ABSTRACT

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The effects of two distinct types of leadership – empowering and directive - have remained under-explored, with research providing inconclusive results about their effectiveness in teams. The purpose of the current study was to shed some light on this ambiguity by exploring whether directive or empowering leadership is superior in predicting team performance for new teams, faced with a learning task. Additionally, this study attempted to explain the mediating mechanisms that might translate the effect of leadership on team performance, and to explore how leader reputation may act as an additional influence mechanism in teams. Results from 60 five-person teams, engaged in a team-based, decision making simulation, provided support for the positive effect of empowering leadership on team performance and some evidence for the unique role of leader reputation in teams led by a directive leader. Theoretical and practical implications conclude this study.

THE EFFECTS OF LEADERSHIP

AND LEADER REPUTATION ON TEAM PERFORMANCE

By

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Chapter 1: Introduction

On May, 6th 1937 one of the biggest dirigibles in the world - the giant airship Hindenburg - caught fire and was destroyed within one minute while attempting to land at Lakehurst, New Jersey. Grounds crews, civilians and personnel awaiting the landing (about 200 people) ran for cover as the ship's stern sank. Then, in the middle of the commotion commanding officer Charles Rosendahl – the official observer of the German dirigible shouted "Navy officers stand still! There are people there – we must go back, take them out and help them"[1]. The timely, directive and non-compromising leadership of the officer was later credited with saving people's lives.

In a similar critical situation, on March 04, 2007, fierce gust of wind flipped a water taxi with 25 people aboard in Baltimore's Inner Harbor leaving the 25 people drowning in 44-degree water. This accident occurred within sight of naval reservists training nearby, who, without awaiting approval from their commander, improvised on the spot and moved quickly to pull victims from the water. Similarly to the Hindenburg accident, the actions of the reservists were later credited for saving lives.

Translating these incidents to "leadership research" terms would mean classifying the leadership of commander Rosendahl as directive, and that of the

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[1] Source: History channel: The Hindenburg Disaster WS

training reservists' commander as empowering. In both of these examples, the crews were very effective under completely different leadership types.

Examples like these raise the question whether the described leadership styles are equally or differently effective in teams – a question which has not yet been answered by practitioners. Similarly, leadership theory and leadership researcher do not offer a unanimous answer to the question whether empowering or directive leadership predict better results in teams. And while extant literature has been dominated by research along the transformational – transactional paradigm, other views of leadership have not fared as well in gaining researchers attention.

Major Purpose of the Current Study

Despite the dominance of the leadership theory which emphasizes a transactional-transformational dichotomy in leadership typology, recent work has suggested that leadership is a more complex phenomenon and other styles also deserve theoretical and empirical exploration (Yukl, 1989). For example, Pearce and his colleagues (2003) examined several competing leadership typologies and suggested that directive, transactional, transformational, and empowering are all separate, distinct forms of leadership. The voluminous research that examines leadership along the transactional-transformational dichotomy has generally concluded that the transformational approach is typically more desirable (Bass, Avolio, & Goodheim, 1987; Dumdum, Lowe, & Avolio, 2002; House, Woycke, & Fodor, 1988; Yammarino & Bass, 1990). The effects of other types of leadership on both individual and team outcomes, however, have received much less attention in the

organizational behavior literature.

Thus, in terms of leadership types distinct from the transactional-transformational paradigm, research has failed to reach a compelling conclusion about their effect on team performance. Some studies (e.g. Srivastava, Bartol, & Locke, 2006) found support for the positive effect of empowering leadership on the performance of top-management teams. Mathieu and his colleagues (2006) hypothesized, however failed to find support for the effect of empowering leadership on sales teams, while Yun and his colleagues (2005) suggested that directive leadership leads to better results in inexperienced teams. Therefore, research has not reached a definite answer about the effectiveness of empowering versus directive leadership in teams and additional research in this area is warranted.

Thus, the first purpose of this study is to examine the effects of directive and empowering leadership on team performance. One major contribution of this effort is shedding light on the dilemma existing in research about the effectiveness of empowering leadership as a driver of team performance.

Why teams? Teams have been increasingly important in the last two decades with organizations facing more complex and uncertain environments (Chen & Kanfer, 2006; Edmondson, 1999). For example, Cohen and Bailey (1997) estimated that over 80 percent of organizations worldwide use some forms of teamwork in their daily functions. As noted by Chen and Kanfer (2006), however, "The trend toward team-based work has, in turn, generated a plethora of questions and challenges…" (2006, p. 224) that need to be addressed by researchers. Leadership has often been

cited as an important driver of team performance (e.g., Druskat & Wheeler, 2003; Durham, Knight, & Locke, 1997; Judge, Piccolo, & Ilies, 2004). Research however, does not have a conclusive position on whether empowering and/or directive leadership are equally or differently suited for teamwork, especially when teams are inexperienced and are faced with a learning task.

Despite the increasing use of newly formed teams, put together for a specific task (Ellis et al., 2003), research dedicated to the specific influence mechanisms that may account for increased performance in such teams has not been abundant. As a result, both researchers and managers are not well aware of the specific leadership type that might predict the better performance in such teams and the mediating mechanisms that may translate the effect of leadership on team performance. From theoretical perspective, it is also not clear whether subordinates should be empowered in order to facilitate learning or directed, because existing theoretical models do not provide guidance. Therefore, by directly comparing directive and empowering leadership in inexperienced teams I try to find which of these leadership types would facilitate team learning and, in turn, predict better results in teams. An answer to this question will guide both theoreticians and practitioners alike faced with the challenge of leading teams in a dynamic, learning requiring environment.

A note to be made is that in a previous laboratory experiment I worked on, I studied the effects of transformational vs. non-transformational leadership on employees' change related experiences (Seo et al., 2010, under review). The study reported here is a step in extending my previous work and experience in

encompassing a wider variety of leaderships and examining their comparative effects. Hence, the major purpose of this study is to compare empowering and directive leadership in teams and to predict which leadership style will derive higher team performance.

A second major purpose of my study is to examine whether team members' perception of leader characteristics could enhance or diminish the effect of the leadership. Specifically, I introduce the concept of leader competence reputation and explore how this reputation interacts with the leader behaviors to predict team outcomes. While leadership is usually treated as a behavioral construct, demonstrated through the actual behaviors exhibited by the leader, reputation, on the other side is a perceptual concept. Reputation is usually defined as a characteristic attributed to the focal person by others (Kilduff & Krackhardt, 1994). Thus, using both a behavioral and perceptual approach to examining the influence of the leader on the team presents a better picture of the leadership as a whole and allows for in-depth examination of the complex interactions that define team outcomes. Focusing on competence reputation of the leader, I am able to theoretically develop ideas about how others' perception of the leader (the reputation) enhances or diminishes the effect of his/her actual behaviors. In this way I derive theoretical arguments about the importance of competence reputation as a factor that influences the actual behaviors of the leader and practical recommendations about how leaders can drive better team outcomes depending on their reputation.

<u>Potential Contributions</u>

This study has several intended theoretical contributions. First, in my theoretical development I argue that empowering leadership has a stronger positive effect on team performance than directive leadership, thus helping resolve an ambiguity about the importance of empowering or directive leadership in teams – which is one of my major contributions to team and leadership research. Additionally, departing from Yun and colleagues (2005), I propose that empowering leadership can be effective even in inexperienced teams, faced with a learning task, offering theoretical rational for the role of empowering leadership in improving performance of teams faced with a learning task. I also attempt to examine several mediating mechanisms which contribute to the positive effect of empowering over directive leadership, thus equipping researchers with a better understanding about the specific mediating mechanism that can facilitate the effect of leadership on team outcomes, and more specifically, team performance.

Examining the specific mediators through which leadership affects team performance is a specific contribution on its own. First, the mediators I focus on help explain the process through which empowering leadership derives better results than directive leadership. It answers the question of "What accounts for the effect of empowering leadership?" Second, despite the general view that empowering is positively related to individual and team outcomes little is known about the mechanisms which actually drive the results. I hope my study will help researchers have a better understanding of the processes and states which translate the effects of

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leadership into outcomes.

Combining the effect of leadership with the effects of leader competence reputation, my study contributes to research by offering a comprehensive picture of the behavioral-perceptual aspects of leadership. I argue that competence reputation enhances the effect of directive leadership on team performance, thus suggesting an alternative approach – both theoretical and practical – to deriving positive team outcomes. From practical point of view I offer recommendations to managers about when and under what circumstances they can "afford" to be directive and when it is necessary to empower team members in order to improve team performance.

Overview of Chapters

This study proceeds in the following way. Chapter 2 introduces empowering and directive leadership and develops theoretical arguments about the stronger effect of empowering leadership on team performance in inexperienced teams faced with a learning task. In Chapter 2 I also introduce the construct of competence reputation and examine how reputation interacts with leadership to influence team performance. In Chapter 3 I develop theoretical arguments about the mediating mechanisms through which empowering leadership surpasses controlling in its positive effects on team performance. Chapter 4 details the methodological approach of the study. Chapter 5 reports the results and Chapter 6 discusses the implications of the study and future research directions.

Chapter 2: Theoretical Background, Literature Review and Main Effect Hypotheses

In this chapter, I develop my theoretical reasoning about leadership, review the literature which supports my theory, and derive my first hypothesis, which compares the effect of empowering vs. directive leadership in teams. In the second part of this chapter I elaborate on the reputation literature, followed by the introduction of the concept of leader's competence reputation. I conclude chapter 2 with deriving my second hypothesis which compares the impact of competence reputation on the effects of empowering vs. directive leadership.

Leadership and Leadership Typologies

Among the variety of leadership definitions, the most widely used is that of Yukl (1989), who defines *leadership* as influencing others. For the purpose of this study, I elect to use this definition, in order to find how specific leader behaviors influence others, and, more specifically, how specific leadership impacts team level processes, states and outcomes.

Perhaps the most dominant paradigm in leadership research is the transactional-transformational paradigm (Bass, 1985; Sashkin; 2004; Yukl, 1989). According to this two factor typology, transformational leadership consists of four distinct components: (1) idealized influence (or charisma); (2) inspirational motivation; (3) intellectual stimulation; and (4) individualized consideration (Bass, 1985). Transactional leadership, on the other side, is focused on the economic

exchanges occurring between the leader and the subordinate, and includes components such as contingent material and personal rewards.

Despite the dominance of the transactional – transformational paradigm, however, developments in leadership research have portrayed a more complex picture of leader behaviors; as Yukl bluntly put it "….[the transactional-transformational paradigm] is fast becoming a two factor theory of leadership process, which is unwarranted oversimplification of a complex phenomenon" (1989, p. 212). Earlier research, such as the Ohio State studies with their focus on initiating structure and the Michigan State Studies, with their definition of task oriented behaviors, suggest the existence of a more task and control oriented leadership – directive leadership, which is distinct from both the dominant transactional and the transformational styles. Indeed, some might think of this task and control orientation as more of the historic "traditional" view of leadership. Additionally, more recent work (Cohen, Chang, & Ledford, 1997; Pearce & Sims, 2002) suggests the emergence of the empowering leadership (characterized by empowering followers to be autonomous and responsible), and its difference from transformational leadership.

Summarizing leadership typologies through empirical and historical analysis, Pearce et al. (2003) arrived at a deductively derived model of leadership which contains four broad types of leadership: directive, transactive, transformational, and empowering. This typology, as well as recent leadership research, suggests that the dominant two factor typology is overly restrictive and that additional leadership styles should be further explored.

In this study, I might have chosen to compare and contrast all leadership styles, but a comparison of all possible leadership styles would have been overly complex. Also, the intent and scope of my research is more limited; that is, to compare and contrast two specific leadership styles – empowering and directive. These two forms of leadership have drawn proportionately less research attention despite important potential outcomes. So, while there are many styles of leadership, empowering and directive have been proportionately understudied. Moreover, results of extant research do not offer a conclusive solution to the question which of the two leadership styles is the better one. Also, no theory currently exists to guide researchers and practitioners as to which of these styles provides for better outcomes, especially in teams research. Therefore, I chose to examine and compare empowering and directive leaders in an attempt to provide detailed and more in-depth guidance to leadership researchers about the usefulness of the chosen leadership styles.

Additionally, the transformational – transactional paradigm has been heavily exploited by researchers despite some recent calls for researchers to focus on a more comprehensive picture of leadership (Yukl & Becker, 2006). In fact, the attention given to the transactional/transformational paradigm seems to have been overly proportional. Also, as noted by Yukl "the distinction between the two types of leadership [transactional and transformational] is not as clear as some theorists would have us believe" (1989, p. 212) which exacerbates the problem of contrasting transactional-transformational leadership. Other researchers have also failed to offer empirical evidence for the clear cut distinction between the transformational and the transactional leadership styles (Pearce et al., 2003; Yukl, 1989), making it

problematic to delineate the behavioral level of the two factor typology.

Therefore, I elected to focus my attention on two distinct leadership types: empowering and directive, and to examine their consequences in the specific context of teamwork.

In describing and manipulating leadership in this study I was guided by several primary considerations. My first and most important reason is that both empowering and directive leadership styles have been under-examined in the research literature, and there is ambiguity in extant research regarding the usefulness of these styles, especially when teams are concerned.

Additionally, the majority of leadership researchers have used the transactional-transformational paradigm to study leadership. Initial evidence, however, suggests that both empowering and directive leadership have their own distinctive merits which warrant further examination. For example, Yun et al. (2005) found that directive leadership predicts better team outcomes than empowering leadership when teams are inexperienced. Interestingly, contrary to the hypothesized effect, Yun and his colleagues (2005) found that empowering leadership provides for higher team learning in both experienced and inexperienced teams. To add to the puzzle, Srivastava and his colleagues (2006) asserted that empowering leadership positively predicts team performance through its effects on information sharing, leaving researchers to wonder whether directive leadership could be equally effective.

What is, then, the preferable and recommended leadership when learning is a pre-requisite for successful team task execution? This question is, unfortunately, still

unanswered by extant research, and I try to shed some light on this issue through the results of my study.

It is also worth pointing out that empowering leadership is the only leadership style which is characterized by directly influencing internal team dynamics by encouraging team initiative, teamwork, and shared decision making (Ahearne, Mathieu, & Rapp, 2005; Arnold, Arad, Rhoades, & Drasgow, 2000; Yun et at., 2005). Thus, empowering leadership style is ideally suited for studies which focus on teams and their outcomes. Initial work in that area (Ahearne et al., 2005; Srivastava et al., 2006; Yun et al., 2005) offers early, but promising results for empowering leadership in teams. However, these authors fail short of examining the mechanisms of how empowering leadership style influenced teams processes and outcomes differentially than other leadership styles. Additionally, to the best of my knowledge, research so far has not examined the effects of empowering leadership in inexperienced teams, faced with a complex, dynamic task which requires team learning as a pre-requisite for success). This is unfortunate for our theoretical understanding of teams, because practice suggests increased use of newly formed, knowledge-based teams, operating in the context of a dynamic environment (Durham et al., 1997). Leading such teams presents both researchers and practitioners with specific challenges – so far under-explored in research.

In summary, in this study I examine two distinct leadership styles: empowering and directive and examine their comparative effects on team outcomes.

Empowerment, Empowering Leadership and Empowering Team Leadership

In this part I introduce the concepts of empowerment and empowering leadership, and offer preliminary reasoning about their effectiveness in teams.

Empowerment

From the early studies of management and leadership (e.g. Bennis & Nanus, 1985; Spreitzer, 1995) to a more recent set of studies (e.g. Mathieu, Ahearne, & Taylor, 2007; Srivastava et al., 2006) empowering subordinates has been cited as a principal component of organizational effectiveness (Keller & Dansereau, 1995). Or, as noted in a recent review article, "Over the past several decades an interest in empowerment can be seen in many subject areas within psychology and management, including motivation, leadership, group processes, decision making, and organizational design" (Yukl & Becker, 2006, p. 210).

Researchers have distinguished between two major perspectives on empowerment (Bartunek, Bradbury, & Boreth, 1997; Liden & Arad, 1996): one focusing on social-structural factors and known as structural (e.g. Perry, Pearce, & Sims, 1999; Pfeffer, Cialdini, Hanna, & Knopof, 1998; Wall, Cordery, & Clegg, 2002) and the other focusing on perceptions or psychological factors and known as psychological empowerment (Conger & Kanungo, 1988).

As Liden and Arad (1996) have noted, the former perspective on empowerment can be successfully depicted as a macro perspective, which focuses on the organizational structures, policies and practices which increase employees'

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intrinsic motivation.

According to the latter perspective (Spreitzer, 1995; Thomas & Velthouse, 1990), empowerment refers to individual psychological reactions to managerial practices and manifests itself in a multifaceted increased intrinsic task motivation. Literature suggests that a "set of four cognitions reflecting an individual's orientation to his or her work role: meaning, competence (which is synonymous with Conger and Kanungo's self-efficacy), self-determination, and impact" (Spreitzer, 1995, p. 1443) comprises psychological empowerment.

Despite the notion that macro or situational empowerment is an important antecedent of psychological empowerment much of the research in this area has focused on the consequences of psychological empowerment (e.g. Conger & Kanungo, 1988, Liden & Tewksbury, 1995). Thus, a gap remains in the literature as to what specific drivers can elicit empowerment and its positive consequences.

As early as 1988, Conger and Kanungo (1988) identified leadership as a potential driver of empowerment and urged researchers to realize that studies which link leadership practices and empowerment are appropriate.

Empowering Leadership

Among the several types of leadership, identified in different leadership typologies (e.g. Pearce et al., 2003; Yukl, 1998) recent empirical research points to a specific leadership type as predictive of positive individual and work unit outcomes – namely, empowering leadership (Manz & Sims, 1980; Pearce & Sims, 2002; Srivastava et al., 2006; Yun et al., 2005). Pearce and his colleagues (2003) examined

different leadership typologies and offered empirical results sustaining the validity of empowering leadership as one type of leadership within a typology of leadership. Hence, empowering leadership has gained importance as a distinct leadership style. Despite its importance, though, relevant research examining consequences and limitations of empowering leadership is still lacking. Especially in the area of team research, Seibert, Silver and Randolph (2004) argue that empowering leadership warrants additional research.

Consistent with the main purpose of this research – namely, examining and comparing the effects of two different leadership types on teams' performance, I focus my attention on empowering leadership effectiveness in teams under the boundary conditions of teams being inexperienced, and engaged in a learning task.

Empowering leadership has been defined as leader behaviors that involve leaders sharing power with subordinates and raising their level of intrinsic motivation (Srivastava et al., 2006); or, as suggested earlier by Manz and Sims empowering leaders "lead others to lead themselves" (1987, p. 119). Empowering leadership involves leader behaviors such as encouraging subordinates to express opinions and ideas, promoting participative decision making, encouraging information sharing, self leadership and teamwork (Pearce et al., 2003; Yun et al., 2005; Arnold et al., 2000).

As Srivastava and colleagues (2006) noted, empowering leadership has been studied from two perspectives – the first focusing on what the leader actually does (e.g. Kirkman & Rosen, 1999) and the second, examining employee's response to empowerment (Conger & Kanungo, 1988; Kirkman & Rosen, 1997, 1999; Spreitzer,

1995; Thomas & Velthouse, 1990). In this study I take the first approach and examine how leader behaviors influence team outcomes directly and through several mediating mechanisms. Consistent with my primary research question, which asks what type of leadership and how leadership enhances team performance, I examine the specific leader behaviors which can predict team performance. Addressing leader behaviors and more specifically empowering leader behaviors as an antecedent of team outcomes is consistent with recent theoretical developments. For example, research submits that external factors, such as leadership, lead to changes in employees' psychological states and how employees actually perceive empowerment (Menon, 2001). Mathieu, Gilson, and Ruddy (2006) took a similar approach in their study which identified external team leadership as a driver of team empowerment and subsequent team processes and outcomes. These authors, however, did not focus on specific leadership styles but examined general team leadership – which leaves unanswered questions as to whether empowerment leadership is better or worse than other leadership styles in predicting teams' performance.

Empowering Team Leadership

Research in the area of empowerment and empowering leadership suggests initial, but promising results, for the positive effect of empowering leadership on individual and organizational outcomes. For example, Yun et al., (2005) offered support for the positive relationship between empowering leadership and team learning, while Srivastava et al., (2006) found support for the positive influence of empowering leadership on team knowledge sharing and efficacy. The direct effect of

empowering leadership on team performance, however, has been more elusive to researchers. For example, Srivastava et al. (2006) failed to find a direct effect of empowering leadership on team performance, suggesting that the effect of leadership is mediated through a number of mechanisms – an issue I will explore in Chapter 3.

An important question for understanding the effect of leadership pertains to the appropriate level of theoretical operationalization and analysis. A pertinent problem to team level research is the failure of researchers to specifically theorize about the level of analysis and to explain the emergence and function of team level constructs.

Historically, leadership has been studied along two conceptualizations: (1) the dyadic relationship between each member and the leader – or the dyadic leader-member exchange (e.g. Graen & Uhl-Bien, 1995); and (2) as an average construct, assuming that leaders treat all members in a consistent manner. After careful examination of the research literature I adopt the second approach to represent the average leader treatment of all team members.

The reasoning behind my choice is justified by the specific context of my study, which focuses on highly interdependent teams in which team members and team leaders are fairly unfamiliar with each other and lack the opportunity to develop a value based, long term relationships. Additionally, in inexperienced teams – a boundary condition of this study - the unfamiliarity of the leader with team members is likely to prevent the leader from dyadic relationships with individual team members.

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A relevant question here is how exactly the specific leadership influences team outcomes. Although a detailed discussion about the mechanisms through which leadership influences team performance is deferred to Chapter 3, I will briefly examine the theoretical foundations of the leader's influence here.

First, team members are highly attuned to the behavior of the leader, which, especially in changing situations, serves as a cue about what is expected and acceptable in team interactions (Nembhard & Edmondson, 2006; Tyler & Lind, 1992). When the leader encourages ideas and ideas sharing, team members are more likely to feel "safe" in their mutual interactions and take personal risks in suggesting task accomplishing strategies. Additionally, members will feel welcome and more enthusiastic to share their ideas and opinions with team members and the leader (Edmondson, 1999) which will assure the exposure of the whole team to creative ideas and suggestions for strategy and tactics improvement, which, I expect, will result in improved performance.

Second, by encouraging teamwork, empowering leaders are likely to influence team's collaboration and communication which will lead to a better team performance. For example, if team members are urged to work together, to support each other, if and when needed, these "instructions" are likely to "stick" with them, especially when coming from a person with a higher status – such as the leader (Nembhard & Edmondson, 2006). When team members work together, support each other, and enjoy open and free communication, this translates into higher, evenly distributed efforts to accomplish the team task, with no team members left to fall

behind and deal on his own with uncertainties and problems.

Third, as already supported in the literature (Srivastava et al., 2006), the emphasis which empowering leaders place on including all team members in information sharing, leads to the whole team being presented with the full information available. In this way not only individual team members, but the team as a whole share the critical information needed for successful team learning, especially in the case of teams faced with a highly interdependent learning task (Ellis et al., 2003). In essence, I suspect that the inherent characteristic of an empowering leader to include all the team members in the information sharing, will help the overall team learning, by presenting the whole team, not only separate individuals with all the available task information.

Additionally, empowering leaders provide opportunities for participative decision making and encourage employees to express their opinions and suggestions when formulating team goals (Yun et al., 2005). As suggested by Marks, Mathieu and Zaccaro (2001), in teams these goal generation processes usually take place prior to or in-between task execution and are referred to as transition processes. The participation of the whole team in the transition processes ensures that each team member is familiar with the team overall goal and is given the opportunity to align his/her individual goal and goal execution strategies with that of the team. By keeping team members informed about the collective goal of the team, empowering leaders ensure that team members act in the collective interest of the team. In contrast, if the leader is directive and authoritarian, and assigns tasks to each individual member, the

team, as a whole, may lack understanding about the specific team goal, thus failing to develop and execute strategies for joint goal accomplishment.

Directive Leadership and Directive Team Leadership

In this part I define directive leadership and clarify how directive leadership applies to teams. Additionally, I explain how directive leaders influence their teams.

Directive Leadership

Definitions of directive leadership vary in the literature. Some authors define directive leadership as "providing the team members with a framework for decision making and action in alignment with the superior's vision" (Somech, 2006, p. 135), emphasizing the sole decision-making aspect of leadership. Other authors, Yun and colleagues (2005), for example, take a more behavioral approach and without specifically defining directive leadership refer to behaviors - such as finalizing action plans and giving specific instructions to team members - as directive.

A historical analysis of the leadership literature might prove useful in understanding the origin and the essence of directive leadership.

Directive leadership as a behavioral type dates back to the early 60s with roots lying in the theory X management style (McGregor, 1960) and the Ohio State Studies initiating structure. The former theory prescribes a management style relying on the leader (manager) exercising tight control and coercive or positional power over subordinates. The Ohio State leadership studies portray initiating structure to include leader behaviors pertinent to task execution, such as defining the way the work is

done; ensuring subordinates follow procedures; and/or (the leader) making important decisions. Parallel to the Ohio State Studies were the Michigan Leadership studies, defining task oriented behavior as a typical grouping of leader behaviors. Planning and scheduling work, coordinating subordinates' work, and providing supplies were all included under the task oriented behaviors. The overall theme of this perspective is that of a top down view of leadership. Another way of thinking of this is to equate "directive" with a more "traditional" view of leadership.

Thus, based on this historical analysis and recent leadership typologies, I define directive leadership with the definition of Pearce et al. (2003) to include behaviors such as "instruction and command, assigned goals, contingent reprimand, and intimidation and non-contingent reprimand" (p. 278).

The most important implication from the historical analysis and the above definition is that giving specific instructions to subordinates and leading without consultation or delegation are repeatedly portrayed as behaviors typical for directive leaders (e.g. Somech, 2006; Yun et al., 2005).

With organizations increasingly using empowered and self-managing teams (Kirkman, Rosen, Tesluk, & Gibson, 2004; Mathieu et al. 2006) the role of the leader, especially as the person who directs the team, may be diminishing. Research, however, suggests that directed teams, not only empowered ones, may reap positive outcomes - such as improved willingness among team members to adopt unshared information (Larson, Christensen, Abbott, & Franz, 1996; Larson, Christensen, Franz, & Abbott, 1998) or better patient care provided by inexperienced teams (Yun et al.

2005). Thus, research is still unclear whether directive or empowering leadership drives higher team performance.

Consistent with the study design and context, therefore, I use the term *directive leadership* to reflect the command and control type of leadership simulated in a lab experiment. Borrowing from the earlier work of McIntyre and Salas (1995, p. 36), who discuss the "tough leadership style" and from Vroom and Jago (1988), who call this leadership autocratic, I choose the term directive leadership. This is similar to what Manz and Sims (1991) call the strong-man type, and what Yukl (1989) calls traditional leadership. Essential characteristics of this style is that the leader has the authority to make the decisions for the group, exercises this right to make exclusive decisions, gives detailed instructions to the group, and expects subordinates to follow the instructions.

Directive Team Leadership

Using logic similar to that of empowering team leadership, I elect to treat directive leadership as an ambient stimulus which affects the performance of the team. In general, a directive leader, as suggested by Pearce et al. 2003 "defines, in detail, the way work is done" (p. 277). By doing this the leader ensures that every team member knows his/her role on the team and acts in accordance with that role. Also, by assigning subordinates to specific tasks – another behavior of directive leaders – the leader is likely to exert influence on member's efforts and persistence in accomplishing the task assigned, making sure that each team member works hard in accordance with his/her task. Additionally, a directive leader ensures that

subordinates follow procedures, which have been placed to ensure task compliance and execution. Thus, by directing team members' individual efforts towards task execution and giving them specific instructions as to how to accomplish their tasks, a team leader influences team members' performance.

From the paragraphs above it is not explicitly clear whether teams led by an empowering or by a directive leader will exhibit better performance – which is a major question for this study. Both seem to "urge" team members towards task execution – although using different behaviors and methods. Hence, a comparison between the two styles and their effects on team performance is necessary and timely.

Teams and Inexperienced Teams Faced with a Learning Task

A work team is a group of individuals who work interdependently to solve problems or carry out work (Hackman, 1987). As organizations recognize that teams are well suited to respond to the challenges of global competition, the use of work teams continues to grow (e.g. Kirkman & Rosen, 1999). This, however, presents researchers and practitioners alike with new challenges in terms of managing, motivating and rewarding teamwork (Chen & Kanfer, 2006).

Despite the voluminous work which addresses issues in teamwork and the progress made in the last two decades, research detailing the complex, dynamic team processes and states – the internal team dynamics – and how these are influenced by external inputs – such as changing environment or leadership, is far from completed (Mathieu, Maynard, Rapp, & Gilson, 2008). It is still unclear how exactly leaders influence team outcomes in highly interdependent teams faced with a complex

learning task (Mathieu et al., 2008). And although the link between team empowerment as a psychological state and positive team outcomes has been established (Kirkman & Rosen, 1999; Mathieu et al., 2006), the same is not necessarily true for the relationship between leader behaviors and team performance. It may seem logical that empowering leader behaviors would lead to higher team performance; however, the explicit evidence supporting this link is still in its nascent stage. For example, Mathieu and his colleagues (2006) failed to support such a relationship, while Kahai and his colleagues (1997) found evidence that directed teams outperformed teams whose members were included in participative decision making. Therefore, this study departs from previous work in not only explicitly examining the effects of empowering and directive leadership on team performance, but explaining the mediating mechanisms that account for the effect of leadership on team performance. Additionally, by examining the effect of leader competence reputation, I provide a theoretical rational for additional influence mechanisms, which can impact team performance over and beyond the effect of leadership.

By focusing my attention on inexperienced teams faced with a learning task, I add to the literature by specifically addressing challenges associated with leading inexperienced, newly formed teams which have enjoyed an increased use in the turbulent business environment of today's organization (Jassawalla & Sashittal, 1999) but have lacked appropriate research attention. As such, in this study, I specifically focus my attention on newly formed, highly interdependent, action teams, whose members have not had prior interaction with each other (Sundstrom, 1990). The lack of team members' familiarity, coupled with a dynamic, learning task in action teams,

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which are "thrown" into the action, presents both practitioners and researchers with specific challenges, as to how to manage and improve the effectiveness of such teams. A specific focus on this type of teams may increase our understanding of the effective mechanisms that contribute to the success of similar, short-lived, highly interdependent action teams (Halfhill, Nielsen, & Sundstrom, 2008).

Basing my reasoning on the understanding that team learning is different from individual learning and can be defined as a change in the team's collective level of knowledge and skills (Ellis et al., 2003), in this study I attempt to understand what type of leadership will be best suited to promote team learning and subsequently impact team performance in newly formed action teams put together for a specific task.

Empowering versus Directive Leadership

The table below summarizes the behaviors typical for empowering and directive leaders which will be emphasized through the leadership manipulation.

Table 1: Comparison of empowering and directive leader behaviors

Empowering Leader Behaviors	Directive Leader Behaviors
• Uses participative decision making	• Gives detailed instructions for task execution
• Encourages ideas and ideas sharing	• Commands team members
• Encourages teamwork	• Defines team members roles
• Encourages information sharing	• Requires compliance

A note to be made here is that literature looks at the directive and the empowering leadership styles as discrete, separate constructs (e.g. Pearce et al., 2003). However, consistent with one of the major purposes of this study – namely compare and contrast the two leadership styles - I view the two leadership types of interest as poles, in order to directly compare them. Considering this study focus on teams, as well as the explicit relevance of empowering leadership to team work and highly interdependent team tasks, I specifically focus my attention on examining the effects of this type of leadership on team performance and compare this leadership to the theoretically most distinct, and potentially opposite on a continuum, leadership type: directive leadership.

With regard to directive leadership, teams with less experience may benefit from the clear instructions provided by a directive leader (Yun et al., 2005). Additionally, in newly formed teams, in which team members have different roles, the role and role-task specification, inherent to a directive leader, may provide team members with a better initial understanding about their role-specific tasks. Additionally, when a directive leader assigns goals to a specific role, the assigned goals, as predicted by goal-setting theory (Locke & Latham, 1990) may also motivate each team member to strive to reach his/her goal, thus contributing to the whole team performance. Additionally, under the supervision of a directive leader team members may be less willing to adopt risky, unapproved by the leader task execution strategies, thus making less mistakes. Therefore, directing team members may have a positive impact on team performance.

Generally, empowering leadership should also have a positive impact on team performance. First, empowering leaders use participative goal setting, which is likely to make team members more committed to a goal which they have chosen. Thus team members are likely to execute more effort towards goal accomplishment (Chen & Kanfer, 2006). Second, in the context of teams with high levels of task interdependence and a learning task, information sharing and team collaboration are critical for team performance, because they ensure maximum and even information distribution, which allows all team members to use all available information for successful task execution. Hence, empowering leadership with its encouragement of ideas and information sharing will help the team take better, informed choices. Additionally, empowering leadership will ensure that all team members are presented with all the information the team has found, thus allowing the team to operate under higher levels of available information (Srivastava et al., 2006). In this way, empowering leaders will allow the team to learn their joint, team task and develop a number of alternative strategies for task execution, because all the team members will be aware of what the team task is (not only individual, role specific task). Also, under an empowering leader, team learning and the execution of a learning task will benefit, by the divergent ideas circulating in the team and the overall higher level of synergy knowledge arrived at by joint exchange of ideas and individual knowledge.

Last, but not least, the empowering leader encourages team work, which ensures team members helping each other and feeling comfortable working on the team. Or, in summary, I suggest that empowering leadership with its inherent characteristics of encouraging collaboration and including team members in decision

making will create atmosphere suitable for team learning. This will be accomplished by providing team members with "safety" for admitting error and taking risks, thus ensuring collective learning and promoting collaborative decision making through emphasizing team work and team members' inclusion in decision making.

Directive leadership, on the other side, may have some negative implications. A leader, who restricts members' inputs and does not consult with subordinates, may deprive the team from sharing necessary information held by different team members - thus interfering with team performance. Also, if supervised by a directive leader, members may feel less motivated to fully engage in the task and persist with it, because they may feel it is not the team and each team member, but the leader who is accountable for the team performance.

Therefore, based on the reasoning outlined above, I arrive at my first hypothesis:

> *H1: Empowering leadership will lead to higher team performance than directive leadership.*

Reputation, Personal Reputation and Leader Reputation

With the adoption of temporal job assignments, flexible work schedules with shared jobs, or rotations at work, employees often face the prospect of developing new work relations (Burt, 2007; Kilduff, Tsai, & Hanke, 2006). In such changing work environment, personal reputation can be used as a cue for expected individual behaviors and characteristics such as trustworthiness, fairness, and competence (Jones & Skarlicki, 2005; Kilduff & Krackhardt, 1994). Despite the anecdotal evidence of

the importance of personal reputation, systematic examination of individual level

reputation and its antecedents and consequences in organizations has been scarce.

Reputation

The majority of the management literature has examined reputation at the firm

level, and has defined firm reputation as "stakeholders' perceptions about an

organization's ability to create value relative to competitors" (Rindova, Williamson,

Petkova, & Sever, 2005, p. 1033). At the organizational level, reputation, and more

specifically favorable reputation, is viewed as a valuable intangible resource that

provides the firm with competitive advantages and allows it to charge price premiums

or outperform competitors (Deephouse, 2000; Rindova et al., 2005). Other macro

researchers have examined the reputation of a firm's CEO, focusing on the external,

media sustained CEO reputation, and its effects on the firm or the stakeholders'

perceptions of the firm (e.g. Fombrun & Shanley, 1990). In summary, macro

researchers examining reputation have focused exclusively on firm level outcomes of

reputation – such as firm performance, ability to successfully compete, and to charge

price premiums. Research, integrating the "internal" or micro effects of firm or CEO

reputation – such as the effect of macro reputation on individual level outcomes - is

still scarce.

At the individual level, reputation is more often than not examined as a single

faceted construct, referring to the favorability or lack of favorability of a target actor;

with scarce research confirming the anecdotal knowledge that favorable reputation is

good and bad reputation should be avoided (Flynn, Reagans, Amanatullah, & Ames,

2006; Tinsley, O'Connor, & Sullivan, 2002).

Recent research, however, has suggested that individual reputation is more than a mere favorability evaluation and have urged for a more detailed and systematic evaluation of personal reputation in organizations (Bromley, 1993). Addressing this call, the current study examines whether a domain specific reputation - the competence reputation of a leader may be used as an influence mechanism in teams to attenuate or accentuate the impact of leader behavior on team performance.

Personal Reputation

Researchers have yet to agree on a single definition of personal reputation, but themes such as "an attribute or characteristics ascribed by others" (Raub & Weesie, 1990, p. 90) or a set of beliefs, perceptions, and evaluations formed by a community for a member are recurring in attempts to define reputation (Anderson & Shirako, 2008). All these reputation themes suggest that reputation is based on others' perceptions (Bromley, 1993; Hall, Blass, Ferris, & Massengale, 2004).

In addition to being favorable or unfavorable, reputation exists in *specific domains*. The concept of reputation domains is considerably new and not explicitly defined; however, it has recently enjoyed increasing interest among researchers. For example, at the firm level, Rindova and her colleagues (2005) argued that firm reputation encompasses the domains of prominence and product quality. At the individual level, academics have examined reputation for fairness and its effects (Jones & Skarlicki, 2005); reputation for competence (Kilduff & Krackhardt, 1994), and reputation for leadership or leader effectiveness (Hall et al., 2004). The results of

these studies suggest that examining the differential effects of reputation domains is an avenue worth pursuing or, as suggested by Bromley (1993), both practitioners and academics should take into consideration the multi-dimensional form of individual reputation and its varying individual and firm level outcomes.

Reasoning that the over-arching anecdotal knowledge about the positive/negative impact of good/bad reputation is too limited, and fails to represent the complex picture of individual reputation, I take the approach suggested by Jones and Skarlicki (2005) and Kilduff and Krackhardt (1994), and examine the nature and consequences of a domain specific individual reputation: competence reputation of the leader.

For the purpose of this research I define competence reputation as *others' perception of a targeted individual task knowledge and performance abilities.* The difference between actual task knowledge and competence reputation is that the latter reflects others' perceptions but not necessarily actual task knowledge of the target individual. Or, as Machiavelli bluntly put it almost five centuries ago: "It is not essential that a Prince should have good qualities, but it is essential that he should seem to have them... Everyone sees what you seem, but few know what you are" (1513). As additionally observed by Mehra, Dixon, Brass, and Robertson (2006): "This advice from the Italian Renaissance is not lost on today's business leaders. It is common practice for corporate leaders to hire professional image consultants" (p. 68).

Leader Reputation

Despite the wide spread notion that reputation, and especially the

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reputation of a leader, is important in influencing subordinates' outcomes, few researchers have examined the individual reputation of the leader, and even fewer have focused on competence reputation. To the best of my knowledge, this work is the first one to study how competence reputation interacts with the behavior of the leader to influence team outcomes.

Why is that important? Mehra and his colleagues gave a partial answer to this question, asserting that "Leaders do not lead in a social vacuum: They are embedded in ongoing systems of interpersonal relationships, or social networks, with subordinates, peers, and superiors" (2006, p. 64). The reputation of the leader develops in these social networks to guide his/her subordinates in their expectations for the future interactions with the leader.

Many of us have been in the situation in which we have been faced with a task dependent on others, but the only information available for the *other* is his/her reputation. In terms of competence reputation, research has provided evidence that students prefer to work with other students who had a reputation for being competent in the project- specific domains (Hinds, Carley, Krackhardt, & Wholey, 2000). Reputation for competence, therefore, is one of the key factors which may influence preference for exchange and interaction, especially when no prior experience with the counterpart is available to guide one's expectations.

In the case of teams, in which the leader is assigned, team members do not have the opportunity to choose their leader and have to enter into exchanges with the assigned leader. When members lack direct observation of the leader's past

behaviors they may look for cues about the leader behavior and what to expect from the leader in the environment. When reputation information about the leader is available it is likely to influence team members' expectations about the leader (Jones & Skarlicki, 2005). Coupled with the actual behavior of the leader, the reputation based expectations are likely to interact to influence team outcomes. If the leader has the reputation for being knowledgeable and able to execute the task at hand this can lead to expectations for positive outcomes and give some justification as to why the leader insists on following specific procedures. In fact, if the leader has high competence reputation his followers may *expect* the leader to tell them how exactly to accomplish the task, because the leader, allegedly, knows the task accomplishment strategies. In contrast, if the leader has no specific task reputation and leaves all the decisions to the team, this may lead some team members to question the leader's status and his abilities to lead the team.

As noted, competence reputation of the leader is one of the potentially influential factors which remains underexplored in theory, and how this domain of reputation interacts with leader empowering behaviors is virtually unknown. There is still a lot of theoretical uncertainty in answering questions such as: "Can leaders empower effectively and reap the positive effects of empowering leadership if they lack the reputation for being competent at the task at hand?" and "Are directive leaders more effective when they have positive competence reputation or not?" Additionally, theory does not provide guidance about the role of reputation for enhancing or attenuating the effects of the actual leader behaviors. This study

attempts to answer these questions.

Unfortunately, research so far has not offered any evidence about the direct effect of competence reputation on performance, and especially on the performance of others. Some circumstantial macro level evidence suggests that firm level reputation for being able to produce quality products (which might be a parallel construct to that of individual competence reputation) positively affects firm performance (Rindova et al., 2005). This, to some degree, can be used as a theoretical grounding to propose a direct effect of reputation on individual outcomes, but keeping in mind that the outcome variable in my study is at the team level, I believe, I do not have enough theoretical grounding to propose a direct effect of individual competence reputation on team level outcomes. Hence, I do not specifically hypothesize a direct effect of leader competence reputation on team performance, although, based on the evidence offered by macro researchers I do expect high competence reputation to be positively related to team performance. I examine this relationship, without specifically hypothesizing it, as my main focus is on the interaction of reputation with the actual leader behaviors. Specifically, I propose that leader competence reputation interacts with leadership to affect team performance.

First, when the leader has the reputation for being knowledgeable and able to execute the task at hand this may serve as a "justification" to the team for his/her issuance of direct and specific task relevant orders. Second, as suggested by Yun et al (2005) when the team is inexperienced the directive leadership produces better results, and I argue that the positive competence reputation of the leader (1) promotes

a better understanding of the tactics and style used by the leader and (2) serves as an expectation forming reason for the competent leader to be directive. Also, the positive competence reputation of the leader may enhance team members' efforts to emulate the leader and thus enhance individual team members' efforts to execute the task. Last, as suggested by Nembhard and Edmondson (2006), leadership by itself is a symbol of status which requires compliance. The positive competence reputation of the leader will serve as additional attributional signal for quality. In this case, members will expect the leader not only to have the legitimate right to lead and direct but the actual competence to do so. This will serve as a signal for quality work and a promise for the delivery of beneficial results, thus explaining and "justifying" the use of directive behaviors.

On the other side, teams led by an empowering leader will be dominated by the actual behavior of the leader and would not need "justification" for the actions of the leader. Therefore, the positive effect of competence reputation for empowering leaders will not be so noticeable and will have a lesser effect on overall team performance. Hence, I propose the following, which is, in essence, a specific form of an interaction hypothesis:

> *H2: Leader competence reputation will have a stronger impact on the effect of directive leadership on team performance than on the effect of empowering leadership on team performance.*

Summary of Chapter 2

In summary, in Chapter 2, I developed theoretical arguments about the

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comparative effects of empowering vs. directive leadership on team performance. Additionally, I introduced the concept of leader personal reputation and more specifically competence reputation, and elaborated on how reputation interacts with leadership to influence team performance.

In the next chapter I explain and propose specific hypotheses about the mediating mechanisms which convey the effect of leadership on team performance. Using Ilgen et al.'s Inputs-Mediators-Outputs-Inputs model (IMOI) I develop specific theoretical arguments about the mediating effects of team's states and processes.

Ilgen et al.'s (2005) model of mediating states argues that team Inputs (I) influence Mediator mechanisms (M) which, in turn, influence Outputs (O) to become subsequent Inputs (IMOI). According to this model of team effectiveness, leadership should be treated as an input to impact the development and effectiveness of several mediating mechanisms, which translate the effect of the inputs to team outcomes such as team performance. A detailed examination of the IMOI model validates its theoretical applicability to explaining not only *what* (in terms of inputs such as leadership, team composition) but also *how* these inputs impact team outcomes. Ilgen and coauthors (2005) answer the *how* question by detailing affective, behavioral, and cognitive or some combination of the three explanatory mechanisms, which mediate between team outputs and inputs. Specifically, both team processes (e.g. coordination) and team emergent states (e.g. team safety) are identified as mediating mechanism. Therefore, following the theoretical guideline of the described model I focus on affective, cognitive and behavioral mediators to explain the effect of

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leadership on team performance. Additionally, guided by the temporal frame of the IMOI model, I specifically focus my attention on mediators important to "the early stages of team development (p. 521, Ilgen et al., 2005) in order to account for the effect of the input (leadership) in newly formed, action teams, which are required to perform at the same time as they undergo the early stages of team development. Therefore, in the next chapter I develop specific theoretical arguments about the influence of leadership on several mediating mechanisms and their impacts on team performance.

Chapter 3: Theoretical Background, Literature Review and Indirect Effect Hypotheses

Theories from the teamwork and training literature guide my understanding and my theorizing about the mechanisms through which leadership influences team outcomes. More specifically, since my proposed outcome is team performance, I am interested in understanding how leadership "translates" into specific performance outcomes. I focus my attention on three mediating mechanisms: (1) psychological safety, (2) team mental models, and (3) behavioral integration – all of which are team level constructs. My reasoning behind, and the theoretical grounding of these mediators, is explained below.

In their 2005 review of teams Ilgen and his colleagues proposed an Input – Mediator - Output – Input (IMOI) to express the nature of team performance. According to this model, team inputs influence different mediators which consequently impact team performance, with team performance becoming an input in the next cycle of team processes. Leadership is generally identified and studied as an input in team literature, and I adhere to this approach in this study.

In addition to classifying leadership as an input for teams, the IMOI model suggests that teams experience "affective, cognitive and behavioral mediation processes" (Ilgen et al., 2005, p. 518). Informed by this literature and by the discussed above team model, I propose that the influence of leadership translates into outcomes through the mediation of affective, cognitive and behavioral processes experienced by

the team. Specifically, guided by the conceptual framework of the IMOI model, I focus my attention on mediating mechanism which can be important for newly formed teams, especially in the early stages of team development.

This theoretical grounding is additionally supported by the findings of training researchers who found evidence that training impacts the affective, cognitive and behavioral reactions of trainees (Kraiger, Ford, & Salas, 1993; Towler, 2003). Keeping in mind that team members were subject to training in this particular study, I have an additional reason to focus on the affective-cognitive-behavioral experiences of the team that were influenced by the training and by the leader behaviors. Most importantly, however, the mediating mechanisms I elaborate upon, explain and relate to team learning, thus translating the effect of leadership in the context of teams faced with a learning task.

Among the myriad mediator processes that are likely to influence team outcomes I believe that the effect of leadership on team performance in newly formed, action teams faced with a learning task can be best explained by mediating mechanisms which are likely to impact both early team development and team learning. Therefore, following the affective-cognitive-behaviors scheme I focus on psychological safety, team mental models, and behavioral integration – constructs, which I define and examine in details below.

Team psychological safety has been explained as an affective mechanism, which may be influenced by leadership and successfully predicts team learning (Edmondson, 1999). Therefore, linking the team IMOI literature and the team

leadership and learning literature, psychological safety seems like a likely mediator of the effect of leadership on team performance. Psychological safety, which research treats as an affective, team level mediator, has been shown to influence team learning (Edmondson, 1999), hence team psychological safety is a logical mediator between team inputs and outcomes. Team mental models (TMM) is a recently suggested, and generally accepted by researchers construct. Characterized as cognitive mediators, TMM are likely to play an important role when teams are faced with distribution of expertise. In teams with distributed expertise coordination of the different roles and communication among members are important for overall team success (Marks et al., 2002; Nembhard & Edmondson, 2006); therefore the commonly held understanding about the task – which is the essence of TMM - might prove critical for team's success. Therefore, I focus on team mental models as a cognitive mediator. My choice for the behavioral mediator is team's behavioral integration, which reflects team's collaboration, communication and social interactions and is likely to play a significant role in highly interdependent teams (Hambrick, 1994).

Psychological Safety

Edmondson (1999) defined psychological safety as "a shared belief that the team is safe for interpersonal risk taking." Asking for help, admitting errors, and discussing problems are all examples of behaviors that team members feel "safe" to engage in when the team enjoys psychological safety. On the other side, when team members do not feel comfortable discussing their errors or problems, mostly for fear of losing face, research suggests that such teams rank low on psychological safety

(Edmondson, 1999). Both qualitative and empirical research links psychological safety to team performance (mostly through its effect on team learning (Edmondson, 1999). For example, Edmondson found that in teams, in which learning is a critical adaptive process allowing interdependent teams to smoothly coordinate their efforts, teams performed better when members feel safe to take risks and admit errors. Risk taking and error admitting facilitate and improve team learning which is directly related to team's performance.

Leadership and the behaviors exhibited by the leader can influence psychological safety. When faced with an empowering leader members are more likely to freely express ideas because this is what the leader is encouraging them to do. Additionally, when the leader encourages team members to share all the task relevant information, team members are likely to feel comfortable to give all the information without fearing a loss of face. Most importantly, the behaviors inherent to an empowering leader, with their emphasis on encouraging team members to share ideas and suggestions, are likely to help create team atmosphere safe for admitting errors and searching for alternative solutions. This, in turn, is likely to facilitate team learning and the successful execution of a team learning task.

Additionally, as specified by the theoretical framework of the IMOI model (Ilgen et al., 2005), psychological safety serves as a mediating mechanism which is important in the early stages of the team development and temporarily is likely to precede team learning. Or, in other words, for team learning to occur, teams must first develop psychological safety in order to enjoy and atmosphere safe for admitting

errors and thus beneficial to overall, team learning. As detailed above, empowering leadership, with its inherent characteristics of encouraging all the team members to share ideas and including all the team members in the decision making process, is likely to create the psychological safety needed for learning and risk taking.

On the other side, when teams are led by directive leaders who individually assign tasks and request the strict following of a pre-determined procedure, team members may not feel comfortable suggesting ideas. Additionally, they may consider sharing information as risk taking since such behavior is not encouraged by the commanding and controlling behavior of the leader. Hence, the team may not be able to operate with all the information available to the individual team members, and the accuracy of the information may not be conclusive. Therefore, directive leadership may exert negative influence on team's psychological safety, thus limiting the beneficial effects of leadership on team performance. Hence, I hypothesize:

H3: Team psychological safety will mediate the positive effects of empowering compared to directive leadership on team performance.

Team Mental Models

Team literature has long suggested that teams with distributed skills and expertise need to develop cognitive structures built upon team members' shared conception of one another's expertise in order to successfully accomplish team tasks (Espinosa, Lerch & Kraut, 2004; Ilgen, Hollenbeck, Johnson, & Jundt, 2005; Kozlowski & Bell, 2003; Pearsall, Ellis, & Bell, 2010). These cognitive structures shared among the team members allow the whole team to efficiently process

information, plan complex actions, and anticipate the task-related behaviors and needs of their teammates (Cannon-Bowers, Salas, & Converse, 1993; Kozlowski & Ilgen, 2006).

Defined as "team members' shared, organized understanding and mental representation of knowledge about key elements of the team's task environment" (Kozlowski & Bell, 2003, p. 347), team mental models (TMM) are cognitive structure, held jointly by the team members. These jointly held cognitive structures allow the whole team to coordinate actions though shared, common understanding of the task related knowledge and procedures (Pearsall et al., 2010). Therefore, elaborating the effect which leadership has on TMM is warranted, considering the important role TMM play as cognitive mediator for successfully executing team learning tasks.

According to a widely accepted typology, developed by Cannon-Bowers, Salas, and Converse (1993), TMM are comprised of (a) technology, (b) task, (c) team mental models, and (d) team- interaction mental models. Although all types of mental models have their role in affecting team processes, only team interaction mental models focus on procedural knowledge team members should have when working together on a task within a given performance domain. Therefore, in this study, I focus and explain the role of team- interaction mental models as potential mediating mechanisms which can be affected by leadership and, in turn, may impact team performance. For simplicity purposes, in what follows, I refer to team- interaction mental models with the more general term of TMM.

Team literature (e.g., Marks et al., 2000) suggests that TMM may vary in their accuracy (the extent to which they correctly reflect on the specific procedural knowledge) and similarity (the extent to which the mental models are similar across team members; however, these two concepts are often overlapping. For example, high accuracy necessitates high similarity, while high similarity indicates high, jointly held understanding of the procedural knowledge needed for task execution. With TMM reflecting the extent to which team members are aware of the task specific roles and the role requirements of fellow team members, and convergence reflecting how close together these mental models (or mental schemata) are, I suggest that TMM similarity reflects the shared procedural knowledge of the team and is directly affected by the empowering behaviors of the team leader. For simplicity purposes, in what follows I refer to TMM similarity as TMM.

For example, through emphasizing information sharing among team members an empowering leader assists the team in developing joint understanding about the required common task and procedures, hence increasing the commonly held mental schemata about task execution in the team. Also, when team members are encouraged to share information they develop a better understanding of (1) each other's role and responsibilities and (2) of the overall environment which can impact team performance. In a highly interdependent task, executed under the conditions of a constantly changing environment, it is critically important for the team to be aware of what each member task role and responsibilities are. This can be facilitated by the development of converging team mental models.

The development of team mental models can additionally be facilitated not only by information sharing, but by encouraging members to share ideas about task execution, which is one of the behavior characteristics of empowering leadership. When ideas are shared the team will benefit because they will have a bigger pool of potential task execution strategies.

Similar to psychological safety, the IMOI model of team effectiveness describes team mental models as starting to form and important in the early stages in team development. Or, in other words, this early-stage mediating mechanism has to be in place for team learning to occur, but is likely to be influenced by input factors such as team leadership. Therefore, summarizing the reasoning of the above section, I hypothesize:

> *H4: Team mental models will mediate the effects of empowering compared to directive leadership on team performance.*

Behavioral Integration

Behavioral integration has mostly been examined at the top management team level as a multifaceted construct with three main manifestations: information exchange, collaborative behaviors, and joint decision making (Hambrick, 1994). As a multi-dimensional construct behavioral integration is highly suitable to describe the degree to which, and how exactly, group members interact (Li & Hambrick, 2005). In terms of team effectiveness, behavioral integration may be treated as a mediating team process(es) which occur in the team, and reflect the information gathering, and joint information using that transpires in the team as a part of task execution (Ilgen

etal ., 2005).

Combining elements of group communication, collaboration and social interaction, behavioral integration was set forth to describe the tendency of some management groups to behave in a more "teamlike" behavior (Hambrick, 1994). As such, all the dimensions of behavioral integration are likely to be directly influenced by empowering leadership. Group communication, for example, is specifically encouraged both by asking members to share ideas and information with one another and by specifically emphasizing team work. By encouraging members to give inputs and ideas, an empowering leader encourages not only the leader-team member communication but also the overall team member – team member communication that occurs in the team, which makes the whole team aware of the team task and team task execution strategy. Also, by asking members to share ideas and information with each other, empowering leaders ensure collaboration among members. This may help equal and even workload distribution, and awareness among team members who might need help. Last, by involving all team members in the decisions and tactics planning processes empowering leaders enhance the common understanding of the team's goal and the exertion of collaborative efforts toward achieving this goal. Therefore, I predict that empowering leadership will be positively related to team behavioral integration and I hypothesize that:

H5: Behavioral integration will mediate the positive effect of empowering compared to directive leadership on team performance.

Chapter 4: Research Methods

The specific methodology, which I used to examine the proposed relationships, is described in this chapter. I begin with a description of the setting and subjects, followed by task description and procedure. I conclude the chapter with manipulations, measures, and discussion of the data analysis techniques.

Before proceeding further, I would clarify a variable nomenclature used in the text. Specifically, the term "empowering leadership" is used in different ways with different meanings in the next chapters, namely:

- "Empowering leadership" is used in a generic sense to refer to any use of this expression, except the two following specific uses.

- "Empowering leadership/treatment" is used to refer to the experimental manipulation of empowering leadership. Details are covered later in the chapter.

- "Perceived empowering leadership" is used to refer to the measure of empowering leadership assessed by participants through a questionnaire. Details are covered later in the chapter.

To foreshadow the results a bit, this distinction is important because I used a two-step manipulation approach to enhance leaders' natural leadership inclination with empowering leadership/manipulation and perceived empowering leadership showing different patterns of correlations in the results.

This study was performed as a laboratory experiment in which I used manipulations to enhance the natural variations in the actual leadership of the team leaders. Therefore, strictly speaking, this study should be treated as a quasi-experimental and not a typical experimental manipulation study. Using a laboratory experiment offers several research advantages. Most importantly, a laboratory experiment provides researchers with the ability to manipulate variables of interest, and in the case of this study, enhances the natural variation in the variables of interest. In this way, laboratory experiments offer the opportunity to identify specific causal events and their effects on outcomes through mediating mechanisms. By enhancing the variability in the predictor variables, I was able to create the most efficient research design possible, which allowed me to test my hypotheses of interest by using the advantages of an experiment, combined with participants' natural leadership inclination. Additionally, the experimental nature of the task allowed me to meet the boundary conditions of the study, by examining my hypothesized relationships in a controlled setting of newly-formed, highly interdependent teams, faced with a learning task. Imposing specific boundary conditions on teams in a field setting is not always feasible, which adds to the appeal of using a quasi experiment as a setting for this study.

Last, but not least, the use of a simulation allowed me to gather objective team performance data, which is not always feasible in field studies and is often cited as a limitation of field studies. Most importantly, conducting the study as a laboratory

experiment allowed me to focus on theory building and the specific examination of the a priori hypothesized theoretical model. Also, the use of leadership manipulations in laboratory conditions has been advocated by many researchers and has become a useful tool that compliments survey research in predicting and examining the effects of leadership on team outcomes (e.g. Durham, Knight, & Locke, 1997).

In addition to the theoretical guidance, I had a methodological reason for manipulating leadership as empowering and directive. Although in reality leadership behaviors may be (1) measured with continuous variables; and (2) treated as separate constructs (e.g. Pearce et al., 2003), experimental manipulations are typically discrete. Thus, in order to make the study meaningful, I had to use contrasting leadership styles. Since a major interest and driver of this study was my idea to examine the effect of empowering leadership on team's processes and outcomes, empowering leadership was selected to be manipulated in the experiment. As most logical and distinct from empowering leadership, the contrast of directive or "tough leadership style" (McIntyre & Salas, 1995, p. 36), focuses on command and control and giving detailed instructions. This is in stark contrast with the essence of empowering leadership – giving followers autonomy and responsibility to carry a task – hence, it is reasonable to contrast directive vs. empowering leadership in a lab study. Therefore, in this study I treated empowering and directive leadership as poles in order to directly compare these leadership types (High-Low versus High-Low, i. e. leaders who are highly empowering are treated as scoring low on directive leadership, and vice versa: highly directive leaders are low on empowering leadership).

Participants in this study were 300 senior undergraduate students enrolled in upper-management course at a major Mid-Atlantic University. The subjects were randomly assigned to 60 5-person teams who engaged in a 2.5 – 3 hr simulation task. A detailed description of the team assignments follows in the section *Procedure* below. In exchange for their participation participants were given course credit. Additionally, the 4 best performing teams (2 in each leadership manipulation condition) were promised and given monetary rewards.

Description of the Experimental Task

Participants played a networked computer simulation - Leadership Development Simulator (LDS) - originally developed by Michigan State University for the Air University's Squadron Officer School at Maxwell Air Force Base. This computer simulation is actually used by the Air Force in its Leadership development course, which suggests evidence for its realism. Humphrey, Hollenbeck, Ilgen, and Moon argued that similar computerized, dynamic games "allow for an increase in the level of mundane realism while increasing the level of experimental rigor" (2004, p. 202).

Overview

Leadership Development Simulator (LDS) is designed to engage teams of 4 players plus a leader in the common task of discovering and interacting with targets in a defined environment. Teams are in charge of integrating multiple sources of information in the process of finding and engaging targets, which include both threats and opportunities. Team members and their leader are seated around a table, each in

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front of a separate computer station, and able to freely talk with each other throughout the simulation. Each team member has a defined role with assigned responsibilities (see Figure 1). These roles are arranged in a hierarchical structure containing staff members (the four players) and a formal leader. Staff members are Operation players and Intelligence players. Detailed description of staff roles is given below.

This simulation is designed to be a complex task in which teams must manage a large number of resources (48 assets in each round) in a short amount of time (7 minutes per round). Team members must negotiate collaborative efforts to achieve certain objectives (such as attacking a large target or verifying intelligence), which, in turn, will produce a higher score.

Team Roles: Functional

Command
Section

Mission
Command

Ops
Section

Intel
Section

| Offensive Ops | Support Ops | Human Intel | Signals Intel |
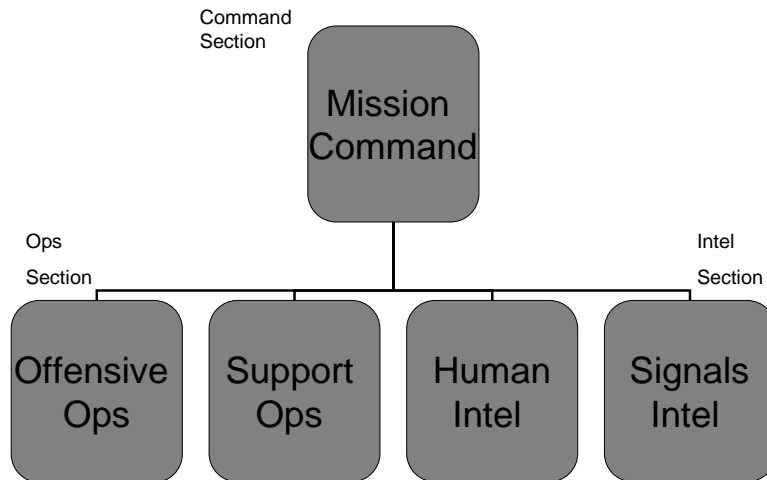
Figure 1: Team Roles

Team Objectives

Teams are given the objective of maximizing their score, which is influenced by four types of events: capitalization on an opportunity, threat destruction by escort, and asset destruction by a threat, and failure to protect the base from a threat. Teams lose 8 points for each asset destroyed by a threat and 8 points each time a threat reaches a base (line 1 on the computer screen). Teams score 4 points for capitalizing on a small opportunity and 16 points for capitalizing on a large opportunity. Teams score 2 points for destroying a small threat and 4 points for destroying a large threat. Overall, the scoring protocol has been found useful with previous runs of the simulation at both Michigan State University and Maxwell Air Force Base.

Team Member Roles

In this study I used a functional structure of the LDS, where staff members have specifically defined, specialized roles, and are responsible for fulfilling their roles throughout the entire simulation (see Figure 1).

In the LDS, staff members are responsible for two primary actions: gathering information and engaging environmental entities. Staff members who primarily gather information about the environment are labeled as "Intelligence" team members, and staff members who engage threats and opportunities to score points and protect bases are labeled as "Operations" team members. There are 2 Intelligence team members and each of them has 2 types of intelligence assets to work with. In

total, four different types of intelligence assets are available: Visual, Communications, Human, and Allied. Each intelligence asset is effective in a different region of the environment and a primary purpose and learning experience for the Intelligence players and the whole team is to find out where each type of Intelligence assets has correct intelligence. Each intelligence asset can be deployed to a single location to gather probabilistic information regarding that area of the environment. In the functional structure, each Intel player has 8 assets of 2 types (e.g., the Human Intelligence player controls 8 human intelligence assets and 8 allied intelligence assets, while the Signals intelligence player has 8 visual and 8 communication assets). It is important to know that, for the Intelligence assets, they (1) only observe the environment, and thus are never lost when deployed to the environment; (2) they are correct only 95 % of the time in only one area of the simulation environment.

In contrast to Intelligence assets, Operations assets directly engage the environment, and thus are at risk to be destroyed by entities in the environment. However, the information that is gathered by Operations assets is not probabilistic, but 100 % accurate. Operations assets team members have four different types of assets: Strike, Escort, Refuel, and Info. Strike assets have the capability of capitalizing on opportunities. Escort assets have the capability of destroying threats. Refuel assets enable other assets to reach distant portions of the environment (in general, operations in the upper half of the plot require refueling). Info assets gather information from areas larger than the areas that can be investigated by Intelligence assets. In the functional structure that I use there are 2 Operation members –

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Offensive operation player and Support Operation player. The Offensive operation player controls 4 strike and 4 escort assets and is responsible for utilizing these assets in the entire environment. Similarly, the Support player controls 4 refuel and 4 info assets and is responsible for utilizing these assets according to their characteristics.

The structure of the game, the role assignments, and the information processing create an environment where information and knowledge are quite diversified and distributed among the team members. To function in an effective way, cooperation and sharing of information is required.

In addition to the four staff members, the team has an assigned leader. In the directive leadership condition the leader is called "Mission Commander", which aids in conveying the "commanding" part of the leadership. In the empowering leadership condition the leader is titled "Mission Coordinator", which helps to convey the empowering role of the leader. In general, the leader provides directions and coordination for the team. S/he observes, coordinates and provides final approval of the moves – the mission leader can approve or change the moves suggested by the staff members. S/he also updates the common operation picture. Figure 1 depicts the roles within the LDS in the directive leadership condition.

Simulation Environment

The environment in the LDS consists of a grid, 16 rows (1-16) by 16 columns (A-P), totaling 256 squares. At the start of the simulation, teams are presented with a blank grid (fig. 2) However, hidden throughout the grid are threats and opportunities, which can be either small or large and either fixed or mobile. As mentioned above,

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threats attack assets and bases, costing the team points. Opportunities are capitalized

upon, gaining the team points. Teams need a single asset to engage a small target, but

they need two assets to engage large targets. Fixed targets remain in the same square

throughout the entire simulation. Mobile targets move about the grid throughout the

simulation.

LDX: The Platform and Paradigm
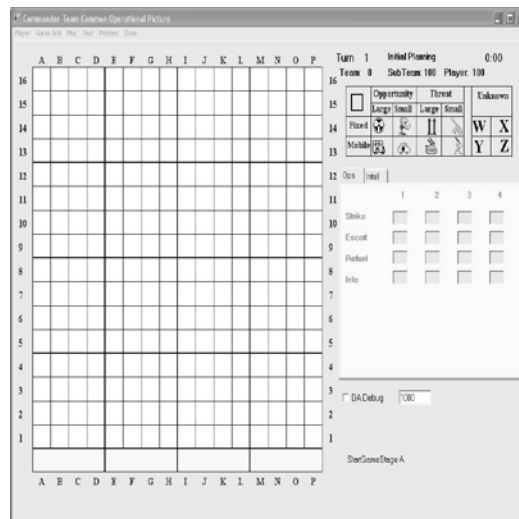
- 16 x 16 Game Grid
- Split into North, South, East, West Regions
- Team Mission
  - Explore and Build COP
  - Engage Opportunities
  - Avoid Threats
  - Protect Bases

Figure 2: LDS Platform

Teams engage in the simulation through a series of "rounds" or decision

making periods, much like the game of chess. At the beginning of each round (Phase

1, called Staff Planning), team members engage by deploying their assets to the

simulation grid and this process lasts 3 min. During Phase 2 of each round (called

Commander Planning) the team leader reviews the team decisions about asset

allocations and has the option of making changes to the asset allocation. In Phase 3 of each round – the Execution phase – teams see the results of their engaging threats and opportunities (or in other words, teams see what threats and opportunities their assets located and engaged with), after which team members have 2 min (in the last – Critique/Analysis phase) to analyze their moves and make decisions for the next round. (See fig. 4 for the timeline of the experiment).

Each team member receives information revealed by his/her own assets and is expected to share this information with the rest of the team. During each round, there is a potential for information return from 48 different assets. Moreover, the majority of this information has to be processed in order to be useful to the team, and the team has only a few minutes to integrate this information into the representation of the task before the round proceeds to asset allocation for the next round. Accordingly, no single team member is able to acquire and process all of the team's information. Instead, the task at hand is highly interdependent and team members have to collaborate to build a common representation of the task, which is referred to as the Common Operational Picture (COP). Figure 3 depicts a sample COP.
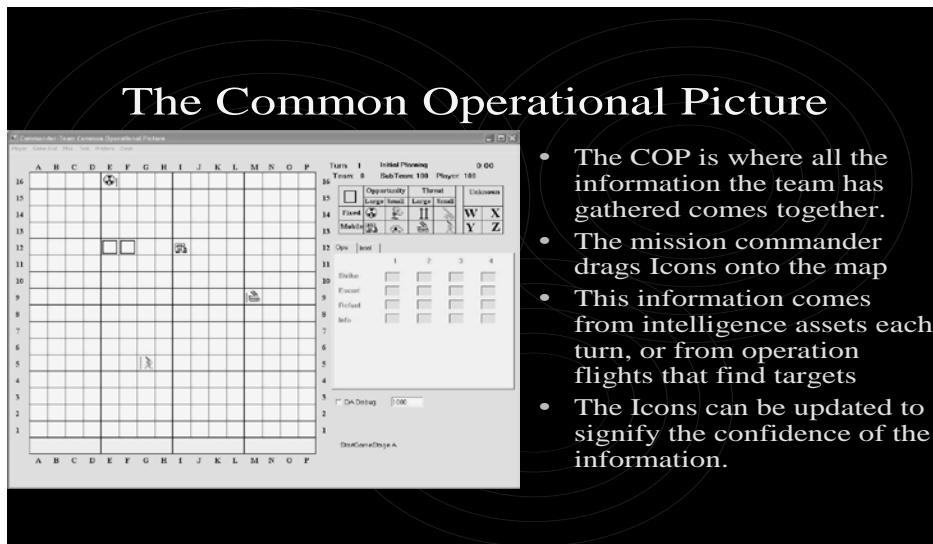
Figure 3: The Common Operational Picture

Procedure

All subjects for the experiment were asked to sign up online and to select their
team session. Participants were only able to sign-in individually and had no
knowledge nor had they any way to learn who else was signed for "their" session. All
the team sessions were randomly assigned to one of the four quasi experimental
conditions: Empowering Leadership – High Leader Competence Reputation;
Directive Leadership – High Leader Competence Reputation; Empowering
Leadership - Neutral Leader Competence Reputation; Directive Leadership - Neutral
Leader Competence Reputation. Upon signing for the experimental sessions,
participants were asked to complete a survey which assessed their inclination to
behave in a directive versus empowering way (detailed explanation of the leadership
selection and manipulation follows in the *Manipulations and Measures* part). After
the random distribution of team experimental sessions across conditions, team leaders
were chosen based on their natural inclination to behave in a directive versus

empowering way. Thus, for a team that was randomly assigned to the Directive Leadership condition, I chose the team member with the highest natural inclination to behave in a directive way to be the team leader. Similarly, for the teams randomly assigned to the Empowering Leadership condition, the team member with the highest natural inclination to be empowering was appointed as the team leader. As noted above, selected team leaders were additionally trained to exhibit desired leadership behaviors on site, right before the start of the experiment.

Once the subjects arrived for the experiment they were given a research article and preliminary materials about the experiment to read in a separate location while the appointed leader was trained. Then team member participants were randomly assigned to one of 4 computer stations. Each staff member computer station was marked as A1; A2; A3; or A4 and subjects were asked to remember their seat coding and mark it on the pre-training survey. They also completed a consent form and a pre-training survey form which asked them about demographic variables and computer experience (See Appendix A for the pre-training survey). After this, the entire team was given a 30 min pre-recorded presentation on how to operate the game. Following the training, the leader read a text to the participants and the game was started immediately without practice runs. Participants played 5 rounds of the game, each lasting 7 min after which the game was stopped. At this point participants were instructed to fill in several surveys which measured the mediating mechanisms. Additionally, to reinforce the manipulating condition leaders were asked to summarize the game so far and to make any pre-scripted comments consistent with the desired leadership style. The pre-scripted prompters, suggested for use during the

game, are included in Appendix B. Five more rounds were then conducted, after which subjects were asked to fill in final surveys. They were then debriefed and thanked for their time. Fig. 4 summarizes the timeline of the laboratory experiment.

Procedure

| Assignment To roles |
| | |
| Mediators Survey (15 min) |

| Leadership Training (30 min) | Team Role Training (30 min) | Initial Survey (15 min) | Actual Task (5 rounds) (35 min) | Actual Task (5 rounds) (35 min) |

One Round: 4 phases
1) Staff Planning – (3 min) –
   Intelligence and Operation Players
   deploy their assets
2) Commander Planning – 1:30 min
3) Execution Phase – 30 sec
4) Critique/Analysis – 2 min

| Final Survey (15 min) |

Figure 4: Timeline of the Experiment

In this study leadership was manipulated to enhance the natural leadership style of the selected team leaders to behave in a directive versus empowering way. Additionally, leader's reputation was manipulated to enhance the variability of this variable. Each of the manipulated variables is described below, followed by a list of the intervening variables. Appendix C (Survey Questionnaire) contains the actual measurement instruments.

Leadership Manipulation

Lab experiments offer the advantage of manipulating variables, however, the manipulation itself may be challenging in ensuring that the manipulated behaviors actually happen and are effectively exhibited during the experiment. To the best of my knowledge no lab study has manipulated empowering leadership behavior, which, by itself, is a challenge. Luckily, several other lab studies offer theoretical and practical implications in guiding my choice of leadership manipulation.

In order to successfully manipulate leadership in this study I used a two-step approach advocated by Durham and her colleagues (1997), which utilizes *both* selection and training to maximize the effectiveness of leadership manipulation. More specifically, the leader was chosen based on his/her personal predisposition to behave in an empowering or directive way and then additionally trained to exhibit the desired leadership behavior.

The leader for each experimental team was selected based on results from an online questionnaire administered prior to subjects reporting to the experimental

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venue. I used the 10-item Directive Leader Scale, used by Durham et al. (1997), which was adapted from Cox and Sims (1996), to select a "directive" leader. Participants were asked to indicate the extent to which they would feel comfortable performing directive-leader behaviors while working in a group, such as "taking charge of a group," "criticizing a group member for inappropriate behavior," "giving instructions to other group members, and "specifying others' roles in a group task. The complete set of items is shown in Appendix D. The highest scoring individual on the directive leadership behaviors in a team was chosen for the role of the directive leader. In order to maximize the difference and hence the effect of the manipulation, a similarly constructed survey was used to select the empowering leader in the "empowered" teams – participants filled in a survey asking to what extent they feel comfortable performing empowering behaviors. The items were adapted from the Empowering Leadership Questionnaire (ELQ), developed by Arnold and his colleagues (2000). The highest scoring individual on the ELQ in a team was chosen for the role of the empowering leader.

The chosen leader was trained on site, in the simulation designated room, immediately before the experiment while the other participants were engaged in non-related activities in a different room for about 30 min. Training has been shown to have an impact on leader behaviors (e.g. Towler, 2003). Additionally, research suggests that training can increase the use of transformational and charismatic leader behavior (Barling, Weber, & Kelloway, 1996; Towler, 2003). Using this line of argumentation, I expected training to increase the use of the modeled empowering/ directive leader behaviors. Additionally, training which lasted only 3 hours, has been

shown to have lasting effects on behavior over two years later (Ganzach, Pazy, Ohayun, & Brainin, 2002). In fact, a short five-minute leadership training manipulation was used by Manz and Sims (1986) and manipulation checks verified the effectiveness of the training materials on subsequent role play exercises. Also, in order to increase the effect of training, I exposed "leaders" to training immediately prior to conducting the experiment task, thus relying on the timely effects of behavior modeling. Also, as suggested by Durham and her colleagues, combining selection with training in a manipulation increases the effect of the manipulation – an approach I used in this study.

The selected "directive" leaders were exposed to a 10 min verbal presentation, which explained what kind of behaviors they were expected to exhibit. After that they were shown a short movie clip – adapted from Apollo 13, emphasizing the desired directive leader behaviors. Additionally, leaders participated in a 10 min role play simulation which emphasized the desired behaviors. For the last 5 min of the training, directive leaders were also trained and asked to develop a specific game plan without input from team members and to ask team members to carry out the proposed game plan (Yun et al., 2005). Appendix E summarizes the 10 min verbal training presentation given to the leaders.

The chosen *empowering leaders* were exposed to a similar 30 min training which included: verbal presentation, which explained and emphasized the kind of behaviors the leader was expected to exhibit during the simulation; short movie clip, emphasizing empowering leadership; and role playing to strengthen the modeled

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behaviors. For the last 5 min of the training empowering leaders were asked to develop a plan to include all the team members in setting team performance goals, exchanging ideas and information with one another. Appendix E summarizes the training for the empowering leaders.

To aid leaders in appearing directive or empowering they were given a "cheat sheet" with a list of key verbal prompters that were suggested for use during interaction with the team. The phrases listed on this "cheat sheet" are shown in Appendix B. Finally, the leaders were given a statement to read before the beginning of the experiment with the text of the statement emphasizing controlling or empowering leader behaviors. This statement is also shown in Appendix E.

Reputation Manipulation

When manipulating reputation I chose two conditions: positive competence reputation and neutral competence reputation. I had three main reasons to choose positive and neutral manipulations for reputation and to exclude the use of negative reputation manipulation. First, there is a strong practical implication which warns against staffing teams and putting into leadership positions incompetent personnel. Additionally, from a theoretical point of view, the team awareness of the leader's negative reputation or lack of task relevant competence may cause conflict in the team, initially undermine team's efficacy beliefs and thus contaminating the results of the study. Third, from a methodological standpoint, reputation in this study is manipulated as the leader having more experience and more knowledge of the task than the other team members. It is practically impossible to have "negative"

experience. The inclusion of negative reputation, however, is an interesting avenue of future research.

In manipulating competence reputation I used a two step approach. First, before coming to the experiment, participants were asked to fill in an online survey which asked about their computer experience, computer game experience, and military experience. Then, during the experiment a trained experimenter informed team members about the following:

(1) In the positive competence reputation condition the trainer informed participants that the leader had been chosen based on his/her superior computer and computer games experience and that he/she was the person with the highest competence for the simulation. Also, staff members were informed (by the trainer) that the leader training aimed at increasing the leader's game competence.

(2) In the neutral reputation condition participants were only informed that the leader was selected based on the pre-training survey.

In both the high and neutral reputation condition, the manipulation was done in the absence of the leader, which I did in order not to bias the behavior of the leader towards the team. Also, as a manipulation check at the midpoint of the game, and at the end, participants were asked to rate their leader game competence and the exhibited leadership style. Appendix C contains the measures.

Additionally, to reinforce the manipulation during the experiment I repeated the approach used by Johnson, Erez, Kiker and Motowildo (2002) and shared with participants that the choice of the leader based on his/her reputation (positive) or

general assignment (neutral condition) was approved not only by the trainer but by the experimenters, who were established researchers. As suggested by Johnson et al. (2002) the reinforcement of the reputation manipulation through a third party was supposed to add strength to the experimental manipulation.

Measures

Table 2 contains the description, the scale reliabilities, and aggregation statistics about the variables. Further information about each variable is provided below.

Table 2: Description of variables

	Variable name	Source	Reliability	Aggregation statistics			
				Mean(Rwg)	F	ICC1	ICC2
1	Psychological safety	Ind. Team members – aggregated to team level	0.7	.90	8.37**	.65	.88
2	Behavioral Integration	Ind. Team members – aggregated to team level	0.82	.74	1.24*	.07	.21
4	Perceived Directive Leadership	Ind. Team members – aggregated to team level	0.87	.77	2.07**	.22	.58
5	Perceived Empowering Leadership	Ind. Team members – aggregated to team level	0.8	.84	2.32**	.28	.68
6	Perceived Reputation	Ind. Team members – aggregated to team level	0.9	.79	1.94**	.19	.59

Objective team performance. Team performance was the dependent variable and it reflected the main team objective to maximize final team score, which comprised of offensive and defensive score. Teams received offensive points each time they engaged an opportunity or neutralized a threat and lost points (or received defensive points) each time one of their assets was destroyed by a threat or a threat got adjacent to the team base (row 1). Total performance was assessed by combining each team's offensive and defensive scores.

Psychological safety. Psychological safety was measured at the mid-point of the simulation (after round 5) with a 7-item measure developed by Edmondson (1999), which asked individual team members to indicate their agreement (on a 5-point Lykert-type scale) about the extent to which the team was safe for interpersonal risk taking and admitting errors. Exemplary items include: "Members of this team are able to bring up problems and tough issues, "If you make a mistake on this team, it is often held against you" (Reversely scored), and "It is safe to take risk on this team".

To justify aggregation of the variable to the team level I calculated aggregation statistics indicating the amount of variance due to team membership (ICC1), as well as the reliability of the team mean differences (ICC2). Both statistics fell within acceptable ranges (ICC1 = .65 and ICC2 = .85) suggesting the appropriateness of the integration of the individual team member scores to a mean team score.

Team mental models (similarity). This variable was measured at the end of the

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simulation, after teams had completed the last round of the simulation exercise. This variable measures how cognitive constructs about the experimental task are shared among team members.

Following previous studies, which had utilized the variable team mental models (e.g. Pearsall et al., 2010) I developed a specific, measurement instrument, idiosyncratic to the experimental task, which reflected the individual team players' concept maps required for successful task completion. Figure 5 presents the actual measurement instrument I used for mapping and scoring team mental models. Following the completion of the experimental task each team member was given a copy of the measurement and asked to fill in the blank spaces (two for each team player, as seen from the figure) with the respective assets each team player controlled during the simulation. Each correctly placed asset was scored with one point, thus if a team player, for example, correctly identified the two assets controlled by the offensive operation player and the two assets controlled by the support offensive player, s/he would score 4 on the team mental model concept map. The score for each individual player on the concept map ranged from 0 (no correctly identified players and their respective assets) to 8 (all players and their matching assets correctly identified).

To arrive at the team-level mental models similarity score (which reflects the extent to which team members' mental models are similar), I used each team member's (e.g. A1) individual concept map (from Figure 5) and compared it to the other team members' concept maps. Thus, in each team there were six possible dyads

of concept maps (A1A2, A1A3, A1A4, A2A3; A2A4; and A3A4) and each dyad was

manually scored with a fraction, reflecting the number of identical answers for the

two players assets (in the nominator) divided by the total number of possibly identical

assets (8 for all players). The scores of the six dyads per team were added to arrive at

an additive, team-level score for TMM similarity (with scores ranging between 0 and

6). Again, this measurement of TMM similarity was idiosyncratic to the study to

appropriately reflect the specificity of the simulation exercise. For the purpose of the

hypotheses testing, the fraction measuring TMM similarity was converted to a two-

digit regular finite decimal.

Please, fill in the squares below with the correct answers in order to most successfully

complete your team's mission. Use the numbers from the boxes at the right of the page. In the column

labeled "Assets" list the assets that each team member used in the game.

■

Team Member	Assets
	1. Escort
	2. Strike
A 1	
	3. Refuel
	4. Info
A 2	
	5.Human Intel
	6. Allied Intel
A 3	7. Visual Intel
	8. Communic. Intel
A 4	

Figure 5: Team Mental Models Individual Concept Map

Behavioral integration. Team behavioral integration is a multi-faceted

construct which measures team's coordination, collaboration and joint efforts. This

variable was measured with a four item scale developed by Hambrick et al. 1994.

Exemplary items include "All team members have a voice in major decisions

affecting the team", "Communication among team members can best be described as

open and fluid" and "Team members frequently share their experience and expertise".

This variable was measured on a 5-point Likert-type scale, asking each individual

member to indicate the extent to which s/he agrees with the items comprising the

administered at mid-point of the simulation (after round 5 of the simulation). The

referent for each item measure was the team, which was consistent with the

theoretical reasoning for behavioral integration to reflect team level processes such as

coordination and coordination. Each individual team members answered individually

to the questionnaire measuring behavioral integration.

In order to support aggregation of individually-reported scores and arrive at a

team score, I calculated the required aggregation statistics, specifically intermember

reliability(ICC1 and ICC2), as well as tested whether the average score differed

significantly across teams (indicated by an F test from a one-way ANOVA

contrasting team means on the variable). Although the mean r_{wg} was at an acceptable

level (.74), both ICC(1), which indicates the proportion of variance in ratings due to

team membership, and ICC(2), which measures the reliability of the between-team

mean differences (Bliese, 2000), were below the typically statistically acceptable cut-

offs needed to confirm the appropriateness of aggregation (.07 and .21 respectively).

Although the result of the ANOVA test (F(59, 180) = 1.24, p <.05) indicated that the

average scores differed across teams, I decided to drop this variable from the analyses

due to the lack of support for aggregation.

Perceived directive leadership. In order to measure the extent to which team

members perceived their leader as directive I used a 7-item measure (1 = *strongly*

disagree and 5 = *strongly agree*) which asked team members to indicate the extent to

which they agree/disagree with statements describing their leader as being directive.

The measure was adapted from Pearce et al., (2003) and exemplary items include

"The team leader requires team members to follow his instructions", "The team

leader makes execution decisions", "The team leader takes charge of our team" and

"The team leader gives instructions to group members". Aggregation statistics in

support of the aggregation of this variable to the team level are as follows: ICC1 = .22

and ICC2 = .58. Although ICC2 values are somewhat low, the result of a one-way

ANOVA shows the average score difference across teams is significant (F(59,180) =

2.07, p < .01). Additionally, the comparatively low levels of ICC2 may be explained

with the small team size (4 persons) and the short duration of the task, which limits

the extent to which team members may arrive at highly shared perceptions of

leadership. However, considering the significant one-way ANOVA result and the

theoretical team-level treatment of leadership, I decided to proceed with the

aggregation of the variable to the team level.

Perceived empowering leadership. Team members' perception of the extent to

which their leader exhibited empowering behaviors was measured with a 7-item

instrument, which required team members to indicate their agreement about the extent

to which the team leader exhibited empowering behaviors (1 = *strongly disagree* and

5 = *strongly agree*). The measure was adapted from Pearce et al., (2003) and

exemplary items include: "The team leader encourages team members to express

ideas/suggestions", "The team leader encourages team members to assume

responsibilities on their own", "The team leader encourages team members to

exchange information with one another" and "The team leader gives the team

autonomy and freedom of action".

Similar to the perceived directive leadership, reliability statistics for the

variable perceived empowering leadership were slightly below the acceptable level

(ICC1 = .28 and ICC2 = .68) however the result of a one-way ANOVA indicated that

scores differ significantly across teams (F(59, 180) = 2.32, p < .01) and also, from

theoretical point of view the behavior of the leader was directed to the team as a

whole and not to a specific member, therefore, I proceeded with aggregating the

individual members' scores to arrive at a single score for each team.

Perceived reputation. Team leader's competence reputation was measured

with a 6-item measure adapted from Hochwarter et al., (2007) and measured the

extent to which team members perceived their leader to have high competence

reputation for the specific simulation task. The items asked team members agreement

with statement like "The mission leader is a capable player", "Our team considers the

leader to be a capable performer", and "The team leader is competent at this task".

Due to the inter-member interaction, the items referring the team leader and the reputation manipulation being performed at the team-level, I expected agreement and convergence in team members' perception about the competence reputation of their leader. Aggregation statistics marginally supported my expectation (ICC1 = 19, ICC2 = .59) and the result of a one-way ANOVA indicated support for the significance difference of scores across teams ($F(59, 180) = 1.94$, $p < .01$), therefore I aggregated the individual scores to arrive at a team-level score for each team.

Control variables. In this study I controlled for leaders natural inclination to behave in a directive and empowering way, because leaders' natural inclination might affect leader behaviors and thus impact the extent to which team members perceive the behavior of the leader to be empowering versus directive. Additionally, I controlled for average GPA per team, because research suggested that general mental ability may be a performance predictor. In a similar line of reasoning, I controlled for team members average computer-game experience, which was measured with a 1-5 Likert-type, 3 item scale, asking participants to indicate their level of computer game experience. Leader gender was also included as a control variable with 1 corresponding to a female leader and 0 corresponding to a male leader. Last, the team gender distribution was also measured and controlled for, by a proportion-variable indicating the proportion of female participants on the team.

Chapter 5: Results

The summary of means, standard deviations and intercorrelations among the study variables of interest is provided in Table 3.

Table 3: Descriptive statistics of the study variables

No	Variable	Mean	SD	1	2	3	4	5	6	7
1	Leadership/ treatment	.52	.50							
2	Reputation/ treatment	.52	.50	-.03						
3	Team performance	10.97	51.6	.02	-.10					
4	Team mental models	4.84	1.16	$.26^*$	-.01	$.23^*$				
5	Psychological safety	3.74	.66	.16	-.15	.15	-.16			
6	Perceived directive leadership	3.41	.63	$-.50^{**}$	-.01	.01	-.03	-.11		
7	Perceived empowering leadership	3.71	.51	$.50^{**}$	-.06	$.25^*$	$.22^*$	$.29^*$	.14	
8	Perceived reputation	3.66	.46	-.10	-.02	.30*	-.01	$.19^*$	$.52^{**}$	$.47^{**}$

N = 60
*p < .05
**p < .01

As seen from Table 3 the majority of the bivariate correlations among the substantive variables were in the expected directions. Before testing the hypotheses, I conducted manipulation check analyses to assess the effects of the manipulations. After completing the manipulation checks, I proceeded with testing the study hypotheses.

Leadership manipulation check

I used a one-way ANOVA to test the effectiveness of the leadership manipulations. Perceived directive leadership and perceived empowering leadership, which measured team members' perceptions about the extent to which their respective leader exhibited directive and empowering behaviors, were used as a manipulation check measure. For the teams in the directive leadership condition, the result of a one-way ANOVA ($F(1,58) = 20.50$, $p < .01$) indicated that the participants led by a directive leader perceived the leader to be significantly more directive than empowering. This provided initial support for the effectiveness of the manipulation.

For the effect of the empowering leadership manipulation, the results of one-way ANOVA revealed significant difference in the group perceptions of the leader as empowering ($F(1,58) = 10.78$, $p < .01$) in teams led by an empowering leader versus teams led by a directive leader. This confirmed the effectiveness of the empowering leadership manipulation.

Reputation manipulation check

The reputation manipulation, which was executed by directly informing the team members about the competence of the chosen leader at the simulation task, proved not effective. I used the teams perception of the leader reputation measured with the variable *perceived reputation* to check for the strength of the manipulation. On average, teams in the high reputation condition ($N = 32$) perceived their leader

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reputation to be at a 3.67 level (SD .27) while their counterparts – teams in the neutral

reputation condition (N = 28) perceived the reputation of the leader to be, on average,

3.64 (SD .41). A simple T-test analyses of groups' mean difference suggested that

team members did not perceive the leaders to have different levels of competence

reputation (T = .34, n. s) as a result of the reputation manipulation.

Measurement model

I used LISREL path-analysis option to check the fit of the hypothesized

model. Figure 6 presents the hypothesized measurement model. The model exhibited

good fit to the data: χ^2 (6, N = 60) = 10.02, p = .07; and goodness of fit statistics

(Comparative Fit Index (CFI) = .80; Goodness of Fit Index (GFI) = 0.91 and Root

Mean Square Residual (RMR) = 0.093), indicating that the measurement model fits

the data well.
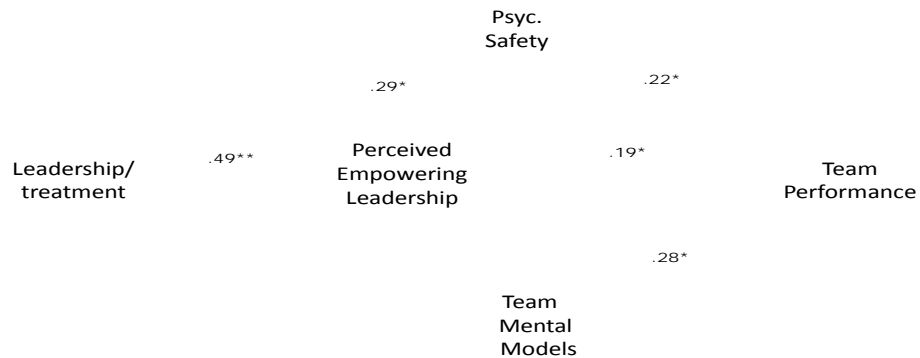

Psyc. Safety

.29*   .22*

Leadership/ treatment   .49**   Perceived Empowering Leadership   .19*   Team Performance

.28*

Team Mental Models

Figure 6: Measurement Model

Linear OLS regression analyses and ANOVA were employed to test the hypotheses. Since all the variables were either measured or aggregated to the team level (after all the statistical requirements for aggregation have been met), linear regression and ANOVA were appropriate statistical methods for testing the hypotheses of interest. At step one of running the regression analyses I included the control variables described above. As seen from Table 4, Model 1, none of the control variables reached significance; however, in order to increase the robustness of my results, I controlled for them in the subsequent analyses.

Direct effect hypotheses

Table 4 provides the results of testing hypotheses 1 and 2. To test Hypothesis 1, which predicted that empowering leadership would lead to higher team performance than directive leadership, I regressed the final team score on team members' perception of empowering leadership. As seen from Table 4 (Model 2), the coefficient for perceived empowering leadership was in the expected direction (β = .29, p < .05) and significant. Therefore, Hypothesis 1 was supported and I have found initial evidence that perceived empowering leadership was positively and significantly related to team performance. In contrast, team members' perception of the extent to which their leader was directive (perceived directive leadership) was non-significantly related to team performance (β = .04, p > .1; Table 4, Model 2).

Table 4: Results of regression analyses (with team performance as dependent variable) [a]

Variables	Model 1	Model 2	Model 3
Control variables			
Leader directive disposition	.02	.07	.16
	(*4.02*; 29.96)	(*14.91*; 29.98)	(34.59; 29.29)
Leader empowering disposition	.06	-.01	-.05
	(*16.34*; 36.30)	(*-1.76*; 36.37)	(-12.75; 34.05)
Team average GPA	.12	.18	.22
	(*34.53*; 39.93)	(*50.89*; 36.47)	(63.52; 37.41)
Average Team Game experience	.13	.13	.04
	(*19.58*; 20.71)	(*19.70*; 20.24)	(6.2; 19.06)
Team gender composition	-.12	-.16	-.14
	(*-25.12*; 30.56)	(*-34.67*; 30.29)	(-30.54; 28.24)
Leader gender (1 = female)	-.01	.01	.12
	(-1.41; 14.75)	(*1.23*; 14.56)	(12.64; 14.39)
Independent variables			
Perceived empowering leadership		.29[*]	
		(*29.49*; 14.35)	
Perceived directive leadership		.04	
		(*3.98*; 13.66)	
Perceived reputation			.78[**]
			(8*9.33*; 23.90)
Leadership (treatment)			2.47[*]
			(*255.08*; 115.25)
Leadership (treatment) x Perceived reputation			-2.24[*]
			(-64.*91*; 31.21)
R square	.05	.13	.27
Δ R square		.08	.22
df	59	59	59

[a]N = 60, entries in the table are standardized regression coefficients, non-standardized coefficients are reported in Italics in parentheses; standard errors are in parentheses.
[*]p < .05; [**]p < .01

Hypothesis 2 predicted that leader's reputation for competence would have a stronger impact on the effect of directive leadership on team performance than on the effect of empowering leadership on team performance. Addressing the hypothesized effect of leader reputation, I found that when the team members' perception of leader reputation was used (*perceived reputation, which, one might argue, is the essence of*

reputation), the interaction term between leadership/treatment and perceived reputation was negative and significant (Table 4, Model 3: β = -2.24, p < .05), as predicted by the interaction hypothesis (H2). To better understand the nature of this interaction I plotted it in Figure 7.
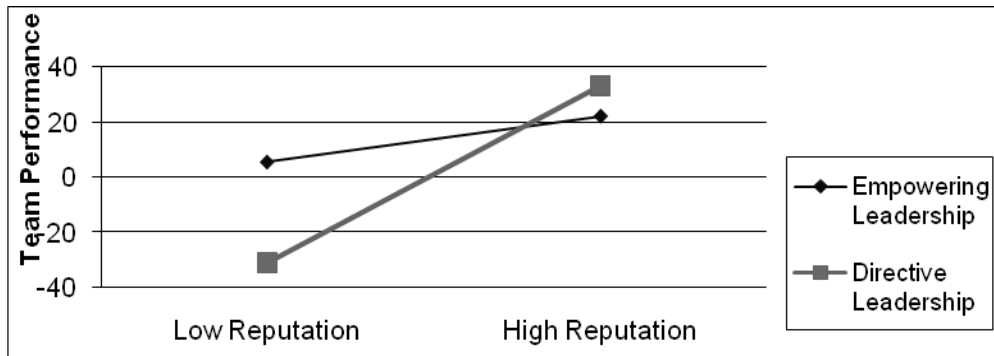
Figure 7: Interaction between Leadership and Reputation

As presented in the figure, leader competence reputation had much stronger effect on team performance for teams led by a directive leader. In fact, a simple slopes test suggested that perception of competence reputation had positive impact on team performance only for teams led by a directive leader (β = .72, p < .05), while the effect of leader competence reputation on team performance for teams led by an empowering leader was non-significant (β = .20, p = .34). Thus, this analysis provides support for H2, which suggested that reputation for competence would have a stronger impact on the effect of directive leadership than on the effect of empowering leadership on team performance. I expand on this interesting finding (with both theoretical and practical implications) in the discussion section.

Indirect effect hypotheses

In the section above I found support for the positive effect of perceived empowering leadership on team performance and here I will proceed to investigate whether the effect of the perceived empowering leadership was mediated through the a priori hypothesized mediators. Hypotheses 3-5 predicted that the positive effect of empowering leadership on team performance would be mediated through psychological safety (H3), team mental models (H4), and behavioral integration (H5). Fig. 8 illustrates the results of these tests (coefficients reported in Figure 8 are standardized beta coefficients). As seen from Figure 8 perceived empowering leadership significantly predicted team psychological safety ($\beta = .31$, $p < .05$) when controlling for the effect of perceived directive leadership ($\beta = -.15$, $p > .1$). Perceived empowering leadership also positively predicted team mental models ($\beta = .22$, $p < .05$). Next, controlling for the effect of perceived empowering leadership (as well as perceived directive leadership), I examined how team psychological safety and team mental models were related to team performance. The only path that remained significant was the path between team mental models and team performance, suggesting that the effect of perceived empowering leadership on team performance was mediated through team mental models. Additionally, the effect of perceived empowering leadership on team performance dropped in significance, reaching non-significant level ($\beta = .16$, $p > .1$), providing evidence that the effect of empowering leadership on team performance was, indeed, mediated through TMM. The strength of the indirect effect was examined through a Sobel test and the results supported the significance of the indirect effect ($z = 2.40$, $p < .05$). Overall, in combination, these

analyses suggests that when team members perceive the leader as empowering, this can have a positive impact on team performance through mediating variables such as mental models. Therefore, Hypothesis 4 was supported, while the mediation effect of psychological safety (H3) and behavioral integration (H5) was not supported. However, clearly, search for additional mediators is warranted.
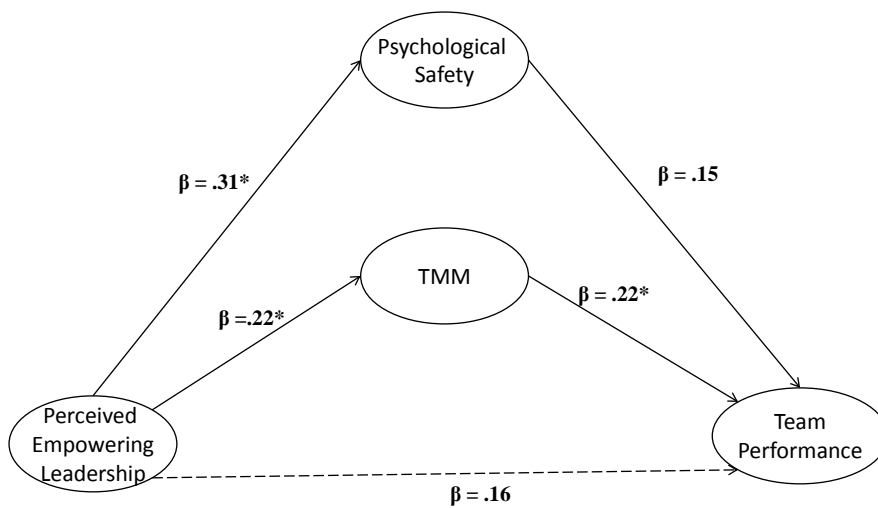
Figure 8: Mediation Model

<u>*Summary of Results*</u>

In summary, the hypothesized positive effect of empowering leadership on team performance was confirmed by the results, suggesting that under the boundary conditions of the study – new, highly interdependent teams, faced with a learning task, empowering leadership outperformed directive leadership in predicting team performance. In terms of leader reputation, the manipulation proved ineffective and

Hypothesis 2, which suggested moderating effect of reputation on the leadership –

team performance relationship may initially be treated as non supported. However,

the extent to which team members perceived the leader as having high competence

reputation positively impacted team performance in teams led by a directive leader,

which suggests support for the soundness of my theoretical reasoning. In summary, in

terms of leader competence reputation as an influence mechanism impacting the

effect of leader behavior, I found that high competence reputation may accentuate the

effect of directive leadership on team performance.

Finally, in seeking mediators, which translate the effect of empowering

leadership on team performance, I found support for the mediating role of team

mental models, which suggested that empowering leadership positively impacted the

extent to which team members developed similar mental maps about the task

knowledge in the teams, which, in turn, led to increased team performance. This is a

particularly interesting finding which I discuss further in the next section.

Chapter 6: Discussion and Conclusion

Leadership in teams has gained significant attention in the organizational behavior literature with researchers attempting to provide theoretical guidance for the impact of leadership on team performance (e.g. Mathieu et al., 2006; Morgeson & DeRue, 2006). Despite the progress made by researchers in conceptualizing and developing the mechanisms through which leaders might impact team performance, the increasing use of inexperienced, put-together-for-a-task action teams questions findings which can be applicable to standard, long standing teams.

Additionally, the emergence and conceptualization of team-targeted leadership types, such as empowering leadership (Perace et a., 2003), calls for the examination of this specific leadership type in inexperienced teams because extant literature does not provide guidance about the applicability of empowerment in inexperienced teams. The problem is additionally exacerbated by the inconclusive, even opposing findings about the impact of empowering leadership on team performance. On the one side, there is evidence that empowering leadership positively impacts the performance of long-standing, top management teams through its effects on information sharing and collaboration (Srivastava et al., 2006). On the other side, Yun and his colleagues (2005) found support for the notion that inexperienced teams performed better when not empowered, but directed by the leader, especially under stressful, demanding tasks. Therefore, research still lacks full understanding of the effectiveness of empowering leadership, especially in inexperienced teams. Therefore, a major purpose of this study was to examine the

role of empowering leadership and its effects on team performance in inexperienced teams. More specifically, the teams of interest were not only inexperienced, but also faced a learning task, which is comparable with today's dynamic and complex use of teams in an ever-changing business environment.

Both leadership and team research caution scholars about the complexity of the leadership – performance relationship, advocating the examination of relevant mechanisms which translate the effect of leadership on team performance (e.g. Mathieu et al., 2008). Therefore, in order to provide in-depth theoretical understanding of the role of leadership in teams, I conceptually defined and empirically tested the intervening role of several mechanisms, which I argued would translate the effect of leadership on team performance. Defining and examining the mediating mechanisms were the second major purpose of this study.

Last, but not least, guided by the emerging literature on individual reputation (e.g. Johnson et al., 2002) I introduced and examined the concept of leader competence reputation as an additional influence mechanism for team performance. Despite emerging research suggesting that, in novel situations, unfamiliar people use leader reputation to anchor their expectations and interpret leader actions (cf. Jones & Skarlicki, 2005) there is virtually no research addressing the issue of leader reputation in teams. In an attempt to fill in this void, in this study I examine whether and how leader competence reputation may impact the effect of leader behavior on team performance.

Addressing the first stated purpose of the study, I compared the effects of two

distinct leadership styles (both of which remain underexplored in team research): directive and empowering. I argued that in inexperienced teams, faced with a learning task, empowering leadership would be better suited to facilitate learning and atmosphere safe for admitting errors, which would lead to better performance in teams led by an empowering leader. My results supported the positive effect of empowering leadership on team performance, suggesting that inexperienced teams benefit from the increased joint decision making and sharing of ideas and information, which are encouraged by the behaviors inherent to empowering leadership. Exploring the mediating mechanism which would translate the effect of leadership on team performance, I was guided by the Input-Mediator-Output-Input model of team effectiveness (Ilgen et al., 2005), and more specifically, guided by my interest in newly formed teams, I focused on mechanisms, which could play important role in the early stages of team development. Specifically, following the model prescriptions, I examined affective, cognitive and behavioral mediating mechanisms which linked inputs (e.g. leadership) to outputs (e.g. team performance). Similarly, the training literature informs researchers that trainees faced with a learning task experience affective, cognitive and behavioral reactions to training (Towler, 2003). Therefore, literature suggested that teams faced with a learning task are likely to experience affective, cognitive and behavioral intervening mechanisms, which would facilitate team learning and mediate the effect of leadership on team performance. Thus, I argued that psychological safety, team mental models convergence and behavioral integration, as affective, cognitive and behavioral mediators respectively, would link leadership to team performance. More specifically,

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I argued that psychological safety, team mental models convergence and behavioral integration would translate the positive effect of empowering leadership on to team performance. Only team mental models fully mediated the effect of empowering leadership on team performance, suggesting that empowering leadership helps team members develop shared understanding of the processes and knowledge needed for accomplishing a learning task.

The last purpose of this study was to examine the role of leader competence reputation and its impacts on the effectiveness of leader behaviors. Due to the lack of relevant theoretical guidance about the role of leader reputation in teams, I used logical reasoning to propose that competence reputation would negatively impact the relationship between empowering leadership and team performance. My finding provides initial evidence for the positive role a leader's competence reputation plays for teams led by a directive leader. Enhancing research understanding about the perceptual aspects of leadership and combining them with the behavioral aspect of understanding leadership, I found that team members' perception of leader's competence reputation serve to create expectations for the behavior of the leader and thus impact the effects of the leader behaviors. This interesting finding may be used to guide researchers by adding an aspect to understanding and using leadership in teams – specifically, my research suggests that teams can be successfully directed only when the leader is perceived as knowledgeable and skilled at the task at hand.

Theoretical Implications

This study has three important theoretical contributions. First, it outlines the

positive role empowering leadership plays in influencing team performance in newly formed, actions teams, faced with e learning task. By outlining the positive role of empowering leadership, I shed some light on the conflicting results about the role of this type of leadership in teams and add understanding to the boundary conditions that might impact leadership in teams (Yun et al., 2005). Additionally, conceptualizing and empirically testing the mediating mechanisms which translate the effect of leadership on team performance is a contribution by itself, specifically the finding that leadership impacts team mental models, which, in turn account for the higher performance in teams led by an empowering leader. Last, my finding about the role competence reputation plays for accentuating the effects of specific leader behaviors adds a finer-grain understanding about the influence mechanisms that can be used in impacting team performance.

Effect of leadership

In this study I found that empowering leadership (or the extent to which team members *perceived* the leader to exhibit empowering behaviors) positively and significantly predicted team performance. Thus, by linking the effect of empowering leadership to team performance in newly formed teams, I shed some light on the conflicting results found in the literature about this type of leadership. Departing from previous research, which had found that newly formed teams benefited from the directive approach and role-specification inherent to the directive leadership type (Kahai et al., 1997; Yun et al., 2005), I found that newly formed teams led by an empowering leader outperformed similar teams led by a directive leader.

Conceptually, this finding coincides with the positive effects found in literature about the effect of empowering leadership on individual performance (e.g. Ahearne et al., 2005; Zhang et al., 2010) and long-standing, top management teams (Srivastava et al., 2006), but extends similar findings to the performance of new, action teams, which have not been linked to benefit from empowering leadership in previous literature. A note to be made here is that I did not found directive leadership hurtful to team performance, but found teams led by an empowering leader to outperform those led by an empowering one. The direct comparison of the two leadership types may be treated by a contribution in itself, because it provides both researchers and practitioners with a comparative understanding about the specific advantages/disadvantages of the compared leadership types. Additionally, specifying the mediating mechanism, which underline the outperformance of the teams led by an empowering leader is another major contribution of this study.

Role of team mental models

My finding that team mental models mediate the effect of empowering leadership on team performance provides support for the usefulness of the recently emerging literature on team mental models (e.g. Ellis. 2006; Pearsall et al., 2010), and extends my contributions to explaining the role of team mental models as a leadership-translating mechanism. In essence, my results suggest that empowering team members through including them in decision making, and asking them to share insights and ideas, allows the whole team to develop a shared understanding of the required knowledge and processes to successfully complete a learning task. This

finding adds considerable value to the emerging literature on team mental models by defining empowering leadership as a possible antecedent of TMM in the context of new teams, faced with a learning task. According to a recent study, summarizing research development in the TMM area, leadership as an antecedent of TMM has remained largely out-of-sight for team researchers (Mohammed et al., 2010) , despite the fact that a number of team development models (e. g. Ilgen et al., 2005) specify leadership as important team input, supposedly impacting team mediating mechanism. Therefore, one of the contributions of the current study lies in its integrating role. Specifically, integrating the so-far separate literatures of TMM development and team leadership (e.g Zaccaro et al., 2001), I conceptually develop and empirically support a process-model, which examins and explains the role of empowering leadership for TMM development. By linking empowering leadership to TMM and team performance, I explicitly outline the process through which team performance in newly formed teams, faced with a learning task, may be improved. The particular finding that team mental models predict increased team performance adds value to the team literature by providing understanding of the way inexperienced teams may capitalize on intra-team mechanisms to improve their performance.

Role of psychological safety

The finding that psychological safety was not a significant mediator of the effect of empowering leadership on team performance warrants a closer examination of the conceptual and methodological approaches undertaken by the study. From theoretical perspective, I believe I correctly argued about positive relationship

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between empowering leadership and team psychological safety, however, the finding that empowering leadership positively predicts team psychological safety, but not team performance through psychological safety is somewhat puzzling. An explanation may be offered by my supplementary analysis, which indicated that team psychological safety measured at the end of the experiment significantly mediated the effect of empowering leadership on team performance. This finding by itself has interesting theoretical implications, suggesting that psychological safety in teams is an emergent state, which takes time to emerge – new teams need some time before they can develop psychological safety and enjoy its benefits.

Leader competence reputation

The last, but by no means least interesting implication of this study is the finding about the role of reputation. More specifically, I found support for the role of the competence reputation of the leader as a mechanism which can impact the effects of leader behaviors. As seen from the results, team members' perception of leader reputation (which theoreticians may argue is the essence of reputation) accentuated the effect of leadership in teams led by a directive leader. From a theoretical perspective, this finding informs researchers about the specific influence that competence reputation may exert on leadership and, more specifically, suggests that high competence reputation benefits leaders who use a directive approach to influence their teams. As seen from the correlation table, perception of leader competence reputation (*perceived reputation*) was highly correlated with both perceived directive and perceived empowering leadership. However, results suggest

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that reputation is only effective in teams led by a directive leader. A plausible explanation might be that high competence reputation creates expectations among team members to be directed and guided by the leader, and when these expectations are confirmed by a directive leadership style, team performance improves. In contrast, team members expecting guidance and direction from a leader based on his/her competence reputation might be unprepared to share power and decisions with a competent leader. A more detailed examination of the role of leader reputation in teams might provide researchers with better understanding of the complex process of leading and influencing teams.

Managerial implications

This study has several implications that might be useful for managers when dealing with issues in a team context. By far, the most interesting managerial implication of this study is the understanding that team members' perception of the leader as empowering leads to the development of shared knowledge and shared understanding of the task, which is useful for the team completion of a new, learning task. Additionally, this study guides managers in understanding the implications of team mental models for team performance, especially when teams are new and have yet to develop their mental models required to successfully execute a task. Although previous research has pinpointed the importance of team mental models (Pearsall et al., 2010), this study guides managers in their knowledge of the importance of selecting and/or training leaders to exhibit empowering behaviors as an antecedent of team mental models.

Second, this study provides managers with a promising understanding of how leadership and leader competence reputation can work together to influence team performance. In essence, my finding that perception of leader competence reputation only accentuates the effect of directive leadership on team performance suggests that when managers have high competence reputation they can employ directive leader behaviors. In fact, coupled with findings from previous work on individual reputation (e.g. Jones & Skarlicki, 2005), my results suggest to managers that high competence reputation may create an expectation among team members that directive leader behavior is appropriate. However, a conclusive and comprehensive advice to managers about the role of leader reputation in teams is beyond the scope of this study and additional work in the area of reputation is warranted from both theoretical and practical perspective.

Limitations and Directions for Future Research

This study has a number of limitations that need to be noted. First, the scope of this study was limited to only new teams faced with a learning task. In addition the teams examined in this study enjoyed very high levels of independence, coupled with a comparatively short duration of the task. Yet, there are many examples of such teams in real life, such as air force crews, programming teams, or engineering teams. In fact, teams like these may be increasingly common in organizations (Sundstrom, 1999). Therefore, the boundary conditions, imposed by my focus on such teams, may be treated both as a limitation and as advantage of the current study. The specific focus on newly formed, action teams limits, to some extent the generalizability of the

results, however, provides researchers with a deeper understanding about the specific mechanisms underlying performance in such teams. One should note the relationships I examined in this study may evolve differently in, for example, long standing teams faced with a learning task or in teams with lower levels of interdependency. In long standing teams with already established emergent states such as psychological safety or collaboration norms, the effect of leadership and leader reputation may have different impacts than in new teams faced with a learning task. Similarly, in teams with lower levels of task interdependence the role specification and task assignments inherent to directive leadership may lead to better performance in teams led by a directive than by an empowering leader. Research would benefit from examining the mediating mechanisms and antecedent factors through which different types of teams approach and execute learning tasks.

Additionally, the significant effects of the perceptual measure of leadership, suggest that examining theoretically outlined hypothesis in a field study would strengthen the theoretical knowledge about the role of leadership in teams. Although I manipulated leadership, in order to enhance the natural leader behaviors of the participants, this study cannot be treated as a typical experimental study, in which the cause-effect relationships are clear-cut. Therefore, a laboratory experiment, in which all the teams are subject to one and the same leadership behavior, may specifically shed light on the leadership behaviors of interest as a causal mechanism for team performance. , On the other side, individual perceptions and expectations about the behavior of a leader, coupled with one's own disposition to different leadership types, may be a better predictor of leader effectiveness than the actual behavior of the

leader. Additional work in the area of team leadership may shed light on this under-explored issue.

The nature of the learning task by itself may have biased some of my results. Specifically, the nature of the task sets the teams as functional in structure with team members having distributed expertise. Under this task design team mental models similarity played an important role as a mediating mechanism, translating the effect of leadership on team performance. A different task, employing hybrid or divisional team structure, for example, may have required different understanding and knowledge exchange among team members, thus activating different team processes and emergent states (Ilgen et al., 2005). Future research examining the proposed relationships may benefit from utilizing a different task or different team structure which would offer the opportunity for different team processes and emergent states to evolve.

Finally, in this study I only focused on examining the impact of leadership and leader reputation on a static team outcome – team performance – measured at the end of the simulation. This cross-sectional design, however, precludes research from understanding the longitudinal processes that underline the final outcome. Specifically, initial examination of the teams' round-by-round performance development (starting at round 1 and ending at round 10) suggests that teams led by a directive leader start with a higher initial performance (average directive team performance at round 1 equals -.68) than teams led by an empowering leader (average empowering teams performance at round 1 equals -6.52). The results of linear growth

modeling, utilized to model team performance development over time, provide

evidence that teams led by a directive leader start better than their counterparts -

empowering teams, however, improve less over time. Or, in simpler words, teams led

by an empowering leader, perform at a lower level at the beginning, however,

improve more over time, eventually outperforming teams led by a directive leader.

This result indicates that there is initial cost associated with empowering leadership.

A potential explanation might be the fact that early team development characterized

by struggle and conflict is more pronounced when leaders attempt to empower their

subordinates. Future research is needed to provide theoretical guidance about the role

of leadership and other influence mechanisms in teams' performance development.

Conclusion

The purpose of this study was to examine the effects of two distinct leadership

types: empowering versus directive leadership and shed some light on the ambiguity

of whether directive or empowering leadership is superior in predicting team

performance for inexperienced teams, faced with a learning task. Additionally, this

study attempted to explain the differential effects of the specified leadership types by

hypothesizing and exploring the mediation effects of several team-level processes.

Another purpose of the study was introducing and examining the concept of leader

competence reputation in an attempt to provide theoretical guidance in understanding

how reputation might act as an influence mechanism to accentuate or attenuate the

effects of leader behaviors.

Sixty teams comprised of four players and a leader engaged in a team-based,

decision making simulation as participants to provide data for testing the study

hypotheses. This simulated environment allowed me to accentuate the leadership

types of interest and to guarantee that the boundary conditions of the study -

inexperienced teams, faced with a learning task - were met.

Results from testing the study hypotheses suggested support for the positive

effect of empowering leadership on team performance and offered a preliminary

interesting finding. Specifically, I found that directive leaders command higher initial

performance which is eventually surpassed by empowering leaders as teams learn the

required task. In terms of mediation, the similarity of team mental models (or team

players' similar understanding of the task concept maps) accounted for translating the

effect of empowering leadership on team performance, while leader competence

reputation was effective only for teams led by a directive leader. Additional research

examining both the specific role of reputation and the role of leadership at different

stages of team development and task execution is warranted.

Appendices

Appendix A: Pre-training Survey

Team No: _____
Individually assigned ID:_____
Demographic Information:
Age: _____
Gender: _____

Ethnicity:
◊ White/Caucasian
◊ African-American
◊ Hispanic
◊ Asian
◊ Other_____
◊ Prefer not to answer

How skilled are you in using computers?
◊ Unskilled
◊ Low skill
◊ Somewhat skilled
◊ Moderately skilled
◊ Very Skilled

How skilled are you in using a computer mouse?
◊ Unskilled
◊ Low skill
◊ Somewhat skilled
◊ Moderately skilled
◊ Very skilled

How often do you play video/computer games?
◊ Never
◊ Rarely
◊ Occasionally
◊ Sometimes
◊ Fairly often
◊ Very Often

Have you ever played Leadership Development Simulation (LDS) game before?
◊ Yes   No

Appendix B: Pre-scripted leader behavior prompter phrases

Directive Leader Suggested Phrases	Empowering Leader Suggested Phrases
OK, good performance so far. • Now, I need you to listen carefully to my instructions so we can do better in the next rounds. • I expect you to stick to your roles and execute them with great diligence. • Make sure you know what your own assets are and operate them accordingly. • I want the intelligence players to send all their assets early in the round in the upper/lower half of the grid. • Operation players, make sure you refuel when operating in the upper grid. • Operation players, pay close attention to the mobile targets. • Our tactics for the next round is … you all need to follow this tactic.	OK, well done so far, team. • I encourage all of you to communicate more in order to improve our team performance. • OK, let's discuss our performance and decide what we want to do in order to improve it. Any ideas? • Let's try to work together – we need ideas. • Let's recap – what each other roles are? • We need all the information you have on the table – tell your team members what you see and think. • How about we try something more creative for the next round? What do you think? • We need to work together as a team – it is up to us to find a way to get more points.

Appendix C: Measurement instruments

Please use the table below to indicate your agreement with each of the statements.

The statements below refer to your team experience as a staff member in the LDS game.

No	Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
A.	**Psychological Safety**					
1.	Members of this team are comfortable checking with each other if they have questions about the right way to do something					
2.	Members of this team are able to bring up problems and tough issues.					
3.	*If you make a mistake on this team, it is often held against you[2].*					
4.	It is safe to take a risk on this team					
5.	*People on this team sometimes reject others for being different.*					
6.	*It is difficult to ask other members of this team for help.*					
7.	No one on this team would deliberately act in a way that undermines my efforts.					
B.	**Team Mental Models – specific instrument**					
C.	**Behavioral Integration**					
8.	All team members have a voice in major decisions affecting the team.					
9.	Communication among team members can best be described as open and fluid					
10.	When major decisions are made affecting the whole team, team members collectively exchange their points of view					
11.	Team members frequently share their experience and expertise.					
D.	**Perceived Reputation**					
12.	The mission leader is a capable player					

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[2] The items in Italics are reversely coded.

13.	Our leader has extensive task related experience					
14.	I consider the team leader to be a capable performer					
15.	The team leaders has extensive task related knowledge					
16.	The team leader has high competence reputation					
17.	The team leader is competent at this task.					
E.	**Perceived Empowering/Directive Leadership** (items are randomized)					
18.	The team leader takes charge of our team.					
19.	The team leader criticizes group member for inappropriate behavior					
20.	The team leader gives instructions to group members					
21.	The team leader defines tasks and responsibilities of group members					
22.	The team leader makes execution decisions					
23.	The team leader establishes the goals of our team.					
24.	The team leader requires team members to follow his instructions					
25.	The team leader encourages the team to set a team performance goal.					
26.	The team leader encourages team members to coordinate their efforts and work together.					
27.	The team leader encourages team members to express ideas/suggestions.					
28.	The team leader encourages team members to exchange information with one another.					
29.	The team leader gives the team autonomy and freedom of action.					
30.	The team leader encourages team members to search for solutions to problems on their own initiative.					

31.	The team leader encourages team members to assume responsibilities on their own.					

Appendix D: Leader online selection survey

Please, using the table below, indicate the extent to which you feel comfortable

performing the following behaviors:
Mark your answer using the scale 0-10 in the following way: 0(extremely uncomfortable or upset) to 10 (extremely comfortable).

No	Item	Answer										
		0	1	2	3	4	5	6	7	8	9	10
1.	Take charge of a group.											
2.	Criticize group member for inappropriate behavior.											
3.	Give instructions to other group members.											
4.	Specify others' roles in a group task.											
5.	Define tasks and responsibilities of group members.											
6.	Assign performance goals to team members.											
7.	Give instructions on how to execute a task.											
8.	Make task execution decisions as a group leader.											
9.	Establish the goals of the group.											
10.	Require group members to follow your instructions.											
11.	Encourage a work group to set its own performance goal.											
12.	Work with group members to develop their performance goals.											
13.	Encourage group members to work together.											
14.	Encourage group members to coordinate their efforts and work.											
15.	Encourage group members to express ideas/suggestions.											

16.	Listen to and consider ideas and suggestions even when you disagree with them.												
17.	Advise group members to exchange information with one another.												
18.	Give subordinates autonomy and freedom of action.												
19.	Encourage group members to search for solutions to problems on their own initiative.												
20.	Encourage group members to assume responsibilities on their own.												

Appendix E: Leader training verbal presentation

Empowering Leader Verbal Presentation:

Good afternoon….,

You have been selected for the mission coordinator in the Leadership Development Simulation. You will lead a team of four staff members, who will play with several different assets to neutralize enemy targets and take advantage of opportunities. This is a very interactive game, which requires high level of coordination and you primary job as the mission coordinator is to coordinate the efforts of the team. This is why you are asked to behave in an empowering way. In general term, being empowering means to ask for ideas and suggestions from your staff members; to give them autonomy to decide how to approach their tasks; to advise all staff members to share any information they have; to urge them to work together and to communicate with one another. More specifically, we ask you to exhibit as many as you can from the following behaviors:

- Ask all staff members for input on the team performance goal –say something like "OK, let's all decide together how we would like to do in this game".
- Advise team members to work together and coordinate their efforts – say, for example "We all need to work together, to communicate freely and support one another in order to be successful"
- Ask as often as you can all staff members to share their ideas regarding the task execution; assure them that there are no bad ideas and you are open to any suggestions.
- Advise staff members to share all the information they have about the game, even if it not information relevant to their specific role. Say something like "Let's hear what all of you see. What else you think is going on?"

In this game you will have to make the final decision about assets allocation, but before you do so we encourage you to ask the input of all the staff members. Say "I think it is better to put X in square Y – do we all agree?"

Next, you will be shown a movie clip which actually exemplifies the empowering leader behaviors you are expected to exhibit during the simulation. What you will see is a dramatization, based on a real situation. Observe closely the mission commander. I will additionally identify the empowering behaviors shown in the movie after we see the clip. Let's watch.

Text read by the empowering leader before the start of the game:

Good afternoon everybody. My name is… and I have been chosen to be the team coordinator for this game. As a coordinator I encourage all of you to communicate freely with one another. Since this is a highly interactive task we need to exchange all the information each of us has and during the game I will urge you to talk to one another and give us all the info you have. Also, we will need ideas and suggestions. Please, tell us any idea you may have for improving our performance. I assure you there are no bad ideas – I personally will take into consideration any idea or suggestion before making a decision. Even for the final decision in each round, we will work as a team – I will ask for your inputs and suggestions. We need to work together, as a team, and help one another. Let's do this.

Directive Leader Verbal Presentation:

Good afternoon….,
You have been selected for the mission commander in the Leadership Development Simulation. You will lead a team of four staff members, who will play with several different assets to neutralize enemy targets and take advantage of opportunities. This is a complex interactive game, comprised of 4 roles and you primary job is to make sure each staff member knows his/her role and performs at his/her best within the role requirements. This is why you are asked to behave in a directive way. There are many practical examples in which directing people provides for excellent results and you will be shown a movie clip which dramatizes a situation of a directive leader.
Now, in general terms, being directive means to assign specific tasks to team members, to ask them to follow your instructions; to assign them specific performance goals and to make your own decisions. More specifically, we ask you to exhibit as many as you can from the following behaviors:

- Ask all staff members to make sure they know their roles, their assets, what their assets can do – say something like "OK, each of you take a few seconds to review your roles. Make sure you know what your own assets are and how these assets work".
- Give staff members specific instructions – say, for example "Info players – you need to deploy as many assets as you can in square X. Operation players, make you sure you know which targets are mobile".
- Ask staff members to follow your command.
- Emphasize that *you* are the mission commander and you have the final authority to make decisions for the team. Say, for example, "OK, deploy your assets and I will decide whether to approve or disapprove the assets allocation".
- Assign performance goal to the team – say "On the next round we need to gain XX more points – staff members, work towards reaching this goal."

Also, as the mission commander, as mentioned, you will have to make the final decision about assets allocation – make sure you execute your right, if you seem fit, to reallocate assets.
Now, let watch the movie clip which presents an example of a very successful directive leader. What you will see is a dramatization, based on a real situation. Observe closely the mission commander. I will additionally identify the directive behaviors shown in the movie after we see the clip.

Text read by the directive leader before the start of the game:

Good afternoon everybody. My name is… and I have been chosen to be the mission commander for this game. As a mission commander, I want each of you to make sure s/he knows his/her role, role requirements, and role specific actions. Also, if I see fit, during the game I will give you specific instruction and I expect you to follow them. Remember, each of you is supposed to work at his/her maximum capacity and my role is to make sure I maximize team performance. As you know, I also have the final

authority about assets allocation and I will use this authority if I believe this will improve the results. OK team, let's do this.

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