature to develop a heterarchical perspective, I address issues that prior studies have only partially dealt with, such as how leadership occurs when existing structures are inadequate, managerial discretion is limited, and improvisation is required. Third, I show how dynamic power transitions and two sets of influencers make up a checks-and-balances system. I thereby address the challenge of balancing the adaptive tension between controlling and adaptive leadership (Hannah et al., 2009), which has been neglected in most crisis research.

In addition to these theoretical implications, the study has methodological implications. First, it highlights the utility of examining lesser-understood phenomena through qualitative research that uses rich data and explorative and longitudinal designs. The findings in this study would probably not have been revealed through commonly used methods such as quantitative field experiments or qualitative historiometric analyses. In particular, this study emphasizes the importance of using real-time data in research in which the stakes are high and the interviewees are likely to have different agendas. Furthermore, the richness generated by combining well-known analytic strategies shows that using more than one approach can complement understanding of a phenomenon.

Last, this study presents some potentially striking implications for practice, particularly in light of most organizations and leaders being ill-prepared for crises (Mitroff, 2004). First, whereas in organizations that have preparedness plans, these typically propose a hierarchical structure (Selart et al., 2013), the findings in this study show that preparation plans should allow for more in situ improvisation to enable adaptive response. Second, where many top managers report having inadequate crisis leadership KSA's (Wooten & James, 2008), this study proposes that leaders could benefit from developing not only their formally appointed leaders to lead during crises but also other potential leaders, to allow for the emergence of many leaders during crises. Third, this study suggests that there is a benefit in developing a strong culture that can offer guidance and, thereby, a conservative form of strategic control during crises.

### **Transferability, boundary conditions, and limitations**

The analysis of the nature, drivers, and consequences of heterarchical crisis leadership portend the transferability, boundaries, and limitations of this leadership practice. Despite this study having been conducted during a specific crisis event in a specific context, in many situations heterarchical leadership seems to be a powerful means of fostering adaptive response and strategic control when too much emphasis on either might affect outcomes negatively. This study offers generic insights that may apply to leadership settings in which balancing the two factors is important, such as during other types of crises. In addition, the proposed heterarchical perspective could be relevant to leadership in temporary projects and organizations going through transformational change.

Nevertheless, this heterarchical leadership practice proposed in this study has certain boundary conditions. The heterarchical leadership and dynamic power transitions described here are most likely to be effective in situations in which (1) the situational needs and demands

are critical and rapidly changing, (2) the existing leadership arrangements are deemed inadequate or of a poor fit, or (3) taking routine actions or settling for non-action is not a viable choice. If the first condition is present but the latter two are not, heterarchical leadership might not be necessitated. This can be the case when an event exceeds the capacity of a context, such as in professionalized emergency organizations (e.g., Hannah et al., 2009).

Although the findings complement and extend the understanding of crisis leadership, the study is limited in several ways. First, because I collected data in a single organization and context during a specific crisis event, I cannot and do not claim that the leadership perspective I describe would be automatically relevant during crises in similar settings. Second, I deliberately chose to explore leadership at a meso-organizational level and did not examine the effects of leadership on either organizational performance or between-leader or between-structures (e.g., unit) variance. Third, although I used multiple data sources, I relied most heavily on the interview data. Fourth, the findings I present are unavoidably linked to the qualitative design I chose. A quantitative approach, for instance, might have yielded different but complementary insights.

However, the study offers some insights that potentially have generic explanatory value. Further research might explore whether this alternative leadership perspective is useful across different settings. Additional research is necessary to refine and further explore the relationships between the concepts introduced, to examine the explanatory power of these relationships, and to grapple with the mentioned limitations. Thus, both further qualitative and quantitative work could expand the understanding of heterarchical leadership.

## **CONCLUSION**

This study is based on a rare and unexpected opportunity I had to study leadership and power relations while an organizational crisis unfolded. Overall, the study suggests that using heterarchical leadership is one way that leaders can grapple with the adaptive tension of balancing strategic control with adaptive response. This type of leadership is produced by having a set of influencers work together as a checks-and-balances system in which dynamic transitions of power can take place, allowing leaders to let go of control to regain control. Although this study is an important contribution to the understanding of crisis leadership, future studies are necessary to explore this heterarchical leadership further, using both qualitative and quantitative designs. Given that more organizations are likely to experience crises, transitions, and changes, this seems to be a potentially important stream of research.

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## **Collective Leadership during an Organizational Crisis: The Centrality of Role Transgressions in Aligning Efforts**

### **ABSTRACT**

In this paper, I examine the emergence and dynamics of collective crisis leadership, drawing on data collected while a terrorist attack was occurring in a multinational corporation. Contrary to prior research emphasizing the role of planning and individual leaders, the qualitative findings reveal that the in situ leadership that took place at this corporation involved impromptu interactions between multiple individuals leading collectively. The emergence of multiple sources of leadership to carry out four critical leadership functions—strategizing, structuring, developing, and relating—provided much needed leadership capacity. With the increased capacity came specialization, which could have led to misalignment, but this was avoided by leaders acting as “role transgressors” to foster the alignment of collective efforts. Based on rich data from a leadership situation researchers rarely have access to, this study contributes to the understanding of crisis leadership by illustrating multiple leadership sources, a typology of leadership functions, and how leadership plays out over time and across levels.

**Keywords:** Crisis leadership, emergence, dynamics

## INTRODUCTION

*Without warning, 32 heavily armed terrorists attacked and besieged a production plant at the subsidiary of a multinational energy corporation and captured the employees who were of foreign descent. This immediately led to the mobilization of a temporary crisis management organization (CMO) at the corporate headquarters. Despite having preparedness plans in place, however, the pending crisis did not resemble anything anyone had planned for or imagined. The personnel had to improvise, while under immense pressure to perform. Action was required, yet acting wrongfully might have been equally harmful. The consequences of non-action or harmful action ranged from jeopardizing the corporation's international strategy to causing the death of a colleague. In response to the rapidly evolving situation, in which the problems were complex, ill defined, and ill structured, multiple leaders emerged from across the organization to take part in crisis response efforts.*

Leadership during this organizational crisis was clearly challenging. First, the unpredictable event involved high stakes, ambiguity, and a sense of urgency—key characteristics of organizational crises (Pearson & Clair, 1998). Second, existing structures as well as preparedness plans seemed ill suited for managing the event, another key characteristic of organizational crisis (Hannah, Uhl-Bien, Avolio, & Caravetta, 2009). Thus, leaders needed to go beyond using plans and improvise, while being confronted with an exceptional event and context. Arguably, situations involving organizational crises represent a point of impact in which leadership is most needed and an understanding of leadership is crucial (Hadley, Pittinsky, Sommer, & Zhu, 2011; James, Wooten, & Dushek, 2011; Mitroff, 2004). Nevertheless, much remains unknown about the emergence and dynamics of leadership in such situations.

To date, crisis leadership research has tended to be conceptual (Hannah et al., 2009; James et al., 2011), prescriptive (Wooten & James, 2008; Pearson & Mitroff, 1993), or focused on individual leadership. In particular, researchers have emphasized the effectiveness of transformational and charismatic leadership styles (Zhang, Jia, & Gu, 2012; Halverson, Murphy, & Riggio, 2004; Pillai, 1996). Although this research has been useful in framing the understanding of crisis leadership on a broader basis, moving crisis leadership research forward requires addressing three pending concerns.

First, although the “romance of leadership” has led to a tendency to celebrate or blame individual leaders (Meindl, Ehrlich, & Dukerich, 1985), responding to a crisis is likely to

involve multiple leaders (Boin, Hart, Stern, & Sundelius, 2005). Second, insofar as responding to crises is likely to require extraordinary efforts, such as the mobilization of a temporary crisis management structure (Selart, Johansen, & Nesse, 2013), the interplay between leaders in these ad hoc mobilized structures is poorly understood (DeChurch, Burke, Shuffler, Lyons, Doty, & Salas, 2011). Third, prior research has failed to acknowledge that leadership demands and needs might qualitatively change as a situation develops from the pre-crisis, to the in situ, to the post-crisis phase (Hannah et al., 2009; Wooten & James, 2008). Therefore, the purpose of this study is to address some of these shortcomings by examining the emergence and dynamics of crisis leadership in ad hoc mobilized structures.

Perhaps because researchers rarely have access to such situations, crisis leadership in situ has seldom been examined empirically (Sommer, Howell, & Hadley, 2015; Pearson & Clair, 1998). Thus, this study offers a unique perspective, as it is based on an opportunity to observe leadership while a crisis—a terrorist attack and siege of a production plant—was taking place at a multinational energy corporation. In particular, the data include observations and interviews conducted while a temporary CMO was mobilized at the corporate headquarters.

The explorative qualitative data analysis yields several important findings. Overall, contrary to research that puts emphasis on using preparedness plans and individual leaders, the leadership in this situation was predominantly carried out impromptu by multiple emergent leaders in a collective effort. Importantly, leadership was not the responsibility of one individual but happened through the interactions between multiple leaders and particularly through role transgressions. Furthermore, leaders engaged in four critical functions: strategizing, structuring, developing, and relating. The emergent leaders provided much needed leadership capacity, and leaders representing different sources of leadership engaged in role transgressions at critical times, which provided an alignment of efforts despite the specialization of roles, working toward the overall purpose of crisis management.

The study contributes to the crisis leadership literature in several ways. First, it answers a call for more qualitative studies of crisis leadership in dynamic contexts and offers a particular focus on the response phase (Pearson & Clair, 1998). Second, in addition to presenting rich data from a leadership situation rarely accessed by researchers, it presents an overview of different sources of leadership during crises, how collective leadership emerges, and how leaders engage in role transgressions as a particular form of collective leadership. Third, this study presents a typology of leadership functions, which is an articulation that has been missing in the crisis

leadership literature (James et al., 2011). Last, by examining leadership across time and levels, it adds a temporal dimension to our understanding of crisis leadership.

The paper proceeds as follows: First, I review research on in situ crisis leadership challenges that occur during an organizational crisis. Then, I present a functional leadership perspective and its key building blocks, a perspective believed to be well suited to examine in situ leadership during crises. Next, I present the research design and context and explain how I collected and analyzed the data. Thereafter, I present my findings in three parts: (1) the emergence of collective crisis leadership, (2) the crisis leadership functions, and (3) the crisis leadership dynamics over time and across levels. Last, I discuss the theoretical contributions and implications of the study.

## **THEORETICAL BACKGROUND**

### **Organizational crisis leadership**

Any organizational crisis, whether it is triggered by a malicious act, an industrial accident, or a natural disaster, poses a tremendous call for leadership (Sommer & Pearson, 2007). These situations are exceptional in both the type of event and the type of context for leadership (Hannah et al., 2009; Pearson & Clair, 1998). Not surprisingly, researchers contend that the response phase is the most challenging one in organizational crisis management (James et al., 2011; Hannah et al., 2009). Leadership during this phase is likely to involve containing the crisis and normalizing the situation (Hadley et al., 2011; Pearson & Clair, 1998). Doing these things necessitate controlling rather than exacerbating the negative effects of a potentially escalating crisis as well as mitigating circumstantial effects (Pearson & Clair, 1998).

According to prescriptive research, throughout the duration of the crisis, crisis leadership should be about making sense of the crisis event, assessing potential consequences, making decisions and setting priorities, accessing resources, and implementing solutions (Sommer & Pearson, 2007; Pearson & Clair, 1998). While prescriptive models tend to portray crisis leadership efforts as a series of steps, the in situ leadership process is usually dynamic and continually subject to shifting situational needs and demands (Pearson & Clair, 1998; Weick, 1993). In addition, an effective response is likely to require structural flexibility that diverges substantially from the static bureaucratic structures often found in organizations as well as preparedness plans (Bigley & Roberts, 2001).

Thus, in situ leadership challenges are related not only to the exceptional event and context but also to the attempts to manage the crisis (Weick, 1988, 2010). In summary, despite the many idealized step-wise models of what constitutes effective crisis leadership, little is known about what leaders do to achieve success while crises unfold—when evolving developments are likely to influence leadership dynamics and require improvisation.

### **A functional leadership perspective**

A functional approach to leadership seems especially appropriate for the examination of leadership during organizational crises. According to this perspective, leadership is about complex social problem-solving through collective efforts (Mumford, Zaccaro, Harding, Jacobs, & Fleishman, 2000; Fleishman et al., 1991). A leader's main job is "to do, or get done, whatever is not being adequately handled for group needs" (McGrath, 1962, p. 5). Rather than specifying behaviors that constitute leadership, the functional approach views leadership as a role. Effective leadership is about translating critical demands and needs into a pattern of leader behaviors that will enable collective efforts to be successful. Which behaviors are functional vary in instrumentality depending on contextual and situational factors and can vary over time (Zaccaro, Rittman, & Marks, 2001).

Importantly, this view focuses on dynamic leadership processes and actions, which contrasts with individual leadership theories' focus on stable leader demographics or traits (Finkelstein & Hambrick, 1996; Hambrick & Mason, 1984) and other theories' focus on fixed situational contingencies (Hersey & Blanchard, 1977; Vroom & Yetton, 1973; House, 1971; Fiedler, 1964). Furthermore, in contrast with leadership style theories, which typically depict leadership as a dyad involving a leader and a subordinate (Bass & Avolio, 1994; Klein & House, 1995), the focus of the functional view is on the critical needs of the collective, as implied by the systems view of organizations (Fleishman et al., 1991; Katz & Kahn, 1978). Thus, the functional perspective seems suitable for analyzing leadership at the meso-level, a level that is higher than the team but lower than the organization.

Compared with other relevant perspectives, such as the complexity view (Uhl-Bien, Marion, & McKelvey, 2007) and the adaptive and flexible leadership view (Klein, Ziegert, Knight, & Xiao, 2006; Yukl & Lepsinger, 2004), the functional view seems more developed. Furthermore, it acknowledges emergent, collective, dynamic, and multilevel aspects of leadership. This view has recently been used to uncover theoretical and practical insights in similar settings (see Shuffler, Jiménez-Rodríguez, & Kramer, 2015), providing promise for its

usefulness in the current setting. In the following sections, I will address three aspects underlying a functional leadership view that seem central to further developing understanding of crisis leadership.

***Emergence of leadership: sources and forms.*** The functional perspective is deliberately inclusive when it comes to *who leads*. Anyone who fulfills the critical collective needs of the situation is considered a source of leadership. Furthermore, in any given collective, it is likely that multiple sources carry out leadership at the same time. This may or may not coincide with formal positions, with leadership being emergent and informal. In addition, leadership may take different forms and be collective. Morgeson, DeRue, and Karam (2010) identify *four sources of leadership* based on the locus (internal or external) and formality (formal or informal) of leadership. Central to this focus is the idea that though a single source or form of leadership can be appropriate for some research purposes, such research might offer an incomplete account of the full extent of leadership. Furthermore, it is important to examine the interplay between different leadership sources and forms.

***Leadership functions in collectives.*** Functional leadership emphasizes the *needs of the collective*. Quite a few studies have been undertaken to identify key leadership functions, in particular as they apply to teams (Morgeson et al., 2010) but also in larger collectives (DeChurch et al., 2011; DeChurch & Marks, 2006). Because larger collectives, by definition, are made up of “units of units,” leadership functions should be homologous across levels of analysis (DeChurch & Marks, 2006; Klein & Kozlowski, 2000). Furthermore, leadership is likely to occur in task and interpersonal dimensions across settings (Bell & Koslowski, 2001). However, a core aspect of functional leadership theory is the idea that leadership functions are not universal to all collectives (Zaccaro et al., 2001). Thus, different settings are likely to render various leadership functions more and less critical to overall functioning. Despite functional leadership studies having been undertaken in many settings (Santos, Caetano, & Tavares, 2015), it is essential to investigate which functions are critical during organizational crises.

***Leadership dynamics across time and levels.*** A functional perspective posits that what constitutes effective leadership *may vary over time and across levels*. Different aspects of temporality in relation to leadership have been discussed in prior literature (Klein & Kozlowski, 2000). For example, some researchers suggest that leadership is likely to be cyclical (Marks, Mathieu, & Zaccaro, 2001) and that leadership capacity often develops over time (Day, Gronn, & Salas, 2004). Whereas the process of leadership may start out as an input, it can become an outcome of prior input in later cycles. Furthermore, across levels, a key issue involves how

leaders align efforts over time. While traditional leadership research describes top management as representing long-term or strategic interests and lower levels of leadership as representing operational or short-term interests, combined actions across levels are likely to contribute to the leadership process. Thus, understanding leadership in collectives hinges on grasping how strategic and operational leadership are aligned over time (DeChurch et al., 2011).

Building on a functional leadership perspective, in the current analysis I depart from prior crisis leadership research in three distinct ways. First, I examine crisis leadership as an emergent, collective activity involving many potential sources and forms of leadership. Second, I examine leadership functions that are critical in addressing collective needs in temporarily, ad hoc mobilized CMOs during crises. Third, I view crisis leadership as a dynamic process that can vary over time and across levels. This approach allows me to refine my research problem and ask three questions: Who (which sources and forms) emerges as leaders during an organizational crisis? What are the critical leadership functions in a temporary crisis management structure? and How does leadership develop over time and across levels? By addressing these questions, I aim to highlight unique aspects that prior crisis leadership research has not examined in much detail.

## **METHODOLOGY**

This study is based on a unique opportunity to collect data about leadership during an ongoing organizational crisis. I was allowed access to carry out research at the corporate headquarters based on having a long-standing and trusting relationship with key personnel in a multinational energy corporation. The crisis event was a terrorist attack and siege of a production plant in one of the corporation's subsidiaries. The data I collected include observations and interviews from the eight days a temporary CMO was mobilized at the corporate headquarters. To derive insights from this "revelatory case" (Yin, 1984), I use an explorative qualitative research design (Edmondson & McManus, 2007). I use this framework to examine some methodological choices regarding data sources, level of analysis, and data analytic strategies.

First, Langley and Stensaker (2012) recommend exploring phenomena in dynamic settings. Such data can reveal information not likely to be uncovered using retrospective data. For example, the passing of time can alter one's memory of the information about what actually went on during an event (e.g., through social impression management). This may be especially true in crisis situations, after which informants often favor narratives focusing on leadership successes (Pearson & Clair, 1998). Thus, in the analysis I primarily draw on interviews and

observations carried out at the crisis management facilities, while I treat observations, interviews, and archival data obtained before and after the event as complementary data.

Second, researchers often report their level of analysis, while the current study's focus was on the emergence and dynamics of collective leadership, particularly across time and levels. Because I deliberately wanted to expand the level of analysis rather than constrain it, I focused on the leadership process both within the CMO (internal) and between the CMO and the permanent organization (external). Furthermore, although I collected the primary data in a short time span, I collected them in a timely, structured manner, which enables the data to be available for longitudinal analysis (Langley, 1999).

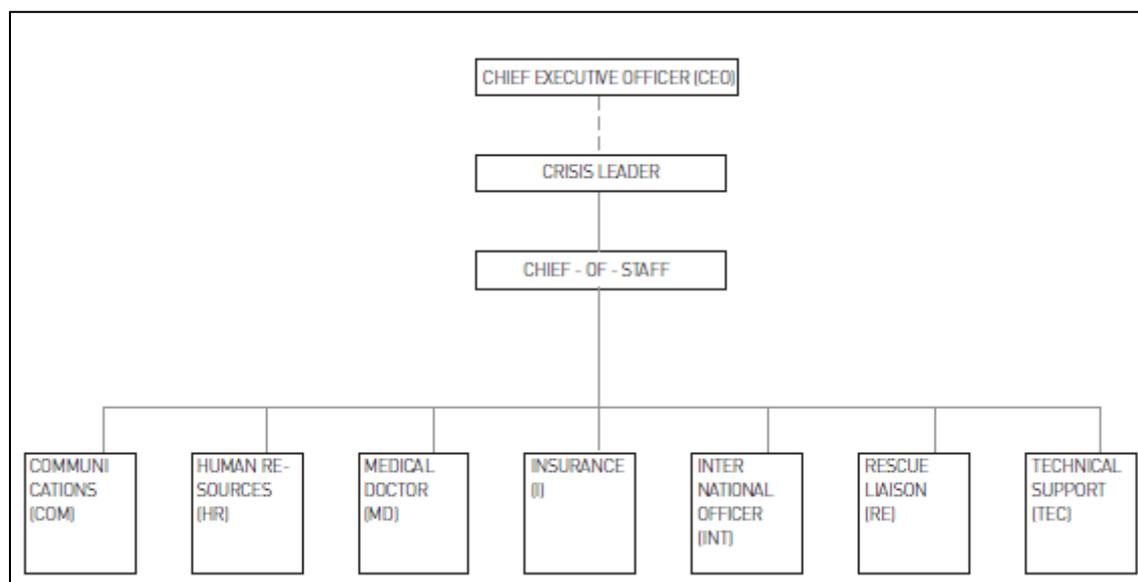
Third, I used two well-known templates in qualitative research to analyze the data. The first strategy I employ, a grounded theory approach (Glaser & Strauss, 1967; Corbin & Strauss, 1990; Strauss & Corbin, 1990), is useful to generate detailed coding of events and relationships between emergent categories. However, the bottom-up detailed coding can cause one to "miss the forest for the trees." Therefore, I also use processual strategies such as visual mapping and temporal bracketing (Langley, 1999) to address rich data, relationships, and time. These strategies are useful for detecting processual patterns that convey an understanding of how a phenomenon develops over time.

### **The Research Context**

The multinational energy corporation I observed, which has six business areas (BAs) and around 30,000 employees, was ranked one of the 40 most profitable companies in the world in 2013, the same year as the terrorist attack and siege. The corporation is a high-reliability organization, which means that it depends on managing the risks associated with its operations and other activities in an error-free manner. However, the corporation acknowledges that crises might occur. Therefore, it has set up preparedness plans for several crisis scenarios, including industrial accidents, malicious and criminal acts, and natural disasters. Furthermore, it provides regular basic advanced crisis management training to a pool of personnel, including leaders, experts, and support personnel, in preparation for such events.

The organization mobilizes a corporate crisis management structure at the headquarters in case a triggering event should exceed its ordinary capacity or threaten the overall corporate interests. Preparedness plans outline two lines of notification: one for the corporate organization (external) and one for the CMO (internal). The plans typically describe seven duty positions, though the scope of the organization is scalable and flexible and can be altered at any time

during a crisis response. Figure 1 provides an example of the structure of a basic crisis management team (CMT) at the corporate level.



**Figure 1.** The structure of the CMT mobilized in response to most triggering events

*The Crisis Event.* In 2013, 32 heavily armed terrorists attacked and besieged a production plant at one of the corporation’s foreign subsidiaries, operated by the corporation and two joint venture partners. At the time of the attack, 800 people were at the plant. Although most of the nationals were released, approximately 130 foreigners from 30 nationalities were captured by the terrorists. During the siege, which lasted for four days, 40 employees from the three partner corporations were tragically killed. In addition, explosions and fires threatened production plant safety as well as operations and investments overall.

The crisis event had many consequences. Five of the 17 employees who were captured by terrorists never returned to their families. In addition, the corporation’s commitment to safe and error-free operations worldwide was violated. Almost two years passed before it was safe for its employees to return to the site. To the studied corporation, not only was the event a human tragedy, but it was also a potential threat to the corporation’s international strategy. The crisis event initiated a debate about the corporation’s international strategy and presence in politically unstable regions. An investigation report issued by the corporate board of directors refers to the event as “the most serious international crisis the multinational corporation has ever faced.”<sup>1</sup>

<sup>1</sup> The In Amenas Attack. Report of the investigation into the terrorist attack on In Amenas. Prepared for Statoil ASA’s board of directors. 2013.

***Crisis Response.*** In response to the incident, crisis management efforts were immediately started. What began as a single CMT (see Figure 1) evolved into a CMO that at the most included six crisis management units. Examples of the activities these groups performed in different units included but were not limited to: (1) communicating with the hostage takers (hostage incident response team) and evacuating victims (response unit); (2) issuing press releases and holding press conferences (communications unit); (3) providing psycho-social support to next of kin (human resource unit); (4) communicating with the board of directors, joint-venture partners, and governments (corporate communications unit); (5) securing the plant and assessing plant damage and restart opportunities (business continuity unit); and (6) facilitating an investigation and transfer of responsibilities to the corporate line organization (recovery unit). Figure 2 depicts a timeline of crisis event developments as well as the emergence of the different units in the CMO based on responses to different situational needs and demands. The CMO was manned on a 24-7 basis for eight consecutive days. The leadership of this temporary organization is the backdrop for the current analysis.

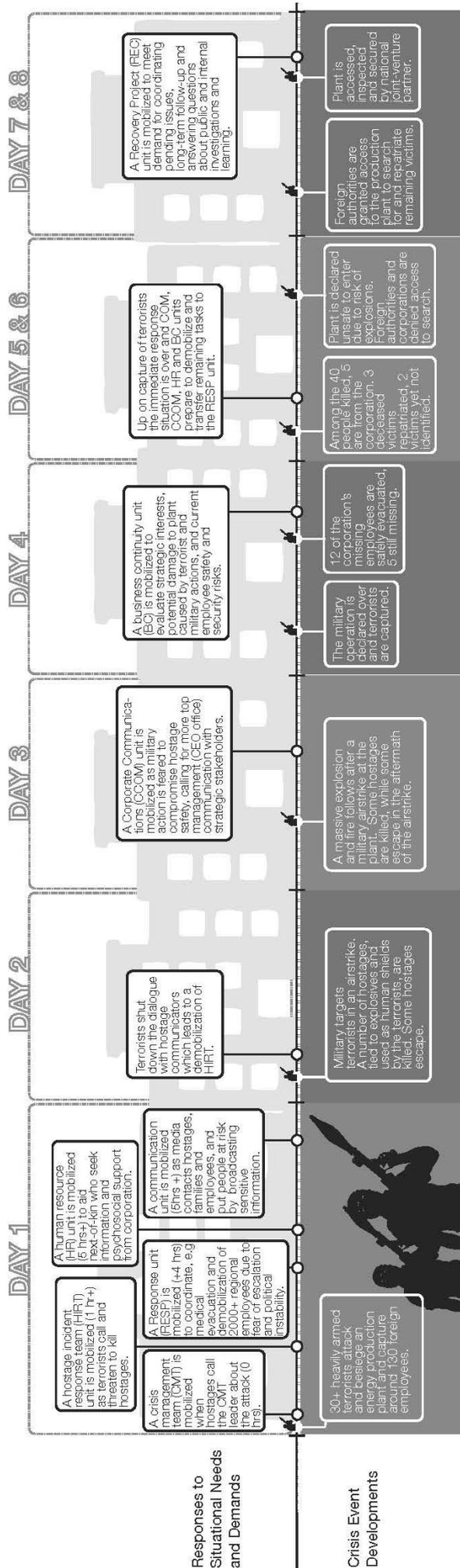


Figure 2: Time Line of Crisis Developments as well as Responses to Situational Needs and Demands

## **Data Sources**

Although I conducted the primary data collection while the CMO was mobilized at the corporate headquarters, I also collected data before, during, and after the crisis. I observed leadership in the crisis management facilities from eight to ten hours a day and conducted 46 interviews during this time. Because the CMO was mobilized for eight days, I had the chance to conduct approximately 70 hours of observations and interviews. To illustrate the amount of the data generated, the in verbatim transcribed interviews consist of close to 900 pages of double-spaced transcribed text, while the other documents include approximately 500 single-spaced pages.

Complementary data sources include five preparatory and post-crisis interviews, 20 observations and contacts conducted before and after crisis (i.e., during crisis management training sessions, workshops and meetings) and archival data. The archival data includes six crisis preparedness plans, electronic crisis management schedules and logs (one data file), and four official and internal crisis management reports. All data were collected by the author. The Norwegian Social Science Data Services (NSD) approved data collection, storage, and use before the crisis for a broader project on crisis leadership. Directly after the crisis, I applied and was approved for an extension of the data set to include personal information and interviews carried out during the crisis.

## **Data Collection**

Immediately on my arrival in the crisis management facilities, the chief of staff and unit leaders informed all other personnel about my presence and status as a researcher. All the personnel were given consent information stating that (1) interview participation is voluntary, (2) participants have the right to withdraw from the study and have their interview records destroyed at any time, (3) interview information is treated confidentially, and (4) the researcher can be contacted at all times for questions.

I informed the respondents that interviews would be conducted in brief, high-intensity periods and could be disrupted by the interviewee if necessary. The use of brief snapshot interviews was guided by the recommendations of Wildman and colleagues (2012) for data collection, which suggest that interviews should be conducted in a way that fits with situational demands. I conducted lengthier interviews in low-intensity periods, following the recommendations of McCracken (1988) for conducting in-depth interviews. Because of these constraints, for the first four days I mainly conducted snapshot interviews lasting between five

and 25 minutes during the daytime. In the evenings and from day four onward, the typical length of interviews was 1–1.5 hours. Of the 46 interviews, 29 were shorter and 17 were longer.

I made personal contact with each interviewee at least twice during data collection. The reason for the repeated contact was to ensure that interviewees felt that their integrity was respected and to allow them to correct or withdraw information if desired. Because a crisis might cause people to be vulnerable, I was careful not to interview personnel who seemed to be in a stressful state. As a trained psychologist, I was able to provide occasional psycho-social support when appropriate. It is important to note that the crisis management facilities are many thousand miles away from the place of the triggering event, so there was not a direct physical threat to the interviewed personnel. The crisis management facilities consist of eight rooms in which I was able to move freely, ask people for interviews, and observe leaders and their units in action—for example, during meetings. Figure 3 presents a photograph.



**Figure 3.** Leaders and their units at work in the crisis management facilities

Meeting each interviewee more than once was also crucial for the saturation of data, which is an important aspect of a grounded theory approach (Glaser & Strauss, 1967). The repeated contact with interviewees and triangulation of data from multiple sources (particularly the complementary data) was further important from a verification standpoint, and served to strengthen interpretive validity (Langley & Stensaker, 2012; Yin, 1984).

### 3.3 Analytic Strategies

I initially organized, coded, and analyzed interviews using Atlas.ti7 software. I analyzed the data bottom-up in three steps: first-order coding, second-order coding, and overarching conceptual categorizing, as is common in grounded theory (Strauss & Corbin, 1990). First, I labeled codes as close to the words used “in vivo” by interviewees as possible, based on a minimum level of meaning. This step generated 547 initial codes. Second, I refined the codes and subsumed the first-level codes under the second-order codes. This step eventually generated 25 codes. Third, I organized the second-order codes into three overarching conceptual categories.

Then, I continued analyzing the data top-down, looking for processual patterns using visual mapping and temporal bracketing strategies (Langley, 1999). During this process, I also compared the interview data with the secondary data. Visual mapping led me to identify the multiple sources and collective forms of leadership as emergent phenomena. Furthermore, it led me to identify the leadership functions and sub-tasks as repetitive, cyclical, and in line with the overall purpose of crisis management. By depicting how leaders emerged and interacted over time, I could identify leadership capacity and leadership alignment as phenomena that created tension and changed dynamically over time.

Though depicted in a stepwise manner, the top-down analysis was also about “conceptual leaping.” Throughout the data analysis, I revisited, revised, and refined findings in an iterative manner (Klag & Langley, 2013). For example, arriving at the functional perspective as a theoretical lens for analyzing crisis leadership involved an iterative process in which I shifted between reading or listening to interviews, analyzing data, and reviewing literature on crisis leadership and other extant works. This allowed me to explore and examine the leadership observed in the field in a manner that increasingly enabled me to construct theory.

#### **4.0 Findings**

I will present the findings in three main parts. First, I will show how multiple leaders representing different sources of leadership emerge as leaders. These leaders come together to form leadership constellations predominantly consisting of two or more individuals, making leadership predominately collective. These people engage in role transgressions to contribute to the leadership process. Second, I will describe the various functions leaders repeatedly engaged in to contain the crisis. These functions facilitated the collective needs of the group along task and interpersonal dimensions and include strategizing, structuring, developing, and relating. Third, I will illustrate how the emergent leaders contributed to building leadership

capacity over time, through repeated engagement in leadership functions in increasingly specialized domains. While specializing efforts in different domains could have easily led the response to diverge in conflicting directions, role transgressions served to align these efforts over time.

### **The Emergence of Collective and Role-Transgressing Leadership**

*Emergent Sources of Leadership.* I began the qualitative examination of crisis leadership by asking interviewees: “Who are the leaders [of the CMO]?” Rather than being straightforward, though, the answer to this question seemed quite complex.

First, respondents described the CEO and the director of the BA affected by the crisis as the formal leaders of the corporation in general as well as during crises. However, in accordance with the crisis preparedness plans, the chief of staff was the formal leader of the CMO. Other formal leaders within the CMO included the unit leaders. Thus, formal leadership was both external and internal to the CMO.

Furthermore, almost all interviewees referred to several other informal and emergent leaders as the *key* contributors to leadership in the CMO. As an interviewee said during our first snapshot interview:

*There are more leaders here than you could have possibly imagined [before the crisis]. For instance, we're flooded by corporate staff and line leaders, and I am a leader as well, although no plans describe this role. (II8)*

As the interviewee implied, several ad hoc leaders emerged in the CMO. These were either experts who became responsible for a specific task domain, such as “hostage communication,” or personnel who stepped into a role to relieve a formal leader. Furthermore, corporate staff and line leaders external to the CMO took on leadership roles in the same manner. These leaders were typically responsible for a corresponding domain in the corporate organization, such as human resources, and could offer useful advice and resources during crisis response. However, their roles were not mentioned in the preparedness plans. Overall, interviewees consistently referred to four sources of leadership as present during the crisis. While two of these sources had been formally defined in preparedness plans before the crisis, two were informal and emergent.

In Table 1, I adopt the framework by Morgeson et al. (2009) to a crisis situation to show that leadership could stem from four sources that were either formal or informal, and either

external (permanent corporate organization) or internal (temporary CMO). According to these designations, the sources of leadership could be classified as follows: (1) the CEO and BA director: “formal-external”; (2) the chief of staff and unit leaders: “formal-internal”; (3) the ad hoc task leaders: “internal-informal”; and (4) the corporate line and staff leaders: “external-informal.”

**Table 1.** Leadership Quadrants: Four Leadership Sources during an Organizational Crisis

		<i>Formality of leadership</i>	
		Formal	Informal
<i>Locus of leadership</i>	External	CEO/BA director (1)	Corporate staff/ line leaders (4)
	Internal	Chief of staff / unit leaders(2)	Ad hoc leaders (3)

*Note.* Adapted from Morgeson et al. (2009).

***Emergent Leadership as Collective.*** Apart from stemming from many sources, leadership during the crisis was predominantly shared by two or more people in different ways, thereby taking multiple forms. Collective forms of leadership occurred within all of the sources of leadership in the quadrants depicted in Table 1. For example, when the crisis struck, the CEO was abroad on business travel and the BA director acted as his deputy. However, the BA director and the CEO continued to share the role as external-formal leaders on the CEO’s return. As an interviewee said:

*He [the CEO] and [the BA director] really work together in concert. (IF3)*

This dyadic leadership was evident by the two external-formal leaders making sure that one or both of them were available to the leaders in the CMO either over the phone or in person at all times.

The corporate staff and line leaders, classified as external and informal leaders in Table 1, also described sharing leadership in different ways. For example, some corporate leaders found it necessary to share leadership during the day and rotate during the night. As one leader said:

*We made sure that [during the night] Friday through Saturday it was one of us and then there was another one on Saturday and on Sunday there was a third. We shared the tasks. During the daytime we were all present, more or less. (EII2)*

Furthermore, collective leadership involved leaders from different quadrants leading together. For example, in the response unit, leadership was mostly shared by three people, one formal and two informal leaders. As one of the informal leaders described the triad:

*I am part of the triangle that leads this. During the daytime, it's me, and [formal-internal leader] and [internal- informal leader]. During the night time, it's [internal-informal leader] and [internal-informal leader]. (II3)*

Although he was never formally acknowledged as a leader, he was described as a part of the leadership triangle also by many others. Similar leadership constellations were also described in the other units.

Finally, collective leadership involved leaders from all four quadrants and could include different people from time to time, depending on which problem was the most critical to address. At one point a leader that I talked to several times said:

*You know I've told you that we have micro-meetings with kind of all of us every now and again? It's typically the CEO, some corporate guy, me or [the response unit leader], and one of the [task force] guys. Different people at different times, I guess. The critical people. The people who know best right there and then. I have to tell you, I think this is where leadership happens. We're doing it together, the four of us, this leadership thing, when it comes to the bigger purpose. (IF1)*

Thus, leadership was carried out by multiple leaders together, while constellations varied depending on the criticality of pressing problems and situations. This underscores the centrality of leaders transgressing their roles, whether they were formal or informal and external or internal to the CMO.

***The Centrality of Role Transgressions.*** Perhaps the most unique characteristic of emergent and collective crisis leadership is that leaders engaged in what I refer to as role transgressions. These

transgressions involved leaders stepping out of their roles, sharing roles, and taking on roles that did not exist in the preparedness plans and procedures before the crisis. For example, the CEO described himself as a “tool” for the leaders in the CMO, suggesting that he transgressed his role as an external leader of the CMO. The external corporate line and staff leaders also carried out functions within the CMO, similarly transgressing their other roles, as they had no formal roles in the CMO. The ad hoc leaders who emerged internally within the CMO are examples of the same.

Thus, leaders not only came together to lead but also carried out role-transgressing leadership. Among the explanations for engaging in these role transgressions, leaders mentioned the high stakes, urgency, ambiguity, and novelty of various situations. Performing under immense pressure, formal as well as emergent leaders reported feeling a sense of responsibility and need for control and emphasized having a “fear of glitches,” which explains why people from different quadrants led at the same time.

Overall, the emergence of different sources and collective forms of leadership hints at the nature of the leadership that unfolded during the organizational crisis. More important, it involved role transgressions, or people stepping out of their roles to contribute to the overall purpose of management. Next, I examine the critical functions of crisis leadership that all leaders took part in throughout the crisis response.

### **The functions of collective crisis leadership**

The leaders quickly began working toward the overall purpose of crisis management to contain the crisis. Beyond saving the lives of the captured hostages, this involved ensuring that the crisis did not escalate, which led to the evacuation of more than 2,000 people in the affected region. Furthermore, it involved ensuring that the corporation’s international strategy, concerning operations and investments in politically unstable regions of the world, was not questioned until the immediate situation was contained.

Interviewees described the role of leadership as purpose driven and directed toward orchestrating collective efforts. However, there were several challenges to collective performance. Most critically, the currently existing routines and structures for problem solving were deemed inadequate. Furthermore, while under tremendous pressure to perform, the personnel had to learn both how to solve problems together and how to interact with one another in new ways. Confronted with these challenges, leaders had to engage in critical functions to facilitate collective performance.

The analysis reveals that along a task dimension, leaders engaged in strategizing and structuring. Along an interpersonal dimension, leaders engaged in developing and relating. Table 2 depicts leadership dimensions, functions and sub-tasks. I will more closely examine each of these in the following sections.

**Table 2.** Summary of Leadership Dimensions, Functions and Subtasks in the CMO

<b>Dimension</b>	<b>Function</b>	<b>Description</b>
Task dimension	<i>Leader strategizing</i>	This function concerns coming up with a course of action in response to evolving, ill-defined, and ambiguous problems, rather than executing a ready-made plan. The latter involves giving sense to inadequate information (sense-giving), anticipating potential crisis developments (future forecasting), setting priorities about what to address and when (prioritizing), and explaining the rationale behind strategic choices (meaning-making).
	<i>Leader structuring</i>	This function concerns altering ill-defined response structures in a flexible manner to fit with the strategic choices and developments. This involves notifying personnel and assigning them roles and responsibilities (mobilizing), timing dependent activities (coordinating), and ensuring that response domains are defined and have access to resources (boundary spanning).
Inter-personal dimension	<i>Leader developing</i>	This function concerns developing personnel resources who are ill-prepared for crisis management through displaying relevant behaviors (serving as a role model), providing positive and negative feedback (reinforcing), and providing brief instructions and encouraging participation (instructive encouraging).
	<i>Leader relating</i>	This function concerns addressing the reactions of personnel related to being ill prepared for the crisis and social interactions that happen in a pressing situation. It involves conveying that crisis reactions occur (fostering coping), mitigating those reactions that occur or might occur (regulating activation), and addressing potential relational tensions and conflict (facilitating cooperation).

***Leader Strategizing.*** The name of this first function is taken from the use of the term “strategizing” by one leader to explain that this function is more about devising with a course of action than about executing a ready-made plan. The first aspect of this function is *sense-giving*, which refers to the role of the leaders in asking questions, interpreting information from many sources, and conveying information to all the personnel, which goes beyond the efforts of the other personnel to try to make sense of the event. For example, at the outset, it was

difficult to grasp how many people were actually captured by terrorists. Thus, leaders gathered information from the site of the attack, personnel databases, maps, and footage of the plant and made an overview to aid further assessment of the situation.

Then, *proactive forecasting*, or assessing the worst-case and big-picture potential of the triggering event, was an important part of leadership and led to taking important precautionary measures. For example, because the worst-case scenario was that the terrorist attack was a sign of political unrest and a wave of terrorism in the entire region, to avoid an escalation, an evacuation of personnel across the region was conducted. Leaders also assessed the big picture, or circumstantial effects, of the crisis for different stakeholders, as one interviewee described:

*You need to get [everyone] involved and you need to guess what the potential [of the pending event] is. You also need to have that strategic perspective. How might this affect business or public interests? How might this affect your owners? (EI32)*

In addition, leaders engaged in *prioritizing*, or choosing certain issues over others. This was helpful in deciding whether to act on issues immediately, at a later stage, or not at all. For example, when the terrorists called, leaders instantly re-routed the calls from the reception center to the crisis management facilities, where trained hostage communicators were available to answer the phone. Because “Communicating with hostage takers” was a defined priority and experts were ready to take on the task, this could be done quickly.

Leaders also engaged in *meaning-making*, or explaining and justifying choices concerning the overall direction of crisis management efforts. Leaders often used the crisis management values to justify choices made in pressing situations, making statements such as:

*We're here to protect people, environment, assets and reputation, in that order. That's the bottom line. (IF22)*

In particular, when a choice was expected to be controversial and therefore a threat to corporate reputation, leaders were more likely to provide such a rationale. For example, after the terrorists had been captured, there was a need to “move on” and get out of crisis mode. Because this could be perceived as insensitive, meaning-making was considered necessary. As one leader explained, he informed the personnel during the crisis that:

*What we need to convey now is that we are a resilient organization, not only in a crisis situation, but as a corporation as well. Yes, we're exposed to terrorism, but the corporation is moving on. Finding a way to do that that does not roll over the feelings*

*that exist in the corporation ... and the feelings of those who did not get their family members home.... How do we do that in a careful way? It is quite difficult to find that balance.* (EF1)

Leaders were frequently heard explaining why they made different choices, indicating that the potential conflicts of interests between stakeholders were many and were deemed important to address as part of the strategizing function.

**Leader Structuring.** The dynamism of leadership is perhaps the most visually evident in the second leadership function, structuring, which involves flexibly scaling the structure of response to fit with the unfolding strategy.

The first aspect, *mobilizing*, involved notifying and assigning personnel roles and responsibilities on an ongoing basis. A leader posed the following question during the fourth day of response:

*We have to assess if the current unit structure is okay: “Do we need to mobilize more resources?”* (EI2)

While the activation of some response units was outlined in plans, many units were either not mentioned at all (e.g., corporate communication) or only mentioned in separate plans (e.g., hostage communication). Therefore, leaders had to actively see to it that units were mobilized.

Next, *coordinating* entailed leaders being key to aligning activities within, between, and across entities. For example, information updates to the next of kin were produced by the communications unit and delivered to the next of kin by the human resource unit, which meant that leaders in these units had to be attentive to the timing of these overlapping activities.

Another aspect of leader structuring, *boundary spanning*, involved defining boundaries and gaining access to resources. As the recovery unit leader explained, this included addressing boundaries internal to the CMO and related to the external, permanent organization:

*I have brought up that, just as important as what we will be doing, is what we will not be doing... The recovery unit, we’re not going to engage in response work. We’re not going to run business continuity, or work towards [the other corporations in the joint-venture]. The latter will be handled in the line organization.* (IF5)

Overall, structuring was an ongoing, repetitive leadership function that entailed leaders mobilizing, coordinating, and boundary spanning on the basis of crisis and response developments. Together, strategizing and structuring represent leader functions along the task dimension. Next, I turn to the two leader functions along the interpersonal dimension.

***Leader Developing.*** The first function along the interpersonal dimension is developing. Given the time pressure, time was limited to develop people on the job during the crisis. Because new people continually arrived in the crisis management facilities and others left, because of such factors as rotational schedules, leaders were pivotal to teaching personnel what to do in an efficient way.

For example, by *servicing as role models*, rather than going into long explanations of how things worked, leaders could quickly influence the personnel's behaviors without losing precious time. Leaders could accomplish this by displaying the desired behaviors in a confident manner. As one interviewee suggested:

*[A leader] must show that "I know how to do this" to the team around him. When a leader does this, it has the effect that the members can also emerge with more confidence. (II15)*

Leaders were also observed *reinforcing* behaviors, which was another way of teaching personnel what was expected of them quickly. As an interviewee explained, there was a focus on positive reinforcement or rewarding people:

*In a crisis situation you cannot accept many minuses. Personnel must deliver on the pluses. In a normal job situation is the total sum of pluses and minuses that determines whether one can trust people [... to do a job]. Here, you just have to reinforce the pluses. (II12)*

If the desired behaviors could not be fostered through reinforcement, *negative reinforcement*, or punishment, was used. As the following interviewee indicated, he was reluctant to act in a punishing manner, though it could be necessary when stakes were particularly high:

*It's like giving someone a pinch ... I wouldn't call it role playing, but it's part of my role. [The punishing behavior] needs to be controlled—one must not overdo it or abuse it. It means: "Enough is enough." It may be necessary in commanding mode. (EI8)*

Leaders also engaged in *instructive encouragement*, which meant that they told people what they expected of them and then encouraged their participation. The following leader for example, said to the unit personnel:

*I'm going to run this assessment and I need everyone to contribute to get information on the [crisis management] board. When we set our priorities I hope you'll contribute and tell us what we should focus on.* (II2)

Overall, although the general attitude was that “people either get it or not,” leaders observed that personnel could “learn by doing,” by reproducing the behavior of role models, by being reinforced, and by receiving instruction with the expectation that they would step up to the challenge.

**Leader Relating.** The second function along the interpersonal dimension is relating, which pertains to leaders managing crisis reactions as well as relational issues. First, awareness of the potential adverse reactions, such as cognitive overload, emotional strain, and fatigue, was high among leaders, which led to a focus on *fostering coping*. As one leader explained:

*We became very aware that this was an extreme situation, and talked about that it could last for weeks. It became important to consider: “If this is going to last for weeks we have to ensure that we endure and that we work in a way that enables us to make good judgment calls.”* (EI5)

For example, the awareness of risks associated with stress as well as fatigue made leaders establish duty schedules and short breaks as the norm. Furthermore, leaders advised personnel to take care of themselves in such ways as limiting their working hours. Along the same lines, leaders encouraged the personnel to be task oriented and optimistic despite experiencing setbacks, painful losses, and other negative outcomes. As a leader said to his unit:

*It is terrible with all the injured and killed. However, we are working non-stop to get our [remaining] colleagues out alive. That is the situation, it's bad, but we're working on getting people out. That's how we'll have to think.* (IF7)

Furthermore, leaders engaged in *regulating activation* in both the short and long term. For example, they sometimes asked personnel who could not cope with the situation to leave the CMO to protect both the individual and the organization from distress. As one leader said:

*This one person couldn't handle the pressure. I notified the person's departmental boss: "You're going to have to take care of this person." Then I said to him: "You sleep at home." He had to be reined in and controlled in a way. (II1)*

In the following example, the intervention by leaders was less drastic:

*I and another leader had observed the same thing [another leader becoming too controlling] and felt that a stressful situation was about to occur. So I addressed the leader in question and said: "I think you should take this opportunity to take a break, get a night at more distance [from the crisis management facilities], and then come back the next day." The leader didn't want to. He said: "Thank you but I am going to stay here." However, he said he'd create a bit more space around himself. (EI4)*

Leaders also regulated activation through psycho-social support by providing individual follow-ups and collective diffuse-and-debrief sessions. One leader described her efforts as such:

*I am currently trying to follow up on those who were demobilized yesterday. I've talked to all but one. I am thanking them for the tremendous effort they've made, and I praise them for having performed so persistently. I'm telling them to take care of themselves and I ask: "Do you have anyone around you when you get home? If you would you like to call me, please do." (EI43)*

In addition, leaders were concerned with *facilitating cooperation*. One interviewee explained how leaders would often seek commitment by relating with others informally:

*You have formal lines, where everything is clearly defined ... however; in addition, you have the [need for] alignment across. If you know that you are running a decision through the formal lines, but there is a person [in the response organization] that it's important to have on board, you'll do that check-off early. (IF5)*

Furthermore, while leaders were rarely observed resolving conflicts, they frequently engaged in resolving tension before it turned into a conflict. As one leader said:

*One of the days I discovered that there was a lot of friction between two units. I decided that: "I will go and talk to them and bring with me the knowledge I have from the other units. I actually think it was important that I stayed there for a while. I considered myself a bit like an interpreter ... or glue stick ... or as someone who just answered the phone and got issues settled." (EI13)*

Similar efforts aimed toward cooperation were reported by many leaders. Overall, leader relating involved fostering coping, regulating activation, and facilitating cooperation. Taken together, developing and relating represent leadership functions along the interpersonal dimension. Next, I examine leadership emergence and dynamics over time and across levels.

### **Leadership dynamics over time and across levels**

While leaders focused on the same purpose throughout the crisis and engaged in the same functions in a repetitive and cyclical manner, the tasks changed over time, depending on crisis developments. Furthermore, the emergence of more leaders enabled their efforts to become more specialized. However, with the increased leadership capacity came a greater need for the alignment of efforts. Next, I will turn to how the emergence of leadership capacity and alignment of efforts occurred temporally.

*Leadership Emergence and Capacity.* The emergence of many sources of leadership contributed to the crisis leadership process by providing much needed leadership capacity over a relatively short period. Indeed, at first, there was a minimal CMT and only one leader. This changed drastically over the coming hours and days. At the midpoint of the crisis, four days later, the temporary mobilized crisis response structure had increased to around 125 people and the leader–member ratio was close to 1:5. A quick review of the preparedness plans serves to illustrate that the leadership expanded beyond expectations during the eight days for which the structure was mobilized.

In observing the emergence of leadership, it is important to note that interviewees agreed that formal roles were not irrelevant; indeed, it was often formal leaders who initiated the emergence of more leaders. When interviewees were asked how potential sources of leadership were turned into actual ones, most described those already in positions of leadership as providing the input leading to the emergence of other leaders. For example, one leader was described as a “maker of leaders” by several others. One interviewee compared him to a “money printing machine”; however instead of producing money, he produced people that could lead. Evidently, leadership was more about carrying out critical functions than about formality.

Furthermore, throughout crisis management, leadership functions were repeated in a manner that did not involve steps but rather was cyclical. For example, with the mobilization of each new unit, leaders would cycle through the leadership functions. Repeatedly engaging in the same functions had a specific capacity-building value. By engaging in these leadership

functions, leaders who had already emerged socialized other potential leaders to step up as leaders.

In addition, drawing on multiple sources of leadership contributed to leaders' ability to respond to an array of unpredictable and quickly expanding situational needs and demands. Building capacity over time involved an increasing amount of leaders carrying out similar functions in several activity domains. This enabled the specialization of response in an escalating and increasingly demanding situation. As one interviewee described the situation:

*As the crisis is escalating ... [the response demands] become more and more specialized and demanding. You adjust the scale of the organization in order to ensure that you have enough capacity and adequate focus on details (IF4).*

Thus, to avoid experiencing a leadership deficit, potential sources of leadership were employed in an expansive manner. This was particularly evident on the fourth day of crisis management, when the temporary mobilized organization reached its midpoint in many ways. As Figure 2 shows, this is the day the terrorists were captured. At this point, the crisis management facilities were filled with people working on crisis management tasks across different domains. From what had started out as a leader deficit, leadership capacity was able to reach its maximum potential and then become a surplus.

***Leadership Role Transgressions and Alignment.*** Despite being able to benefit from the emergent leaders, one the largest challenges remained: aligning crisis management efforts across levels and over time. As the leadership capacity was increased and crisis response could be specialized in increasingly more domains, the challenge of aligning efforts also increased. It seems as though role transgressions were important in supporting the alignment of efforts across level over time.

Whereas at the outset, the external leaders in the permanent organization “stepped down” and helped the internal leaders in the CMO, toward the end it was the internal leaders who “stepped up” and helped the external leaders. Thus, the shifting patterns of role transgressions seem to have provided both much needed leadership capacity and an opportunity to align efforts not only across the specialized domains but also between the temporary and permanent organization, depending on which was the most critical.

It is important to understand that the leaders in the different leadership quadrants in Table 1 not only were positioned at different organizational levels but also “represented” efforts

that required different lengths of time. Whereas the role of external leaders was to ensure long-term strategic control over the consequences of the crisis, internal leaders were believed to focus mainly on operational, short-term adaptive responses to unfolding consequences. As one external leader explained:

*[As a CEO and BA director] you're greatly supported by the [internal-formal crisis leader]. The [internal-formal crisis leader and other unit leaders] are very much responsible for the operational leadership activities in the crisis management organization. It is very important that [the CEO and BA director do] not get too into details...you would quickly lose [the strategic] perspective. The challenge of [the BA director] is to concentrate on the strategic, overall aspects. (EI9)*

The CEO confirmed this difference in roles and suggested that getting distance from the ongoing crisis management efforts was important in managing the strategic, long-term interests of the corporation:

*I think it's quite important to spend a lot of time "on the balcony" to get some distance from the operational issues. Is the distance correct? Are we ... sort of ... getting the strategic picture? If you're operationally involved all the time, you won't see the bigger [picture]. (EF1)*

Another interviewee explained the role of all the external leaders in the same way:

*It is important that [the CEO and BA director] and [corporate staff and line leaders] don't dig into too many details—yet understand where the organization is at right now...[and]...know the business and think ahead ... In a way, you need to distance yourself from [the event] and think of the [name of corporation]. (EI8)*

Both these quotations indicate that strategic, long-term crisis leadership and short-term, operational crisis leadership are separable. However, quite surprisingly, this distinction was not always present in practice. Indeed, aligning efforts across the strategic and operational levels seems to have hinged on external leaders actively taking part in executing leadership in the CMO and thereby placing a “representational gap” between strategic and operational levels and short- and long-term time perspectives. An external-informal leader described the scenario as such:

*[For us], it's important to be present, to be on the playing field, to be operational. (EI9)*

Another external-informal leader explained the situation further:

*If I tell you that supporting [the corporation] is our most important job...then of course ... being present in the crisis management facilities wherever you are needed is what you have to do. (IF23)*

In addition, there seems to have been a need for aligning efforts the other way around, too. One of the crisis management unit leaders in the internal organization explained how this worked in the opposite direction:

*The challenge for us is to be aware of and identify strategic issues that can influence the [name of corporation] long-term and to pass them upwards. (IF4)*

Another internal leader described another situation that illustrates a similar reverse process:

*I've told [a corporate line leader] that he needs to act on the issues we've identified...like business continuity. (IF2)*

Thus, role transgressions fostered not only the capacity but also the alignment of efforts.

Last, it seems that external leaders would not have succeeded unless the leaders in the temporary CMO succeeded. As the leader of the corporate communications unit said on the eight day of crisis management:

*It is quite clear that if the operational [response to the crisis]... hadn't had airplanes to evacuate people... if people had been stuck [in the region of the attack] for one hour longer than necessary ...if people had died down there from injuries because they were not medically treated... There are a lot of factors like that that are critical to whether you're able to communicate the way [the CEO] has done. But because we have succeeded operationally, we've had the opportunity to demonstrate the [strategic] leadership [the CEO] stands for in a way that builds trust and pride. (EI21)*

Taken together, leadership across time and levels involved an increase in capacity as well as an increased need for aligning efforts. Role transgressions contributed to both increasing capacity and aligning efforts but played a specific part in aligning efforts between the external and internal leadership sources, as they helped bridge the representational gap between the two structures, the permanent corporate organization, and the temporary CMO, thereby aligning the strategic and operational interests through leadership in situ.

## DISCUSSION

The findings reveal that the leadership that unfolded in the corporation not only was emergent and dynamic but also involved multiple sources of leadership engaging in role transgressions to achieve the overall purpose of crisis management. Furthermore, the findings describe the four critical leadership functions carried out by the emergent leaders to orchestrate collective efforts: strategizing, structuring, developing, and relating. Over the course of the crisis, the emergence of leaders from many sources provided much needed leadership capacity, which made it possible for them to specialize efforts; yet this also challenged the overall alignment. However, shifting patterns of role transgression seem to have provided both much needed leadership capacity and an opportunity for aligning efforts across the specialized domains. In the following sections, I will compare and contrast these findings with prior literature and highlight the key contributions of this study.

### **Emergent and collective leadership**

The first set of findings shows that leadership during the organizational crisis was emergent and collective. In particular, the combination of four sources of leadership contributed to the leadership process in ways that make it difficult to determine what a single formal leader did compared with what different emergent constellations of leaders do together. This concentration on emergent and collective leadership is at odds with traditional research focusing solely on the role of planned and formal leadership during crises (e.g., Bigley & Roberts, 2001).

However, it reflects recent work on emergent and collective leadership. For example, Morgeson et al. (2010) as well as others (see, e.g., Pearce & Conger, 2003) describe team members sharing the leadership role in an emergent and informal manner as a form of collective leadership. Although these scholars have not addressed the sharing of leadership across leadership quadrants, this topic has been reviewed by such researchers as Gronn (2002) and Denis and colleagues (2001). In complex organizations, Denis and colleagues (2001) suggests that leadership is “pooled at the top,” meaning that top managers become part of a role constellation that leads together and might also change over time.

The crisis leadership observed in this study differs from prior accounts of emergent and collective leadership in important ways. First, prior research does not aptly address many sources of leadership sharing the responsibilities of leading (i.e., across quadrants) simultaneously. Also contrary to past scholars’ insistence that leadership under pressure is demonstrably filled by one person at a time, whether by a formal or emergent leader (see, e.g.,

Aime et al., 2006), I find the opposite to be the case in this study. Leadership in the crisis was with very few exceptions carried out by multiple people simultaneously, particularly under pressure.

Nevertheless, it is worth noting that leadership was not shared by everyone and there were some clear patterns of leadership. While leadership changed in a flexible and fluid way, and role constellations could change from one situation to the next depending on pressing situational needs and demands, only those who carried out critical leadership functions during the crisis were described as leaders. Other personnel were referred to as experts and support personnel. Although these people carried out important tasks, interviewees made it clear that these people were not leaders. Thus, I document a leadership practice that is complex, adaptive, and flexible, yet not arbitrary.

### **Leadership functions during crisis management**

The second set of findings show that the four leadership functions—strategizing, structuring, developing, and relating—seem to have fulfilled collective needs along task and interpersonal dimensions. Whereas some of the four functions reflect prior work about leadership functions in collectives, others differ from prior studies in significant ways. This difference is most likely attributable to the in situ challenges that crisis leaders are confronted with to a greater extent than leaders in other events and contexts.

One difference between the current and prior studies is that while strategizing and structuring are similar to the task dimensions identified by DeChurch et al. (2011) and DeChurch and Marks (2006), within the category of strategizing some subtasks seem to be unique to in situ leadership. Crisis leaders spend a considerable amount of time anticipating an unknown future, evident by the salience of proactive forecasting. Furthermore, the “politics” of crisis leadership in an in situ situation are evident in the salience of meaning making. In addition, in situ crisis leadership is about not only the coordination of existing structures but also the structuring response itself. This is particularly evident in the salience of the structuring function and the importance placed on mobilizing and boundary spanning.

Another difference is that the two interpersonal dimension functions, leader developing and leader relating, seem to have been more salient in in situ crisis leadership than in larger collectives, judging from prior research. While these functions have often been deemed important at the team level, DeChurch et al. (2011) do not mention either of them or any related tasks at all. This is perhaps because a majority of qualitative studies of larger collectives are not

based on real-time data and therefore do not capture the interpersonal dimension well. Although it may come as no surprise that the leaders in this study engaged in developing personnel, the “quick-fix” sub-tasks applied within the functions illustrate some of the challenges of in situ crisis leadership. Specifically, the time constraint made any thorough attempts at developing personnel difficult; yet the restriction seems to have worked well to prompt learning in other ways, perhaps because the severity of the situation led to quick learning.

Within the leader relating function, the role of leaders in promoting coping and regulating activation is worth noting. Because, as Weick (1993) and others have claimed, crisis events are notoriously known to cause people to “choke under pressure,” this activity seems to have been important. Furthermore, there seems to be little time for conflicts during crises, and therefore leaders are careful to prevent them, as if they were to occur, they might cause response inertia. It is worth noting that, similar to Klein et al. (2006), I do not find “motivating” to be a key leadership function, despite being important in most other settings.

### **Aligning collective leadership efforts**

The third set of findings concerns how leadership dynamics unfolded over time and across levels. This study shows that the purpose and leadership functions stayed the same throughout the crisis. This resonates with the literature on team leadership, which suggests that leaders are expected to cycle through repetitive patterns to reach an overall mission or purpose (Marks et al., 2001). This study also shows that a similar cyclical repetitiveness is central to leadership in larger collectives. Furthermore, research has shown that in teams, leadership that first serves as an input later becomes an output and can produce leadership capacity (Day et al., 2004). This is indeed reflected in the current study, but on a much larger scale.

However, whereas the leadership capacity in this study increased, the alignment needs changed. Probably unique to this study is the illustration of how leaders deal with aligning operational and strategic leadership (DeChurch et al., 2011) across levels and time perspectives through role transgressions. At the outset of the crisis, role transgressions helped internal leaders manage the situation, whereas toward the end of it, role transgressions helped external leaders normalize the situation. Role transgressions seem to have filled a representational gap between different levels of leadership.

Although prior research has identified the representational gaps between different structures (Cronin & Weingart, 2007; Okhuysen & Becky, 2009), most studies do not focus on the role of leadership in bridging efforts across time and levels (Santos et al., 2015). Instead,

they focus on such factors as within- and between-team coordination without mentioning the role of leadership (see, e.g., Firth, Hollenbeck, Miles, Ilgen, & Barnes, 2015). An exemplary study that does focus on leadership only evaluates the role of individual leaders in bridging gaps when it comes to, for example, fostering a shared mental model in multi-team systems (Murase, Carter, DeChurch, & Marks, 2014). Thus, this study seems to be the first to investigate how leaders collectively align efforts through role transgressions when it comes to both temporal perspectives and organizational level gaps.

***Theoretical, methodological, and practical implications.*** This study has some important implications for how to theorize crisis leadership. First, it indicates that addressing only one source of leadership may not provide an adequate account of the leadership involved in organizational crises. Therefore, the multiple sources of leadership identified herein are useful. Second, the identification of leadership functions is, to my knowledge, the first that pertains to a crisis management setting. It shows the utility of applying a functional leadership perspective to the study of crisis leadership. Third, whereas most studies on crisis leadership have been general or static, focusing neither on a specific phase nor on changing situational needs and demands, this study begins to outline changes over time, such as in leader emergence and capacity and with alignment needs.

This study also shows the value of using explorative qualitative designs in research on crisis leadership. Such studies reveal aspects of crisis leadership that are not possible to reach through qualitative, variance-based analysis, especially when these involve a single leadership source and measuring leadership at one point in time. This research indicates that observing a single leader's effectiveness would not fully capture such factors as the leadership that was involved. For example, the centrality of role transgressions in the emergence of leadership capacity as well as the alignment of efforts probably would not have been revealed through the most commonly used research designs.

Last, the study has some practical implications. Overall, insofar as there has been a tendency to focus on formal leaders and preparedness plans, this study indicates that organizational leaders could also benefit from considering how they can respond to crises through emergent efforts. First, this might involve viewing informal leadership emergence and impromptu responsiveness just as important as planned response. Second, a pool of potential crisis leaders who have received basic training in crisis response, ready to emerge as leaders when a crisis unfolds, might be made available. Third, given that crisis leadership usually involves ill-defined problems and problem-solving structures, training could include

developing leaders to execute the four leadership functions identified in this study. Fourth, training could include practicing role transgressions, such as how to deal with emergent leaders and how to dynamically align efforts over time and across levels.

*Transferability, limitations, and future research.* The findings from this study should be transferrable to other research that observes similar settings (i.e., exceptional crisis events in exceptional organizational contexts). However, there are some potential limitations of the current study. For example, it is based on a single case and reflects leadership in response to a specific crisis event. Therefore, the sources of leadership, functions, and developments over time and across levels might not apply during all kinds of crises. These findings tie in well with such studies as that by DeChurch et al. (2011). The leadership source framework, leadership functional typologies, and visual mapping and temporal bracketing could be used to further leverage knowledge about crisis leadership. Further research should examine whether these findings are valid in other crises as well as in other settings.

## CONCLUSION

This study is based on a rare opportunity to observe in-situ crisis leadership while it was unfolding in a temporary crisis management structure. Drawing on real-time observations and interviews, I developed an emergent and dynamic perspective of crisis leadership, in which multiple sources of leadership repeatedly engage in a set of leadership functions. Over time, the emergence of leaders contributes to an increased leadership capacity, and leaders are able to carry out more specialized crisis management efforts. Although this might put pressure on the alignment of efforts, leaders can align these efforts by engaging in role transgressions. While I identify key aspects of crisis leadership in situ, future studies are necessary to elucidate the role of leaders in these exceptionally challenging leadership situations.

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