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EXAMINING THE IMPACT OF LEADER SOCIAL DISTANCE ON A MULTICULTURAL TEAM

by

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A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy
in the Department of Psychology
in the College of Sciences
at the University of Central Florida
Orlando, Florida

Fall Term
2011

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ABSTRACT

Leading multicultural teams is one of the main challenges faced by today's leaders. The advantages often associated with multicultural teams (e.g., collaboration and integration of different knowledge, ideas, and approaches to a task) are often the major challenges in leading these teams. The literature on effective multicultural teams has identified leadership as an important factor for team effectiveness. Therefore, the goal of this study was to examine the effect of leader social distance in multicultural teams. A lab study was designed to test the impact of experimentally-manipulated leader social distance (socially close or socially distant) on the relationship between team member diversity and team affect, processes, and performance. Results varied for female and for male teams. Specifically, the nature of the interactions between leadership and team diversity depended on the specific cultural dimension measured and the gender of the team. In the end, the impact of diversity on culture in female teams was improved by close leaders (the relationships were positive), and worsened by distant leaders (the relationships were negative) for team affect, processes and viability. For male teams, the impact of diversity was always negative in both leader conditions; however, in distant leader conditions the relationship was more negative. Implications for theory and practice are discussed along with suggestions for future research.

This work is dedicated to my mother, Carmen DiazGranados, and father, Jaime DiazGranados, who have always taught me to value a thirst for knowledge, have a broad world view and have confidence to accomplish anything I put my mind to. Sin sus enseñanzas, yo nunca habría podido soñar con esta meta ni cumplirla.

ACKNOWLEDGEMENTS

There are a great many people who have contributed to the completion of this journey to whom I would like to acknowledge and extend my gratitude.

My deepest gratitude is extended to my co-chairs Dr. Eduardo Salas and Dr. Kimberly Smith-Jentsch. Ed provided me with, what he termed, “opportunities to excel” that have contributed to the diversity of my knowledge and experience. I only now fully realize the impact these opportunities had on my development as a researcher, and I am extremely thankful to him for these opportunities. Kim has an amazing ability to mentor students, providing them with so much developmental and psycho-social support that I cannot find enough words to express my appreciation for her. I truly appreciate their dedication to developing me into a scientist. To both of them, I look forward to the continued development of our relationships as colleagues and friends.

I would also like to thank the rest of my committee Drs. Robert Pritchard, Shawn Burke, and Ron Piccolo. Several people expressed to me that I was ‘crazy’ for having a five person committee. From the beginning I viewed it as a dream team of scientists challenging me to develop a stronger study. Thank you for your time, feedback, and most of all your support. I must extend a special thank you to Bob Pritchard. I will always fondly remember the talks and laughs in his office that kept my perspective in check throughout my time in graduate school. His timing for moving to UCF was impeccable.

Logistically I could not have completed the study reported in this dissertation without the army of research assistants who dedicated their time to helping me.

Specifically to Teresa, Nastassia, Jake, and Matt, I commend their acting abilities, and am indebted to them for putting those skills to work as confederates in this study. You all were superb.

During my journey at the University of Central Florida I have met some amazing people that I truly am thankful for meeting. The colleagues in my classes, in the labs down the hall, and those who were members of the DHSIR lab during my time at UCF have truly contributed to who I am now. I thank them for their friendship, the laughs, at time the tears, and, most of all, the sounding board that they provided me. I hope I was able to return these favors to them.

Thank you to my family and friends who supported me. They were always interested in learning about the work that I was involved in, even if at times they did not quite understand the topics.

Last, but definitely not least, I have to acknowledge Mike Curtis, my husband. He has supported me through this journey unconditionally. Thank you for proofreading when you had your own proofreading to do, listening when I needed an unbiased ear, and most of all thank you for being my solid ground.

FUNDING ACKNOWLEDGEMENT

This work was supported by funding from the Army Research Office MURI Grant to Dr. Michele Gelfand, Principal Investigator, UMD (W911NF-08-1-014), subcontract to UCF (Z885903). The views expressed in this work are those of the author and do not necessarily reflect the organizations with which she is affiliated or her sponsoring institution or agency.

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CHAPTER ONE: INTRODUCTION

Statement of the Problem

Organizational theorists agree that leaders are key contributors to organizational and team success (Burke, Stagl, Klein, Goodwin, Salas, & Halpin, 2006; Chemers, 1993; Chemers & Murphy, 1995; Lord & Maher, 1991). Leaders of teams assist to coordinate the collective resources of the team in order to reach a shared goal. Given the challenges and potential opportunities that multicultural diversity adds to team functioning and performance, managing multicultural work teams is one of the difficult challenges that leaders face in a global economy, and it is something that leaders have much to learn about (Tsui & Gutek, 1999).

Leadership researchers and the popular business press have attempted to address the required skills and success factors to leading diverse teams. These sources provide practitioner-oriented articles and books on how to manage teams based on case studies of specific companies, or theoretical conceptualizations and frameworks from leadership and team researchers which encourage and propose that leaders promote a team identity, make the team aware that cultural differences will influence the team, promote collaboration, and facilitate meetings in order to ensure full participation from all team members (see, Becker, 2004; Burke, Shuffler, Salas, & Gelfand, 2010; Stonehouse, Hamill, Campbell, & Purdie, 2004; Cordery, Soo, Kirkman, Rosen, & Mathieu, 2009; Goodbody, 2005) and increase their effectiveness. While these sources do provide

examples of how issues of multicultural diversity may be addressed in organizations or teams, this work lacks empirical testing.

Therefore, the purpose of this study was to examine the mechanisms through which leaders can facilitate teamwork within multicultural teams, such that performance is maximized and relationships maintained. While leaders have been shown to have a tremendous impact on the performance of homogeneous teams, the mechanisms that leaders need to employ to mitigate against the decrements in shared affect and behavior, that can occur in multicultural teams has yet to be investigated. The specific aim of this study was to investigate the manner in which leadership (i.e., leader social distance) interacts with team diversity present in multicultural teams.

As a result of human innovation and technological progress the process of economic globalization has increased at a rapid rate. The process of economic globalization refers to the integration of economies around the world, and also to the movement of labor and technology across international borders. The International Monetary Fund's report on globalization (Di Giovanni, Gottselig, Jaumotte, Ricci, and Tokarick, 2008) indicates that countries benefit from economic globalization. More specifically, their citizens benefit from access to a wider variety of goods and services, lower prices, improved health, more and better-paying jobs. However, from an organizational perspective globalization can create extreme challenges for organizational leaders.

Over the last 30 years, in response to changing economic conditions and in an effort to share and transfer knowledge across geographic and temporal boundaries,

organizations have adopted the use of teams in order to accomplish their work (Goodwin, Burke, Wildman, & Salas, 2009; Kozlowski & Ilgen, 2006). In a global economy this means that organizational leaders are managing the efforts of teams and organizations with diverse cultural backgrounds. The differences in these cultural backgrounds can present serious obstacles in the leadership of teams and organizations. For example, when members of a team differ on their language fluency this can lead to problems with communication but for the members who lack language fluency, it can also impact the perceptions of those members' capabilities to contribute to the task. Another obstacle that can arise comes from the fact that members may differ in their approach for accomplishing their task. For example, if members of a team differ on the cultural dimension of tolerance for ambiguity, which refers to the manner an individual perceives and processes information about ambiguous situations or stimuli, their reactions to the same situation may be very different. One member may experience stress and react prematurely to situations, where another member may react to the same situation with curiosity and interest. When these types of obstacles arise, the team could stalemate. Cultural diversity in teams can generate difficulties or obstacles leading to the team's success. Leaders are a mechanism by which multicultural teams can overcome their obstacles. Leadership is a fascinating topic with much still remaining to be learned. Thus, it is no surprise that researchers are turning their attention to how leadership and culture interact, and the impact of leadership in multicultural teams.

General Approach

The traditional body of leadership research has focused on leadership styles and has focused most on the leader-follower interaction and not the leader-team interaction. One perspective of leadership not based on leadership styles is the functional leadership approach. Specifically, it addresses the relationship between leader and the team (Fleishman, Mumford, Zaccaro, Levin, Korotkin, & Hein, 1991; Mumford, Zaccaro, Harding, Fleishman, & Reiter-Palmon, 1993; Zaccaro, Rittman, & Marks, 2001). The basic principle of the functional perspective of leadership is that the team leader is, "....to do, or get done, whatever is not being adequately handled for group needs" (McGrath, 1962, p. 5). This perspective defines leadership as social problem solving, in order to help the team accomplish their goal (Zaccaro, et al., 2001). This study investigated the impact of leader social distance (i.e., via functional leadership behaviors) between the leader and the team. Therefore the emerging question is: how does a team leader's social distance impact the processes and the effectiveness of multicultural teams?

The topic of leadership at a distance was initially proposed by Bogardus (1927, 1928), where he proposed that leadership was automatically accompanied by social distance. He further went on to hypothesize that the prestige and thus the influence of the leader is diminished by a reduction of social distance. In other words, a leader's influence and the respect they command are reduced because as social distance is reduced a leader's weaknesses are more apparent to the follower. Since the introduction of this construct, empirical work on leader distance is still lacking. Napier and Ferris (1993) provided a deeper and more extensive examination of this construct. Napier and Ferris

(1993) made an assertion about leader distance and work place dynamics which can also be applied to understanding team dynamics. That is, without understanding the role that leader distance has on team dynamics, our comprehension of team dynamics is lacking. The leader's impact on a team has critical influences on how a team performs. A recent meta-analysis (Burke, Stagl, Klein, Goodwin, Salas, & Halpin, 2006) found that leadership in teams does in fact matter in terms of achieving team performance outcomes. However, an area that has still received little empirical attention is research on *how* a leader influences team dynamics.

As mentioned above, one of the biggest challenges that leaders face in a global economy is managing multinational teams. Leaders are placed in positions where they may need to address unquestioned biases that can interfere with team functioning. Recent research has determined that perceptions of distance vary based on culture (Weinfurt & Moghaddam 2001). Some cultures are more likely to perceive social distances whereas others are not as sensitive to distances between leaders and subordinates. In order to better understand team dynamics and the impact of leadership in diverse teams, this study examined the influence that a leader's social distance has on culturally diverse teams.

Purpose of the Present Study

The lack of controlled laboratory examinations of the impact of leadership on multicultural teams led to the design of the current study, with the aim to answer the question: How does the leader moderate the relationships between team cultural diversity, team emergent states, and team processes? Specifically, how does the team's cultural diversity composition interact with the characteristics of the leader?

Before summarizing the literature and rationale for the hypotheses, the relationships explored in this study are summarized in Figure. This figure 1 represents a model which graphically represents the hypothesized relationships among the variables in the current study. Formal hypotheses predict that leader social distance will moderate the relationship between team cultural diversity and team processes such that team diversity is positively related to team processes when leader social distance is low and negatively related to team processes when leader social distance is high. Formal hypotheses also predict that teams with higher levels of affective emergent states will exhibit better team processes. The model also depicts predictions about the mediated moderated relationship among team diversity, leader social distance, team affective states and team processes. It is also predicted that when teams are high on the cultural dimension of power distance they will have higher levels of team affect and demonstrate more team processes when the leader is socially distant, as compared to when the leader is socially close. A positive relationship between team processes and team outcomes is also expected. Finally, team processes will mediate the moderated relationship among team diversity, leader social distance and team outcomes.

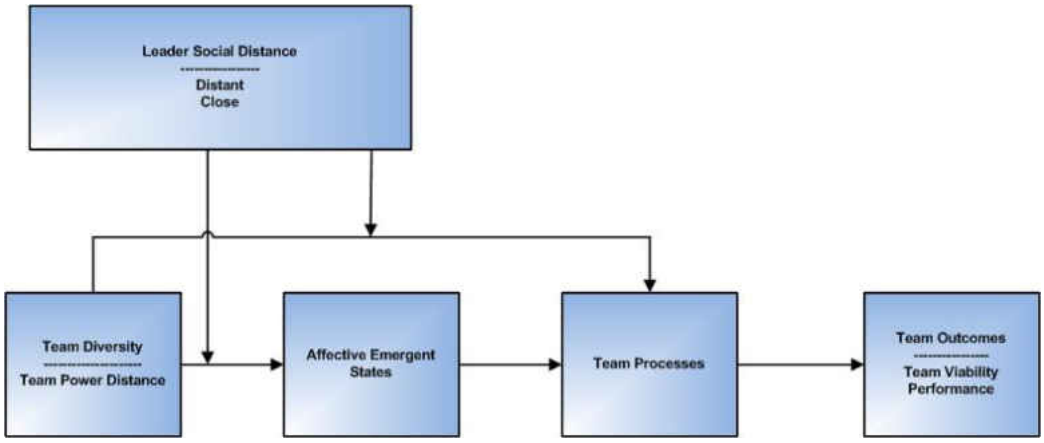

Figure 1. Graphical representation of study variable relationships.

CHAPTER TWO: LITERATURE REVIEW

The current study drew upon several established literatures in order to provide a theoretical basis. The areas that are relevant and informative to the current study are the literatures on leadership, culture, and teams.

Leadership

Leadership has been a topic of interest for centuries. Examples of early writings about leaders and their style of leadership can be found in some of the great literary works of the Western world (e.g., the Iliad, the Odyssey). The intrigue and study of history has essentially been the study of leaders, and answering such questions about who these leaders were, what these leaders did, and why they did the things they did. The intrigue of leadership in organizations began in the 1920s and 1930s (Bass, 1990) when industrial and organizational psychologists set out to investigate the leadership phenomenon.

The first approach used to understand leadership in organizations was the trait approach. This approach revolved around the notion that leaders possessed certain characteristics that non-leaders did not (see Bowden, 1926; Cowley, 1931). The literature on leadership since the trait approach has evolved dramatically. The evolution of the leadership literature has seen leadership researchers hypothesize theories that focused less on traits and more on the situation (Murphy, 1941; Schneider, 1937), the interaction between traits and the situation (Bass, 1960; Case, 1933), a humanistic perspective (Blake & Mouton, 1964; McGregor, 1966), the leader-follower interaction (Fiedler 1967; Graen, 1976; House, 1971), and the styles of leaders (Avolio & Bass, 1991; Bass, 1985).

The traditional body of leadership research has focused on the leader-follower interaction, and even the leader-organization interaction, and not the leader-team interaction. As the use of teams has increased in organizations, research has begun to focus on the role of leadership in team effectiveness. Team leadership is the primary focus of this dissertation.

It has been argued that the examination of team leadership needs to move beyond applying individual and organizational level leadership theories to teams and rather focus on how leaders foster more interconnectivity (Zaccaro, Heinen, & Shuffler, 2009; Kozlowski, Watola, Jensen, Kim, & Botero, 2009). Therefore, rather than utilizing traditional leadership theories as a basis for the development of this study, the literature on team leadership is more relevant. In this study team leadership is defined as the enactment of the affective, cognitive, and behavioral processes needed to facilitate performance management (i.e., adaptive, coordinated, integrated action) and team development (Burke, DiazGranados, & Salas, in press).

The influencing power of leaders and its impact on teams has received some attention in the leadership literature. For example, Shamir, Zakay, Breinen, and Popper (1998) found that transformational leadership (i.e., leaders who show concern for followers' needs) was positively related to team potency. Moreover, Lim and Ployhart (2004) found that team member ratings of their commanders transformational leadership style was positively related to team performance. However, this research has focused on different styles of leadership. One condition of leadership that has been examined in

conjunction with leadership style, specifically with transformational and charismatic leadership, is that of leader distance.

The differences between close and distant charismatic leaders have been examined to some extent, but not recently (e.g., Howell, Bowen, Dorfman, Kerr & Podsakoff, 1990; Katz & Kahn, 1978; Shamir, 1995; Yagil, 1998). However, the examination of leader distance has primarily focused on the physical distance between leaders and followers. Napier and Ferris (1993) and more recently Antonakis and Atwater (2002) built upon past conceptualizations of leader distance (e.g., Ferris, Judge, Rowland, & Fitzgibbons, 1994; Judge & Ferris, 1993; Rothaus, Morton, & Hanson, 1965) and defined distance as a multidimensional construct comprised of psychological, structural, and functional distance.

No research to date has examined leader distance as a multidimensional construct. Moreover, no research has examined the impact of leader distance and how it affects different cultures. The focus of this study was to isolate one dimension of the multidimensional construct of leader distance, specifically that of social distance. This study further investigated how differences in social distance (i.e., proximal and distant leadership) impacts multicultural teams.

Several perspectives from the leadership literature help to explain why the hypotheses proposed in this study, that is how leader social distance will moderate the enactment of affective and cognitive states, as well as, behavioral processes in a multicultural team. As such, a review of the literature on team leadership is provided. However to narrow the focus of team leadership a review of the functional leadership

approach which specifically addresses in broad terms the behavioral functions that leaders can take within a team is also provided. Lastly, the literature on leader distance serves as a basis, and how leader distance may change the influencing power of a leader, in order to fully examine the role of the leader and its impact on team dynamics. However, before an explanation of the leader's role in a team, the nature of team functioning will first be explained. Once an understanding of how teams function is clear and how they specifically function during a team task, the role of the leader can be better articulated.

Team Leadership

Effective team performance is a product of several key characteristics (Zaccaro & Klimoski, 2002; Zaccaro et al., 2001). First, there needs to be an effective integration of team members' actions and knowledge. Since the operating environment of teams has changed dramatically in the last ten years; teams are required to work in much more complex environments, and with increased work tempos. Therefore a second key characteristic of teams is the ability of teams being adaptable; given the dynamic demands of organizations the need for this is greater now more than ever. Third, how effectively the leader organizes the team to make progress towards their team goal contributes to the success of a team.

Work is organized around teams because it is believed that teams can produce more effective results than individuals can on the same task. However, some research has found that teams are only as good as their best team member. Meaning, an exceptional team member can create better outcomes compared to that of what their team can create

(Davis, 1969; Hill, 1982). The benefit of effective team leadership is the achievement that the team reaches a level that no one member could reach (Hackman & Wageman, 2007; Zaccaro, et al., 2009). That is, what the team produces is better than the best team member, and better than the sum of the individual team members' abilities.

The inability of all teams to reach a this level of performance can be attributed to process losses (Steiner, 1972; Zaccaro, et al., 2009). Process losses may be indicative of factors such as poor communication either within the team, or with external resources, poor coordination among team members, or because of a lack of integration of information among the team members. The umbrella term for the overarching processes by which teams effectively perform their task has been attributed to the construct of teamwork. This begs the questions, what can a leader do to help reduce process losses in teams?

Specifically, of interest in the present context is the impact that leader social distance will have on a team. However, before the discussion on leader social distance a discussion on the specific leadership theory what defined the leader's behaviors within the manipulation will be presented. The current study drew from functional leadership to clearly define, and make explicit, the behaviors that the leader would engage in while leading the team.

Functional Leadership

The central premise of functional leadership theory is that of social problem solving. The leader's role is to diagnose problems that may arise, generate and plan potential solutions, and assist the team in implementing solutions (Fleishman et al, 1991).

The critical distinction between the functional leadership approach and that of team leadership is that the functional perspective emphasizes leadership as a boundary role which links the team to its environment, teams operating in complex domains where sensemaking is required, and that leaders are not defined by a specific set of behaviors. Rather, leaders do whatever needs to be done so that teams can perform effectively. A critical premise of functional leadership is that team effectiveness and leader effectiveness are not synonymous. In fact, team circumstances (i.e., member ability, team composition, etc.) may necessitate certain leader activities for team success.

Morgeson, DeRue, and Karam (2010) took a functional approach to understanding team leadership and conducted a thorough review of the team leadership literature in order to develop a taxonomy of team leadership functions (see Table 1).

Table 1. Taxonomy of team leadership functions (adapted from Morgeson et al., 2010)

Transition Phase Leadership Functions
Compose team
1. Selects highly competent team members
2. Selects team members who have previously worked well together
3. Selects team members that have previously worked well with the leader
4. Selects team members so there is the right mix of skills on the team
5. Selects highly motivated team members
Define mission
1. Ensures the team has a clear direction
2. Emphasizes how important it is to have a collective sense of mission
3. Develops and articulates a clear team mission
4. Ensures that the team has a clear understanding of its purpose
5. Helps provide a clear vision of where the team is going
Establish expectations and goals
1. Defines and emphasizes team expectations
2. Asks team members to follow standard rules and regulations
3. Communicates what is expected of the team
4. Communicates expectations for high team performance
5. Maintains clear standards of performance
6. Sets or helps set challenging and realistic goals

7. Establishes or helps establish goals for the team's work
8. Ensures that the team has clear performance goals
9. Works with the team and individuals in the team to develop performance goals
10. Reviews team goals for realism, challenge, and business necessity

Structure and plan

1. Defines and structures own work and the work of the team
2. Identifies when key aspects of the work need to be completed
3. Works with the team to develop the best possible approach to its work
4. Develops or helps develop standard operating procedures and standardized processes
5. Clarifies task performance strategies
6. Makes sure team members have clear roles

Train and develop team

1. Makes sure the team has the necessary problem solving and interpersonal skills
2. Helps new team members learn how to do the work
3. Provides team members with task-related instructions
4. Helps new team members to further develop their skills
5. Helps the team learn from past events or experiences

Sensemaking

1. Assists the team in interpreting things that happen inside the team
2. Assists the team in interpreting things that happen outside the team
3. Facilitates the team's understanding of events or situations
4. Helps the team interpret internal or external events
5. Helps the team make sense of ambiguous situations

Provide feedback

1. Rewards the performance of team members according to performance standards
2. Reviews relevant performance results with the team
3. Communicates business issues, operating results, and team performance results
4. Provides positive feedback when the team performs well
5. Provides corrective feedback

Action Phase Leadership Functions

Monitor team

1. Monitors changes in the team's external environmental
2. Monitors team and team member performance
3. Keeps informed about what other teams are doing
4. Requests task-relevant information from team members
5. Notices flaws in task procedures or team outputs

Manage team boundaries

1. Buffers the team from the influence of external forces or events
2. Helps different teams, communicate with one another
3. Acts as a representative of the team with other parts of the organization (e.g., other teams, management)
4. Advocates on behalf of the team to others in the organization
5. Helps to resolve difficulties between different teams

Challenge team

1. Reconsiders key assumptions in order to determine the appropriate course of action
2. Emphasizes the importance and value of questioning team members
3. Challenges the status quo
4. Suggests new ways of looking at how to complete work
5. Contributes ideas to improve how the team performs its work

Perform team task

1. Will "pitch in" and help the team with its work
2. Will "roll up his/her sleeves" and help the team do its work
3. Works with team members to help do work
4. Will work along with the team to get its work done
5. Intervenes to help team members get the work done

Solve problems

1. Implements or helps the team implement solutions to problems
2. Seeks multiple different perspectives when solving problems
3. Creates solutions to work-related problems
4. Participates in problem solving with the team
5. Helps the team develop solutions to task and relationship-related problems

Provide resources

1. Obtains and allocates resources (materials, equipment, people, and services) for the team
2. Seeks information and resources to facilitate the team's initiatives
3. Sees to it that the team gets what is needed from other teams
4. Makes sure that the equipment and supplies the team needs are available
5. Helps the team find and obtain "expert" resources

Encourage team self-management

1. Encourages the team to be responsible for determining the methods, procedures, and schedules with which the work gets done
2. Urges the team to make its own decisions regarding who does what tasks within the team
3. Encourages the team to make most of its own work-related decisions
4. Encourages the team to solve its own problems
5. Encourages the team to be responsible for its own affairs
6. Encourages the team to assess its performance

Support social climate

1. Responds promptly to team member needs or concerns
2. Engages in actions that demonstrate respect and concern for team members
3. Goes beyond own interests for the good of the team
4. Does things to make it pleasant to be a team member
5. Looks out for the personal well-being of team members

Drawing from the episodic cycles of team processes as delineated by Marks and colleagues (2001) Morgeson and colleagues developed their taxonomy around the transition and action phases. During the transition phase the critical team leadership functions include defining the mission, goals and standards of performance, making sense

of the team environment, and facilitating feedback. These leadership functions help to develop the foundation of the team. The action phase, when the team is focused on the direct contribution at accomplishing the team's goal, requires leader activities that help monitor the team and its performance environment, challenge the team to continually improve, and cultivates a positive social climate within the team.

In the current study the functional leadership approach was used to define the behaviors that the confederate leader exhibited during the task. Appendix C provides the leader's script with the leadership behaviors highlighted and how each condition differed. The condition under which these behaviors will be conveyed to the team will be based on the theory of social distance.

Leader Social Distance

There is perhaps no construct that is so fundamental to interpersonal interactions in organizations, yet so incompletely understood, than distance in organizations. Graen (1976) has contributed greatly to our understanding of the aspect of distance in relation to a leader and a subordinate. His leader member exchange model of leadership hypothesizes that in-groups and out-groups exist within this leader-subordinate relationship. Members who are considered by the leader to be a part of the in-group enjoy different rewards, and benefit from different leadership behaviors and experience different levels of satisfaction and performance ratings. These benefits are attributed to the relative closeness in their working relationship with their leader.

Researchers have explored the phenomena of organization and leader distance, but have done so by examining it as a unidimensional construct. Rothaus, Morton, &

Hanson (1965) examined psychological distance, Kerr and Jermier (1978) examined spatial distance, and Sundstrom, Burt, & Kamp (1980) examined physical distance. Napier and Ferris (1993) and more recently, Antonakis and Atwater (2002) examined distance as a multidimensional construct comprised of social, structural, and functional distance. Social distance refers to the psychological effects of actual and perceived demographic, cultural and value differences between the supervisor and the subordinate. Napier and Ferris delineated that demographic similarity; power distance, perceived similarity, and values similarity are dimensions of social distance. Demographic similarity is based on the age, race or gender differences between leaders and subordinates. Power distance refers to follower acceptance of power differentials between the follower and the leader. Perceived similarity refers to the degree to which the subordinate believes they are similar to the leader. Lastly, values similarity refers to similarity of beliefs, values, or attitudes between followers and their leader. This study focused on the dimension of social distance.

Structural distance encompasses those aspects of distance brought about by physical structure (e.g., actual physical distance between work spaces of the supervisor and subordinate) as well as organizational structure (e.g., the degree of centralization or span of management) and supervision structure (e.g., the amount of task and social contact between the supervisor and subordinate). This type of distance is often discussed in terms of propinquity (physical distance).

Functional distance describes the degree of closeness and quality of the functional working relationship between the supervisor and subordinate, in essence, whether the

subordinate is a member of the in-group or the out-group of the supervisor. This dimension is conceptually distinct from psychological and structural distance in that it describes the behavioral manifestation of distance in the functional working relationship between the supervisor and subordinate. Functional distance is based on how well the leader and subordinates understand each other.

Antonakis and Atwater (2002) expanded upon Napier and Ferris's (1993) model of distance in several important ways. Napier and Ferris suggest that more interaction between subordinates and leaders results in better performance. However, Antonakis and Atwater believe that the closeness and therefore the effectiveness of a leader is dependent on many factors not one dimension alone. Second, Antonakis and Atwater posit that social and interaction distances are independent of one another. That is, identification with the leader is possible if social distance is small or large. Most important, and pertinent to this study, is that Antonakis and Atwater went beyond the single unit of analysis used by Napier and Ferris. Rather they took into consideration the impact of leader distance on different levels of analysis, teams and collectives. Table 2 outlines the dimensions of leader social distance with example indicators for each distance construct.

Table 2. Dimensions of Leader Distance

Distance Construct	General Indicators	Specific Indicators
Social Distance	Attributional Charisma	Organizational performance cues, image-building techniques, visionary behaviors, use of rhetoric, and articulation of ideology
	Authority	
	Demographic Similarity	Age, sex, education, experience, and race distance
	Power	
	Power Distance	

	Perceived Similarity	
	Rank	
	Social Standing	
	Status	
	Trust	Ethical, moral, and altruistic orientations
	Values Similarity	Work related value, sex role orientation, and cultural value distance
Structural Distance	Design Distance	Office design distance
	Opportunity to Interact	Social contact at work, social contact outside work, accessibility
	Proximity to Leadership	
	Spatial Distance (Task Contact)	
	Span of Management	
Functional Distance	Affect	Liking, support, trust
	Degree of Leader to Follower Interaction	
	Frequency of Interaction	
	Relationship Quality	Supervisor satisfaction, relationship satisfaction

Leaders do not lead in a social vacuum; leadership indeed is a social affair (Mintzberg, 1973; Porter & McLaughlin, 2006). Despite the influence of leaders, the distance construct has been overlooked within leadership research. Moreover, in the teams' literature no attention has been paid to the impact of social distance between leader and team, and its effect on team performance. Leader distance has been defined as a multidimensional construct consisting of social, structural, and functional distance. To further understand how social distance can mitigate the decrements often experienced by multicultural teams, the current study created a lab-based study with leadership having two levels of distance, socially distant or socially close.

Culture and Diversity

Managing diverse work teams is one of the difficult challenges that leaders face, and it has been described as "not going smoothly" (Tsui & Gutek, 1999, p. 1). The changing demographic composition of the workforce due to labor and market trends has created these challenges for today's organizations and leaders (Triandis, Kurowski, & Gelfand, 1994). Diversity in organizations has often been portrayed as the "double-edged sword". That is, on one side there are positive effects associated with diversity (e.g., increased levels of innovation and problems solving effectiveness, see Horwitz & Horwitz, 2007), but on the other side there are negative outcomes associated with diversity (e.g., reduced interpersonal liking, and intergroup communication, see Tsui & O'Reilly, 1989).

Prior research provides evidence that culture is defined as the manner in which individuals perceive, think, and make decisions about their environment (Triandis, 1995). Therefore, I argue that heterogeneity on cultural dimensions will influence team processes and team outcomes. Complex team tasks encompass both individual and team processes (Ilgen, Major, Hollenbeck, & Sego, 1991). Individuals engaged in complex tasks often have specialized knowledge or distributed information about different pieces of the problem. Therefore, critical team processes such as information sharing and participation in team discussion are required for effective team performance. I argue that cultural diversity will impact how teams engage in team processes.

The term diversity is meant to refer to the distribution of certain attributes among interdependent team members (Jackson, Joshi, & Erhardt, 2003). Some attributes are

easily detectable and are considered to be surface-level attributes (e.g., age, sex, racio-ethnicity), while others are underlying attributes, deep-level, and only become evident after interaction between individuals (e.g., personality, attitudes, values). To better understand the impact that cultural diversity has on team processes and outcomes, this research explored the relationship between diversity -- focusing on deep level diversity on the cultural values of collectivism, individualism, tolerance for ambiguity and power distance-- and a team's ability to effectively coordinate their attitudes and behaviors to effectively perform a complex team strategy and decision making task.

Organizations are becoming increasingly diverse. Globalization has created commerce without borders, which in essence means that companies are building their resources by partnering with companies located outside of their natural domestic borders. It is quite common to see listed in the paper that a company based in Australia is bidding for a Canadian company, or that a company has offices in London, Bogota, Hong Kong, Singapore and Sao Paulo. Increase of diversity in organizations can be associated with benefits or detriments. To better understand how to harness the potential that can be found in diverse teams, more empirical work needs to be conducted to investigate multicultural teams rather than conducting more multinational studies or cross-national comparisons. Therefore, this study examined multicultural teams and the impact that leader distance may have on the relationships between diversity and processes and team outcomes. I theorize that social distance, specifically socially close leaders, will provide a context that may minimize the negative effects of being different based on cultural

dimensions. In other words, the negative effect of diversity and team processes will be improved by close leaders. Therefore, formally stated hypothesis 1 states:

> ***Hypothesis 1:*** The relationship between team cultural diversity and team processes is moderated by leader social distance in such a way that teams' diversity is more positively related to team processes when leader social distance is low than when leader social distance is high.

Team Affective Emergent States and Team Processes

Affective emergent states describe the states of teams as opposed to how team members interact. Emergent states represent the products of team experiences and when teams interact often, these emergent states then become new inputs to subsequent processes and outcomes. Examples of affective emergent states include cohesion, psychological safety, and collective efficacy. A meta-analysis by Gully et al. (2002) showed that the relationship between collective efficacy, the feeling of the overall capabilities of the team to reach their goal, and team processes was positive and significant. The theoretical basis of this finding, and others similar, is based in social cognitive theory, that efficacy is a determinant of the amount of effort that an individual will put forth in order to successfully accomplish the teams goal (Bandura, 1986). Other affective emergent state research, specifically that of psychological safety, has also reported similar findings between affect and team behaviors. For example, Edmondson (1999) found a significant relationship between psychological safety, the belief that the team is safe for interpersonal risk taking, and learning behaviors. Based on these empirical findings the following hypothesis is put forth:

Hypothesis 2: Team affective emergent states are positively related to team processes.

Team affect states should facilitate teamwork processes such as information sharing and discussion participation in a team because it alleviates excessive concern about others' reactions to ones' own actions, sharing of information, or stating ones' points of view which have the potential for threat. For example, if team members are unwilling to share a dissenting point of view based on unique information they hold, the team may stay the course in making a decision that does not allow them to reach their performance goal. In contrast, if a team member feels that team members' are capable of accomplishing their task, it is more likely for the individual to mention unshared information, and to participate in the discussion.

Brown and Leigh (1996) found that higher levels of job involvement and exertion of greater effort resulted when affect (e.g., psychological safety) was high in organizations. West and colleagues (West, 1987; West & Altink, 1996; West & Farr, 1990) argue that one of the main influences on team processes (i.e., problem solving processes) is affective states. They argue that individual participation is inhibited when people feel insecure and unsafe in their environment. Individuals who feel threatened or unsafe tend to stay the course. That is, they continue to use routines that have worked in the past rather than taking the risk to attempt or create new methods. Moreover, they are likely to not divulge or share unique information that they may be privy to. Given these findings, I formally hypothesized that:

Hypothesis 3: Team affective emergent states mediate the moderated relationship among team diversity, leader social distance and team processes.

Team level power distance will also likely interact with the leader social distance. Power distance is defined as the extent to which people regard unequal status differences as legitimate (Hofstede, 1980). Those individuals who rate high on power distance will expect that those individuals higher in status will emphasize their status over them. Moreover, individuals who rate high on power distance accept their lower status and authority roles vis-à-vis those that have more power (Adler, 1991). Specifically in the organizational context, individuals high on power distance will likely accept a high structured authority relationship with leaders. When individuals that are comfortable with and expect these types of status differences encounter a situation where their leader does not embody the high status rank that they would expect, this incongruency could lead to detriments in affect. I believe that teams that rate higher on power distance will actually have higher levels of affect when their leader acts as they would expect them to act, socially distant. Therefore I formally hypothesize:

Hypothesis 4: Leadership condition and team power distance will interact in such a way that teams high on power distance and led by leaders who are socially distant will have a higher positive affect than teams high on power distance and led by leaders who are socially close.

Team Processes and Team Outcomes

In a meta-analytic investigation of the impact of information sharing predicting team performance, Mesmer-Magnus and DeChurch (2009) reported that information

sharing of unique information was more predictive in hidden profile tasks (i.e., where relevant information is distributed among team members; Stasser & Titus, 1985) than on non-hidden profile tasks. When information is distributed among team members it is important for information to be shared in order to make effective team decisions. Cohen and Levinthal (1990) argued that when individuals who have unique information interact, the process of participating in discussion increases the capacity of the team to make novel linkages and associations beyond what any one individual could do. Communication of information facilitates team decision making because team members become aware of unspoken assumptions, which results in improved decision quality (Schultz, Ketrow, and Urban, 1995). This suggests that information sharing should be positively related to team performance outcomes.

As previously mentioned, not all team outcomes are task-driven. In addition to performance outcomes, affect based team outcomes (e.g., team viability) are also critical to team performance. Team viability, often characterized as a general dimension of team outcomes (Sundstrom, De Meuse, & Futrell, 1990), is the team's attitude towards remaining on the team. Team viability refers to the degree team processes maintain the willingness of team members to continue their collaboration. Unlike team task performance, team viability is primarily affect, attitude, or emotion based (Barrick et al., 1998). Teams who engage in information sharing and discussion participation will be more satisfied with their experience with the team, and report higher levels of team viability. Therefore, it is posited that the more teams engage in team processes like information sharing and discussion participation, the greater the team performance

outcomes and team viability. Moreover, team processes will mediate the moderated relationship between team diversity, leader social distance, and team outcomes.

Hypothesis 5: Team processes are positively related to team outcomes.

Hypothesis 6: Team processes will mediate the moderated relationship among team diversity, leader social distance and team outcomes.

Similar to hypothesis 4, I believe that team level power distance will also interact with leader social distance to predict processes. Again, power distance refers to the extent to which people regard unequal status differences as legitimate (Hofstede, 1980). Because I think it is important for there to be a fit between the team and the leader, if there is an incongruence between what the team believes the status differential should be between a leader and his/her subordinates then I believe that this will impact how the team members interact with one another. Hypothesis 5 predicts this interaction will impact team processes. Formally stated, I put forth the following:

Hypothesis 7: Leadership condition and team power distance will interact in such a way that teams high on power distance and led by leaders who are socially distant will have higher team processes than teams high on power distance and led by leaders who are socially close.

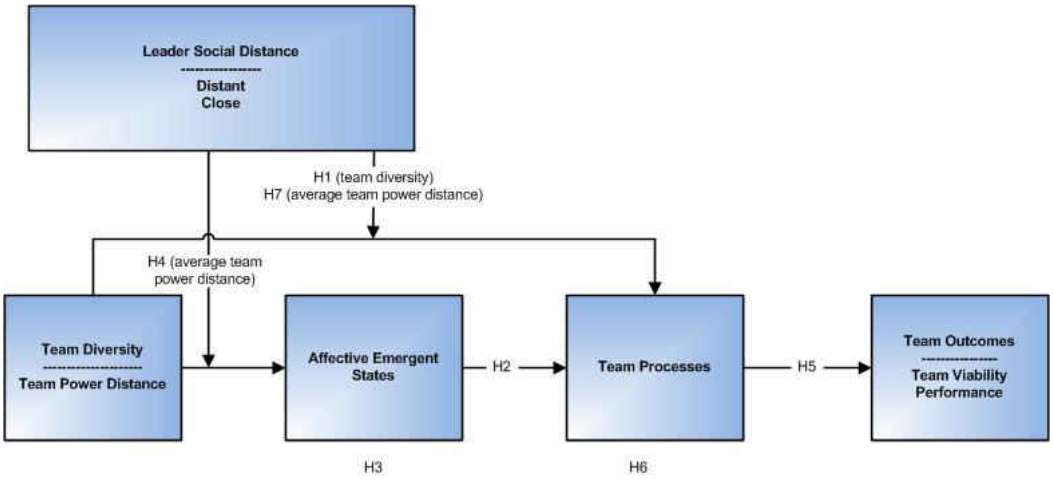

Figure 2. Hypothesized relationships between study variables.

CHAPTER THREE: METHODS AND MATERIALS

Participants

Participants in the present study were 496 undergraduate psychology students assigned to 124 four-person teams. Participants' average age was 19.92 years (*SD* = 2.86). There were 65 all-female teams and 59 all-male teams. Teams were assigned a trained confederate leader of the same sex. Hypotheses were tested separately for male and female teams. The ethnicity represented in the sample include Caucasian (51%), Hispanic or Latino (19%), Black/African American (13%), Asian or Asian American (10%), Pacific Islander (2%), American Indian (2%), Middle Eastern (2%) and other (2%, predominantly consisting of Caribbean). I conducted Analysis of Variance (ANOVA) tests in order to determine if participants from these ethnicity/racial groups differed with respect to their scores on any of the cultural dimensions measured in this study. No significant differences were found. Participants were recruited using two main sources: (1) using the Psychology department's participant management system, SONA, and (2) using a local area posting site (e.g., Craigslist) to recruit students for their participation. Out of all teams 41% of the individuals were recruited from Craigslist and 59% were recruited from SONA.

The power analysis was conducted prior to data collection. I used equations provided by Tabachnick and Fidell (2007) and Green (1991) to calculate the required sample size needed to analyze the data. Specifically, I used Green's equation, included below, which accounts for anticipated effect sizes when calculating sample size requirements for multiple regression was used.

$$N \geq 8 / f^2 + (m - 1)$$

The anticipated effect size is represented by f^2, N is the required sample size, and m is the number of predictors in the equation. The equation used to test the mediated moderation hypotheses contain 10 predictors (the most of any equation in the analyses conducted). To be conservative, f^2 was set to be .13 (Cohen, 1988). Therefore, by substituting these values into the equation shown above, the minimum required sample size is 71 for detecting a significant effect at an alpha level of .05 and a power level of .80. The overall sample size would have met this minimum requirement, if hypotheses would have been analyzed using all teams (male and female) in the same sample. However, because male and female teams reacted differently to diversity and the leadership manipulation, analyses were conducted separately for male and female teams. Therefore, power in detecting effects is lower than anticipated.

Design

This laboratory-based study used a leader manipulated variable consisting of two levels of social distance, high distance (socially distant leaders), and low distance (socially close leaders). Team composition with respect to heterogeneity on cultural dimensions was measured as a continuous variable rather than experimentally manipulating team composition with respect to heterogeneity. Research participants either signed up via the psychology department's online participant management system (SONA) or via email per communication with me from craigslist.org. Once the participants signed up for a specific timeslot (4 participants per timeslot), which was

randomly assigned to a leader condition (distant or close), students were provided the option of being compensated with class credit points as approved by the psychology department or with cash ($8 per study hour). The study lasted for 2.5 hours. Analyses were conducted to determine any differences between paid participants and SONA credited participants on all study variables and no differences were found. Prior to arrival, the participants were aware that the study was a team-based study. All study materials and methods were approved through the university internal review board (see Appendix A).

Procedure

Once informed consent was acquired individually from each participant, the 4 individuals were taken to the laboratory where each participant was randomly assigned to one of four roles seated around a square table.

Measurement of Actual and Perceived Diversity

The first survey that the participants completed consisted of the measures of the four dimensions of culture (i.e., collectivism, individualism, tolerance for ambiguity, and power distance) and of their perceived diversity of the team with respect to culture. Next, graphical representations of the four team members' actual scores on each of the cultural dimension were produced. Since all measures were completed via Qualtrics, an online survey tool, the leader was able to download the data in real time from the internet and import the data into the Excel based spreadsheet which was then linked to a PowerPoint file, which created the diversity elicitation graph. An example of the graph is included in Figure 3.

Prior to receiving the graphs which showed the participants their scores on each of the cultural dimensions, participants were asked to rate their perceptions of their team's diversity again. The RA then gave each participant a graph and provided them with an overview of how to interpret the four separate graphs. As part of the explanation provided to the team members the RA provided a definition of each cultural dimension (see Appendix B for the definition script). The RA never interpreted the graphs for the team; they simply explained the concepts of each cultural dimension. Interpretation of the graphs was left up to each team member to interpret. Finally, participants were asked once again to complete the measure of their perceived team diversity.

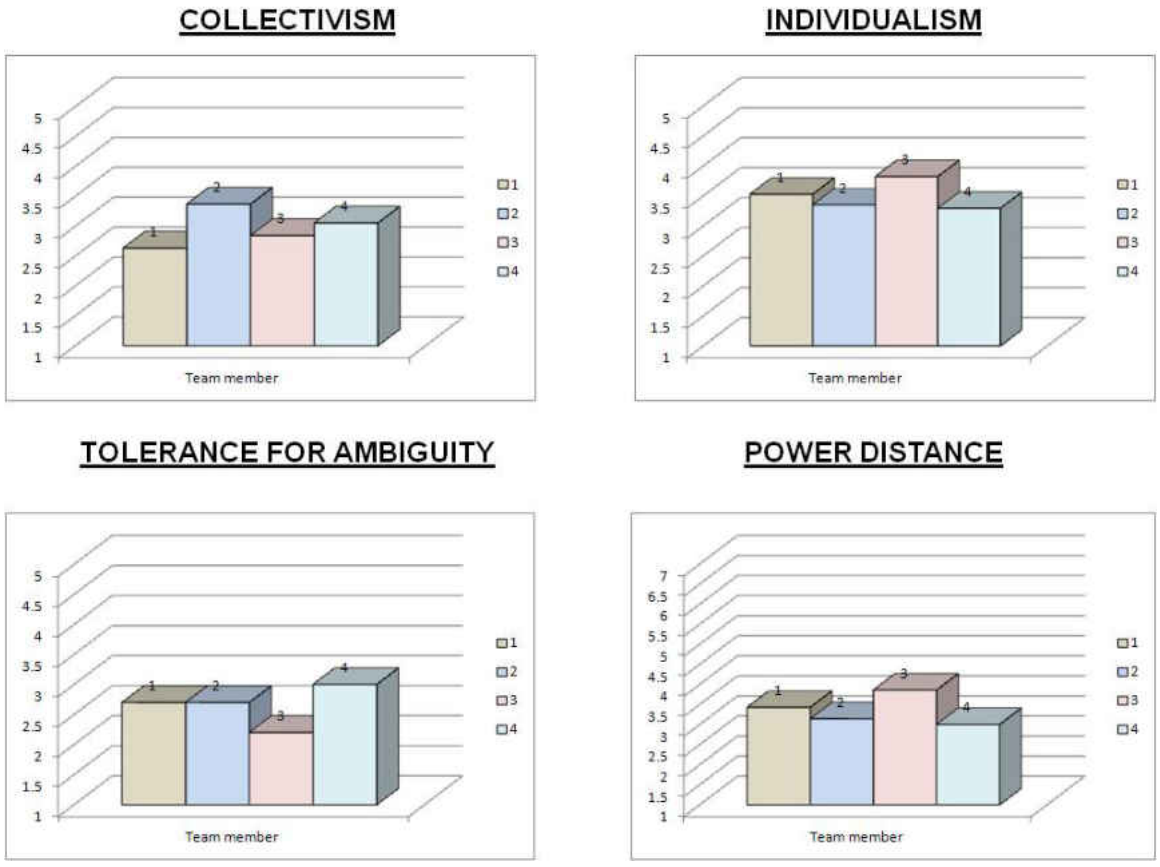

Figure 3. Diversity elicitation graph

Declarative knowledge training and quiz

The team engaged in a 20-minute RA led scripted training on the study task. The training focused on declarative knowledge and purposefully did not cover any procedural information which would be covered by the leader. The declarative knowledge training consisted of board set-up, what each item on the board represented and provided an overview of how to move around the board. The training did not include explanations on the mechanics of how to play the game, their goal, or their individual roles.

Following the declarative knowledge training with the RA, a declarative knowledge quiz was administered to ensure that all team members understood the basic mechanics of the game. The RA then graded the quiz and provided the team with feedback on any responses which were incorrect. Next, the RA presented the leader, as they walked into the lab space. The leader was introduced as someone who had led other teams before and as an expert in the game *Pandemic*. During the introduction, the RA described the leader to the team as someone who had a tremendous amount of experience playing the game and had knowledge on how to win the game.

Task

The research platform used for this study was a modification of an off the shelf board game called *Pandemic,* published by Z-Man Games (2008, Figure 4 displays a picture of the game board). The task is collaborative in nature with the primary goal being to save the world by curing 4 diseases before pandemic occurs. Participants take on 1 of 4 roles, of which each has a unique ability that the other team members do not have.

The participants must collaborate with one another to coordinate their efforts to win the game.

This task was particularly suited for the purposes of this research for two specific reasons. First, the game represents a collaborative task. That is, no one individual can win the game for the team and in essence the team is playing against the shuffle of the deck. To work most efficiently and effectively, each player must share the information provided to them about their specific roles and the player cards they hold in their hand in order for the team to be able to work towards reaching their goal. Second, task features are critical to eliciting team process behaviors in order to be able to study them. Due to the nature and the complexity of the game, team processes were observable during the study.

Figure 4. Picture of the study platform *Pandemic*.

Leader Manipulation

Once the leader entered the room the leader portrayed a specific persona of a distant or close leader, depending on the condition assigned to the team. Each confederate had received over 40 hours of training, didactic and simulated. Each confederate's training consisted of the development of their knowledge on the theory of leader distance and social distance, mock practice sessions with the RAs as the participants, observation of digitally recorded videos of themselves and the other confederates acting out the script, and participation in debriefs after each session to ensure all confederates portrayed each dimension of social distance the same. Each confederate also performed at least 10 live pilot sessions to ensure they were prepared for their role.

The first 15 minutes of the leader's interaction with the team was spent explaining the procedures and structure of playing *Pandemic*. It was during this training that the goal of the game was communicated to the team, and the procedures they would have to follow in order to play the game (i.e., selecting two player cards per turn, not showing team members the cards in the their hands, etc.). The leader's script was developed so that in each condition the leader displayed the same specific functional leadership behaviors. In order for the manipulation of leader social distance to be conveyed by the leader, the script was modified so that when the leader communicated a specific functional leadership behavior, depending on the condition, they would emphasize, or not, the distance between them and the team on authority, power and structure. I have included in Appendix C a table which presents the leader script and how it aligns to each functional leader behavior and how each condition's script was modified to emphasize each condition of social distance.

Upon completion of the leader-guided training the leader then provided the team with a 10 minute practice round, where the players were instructed to play the game with an open hand (the players were allowed to discuss freely the cards in their hand throughout the study, but they were instructed to not show each other the cards in their hands after the practice round). During this time the participants were guided through their moves by the leader and they were allowed to ask the team leader any questions regarding how to play the game but never regarding strategy. After this round, team members completed measures involving their affect toward the team as well as questions regarding their perception of their team's diversity.

Practice Round

Once the practice round was finished, the leader then started the team on a training round which lasted for 15 minutes. The participants were instructed by the leader that he or she would be observing them so he or she could provide feedback to the team at the end of the round. In addition to observing their moves, the leader would also be managing external resources which would be presented to them by the RA. After completing the training round, participants completed measures of perceptions of diversity and of their team processes during the training round. Upon completion of the measures, the leader then provided the team feedback. The training round provided the team with a realistic preview of what was expected of them by the leader (i.e., structure of play) and also provided them with the opportunity to gain a better understanding of how to play the task.

Post-Performance Measures

After the training round the team then engaged in their performance round, which was similar to the training round in time and format (i.e., observed by the leader, external resources, etc.). Immediately after, the leader provided the team with his or her feedback and then left the room. At this point, team members completed measures of their team processes during the performance round and their perceptions of team viability. During the experimental debrief it was explained to them that the leader was a trained confederate acting in a particular manner and following a script. A flowchart explaining the experimental procedure is presented in Figure 5.

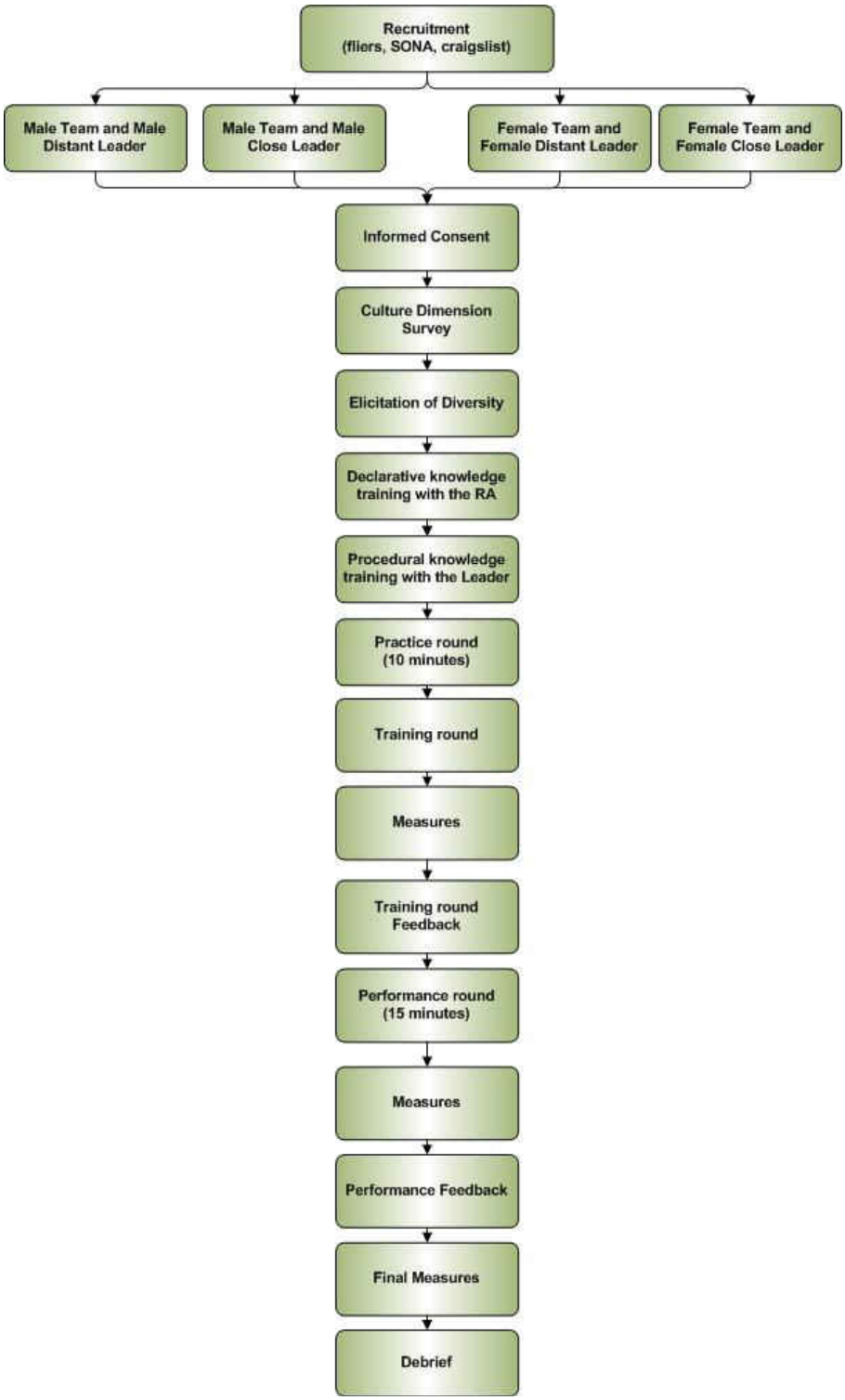

Figure 5. Flowchart of experimental procedure.

Measures

As previously mentioned all survey data were collected via laptops using an online survey system called Qualtrics. All scales used a Likert-type response scale and were examined for any necessary reverse coding. Validated scales were used when possible, but some scales required some modifications to fit the context of this study. In order to statistically control for as much variance as possible, a variety of variables were collected and used as control variables when appropriate. All Cronbach's alpha reliability coefficients, which are presented below, and in Table 8 and Table 9 presented on the diagonal, were calculated using individual team member ratings to determine the internal consistency of each of the measures. Cronbach's alpha is also reported for the composite scores which were created for affect and processes. These calculations were based on the average team-level score of each individual measure to calculate alpha.

Control variables

In order to statistically control for as much variance as possible, a variety of variables that are conceptually and empirically related to teamwork were measured and used as control variables when appropriate. The following describes each control variable by providing the citation, the scale used, sample items, and coefficient alpha information. See Appendix H for full scale descriptions.

Trust

Trust was not used as a part of the affect measure since research has demonstrated that trust is a promoter of teamwork behaviors (Mayer, Davis, & Schoorman, 1995). Trust was used as a significant control variable in several of the analyses for both male

and female teams. The two-dimensional scale by Wildman and colleagues (2009) was used and includes 16-itms which measure the dimensions of trust (8-items) and distrust (8-items). Each item was rated on a 5-point Likert scale from "not at all" to "very much so". Sample items include, "How certain are you that your teammates will perform well" and "How positive are you that your teammate will try and do what is best for the team". Internal consistency of this measure was calculated on the individual level and it was determined to be appropriate .92.

Levels of Self-concept

Levels of self-concept refer to people's self-definitions when they relate themselves to others (Markus & Wurf, 1987). These levels of self-concept have been linked to the forms of social exchange (e.g., negotiation, reciprocal, etc., see Flynn, 2005). The three dimensional scale developed by Selenta and Lord (2005) was used and includes 15-items. Each item is rated on a 5-point Likert scale from "strongly disagree" to "strongly agree". Sample items include, "I value friends who are caring, empathetic individuals" and "When I become involved in a group project, I do my best to ensure its success". Internal consistency of this measure was calculated on the individual level and it was determined to be appropriate at .81.

Personality

As demographic variables may influence team performance (Barrick, Steward, Neubert, & Mount, 1998; Driskell, Hogan, & Salas, 1987), I used two of the big five personality dimensions as control variables. The MINI-IPIP scales developed by

Donnellan, Oswald, Baird, & Lucas (2006) were used. These scales include 20-items and use a 5-point Likert scale from "very inaccurate" to "very accurate". The two dimensions that proved to be statistically significant control variables were the dimensions of conscientiousness and neuroticism. Internal consistency of these two sub-dimensions of personality were calculated based on the individual level data α =.67 for conscientiousness, and α =.68 for neuroticism.

Self-construal

Self-construal is an individual factor that has been linked to the relationship between cultural variables and interaction styles (Gudykunst, et al., 1996). Self-construal is defined as one's self-image and is composed of two subdimensions (Markus & Kitayama, 1991). The Oetzel and Ting-Toomey (2003) 8-item scale was used to measure self-construal. The measure used a 5-point Likert scale from "strongly disagree" to "strongly agree". Sample items of this measure include "I respected the decisions made by others" and "I tried not to depend on others". Internal consistency of this measure and the subdimension of interdependence were calculated based on the individual level data α =.72, for both the overall scale and the subdimension of interdependence.

Team Diversity on Cultural Dimensions

Team diversity with respect to dimensions of culture was operationalized using the four cultural dimensions of collectivism, individualism, tolerance for ambiguity, and power distance. Standard deviations for team member scores on the following scales were used.

Collectivism

To assess the dimensions of collectivism and individualism the two-dimensional scale of individualism and collectivism created by Oyserman, Coon, & Kemmelmeier (2002) was used. The total scale consisted of 36-items, of which 19-items measured the construct of collectivism. Cronbach's alpha coefficient for the collectivism measure was .86. Each item was rated on a 5-point scale from "strongly disagree", coded 1, to "strongly agree", coded 5. A sample item for collectivism includes, "My family or friends are central to who I am."

Individualism

The scale that measured individualism consisted of 17- items which measured the construct of individualism. An acceptable internal consistency reliability for the measure of individualism was found with α =.86. Each item was rated on a 5-point scale from "strongly disagree", coded 1, to "strongly agree", coded 5. The scale of individualism included items such as, "I prefer being able to be different from others" and "It is important for me to remember that my personal goals have top priority".

Tolerance for Ambiguity

Tolerance for Ambiguity was measured using McLain's (1993) 22-item scale. Acceptable internal consistency reliability for the measure of tolerance for ambiguity was found with α =.87. Sample items of this scale include "I am tolerant of ambiguous situations" and "I generally prefer novelty over familiarity". This scale used a 5-point response scale ranging from "strongly disagree" to "strongly agree".

Power Distance

The last cultural dimension measured was that of power distance. I used the scale developed by Maznevski, DiStefano, Gomez, & Wu (1997) which consists of 7-items using a 7-point Likert scale. Acceptable internal consistency reliability for the measure of power distance was found with α =.77. A sample item of the power distance measure included "A hierarchy of authority is the best form of organization".

In order to create cultural heterogeneity indices I calculated the standard deviation of each cultural dimension for all 4 participants. The measure of heterogeneity should be interpreted as the larger the heterogeneity score the more diverse the team is on that specific cultural dimension. In order to test Hypotheses 4 and 7 which make predictions about average power distance, an average score of power distance was used in the analyses. In Table 3 the intercorrelations between averages and standard deviations for all culture dimensions are presented. See Appendix D for full scale descriptions.

Table 3. Intercorrelations between culture dimension measures (averages and standard deviations)

Variable Name	1	2	3	4	5	6	7	8	9
1. Average Collectivism	--								
2. Average Individualism	-.437**	--							
3. Average Tolerance for ambiguity	-.212*	.109	--						
4. Average Power distance	.232**	-.058	-.137	--					
5. Collectivism heterogeneity	.037	-.198*	.191*	-.168	--				
6. Individualism heterogeneity	-.462**	.613**	.218*	-.141	-.122	--			
7. Tolerance for ambiguity heterogeneity	.062	-.027	.024	.074	.140	-.026	--		
8. Power distance	-.001	-.180*	.213*	-.198*	.418**	-.139	.317**	--	

heterogeneity									
9. Perceptions of cultural diversity [+] (Post training round)	-.099	.091	-.035	-.119	.089	.024	.104	-.012	--
10. Perceptions of cultural diversity (Post performance)	-.086	.120	-.058	-.142	.050	.092	.103	-.037	.925**

Note. $N = 124$. ** $p < .01$, two-tailed. * $p < .05$, two-tailed. [+] Higher ratings mean perceptions of similarity.

Perceived Diversity

Perceptions of team cultural diversity were measured with an item that asked the team "Overall, how similar or dissimilar culturally is your team". The rating scale ranged from "very dissimilar" coded as a 1, and "very similar" coded as a 7. Therefore, higher ratings should be interpreted as perceptions of team similarity and lower ratings on this item mean that team members perceived their team to be dissimilar. Perceptions of diversity were collected during the second survey, post presentation of the diversity elicitation graph, post practice round and after the performance round.

To determine whether viewing the diversity graphs affected perceptions of team diversity I conducted an analysis of the data in which team level perceptions of diversity were predicted by actual team diversity on each of the cultural dimensions. In the model, I used team-level perceptions of diversity collected prior to viewing the diversity graphs as a control variable, and then added the four heterogeneity measures in the same step. The only significant predictor of post-graph diversity perceptions was the actual team heterogeneity with respect to individualism. The relationship between heterogeneity on individualism and perceptions of cultural diversity was positive; meaning that as diversity on individualism increased so did team-level ratings of the perceived diversity within their team.

I also examined if actual diversity, as measured by heterogeneity on each cultural dimensions was a predictor in the participants initial perceptions measure prior to receiving the diversity elicitation graph. Results of this analysis proved that the model was not significant. Correlations between perceptions of diversity are included in Table 3.

Affect

The surveys that were used to measure the team's level of affect consisted of psychological safety, collective efficacy, and cohesion. A principal components analysis revealed that a single factor explained 69% of the variance in these measures. Therefore, I combined the three team-level measures of affect into a single affect composite by averaging the team-level averages on each measure of psychological safety, collective efficacy, and cohesion. More detail on each individual measure is provided below. Cronbach's alpha coefficient for team level affect scores on the three measures of affect (i.e., using psychological safety, cohesion, and collective efficacy as "item scores") was .69. Correlations between the individual measures are provided in Table 4. These three measures were averaged to form an overall team score for affect.

Psychological Safety

To measure psychological safety the scale by Edmondson (1999), which measured the shared belief that the team is safe for interpersonal risk taking, and a scale developed by May, Gilson, & Harter (2004), which measured the feeling that one can show and employ one's self without fear of negative consequences to self-image, status, or career, was used. Sample items include "If you make a mistake on this team, it is often held against you", "It is safe to take a risk on this team," and "No one on this team would

deliberately act in a way that would undermine my efforts". The response scale used for this measure was a 7-point scale ranging from "never" to "always". An acceptable internal consistency reliability for the measure of psychological safety was found with α =.69. Indices of interrater agreement (see James et al., 1984) were computed and determined to be suitable for aggregation of data to the team level. The agreement value averaged over teams was .89.

Collective efficacy

Collective efficacy was assessed using the Chen, Gully, & Eden (2001) measure which includes 8-items using a 5-point Likert scale ranging from "strongly disagree" to "strongly agree". Sample items include "We will be able to achieve most of the goals that *we* have set for ourselves*"* and *"*When facing difficult tasks, we are certain that we will accomplish them". An acceptable internal consistency reliability for the measure of collective efficacy was found with α =.94. Indices of interrater agreement (see James et al., 1984) were computed and determined to be suitable for aggregation of data to the team level. The agreement value averaged over teams was .97.

Cohesion

The cohesion sub-dimension from the teamwork scale developed by Hoegl & Gemuenden (2001) was used to measure cohesion. The scale was rated on a 7-point scale from "strongly disagree" to "strongly agree" and consisted of 8- items. Sample items include "The team was important to succeeding in the game" and "All members were fully integrated in our team". An acceptable internal consistency reliability for the

measure of cohesion was found with α =.89. Indices of interrater agreement (see James et al., 1984) were computed and determined to be suitable for aggregation of data to the team level. The agreement value averaged over teams was .81. See Appendix E for full scale descriptions.

Table 4. Intercorrelations between individual affect measures.

	1	2
1. Psychological Safety	--	
2. Collective Efficacy	.531**	--
3. Cohesion	.500**	.540**

Note. $N = 124$. ** $p < .01$, two-tailed.

Process

The surveys that were used to measure team processes consisted of information sharing, discussion participation, shared leadership, and teamwork. A principal components analysis revealed that a single factor explained more than 85% of the variance in these measures. Therefore, I combined the four team-level measures of processes into a single process composite by averaging the team-level averages on each measure of information sharing, discussion participation, shared leadership and teamwork. Cronbach's alpha coefficient for team level processes scores for the four measures of processes (i.e., using information sharing, discussion participation, shared leadership and teamwork as "item scores") was .93. The identical measure was collected during the training round as a control variable and during the performance round as a mediator. More detail on each individual measure is provided below. Correlations between the individual measures are provided in Table 5.

Information sharing

Information sharing was measured using a 3-item scale developed by Bunderson & Sutcliffe (2002). The three items asked each team member to evaluate the extent to which information necessary to make key decisions was freely shared among team members, team members worked hard to keep team members up to date on their activities/information received, and team members were kept informed about issues impacting their team decision. This survey used a 7-point Likert scale ranging from "strongly disagree" to "strongly agree". Indices of interrater agreement (see James et al., 1984) were computed and determined to be suitable for aggregation of data to the team level. The agreement value averaged over teams was .97. An acceptable internal consistency reliability for the measure of information sharing was found with α =.89.

Discussion participation

Discussion participation was measured by a 3-item measure derived from Campion et al. (1993). Participants used a 7-point scale ranging from "strongly disagree" to "strongly agree". Items asked each participant if they had a say in how the work of the team was carried out, if all members were able to participate in decision making, and if the decision made for the team were designed for everyone to participate. An acceptable internal consistency reliability for the measure of discussion participation was found with α =.89. Indices of interrater agreement (see James et al., 1984) were computed and determined to be suitable for aggregation of data to the team level. The agreement value averaged over teams was .96.

Shared leadership

Shared leadership was measured using an adapted version of the survey created and validated by Hiller, Day, & Vance (2006). The survey consisted of 12 items, and used a 7-point scale from "never" rated as 1 to "always" rated as 7. Items asked each team member the extent to which their team engaged in specific behaviors, such as, sharing in planning how the work gets done. An acceptable internal consistency reliability for the measure of shared leadership was found with α =.98. Indices of interrater agreement (see James et al., 1984) were computed and determined to be suitable for aggregation of data to the team level. The agreement value averaged over teams was .93.

Teamwork

The survey developed by Hoegl & Gemuenden (2001) was used to measure teamwork. The dimensions that were used for measuring processes included support, effort and communication. The measure consisted of 11 items, and used a 7-point scale from "strongly disagree" to "strongly agree". Sample items include "The team was important to succeeding in the game" and "It was important to the members of our team to be part of this game". An acceptable internal consistency reliability for the measure of teamwork was found with α =.89. Indices of interrater agreement (see James et al., 1984) were computed and determined to be suitable for aggregation of data to the team level. The agreement value averaged over teams was .92. See Appendix F for full scale descriptions.

Table 5. Intercorrelations between individual process measures.

	1	2	3
1. Shared leadership			
2. Teamwork	.892**		
3. Information Sharing	.843**	.828**	
4. Discussion Participation	.706**	.731**	.782**

Note. $N = 124$. ** $p < .01$, two-tailed.

Outcomes

Team viability

As part of outcomes, team viability was measured using 5-items which reflected the affective and interpersonal outcomes regarding the team. Specifically the items measured the degree to which the team would like to continue to function together as a team in the future, if given the opportunity. The measure used a 5-point Likert scale ranging from "not at all" to "very much". A sample item included "How much would you like to come back and work with your team on a different project if there were to be a follow-up study in the future". Cronbach's alpha coefficient for the aggregated team scores was .88. Indices of interrater agreement (see James et al., 1984) were computed and determined to be suitable for aggregation of data to the team level. The agreement value averaged over teams was .95. See Appendix G for full scale descriptions.

Performance

Task performance was measured by the number of diseases the team cured during the performance episode. To cure a disease one participant must collect 7 player cards of the same color in their hand and is able to travel to a city on the board which contains a research station. The maximum number of diseases they could cure was 4, the average

number of diseases cured in their performance session was $M_{male\ teams} = .66$, $SD_{male\ teams} = .90$ and $M_{female\ teams} = .32$, $SD_{female\ teams} = .53$.

Manipulation check

To evaluate the effectiveness of the social distance manipulation, participants were asked at the end of their interaction with their leader but before they were debriefed to respond to a 2-item scale. Items included "My team leader liked to emphasize their authority over the team" and "My leader and I are similar to one another". The two items formed a reliable scale (Cronbach's $\alpha = 74$). This scale was measured on a 7-point scale ranging from "strongly disagree" to "strongly agree".

CHAPTER FOUR: RESULTS

All analyses were conducted at the team level. Originally, analyses were planned to be conducted with both male and female teams combined. However, in order to determine whether male and female teams were reacting differently to diversity and to the leader manipulation, I began by testing hypotheses for the two populations separately. See Table 8 (for male teams) and 9 (for female teams) for Pearson product-moment correlations, coefficient alpha reliabilities, and descriptive statistics for all study variables.

IBM SPSS 19.0 for Windows was used to test study hypotheses. Multiple regression analyses or simple bi-variate correlations were used to analyze all hypothesized relationships between study variables. Mediated moderation analyses were used to examine the interaction between leader social distance and diversity when predicting the mediated relationship between team affect and team processes and team processes and team outcomes. The conceptual models for this study, with each link numbered as to the corresponding hypothesis, are presented in Figure 6. This chapter is organized by hypothesis and the analyses conducted to test the hypotheses by gender. Table 6 provides an overview of each formally stated hypothesis.

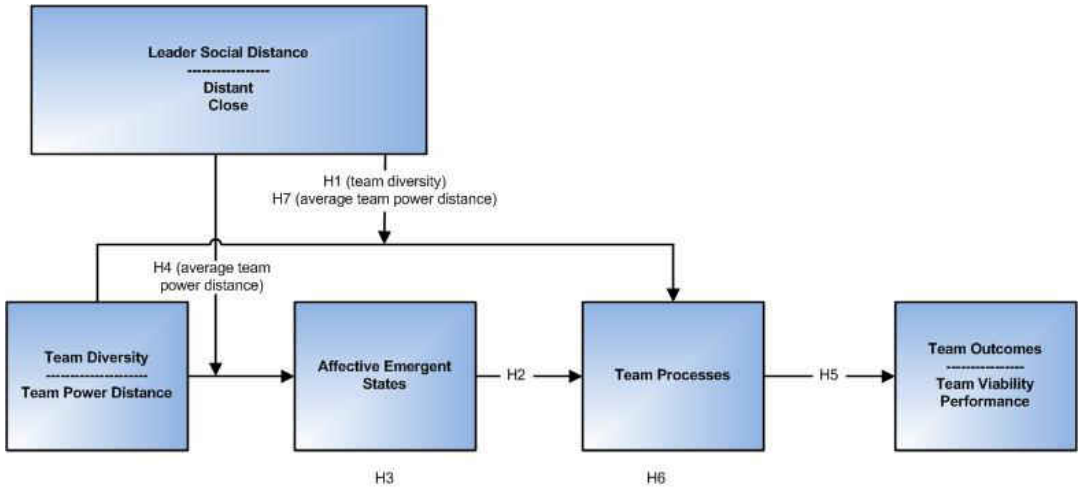

Figure 6. Conceptual model with hypotheses numbered.

Table 6. Overview of study hypotheses.

Hypothesis 1	The relationship between team cultural diversity and team processes is moderated by leader social distance in such a way that team diversity is more positively related to team processes when leader social distance is low than when leader social distance is high.
Hypothesis 2	Team affective emergent states are positively related to team processes.
Hypothesis 3	Team affective emergent states mediate the moderated relationship between team diversity and leader social distance as predictors of team processes.
Hypothesis 4	Leadership condition and team average power distance will interact in such a way that teams high on power distance and led by leaders who are socially distant will have a higher positive affect than teams high

	on power distance and led by leaders who are socially close.
Hypothesis 5	Team processes are positively related to team outcomes (performance and viability).
Hypothesis 6	Team processes will mediate the moderated relationship between team diversity and leader social distance as predictors of team outcomes.
Hypothesis 7	Leadership condition and team power distance will interact in such a way that teams high on power distance and led by leaders who are socially distant will have higher team processes than teams high on power distance and led by leaders who are socially close.

I initially tested my hypotheses using a composite measure of team diversity in which standard deviations on the four dimensions of culture were averaged. Using this operationalization, no significant results were found. Thus, I proceeded to test my hypotheses using separate team diversity scores based on heterogeneity for each cultural dimension. These results are described in the sections that follow.

Table 7 presents a summary of the types of analyses used to test each hypothesis. To minimize any potential problems of multicollinearity, control variables were standardized (Aiken & West, 1991). When appropriate teamwork processes from the training round were utilized as a control variable.

Table 7. Overview of statistical analyses used to test hypotheses

Hypothesis	Statistical Analysis
Hypothesis 1: Moderation of leadership on diversity and team affect	Multiple regression

Hypothesis 2: Team affect is related to team processes	Bi-variate correlation
Hypothesis 3: Mediated moderation of leadership, team diversity, team affect and team processes	Mediated moderation using multiple regression
Hypothesis 4: Interaction between leadership and average team power distance and its effect on team affect	Multiple regression
Hypothesis 5: Team processes related to team outcomes	Bi-variate correlation
Hypothesis 6: Mediated moderation of leadership, team diversity, team processes and team outcomes	Mediated moderation using multiple regression
Hypothesis 7: Interaction between leadership and average team power distance and its effect on team processes	Multiple regression

Table 8. Summary of intercorrelations, means, and standard deviations for study variables, male teams.

	N	*M*	*SD*	1	2	3	4	5	6	7	8	9
1. Leader condition	59	.47	.50	--								
2. Collectivism heterogeneity	59	1.32	.15	-.013	(.86)							
3. Individualism heterogeneity	59	1.09	.12	-.133	-.210	(.66)						
4. Tolerance for ambiguity heterogeneity	59	.98	.14	.070	-.024	.061	(.87)					
5. Power distance heterogeneity	59	1.80	.39	.088	.380**	-.222	.266*	(.77)				
6. Average collectivism	59	3.16	.32	.193	.257*	-.301*	.098	-.079	--			
7. Average individualism	59	3.69	.22	-.058	-.266*	.539**	.178	-.224	-.284*	--		
8. Average tolerance for ambiguity	59	3.52	.25	.125	.375**	-.042	-.249	.286*	-.074	-.136	--	
9. Average power distance	59	4.03	.61	-.027	-.139	-.131	.078	-.301*	.314*	-.020	-.411**	--
10. Team processes- training round	59	5.28	.54	.196	.300*	.206	-.037	.225	.025	.100	.158	-.124
11. Performance- training round	59	.53	.65	.015	-.298*	.232	-.021	-.242	-.188	.237	-.255	-.039
12. Team trust	59	4.68	.46	.401**	.320*	.081	.000	.170	.214	-.056	.305*	-.135
13. Self-conceptualization	59	4.12	.23	.252	.333*	-.362**	-.075	.014	.390**	-.355**	.304*	.059
14. Personality- conscientiousness	53	3.56	.41	-.016	.156	-.347*	-.068	.101	.093	-.304*	-.026	.051
15. Personality- neuroticism	53	2.10	.45	-.254	-.223	.211	.295*	-.242	-.037	.296*	-.474**	.307*
16. Self-construal- interdependence	59	3.93	.24	.160	.357**	-.095	.169	.061	.368**	-.100	-.033	-.147
17. Self-construal	59	3.79	.33	.146	.437**	-.132	.097	.166	.259*	-.201	.002	-.158
18. Team affect	59	4.39	.37	.199	.245	-.086	-.002	.187	.208	.016	.196	.014
19. Team processes- performance round	59	5.47	.52	.104	.257*	.109	-.363**	.066	-.024	-.029	.335**	-.293*
20. Performance- performance round	59	.66	.90	-.171	.190	-.106	-.292*	-.070	-.135	-.108	.148	-.097
21. Team viability	59	3.90	.45	.289*	.182	.008	-.037	.013	.160	.110	.312*	-.195

Table 8. Intercorrelations, means, and standard deviations for study variables, male teams (con't).

Variable Name	10	11	12	13	14	15	16	17	18	19	20
11. Performance- training round	.052	--									
12. Team trust	.611**	-.062	(.92)								
13. Self-conceptualization	.338**	-.070	.292*	(.81)							
14. Personality- conscientiousness	.008	-.109	.213	.171	(.67)						
15. Personality- neuroticism	-.372**	.048	-.366**	-.362**	-.031	(.68)					
16. Self-construal- interdependence	.249	-.131	.349**	.228	.005	-.142	(.72)				
17. Self-construal	.308*	-.154	.358**	.309*	.204	-.196	.825**	(.72)			
18. Team affect	.440**	-.166	.647**	.248	.194	-.247	.343**	.395**	--		
19. Team processes	.705**	.062	.455**	.429**	.026	-.512**	.023	.121	.303*	--	
20. Performance- performance round	.073	.161	.060	.069	.026	-.241	-.064	.112	.027	.278*	--
21. Team viability	.629**	.056	.595**	.293*	-.065	-.379**	.272*	.259*	.479**	.582**	.285*

Note. Cronbach's alpha reliability coefficient is presented in parenthesis on the diagonal.
**$p < .01$, two-tailed.
* $p < .05$, two-tailed.

Table 9. Intercorrelations, means, and standard deviations for study variables, female teams

Variable Name	*N*	*M*	*SD*	1	2	3	4	5	6	7	8	9
1. Leader condition	65	0.46	0.50	--								
2. Collectivism heterogeneity	65	1.32	0.14	-.029	(.86)							
3. Individualism heterogeneity	65	0.99	0.14	-.164	-.075	(.66)						
4. Tolerance for ambiguity heterogeneity	65	0.94	0.12	.105	.335**	-.232	(.87)					
5. Power distance heterogeneity	65	1.78	0.25	-.005	.462**	-.118	.377**	(.77)				
6. Average collectivism	65	3.39	0.33	.150	-.162	-.455**	.168	.109	--			
7. Average individualism	65	3.68	0.22	-.141	-.287*	.585**	-.427**	-.201	-.440**	--		
8. Average tolerance for ambiguity	65	3.29	0.20	.101	.002	.174	.182	.130	-.054	.118	--	
9. Average power distance	65	3.82	0.50	.133	-.216	-.318**	-.003	-.089	.333**	-.135	-.044	--
10. Team processes- training round	65	4.98	0.76	.347**	.018	.033	.186	.227	.015	.035	.314*	-.024
11. Performance- training round	65	0.17	0.42	-.006	-.080	.281*	-.081	-.053	-.137	.077	.070	.149
12. Team trust	65	4.73	0.54	.314*	.044	-.089	.138	.164	.331**	-.082	.034	-.084
13. Self-conceptualization	65	4.12	0.19	.168	.333**	-.066	.202	.254*	.059	-.116	.230	.116
14. Personality- conscientiousness	55	3.74	0.43	-.031	.032	-.329*	-.188	-.032	.077	-.012	-.141	.007
15. Personality- neuroticism	55	2.55	0.50	-.056	.131	.142	.097	-.062	-.231	.053	-.225	-.312*
16. Self-construal- interdependence	65	3.93	0.30	.041	.012	-.239	-.171	-.042	.402**	-.296*	-.104	-.044
17. Self-construal	65	4.09	0.22	.095	.206	-.294*	.006	.156	.270*	-.399**	-.085	-.089
18. Team affect	65	4.34	0.39	.343**	.114	-.025	.113	.273*	.206	.040	.195	-.130
19. Team processes- performance round	65	5.44	0.63	.283*	.052	.037	.154	.227	.026	.041	.236	-.148
20. Performance- performance round	65	0.32	0.53	.251*	-.323**	.188	-.162	-.131	-.074	.233	.091	.193
21. Team viability	65	3.89	0.51	.221	.072	.112	.206	.290*	.123	.007	.176	-.225

Table 9. Intercorrelations, means, and standard deviations for study variables, female teams (con't)

Variable Name	10	11	12	13	14	15	16	17	18	19	20
11. Performance- training round	.008	--									
12. Team trust	.433**	-.131	(.92)								
13. Self-conceptualization	.185	.038	.314*	(.81)							
14. Personality- conscientiousness	-.035	-.121	.062	.027	(.67)						
15. Personality- neuroticism	-.130	.023	-.093	.192	.157	(.68)					
16. Self-construal- interdependence	.066	-.119	.307*	.163	.171	-.040	(.72)				
17. Self-construal	.130	-.131	.358**	.278*	.192	.054	.852**	(.72)			
18. Team affect	.756**	-.157	.782**	.322**	.104	-.139	.189	.263*	--		
19. Team processes- performance round	.834**	-.087	.481**	.248*	.034	-.119	.188	.205	.719**	--	
20. Performance- performance round	.221	.382**	.113	-.018	-.049	-.196	.049	-.055	.130	.314*	--
21. Team viability	.578**	-.070	.638**	.275*	.088	-.074	.298*	.317*	.720**	.758**	.253*

Note. Cronbach's alpha reliability coefficient is presented in parenthesis on the diagonal.
**$p < .01$, two-tailed.
* $p < .05$, two-tailed.

Manipulation Checks

To gauge the effectiveness of the leader social distance manipulation, participants rated their leader on similarity to them and emphasis of their authority by the leader. Analysis of variance (ANOVA) was conducted on these items with condition (socially distant vs. socially close) as the independent variable. Results indicated that, in the socially close condition leaders were rated as more similar to the team members (M_{close} = 4.23, SD_{close} = .80) as compared to socially distant leaders ($M_{distant}$ = 2.53, $SD_{distant}$ = .85), F (1, 122) = 131.32, $p < .001$, $\eta^2 = .52$. In addition, the socially distant leaders were rated as leaders who placed more of an emphasis on their authority over the team ($M_{distant}$ = 5.57, $SD_{distant}$ = .93; M_{close} = 3.71, SD_{close} = .98), F (1, 122) = 107.35, $p < .001$, η^2 = .49. Data were further investigated to determine that the study manipulation did not impact other variables such as team motivation and team climate. ANOVAs were also used to test ratings on these items with condition as the independent variable. Results indicated that, there were no significant differences between conditions on motivation (M_{close} = 2.09, SD_{close} = .85; $M_{distant}$ = 2.20, $SD_{distant}$ = .82), F (1, 122) = .547, p = .461, η^2 = .004, or team climate (M_{close} = 7.00, SD_{close} = 1.17; $M_{distant}$ = 6.58, $SD_{distant}$ = 1.22), F (1, 122) = 3.35, p = .07, η^2 = .030.

Hypothesis 1 Results

Male Teams

Hierarchical regression analyses were used to test the hypothesis that the relationship between team heterogeneity and team processes was moderated by leader

social distance. To test Hypothesis 1 for male teams the variables were entered into the regression analysis in 3 steps: (1) the control variables (i.e., teamwork processes for the training round); (2) leader condition (distant vs. close) and heterogeneity on each cultural dimension (i.e., collectivism, tolerance for ambiguity, power distance, and individualism); and (3) the interaction terms between leader condition and each cultural dimension heterogeneity variable. Table 10 summarizes the results for these analyses. All equations were significant, with the final equation resulting in an R^2 =.64, F (10, 48) = 8.66, p = .000. As a result of these analyses the interaction between diversity on tolerance for ambiguity and leadership was a significant predictor in the model predicting team processes (β = -.1.22, p = .04). Specifically, the results demonstrate that there was a negative relationship between heterogeneity on tolerance for ambiguity and team processes and this negative relationship was stronger for teams with socially close leaders (see Figure 7), than teams who had leaders who were socially distant. Therefore, Hypothesis 1 was not supported for male teams.

Table 10. Regression analysis summary for predicting team processes, male teams

Variables	*B*	*SE B*	*β*	*95% CI B*
Constant	0.46	1.817	---	--
Control variables:				
Processes- training round	0.80	0.12	0.70**	[.57, 1.03]
Leader condition[+]	3.10	2.52	1.77	[-1.97, 8.17]
Tolerance for ambiguity (TA) heterogeneity	-0.87	0.94	-0.14	[-2.76, 1.02]
Individualism (I) heterogeneity	-0.33	1.07	-0.04	[-2.49, 1.82]
Power distance (PD) heterogeneity	-0.11	0.38	-0.04	[-.87, .66]
Collectivism (C) heterogeneity	0.62	0.70	0.11	[-.78, 2.03]
Condition x TA	-2.10	1.21	-1.22**	[-4.53, .34]
Condition x I	0.28	1.39	0.18	[-2.51, 3.07]
Condition x PD	0.11	0.62	0.11	[-1.15, 1.36]

Condition x C	-1.18	1.22	-0.90	[--3.64, 1.28]
R^2			0.64	
F (10, 48)			8.66**	
Avg team power distance[a]	0.09	0.13	0.10	[-.17, .35]
Condition x Avg team power distance[a]	-0.10	0.18	-0.07	[-.45, .26]
R^2			.67	
F (12, 46)			9.33**	

Note. $N = 59$.
**$p <. 05$.
[+] 0=distant, 1=close.
[a] terms were added as an additional step to the equation to test for Hypothesis 7.

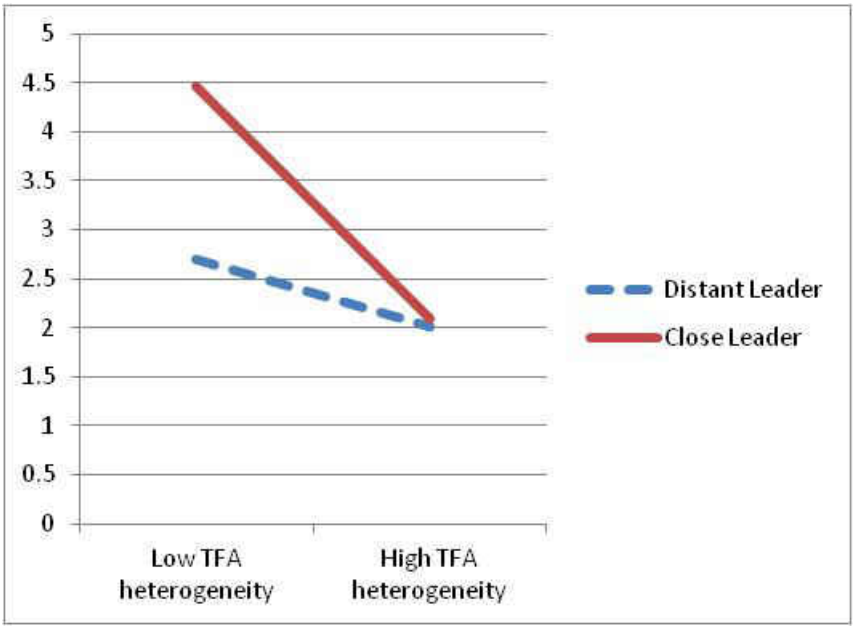

Figure 7. Interaction between leader condition and heterogeneity in tolerance for ambiguity predicting team processes male teams.

Female Teams

To test Hypothesis 1 for female teams, the identical equation was run with the exception of the control variables which were used in the model. For female teams, the only significant control variables were self-construal interdependent and personality-conscientiousness. Training round processes were not a significant predictor in this equation as they were for the male teams; therefore I removed it from the model. Table

11 summarizes the results for these analyses. All equations were significant, with the final equation resulting in an R^2 =.35, F (11, 43) = 2.11, p = .04. As a result of these analyses it was determined that for female teams with a close leader, there was a positive relationship between tolerance for ambiguity heterogeneity and team processes. On the other hand, for female teams with a distant leader this relationship was negative. This result indicates that teams with higher levels of heterogeneity on tolerance ambiguity experienced lower levels of reported team processes when they were led by distant leaders. Therefore, for female teams Hypothesis 1 was supported. The interaction is plotted and shown in Figure 8.

Table 11. Regression analysis summary for predicting team processes, female teams

Variables	*B*	*SE B*	*β*	*95% CI B*
Constant	-1.77	2.56	---	--
Control variables:				
Self-construal-interdependent	0.30	0.16	0.26**	[-.03, .63]
Personality- conscientiousness	0.19	0.15	0.18	[-.11, .49]
Leader condition[+]	-6.09	3.84	-2.85	[-13.84, 1.66]
Tolerance for ambiguity (TA) heterogeneity	-1.51	2.42	-0.15	[-6.39, 3.38]
Individualism (I) heterogeneity	1.59	1.37	0.21	[-1.17, 4.35]
Power distance (PD) heterogeneity	-0.05	0.95	-0.01	[-1.97,1.87]
Collectivism (C) heterogeneity	0.77	1.96	0.10	[-3.18, 4.72]
Condition x TA	5.56	2.96	2.52**	[-.42, 11.53]
Condition x I	2.56	2.05	1.18	[-1.58, 6.70]
Condition x PD	1.65	1.27	1.39	[-.92, 4.22]
Condition x C	-2.80	2.51	-1.75	[-7.86,2.25]
R^2			0.35	
F (11,43)			2.11**	
Avg team power distance[a]	-0.18	0.17	-0.15	[-.51, .15]
Condition x Avg team power distance[a]	0.16	0,21	0.10	[-.27, .58]
R^2			.35	
F (13,41)			10.47**	

Note. N = 55.
**p < .05.
[+] 0=distant, 1=close
[a] terms were added into the equation as an additional step to test for Hypothesis 7.

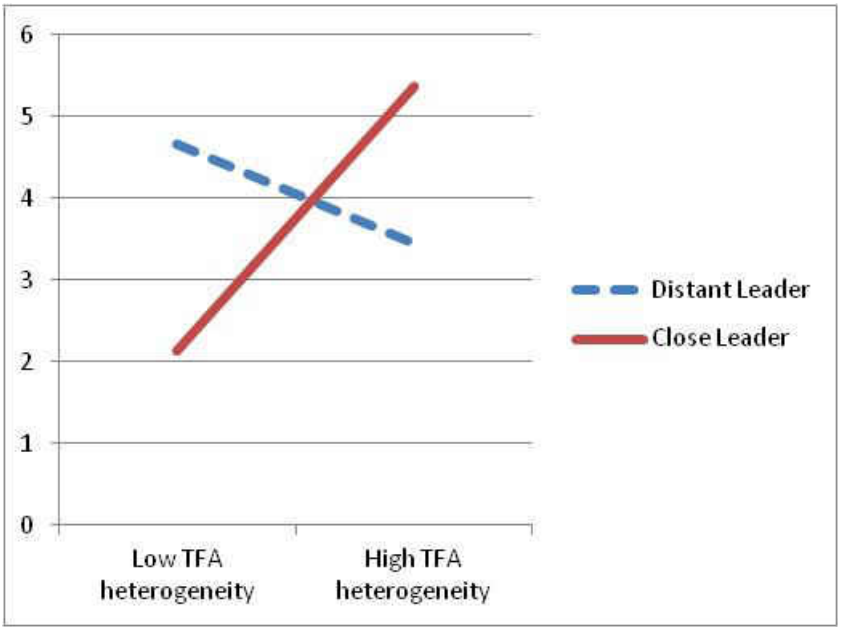

Figure 8. Interaction between leader condition and heterogeneity in tolerance for ambiguity predicting team processes female teams.

Hypothesis 2 Results

Hypothesis 2 stated that team affective emergent states would be positively related to team processes. Simple bi-variate correlations (see Table 12 for summary results) indicated that team affective emergent states were significantly related to team processes, for both male and female teams. For male teams, the correlation between team affect and processes was $r = .30$, $p = .01$, and for female teams the correlation between team affect and processes was $r = .40$, $p = .000$. Therefore, Hypothesis 2 was supported.

Table 12. Correlations between team affect and team processes, male and female teams

Variable	*N*	*Team Processes*
Male teams		
Team affect	59	0.30**
Female teams		
Team affect	65	0.40**

Note: $^{**}p < .05$

Hypothesis 3 Results

Hypothesis 3 predicted mediated moderation (Muller, Judd, & Yzerbyt, 2005) such that team affective emergent states would mediate the previously hypothesized and tested interaction between leader condition and team cultural diversity on team processes. According to Muller et al. (2005), to show mediated moderation three models must be estimated. The first model tests the significance of the interaction term as a predictor of the dependent variable, the second model tests the significance of the interaction term as a predictor of the mediator, and the third model controls for the interaction term between the independent variable and the moderator when testing the relationship between the mediator and the dependent variable. To show an overall moderating effect the interaction term between the independent variable and the moderator variable must be a significant predictor in model 1 and model 2. When the mediator is added to the 3rd model, the beta weight for the independent variable and the moderator should become non-significant or should drop in its magnitude as well as the mediator being a statistically significant predictor in the model. This would indicate that the mediator is explaining some of the variance that was not being explained in the previous models. The results for male and female teams are provided below.

Male Teams

The first model necessary to test mediated moderation consists of using regression to determine whether leader condition and heterogeneity interact to predict team processes. As we can see in Table 10, the first model in testing mediated moderation is the same as the model required to test Hypothesis 1. The results of this analysis indicated a statistically significant interaction term between heterogeneity on tolerance for ambiguity and leader condition in predicting team processes (β = -1.22, t (48) = -1.73, p = .04). Given that the first step necessary to test for mediated moderation was confirmed, I continued to test for mediated moderation by creating the 2nd model which predicted team affect, the mediator, as the dependent variable. The second model proved to be a non-significant model, with no significant interaction terms between cultural dimensions and leadership condition as predictors of team affect (F (11, 41) = 1.75, p = .10). The second condition to test mediated moderation was not met, therefore I did not proceed with any further steps. Therefore, results indicated that for male teams Hypothesis 3 was not supported. Team heterogeneity did not interact with team leader condition to predict team affect.

Female Teams

In testing the 3 models to examine for mediated moderation for female teams, I repeated the process described in the preceding section. As shown in Table 11, leader condition interacted with heterogeneity in tolerance for ambiguity to predict team processes (β = 2.52, t (43) = 1.88, p = .03). The second model used to test mediated moderation predicts the mediator, in this case team affect. Results indicated that there

was a significant interaction between heterogeneity on power distance and leadership condition (β = 1.69, t (54) = 1.73, p = .04). The plot of this interaction is presented in Figure 9. However, since the same interaction term in model 1 was not a significant predictor in model 2, I did not continue to test for mediated moderation since the pre-conditions were not met. Therefore, for female teams Hypothesis 3 was not supported. However, the relationship between team heterogeneity on the power distance dimension and team affect was moderated by team leader condition. Specifically, teams with close leaders had a positive relationship between diversity on power distance and team processes. On the other hand, teams with distant leaders had a slightly negative relationship between diversity on power distance and team processes.

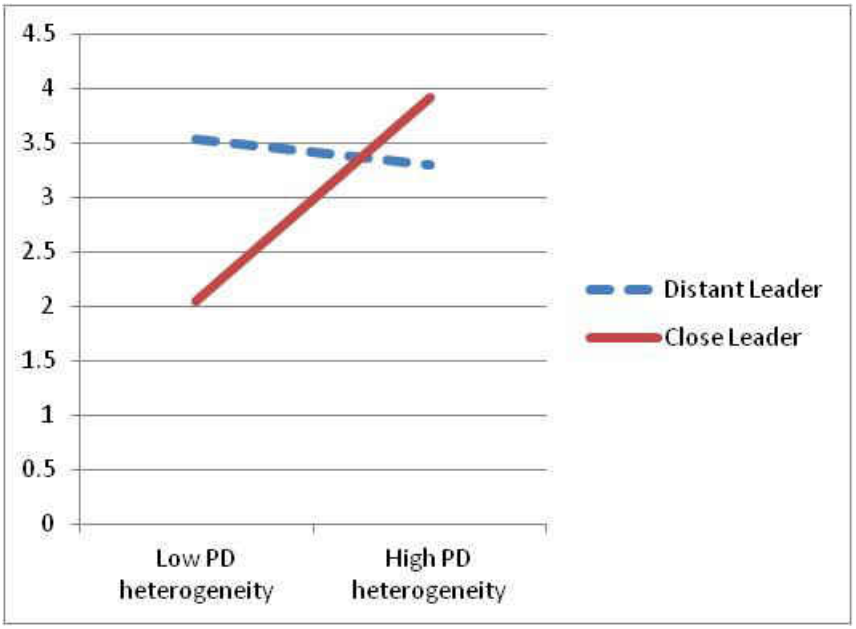

Figure 9. Interaction between leader condition and heterogeneity in power distance predicting team affect female teams.

Hypothesis 4 Results

Male Teams

Hypothesis 4 predicted that average team levels of power distance would interact with the leader condition when predicting team affect in such a way that teams with high average power distance and leaders who are socially distant would have higher positive affect than teams with low average power distance and socially distant leaders. Hierarchical regression analyses were used to test the interaction between average team power distance and leader condition predicting team affect in male teams. To test Hypothesis 4, the variables were entered into the regression analysis at 3 steps (see Table 13 for a summary of these analyses): (1) the control variable (i.e., team trust); (2) leader condition (distant vs. close), the heterogeneity variables for each cultural dimension (i.e., collectivism, tolerance for ambiguity, power distance, and individualism) and the average score of team power distance; and (3) the terms representing interactions between heterogeneity on each cultural dimension and leader condition and the term representing an interaction between average team power distance and leader condition. All equations were significant, with the final equation resulting in an R^2 =.53, F (12, 46) = 4.29, p = .000. However, the change in R^2 was not significant when the interaction terms were added in the last step (ΔR^2=.07, p = .27), indicating that the interaction between team power distance and leader condition did not explain any additional variance in the model. Moreover, the interaction term for average team power distance by leader condition was not significant. Therefore, Hypothesis 4 was not supported for male teams. The relationship between average team power distance and affect was not moderated by team

leader condition. However, there was a significant interaction term between heterogeneity on collectivism and leader condition. The relationship between heterogeneity on collectivism and team affect was negative for teams with distant leaders, and positive for teams with close leaders. Figure 10 illustrates this interaction and the summary of this analysis is presented in Table 13.

Table 13. Regression analysis summary for testing the leader condition and average team power distance interaction predicting affect, male teams

Variables	***B***	***SE B***	***B***	***95% CI B***
Constant	2.37	2.15	--	--
Control variables:				
Team Trust	0.62	0.11	0.73**	[.41, .84]
Leader condition[+]	-4.27	2.85	-2.74	[-10.01, 1.47]
Tolerance for ambiguity (TA) heterogeneity	0.19	0.96	0.03	[-1.74, 2.13]
Individualism (I) heterogeneity	-1.18	1.18	-0.17	[-3.55, 1.20]
Power distance (PD) heterogeneity	0.09	0.44	0.04	[-.80, .98]
Collectivism (C) heterogeneity	-0.97	0.76	-0.19	[-2.51,.56]
Average team power distance (AvgPD)	0.11	0.11	0.15	[-.12, .33]
Condition x TA	-0.12	1.30	-0.07	[-2.74, 3.63]
Condition x I	0.55	1.53	0.38	[-2.53, 3.63]
Condition x PD	0.19	0.70	0.22	[-1.22, 1.59]
Condition x C	2.50	1.30	2.14**	[-.12, 5.12]
Condition x AvgPD	-0.15	0.17	-0.12	[-.49,.21]
R^2			0.53	
F (12, 46)			4.29**	

Note. $N = 59$.
**$p <$. 05 (one-tailed).
[+] 0=distant, 1=close

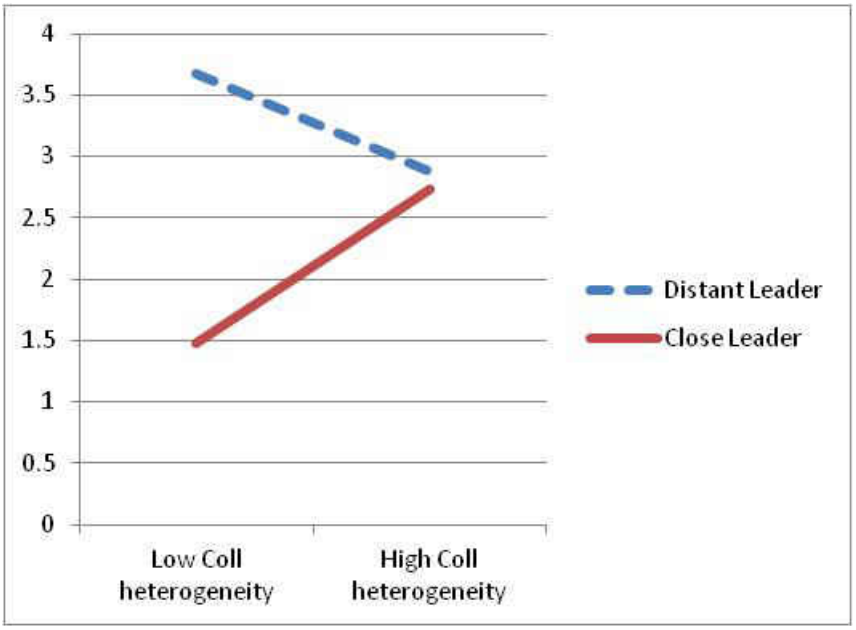

Figure 10. Interaction between heterogeneity on collectivism and leader condition predicting affect male teams

Female Teams

Hierarchical regression analyses were also used to test the interaction between average team power distance and leader condition predicting team affect in female teams. To test Hypothesis 4, the variables were entered into the regression analysis at 3 steps (see Table 14 for a summary of these analyses): (1) the control variable (i.e., team trust, self-concept); (2) leader condition (distant vs. close), the heterogeneity variables for each cultural dimension (i.e., collectivism, tolerance for ambiguity, power distance, and individualism) and the average score of team power distance; and (3) the interaction terms for heterogeneity on each cultural dimension by leader condition and the interaction term for average team power distance by leader condition. All equations were significant, with the final equation resulting in an R^2 =.71, F (13, 51) = 9.49, p = .000. However, the change in R^2 was not significant when the interaction terms were added in

the last step (ΔR^2=.033, p = .35), indicating that the interaction term between average team power distance and leader condition was not significant and did not explain any additional variance in the model. Moreover, that the interaction term was not a significant predictor. Therefore, Hypothesis 4 was not supported for female teams. The relationship between average team power distance and affect was not moderated by team leader condition. However, there was a significant relationship between heterogeneity on tolerance for ambiguity and leader condition. There was a strong negative relationship between heterogeneity on tolerance for ambiguity and affect for socially distant leaders. For socially close leaders the relationship was slightly positive, but very close to zero. Figure 11 illustrates this interaction and the summary of this analysis is presented in Table 14.

Table 14. Regression analysis summary for testing the leader condition and average team power distance interaction predicting affect, female teams

Variables	*B*	*SE B*	*β*	*95% CI B*
Constant	1.95	1.24	--	--
Control variables:				
Self-concept	0.15	0.08	0.17**	[-.02, .32]
Team Trust	0.53	0.07	0.70**	[.39, .66]
Leader condition[+]	-3.14	2.04	-1.94	[-7.23, .96]
Tolerance for ambiguity (TA) heterogeneity	-2.13	0.96	-0.31**	[-4.05, -.21]
Individualism (I) heterogeneity	-0.003	0.63	0.00	[-1.26, 1.26]
Power distance (PD) heterogeneity	0.01	0.42	0.002	[-.84, .86]
Collectivism (C) heterogeneity	-0.09	0.81	-0.02	[-1.70,1.53]
Average team power distance (AvgPD)	0.06	0.11	0.07	[-.16, .29]
Condition x TA	2.15	1.28	1.29**	[-.41, 4.72]
Condition x I	0.44	1.09	0.27	[-1.76, 2.64]
Condition x PD	0.43	0.59	0.48	[-.76, 1.62]
Condition x C	0.07	1.13	0.05	[-2.20, 2.33]
Condition x AvgPD	-0.07	0.16	-0.05	[-.40,.25]
R^2			0.71	
F (13, 51)			9.49**	

Note. $N = 65$.
**$p <$. 05 (one-tailed).
[+] 0=distant, 1=close

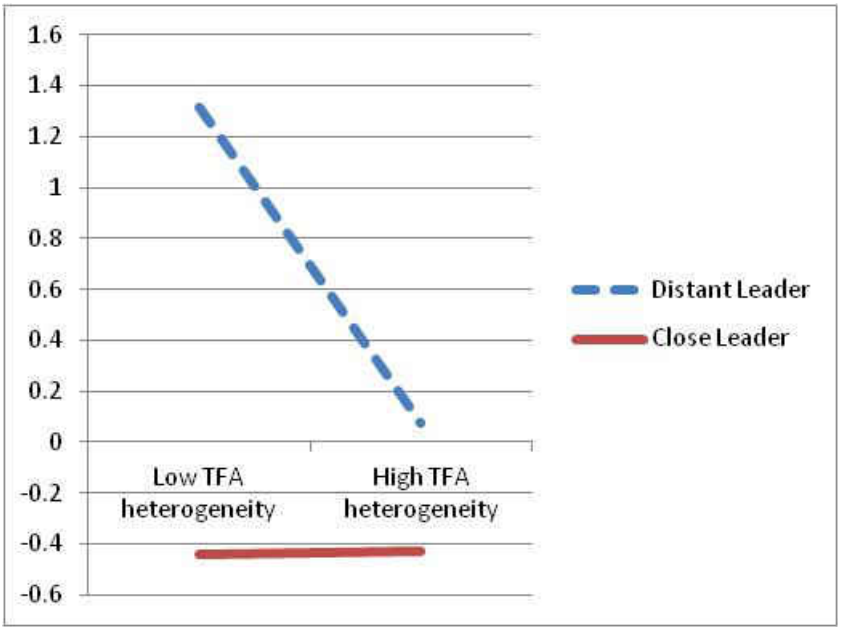

Figure 11. Interaction between heterogeneity on tolerance for ambiguity and leader condition predicting affect female teams

Hypothesis 5 Results

Hypothesis 5 predicted that team processes would be positively related to team outcomes. Two team outcomes were measured: (1) team performance (i.e., number of diseases cured) and (2) team viability. Simple bi-variate correlations (see Table 15 for summary results) indicated that team processes were significantly related to both team performance and team viability, for both male and female teams. For male teams, the correlation between team processes and performance was $r = .278$, $p = .01$, and for team processes and team viability the correlation was $r = .582$. $p = .000$. For female teams the correlation between team processes and team performance was $r = .316$, $p = .000$, and for team processes and team viability the correlation was $r = .763$. Therefore, Hypothesis 5 was supported for both male and female teams.

Table 15. Bi-variate correlations between team process and team outcomes, male and female teams.

Variable	*N*	*Team Performance*	*Team Viability*
Male teams			
Team process	59	.278**	.582**
Female teams			
Team process	65	.316**	.763**

Note: $^{**}p < .05$

Hypothesis 6 Results

Male Teams

Hypothesis 6 predicted that the interaction between leader condition and team heterogeneity on team outcomes would be mediated by team processes. To test Hypothesis 6, the variables were entered into the regression analysis at 3 steps: (1) the control variable (i.e., personality-neuroticism); (2) leader condition (distant vs. close), the heterogeneity variables for each cultural dimension (i.e., collectivism, tolerance for ambiguity, power distance, and individualism); and (3) the interaction terms for heterogeneity on each cultural dimension by leader condition. Results indicated that none of the models were significant models predicting team performance. Therefore, I did not continue to test for mediation moderation since the first pre-condition was not met.

To test Hypothesis 6 on viability, the variables were also entered into the regression analysis at 3 steps: (1) the control variable (i.e., processes- training); (2) leader condition (distant vs. close), the heterogeneity variables for each cultural dimension (i.e., collectivism, tolerance for ambiguity, power distance, and individualism); and (3) the

interaction terms for heterogeneity on each cultural dimension by leader condition. The difference in variables between this equation and the previous one tested when predicting performance, were control variables used. The only control variable that was appropriate to use was processes as measured after the training round. Results demonstrated three statistically significant models predicting team viability but none of the interaction terms were statistically significant predictors of the dependent variable. Therefore, since the first condition of testing mediated moderation was not found no further analyses were conducted. Therefore, Hypothesis 6 for male teams was not supported. Team heterogeneity with respect to the cultural dimensions did not interact with leader condition to predict either team performance or viability.

Females

The same steps were taken to investigate Hypothesis 6 for female teams. The variables were entered into the regression analysis at 3 steps: (1) the control variable (i.e., processes- training); (2) leader condition (distant vs. close), the heterogeneity variables for each cultural dimension (i.e., collectivism, tolerance for ambiguity, power distance, and individualism); and (3) the interaction terms for heterogeneity on each cultural dimension by leader condition. The first model, resulted in a statistically significant interaction for tolerance for ambiguity and leader condition (β = -2.30, t (54) = -2.13, p < .05). As shown in Figure 12, heterogeneity with respect to tolerance for ambiguity was positively related to performance outcomes for female teams with distant leaders but negatively related to performance outcomes for female teams with close leaders.

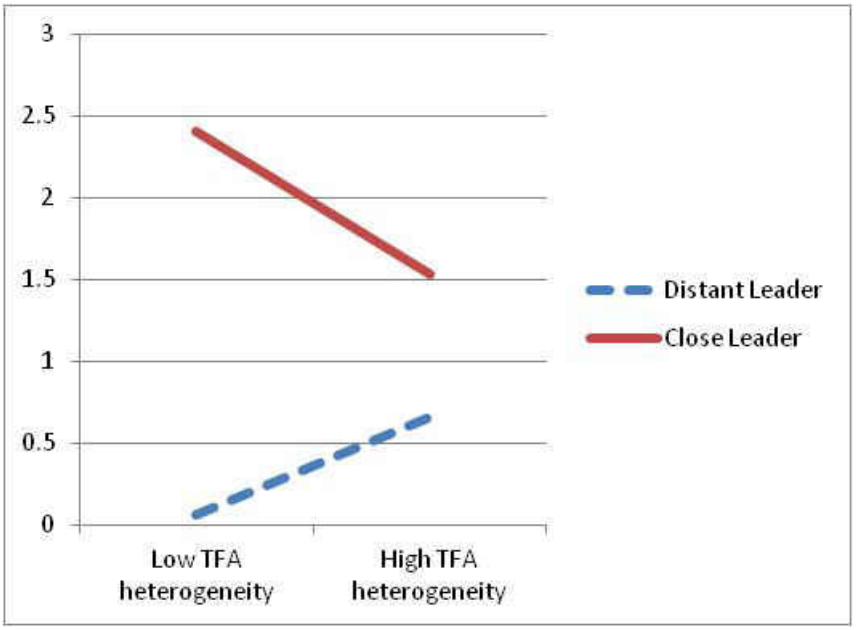

Figure 12. Interaction between leader condition and heterogeneity in tolerance for ambiguity predicting team performance female teams.

The second model, which was used to test Hypothesis 1, predicts the mediator, in this case team processes. Results, as seen in Table 11 and Figure 8, indicated a statistically significant interaction between tolerance for ambiguity and leader condition predicting processes, which supports the second precondition for mediated moderation. The plotted interaction shows that the relationship between heterogeneity on tolerance for ambiguity was positive for teams with socially close leaders, and negative for teams with socially distant leaders. This interaction is in the opposite direction to that found in the first model. Therefore, team processes are not mediating the interaction of heterogeneity and leader condition. Table 16 summarizes the results of these analyses.

Table 16. Mediated moderation results for models 1 and 2 female teams

Variables	Model 1: Team performance	Model 2: Team processes (same as H1)
Control variables		
Processes training round	0.17	--
Self-construal- Interdependence	--	0.26**
Personality- Conscientiousness	--	0.18
Main variables		
Condition[+]	3.73**	-2.85
Collectivism (C) heterogeneity	-0.26	0.10
Individualism (I) heterogeneity	0.14	0.21
Tolerance for ambiguity (TA) heterogeneity	0.22	-0.15
Power distance (PD) heterogeneity	0.10	-0.01
Interaction terms		
Condition x C	-0.76	-1.75
Condition x I	-0.10	1.18
Condition x TA	-2.30**	2.52**
Condition x PD	-0.44	1.39
Mediator variable		
Team processes	--	--
R^2 for total equation	0.34	0.35
F (df) for total equation	2.75** (10, 54)	2.11** (11, 43)

Note. Standardized coefficients are reported for the final step in each model. Dashes indicate that the values are not applicable.
$N = 65$.
**$p < .05$ (one-tailed).
[+] 0=distant, 1=close.

The first model to test the mediated moderation predicting team viability in female teams indicated that there was a significant interaction term for team heterogeneity with respect to power distance and leader condition ($\beta = 1.65$, t (42) = 1.96, $p < .05$). This interaction is plotted and shown in Figure 13, which shows that the relationship between heterogeneity on power distance and team viability is negative for teams with socially distant leaders, and the relationship is positive for teams with socially close leaders. Since model 2 for testing mediated moderation predicting team viability is

the same as the second model for testing mediated moderation predicting performance, we know that the significant interaction term in this equation is the interaction term that consists of heterogeneity on tolerance for ambiguity and leader condition. Since the same interaction term is not significant in both model 1 and 2, the second pre-condition for testing mediated moderation was not found. Therefore, no further analyses were conducted and Hypothesis 6 for female teams predicting team viability was not-supported.

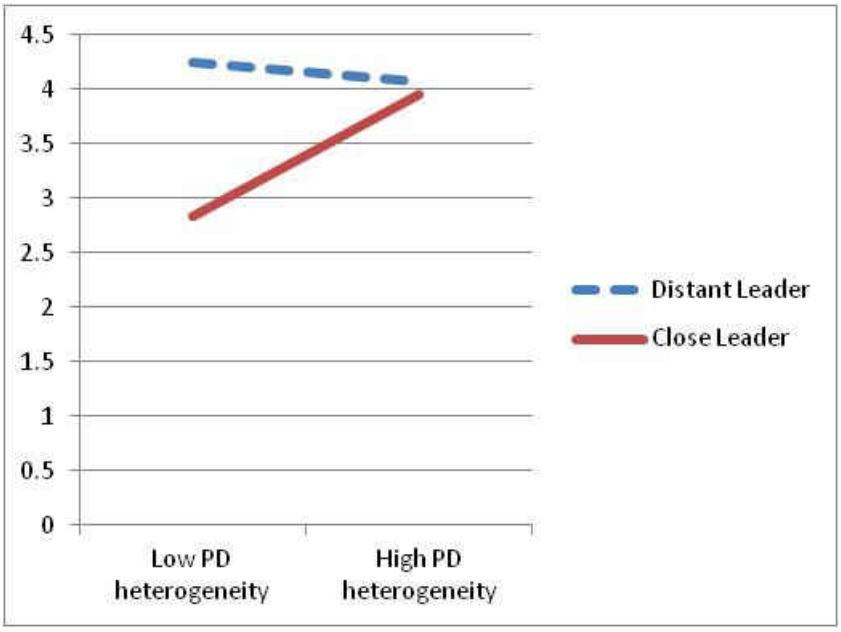

Figure 13. Interaction between leader condition and heterogeneity on power distance predicting team viability female teams

Hypothesis 7 Results

Male Teams

Hypothesis 7 stated that team average power distance and the leadership condition would interact in such a way that teams with high power distance and leaders who are

socially distant will have higher team processes than teams with low power distance and socially distant leaders. Hierarchical regression analyses were used to test this interaction. To test Hypothesis 7 for male teams, the variables average team power distance and the interaction between average team power distance and leader condition were added to the regression equation developed previously to test Hypothesis 1. These variables were entered into the equation as the fourth step predicting team processes. Results (see Table 10) indicated that adding these variables did not explain additional variance ($\Delta R^2 = .03$, $p = .14$). Therefore, Hypothesis 7 was not supported for male teams. Team leader condition did not moderate the relationship between team average power distance and team processes.

Female Teams

To test Hypothesis 7 for female teams, the variables for average team power distance and the interaction between average team power distance and leader condition were entered into the regression equation developed to test Hypothesis 1. These terms were entered into the equation as the fourth step predicting team processes. Results are summarized in Table 11. Results indicated that adding the team average power distance terms resulted in a non-significant model ($R^2 = .35$, F (13, 41) = 1.71, $p = .09$). Therefore, Hypothesis 7 was not supported for female teams either.

Results of all analyses are summarized in Table 17. Figures 14, for male teams, and 15, for female teams, show my conceptual model, the links that remain are the links which were supported by the data. The links which were not supported have been removed.

Table 17. Overview of results by hypotheses.

Hypothesis	Results of hypothesis testing
1. The relationship between team cultural diversity and team processes is moderated by leader social distance in such a way that team diversity is more positively related to team processes when leader social distance is low than when leader social distance is high.	**Male teams**: hypothesis not supported. However, a negative relationship between heterogeneity on tolerance for ambiguity and team process was made weaker by distant leaders **Female teams**: hypothesis supported for tolerance for ambiguity dimension.
2. Team affective emergent states are positively related to team processes.	**Male teams**: hypothesis supported. **Female teams**: hypothesis supported.
3. Team affective emergent states mediate the moderated relationship among team diversity, leader social distance and team processes.	**Male teams**: hypothesis not supported. **Female teams**: hypothesis not supported. However the relationship between heterogeneity in power distance and affect was positive for those with socially close leaders, and negative for those with socially distant leaders.
4. Leadership condition and team average power distance will interact in such a way that teams high on	**Male teams**: hypothesis not supported. However, the relationship between heterogeneity in collectivism and affect

power distance and led by leaders who are socially distant will have a higher positive affect than teams high on power distance and led by leaders who are socially close.	was negative for those with socially distant leader, and positive for those with socially close leaders. **Female teams**: hypothesis not supported. However the relationship between heterogeneity on tolerance for ambiguity and affect was negative for those with socially distant leaders, and close to zero with socially close leaders.
5. Team processes are positively related to team outcomes (performance and viability).	**Male teams**: hypothesis supported. **Female teams**: hypothesis supported.
6. Team processes will mediate the moderated relationship among team diversity, leader social distance and team outcomes.	**Male teams**: hypotheses not supported for either outcome. **Female teams**: hypotheses not supported for either outcome. However, the relationship between heterogeneity on tolerance for ambiguity and performance was positive for teams with socially distant leaders, and negative for teams with socially close leaders. There was a positive relationship between heterogeneity on

	power distance and viability when leaders were socially close, but when leaders were socially distant there was a negative relationship.
7. Leadership condition and team power distance will interact in such a way that teams high on power distance and led by leaders who are socially distant will have higher team processes than teams high on power distance and led by leaders who are socially close.	**Male teams**: hypothesis not supported. **Female teams**: hypothesis not supported.

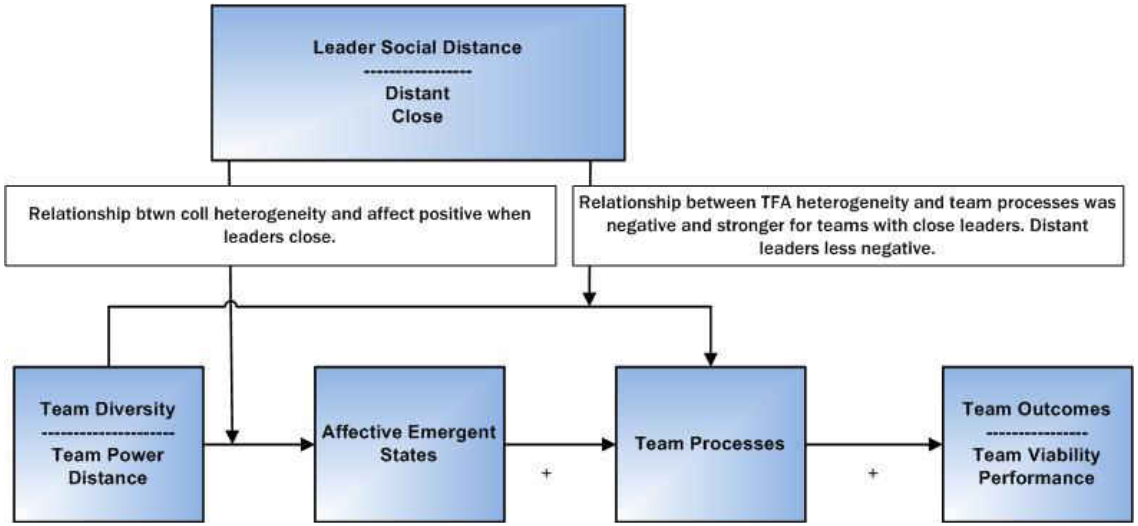

Figure 14. Conceptual model supported by the data, for male teams.

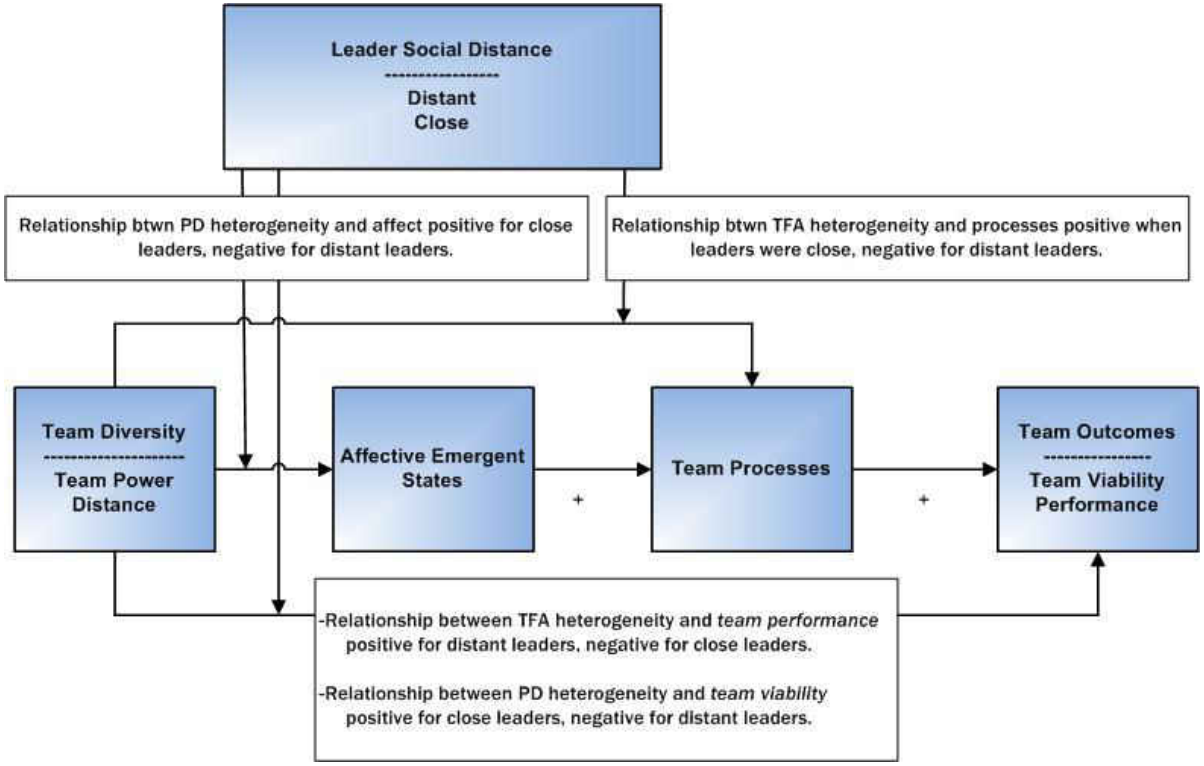

Figure 15. Conceptual model supported by the data, for female teams.

CHAPTER FIVE: DISCUSSION

Results from the current study indicated that the moderating effect of leader distance on the effects of cultural heterogeneity within a team depends on 1) the particular dimension of culture, 2) the gender of teammates, and 3) the nature of the dependent variable (affective, behavioral, or outcomes). Hypothesis 1 proposed that leader social distance would interact with team diversity to predict team processes in such a way that teams with close leaders would have a more positive relationship between diversity and team processes. The dimension of cultural heterogeneity that affected team processes, tolerance for ambiguity, was the same for male and female teams. However, the interaction found between this dimension of diversity and the leader manipulation varied for male and for female teams. Results indicated that the relationship between heterogeneity on tolerance for ambiguity and team processes was positive for female teams who had leaders who were close. On the other hand, for female teams who were led by distant leaders this relationship was negative. Therefore, close leaders not only alleviated the negative effects of diversity on team processes that existed with distant leaders, they actually turned diversity into a positive influence for female teams.

For male teams, however the findings were different. Results indicated that the relationship between heterogeneity with respect to tolerance for ambiguity and team processes in both leadership conditions was negative but close leaders exacerbated this negative relationship.

The relationship between team affect and team processes was positive for both male (r = 30) and female teams (r = .40) with the correlation being stronger for the female teams. Regardless of gender, there was no support for the hypothesis that average levels of power distance would be positively associated with affect when the team leader was distant. However, for female teams power distance heterogeneity was negatively related to team affect when the leader was distant but positive when the leader was socially close. With respect to predicting team affect in male teams, heterogeneity on collectivism interacted with the leader manipulation. Specifically, heterogeneity was negatively associated with team affect for teams with distant leaders but positive for teams with close leaders.

Team processes were positively correlated with both team viability and team performance outcomes. Again, these correlations were stronger for female teams than for male teams. Leader condition did not interact with heterogeneity on any of the cultural dimensions to predict viability or team performance outcomes for male teams. However, for female teams, the relationship between heterogeneity on tolerance for ambiguity and team performance was positive for teams led by distant leaders but negative for teams led by close leaders. This interaction was directly opposite from the interaction between heterogeneity in tolerance for ambiguity and leader condition as predictors of team process. With respect to predicting team viability, heterogeneity with respect to power distance was positively related for female teams with close leaders but negatively related for female teams with distant leaders.

In summary, the findings of this study demonstrate that leader distance moderates the effects of heterogeneity on culture and team processes and team outcomes however the nature of the interaction between these variables differs for male and female teams. Significant interactions were found between heterogeneity on culture dimensions and leader condition on all study variables for female teams, but only team affect and processes were impacted by this interaction for male teams. Results of the analyses indicated that heterogeneity with respect to individualism did not have a direct or moderated effect on any of the dependent variables in this study. Moreover, heterogeneity with respect to collectivism was only a significant predictor of team affect for male teams. The interaction between heterogeneity with respect for tolerance for ambiguity interacted with leader condition to predict team processes and performance outcomes whereas heterogeneity with respect to power distance interacted with leader condition to predict the affective states and outcomes (i.e., viability). I had expected that close leaders would be able to better harness the potential benefits of what can come with heterogeneity in teams; however, this was not always what was supported by the data. For female teams this was true for team affect, team processes, and viability. However, for predicting team performance, heterogeneity hurt the team's performance when the leader was close, but benefited the team when the leader was distant. For male teams, however, heterogeneity on tolerance for ambiguity was always negatively related to team processes but this effect was made worse by a distant leader.

Theoretical Implications

The present study has several theoretical implications regarding leadership and diversity in teams. One theoretical implication is that cultural theory appears to serve as a useful theoretical lens to understand the influence of leadership. The findings of this study do suggest that an interaction between leadership and team diversity does exist in explaining team affect, processes and outcomes. However, the interaction of diversity and leadership is contingent on gender and the specific cultural dimensions rather than cultural diversity as a composite.

The cultural dimension of tolerance for ambiguity was consistently found to significantly interact with the leadership manipulation, in both male and female teams. However, the nature of the interaction was different for these teams. One explanation as to why this cultural dimension interacted with leader social distance could be based on the characteristics of the task and the context. That is, the task that the teams were asked to perform was a highly interdependent task with high levels of uncertainty. The context being, they were ad-hoc teams with a leader assigned to them without having any previous experience with that leader. Given that tolerance for ambiguity defines how individuals accept uncertain situations, diversity in team member's acceptance of uncertain situations was the key factor for why the leader manipulation interacted with this cultural dimension. Specifically, in a team where players differ on how they handle uncertain situations, more discrepant views of how to approach the task can arise; therefore the influence of the leader may have more impact on how team members interact.

The present study's strength lies in the focus of understanding leader distance. For that reason, an obvious theoretical implication of the current study is to add to the understanding of leader distance theory. While we, leadership researchers, have a broad understanding of leadership we still do not understanding the fundamental processes that drive the influencing effect of leadership. Theory on proximal leaders has been conceptualized but little empirical work has been conducted. This study provides a snapshot at how a specific cultural dimension and gender are influential in explaining the impact of leadership. Moreover, it provides additional understanding that leader distance has a differential impact on male and females. In this study the gender of the leader was matched to the team, to better understand the implications of leader distance and how it interacts with cultural heterogeneity future research would benefit from investigating how distance may interact with gender of the leader, and how this influences team affect, processes, and outcomes. That is, do culturally heterogeneous female teams benefit from socially close leaders even if they are male leaders? Or, do culturally heterogeneous male teams benefit from socially distant leaders, in terms of team processes, if they are led by female leaders?

This research makes a theoretical contribution to the multi-cultural team collaboration literature as well. Most theory of team collaboration neglects the central role of leadership in explaining what influences followers to engage in certain behaviors. An interesting finding, although one that was not hypothesized, of the current study was how heterogeneity on individualism influenced the team member's perceptions of team diversity. There was a positive relationship between actual heterogeneity on

individualism and perception of team diversity. A possible explanation to this finding could be leveraged from what we know from the GLOBE studies. According to the GLOBE ratings, the U.S. is a medium individualistic country. Perhaps this dimension is most important or salient to team members. Therefore, when the graphs were presented to them they focused on the graph for individualism more than any of the other graphs. What is important to keep in mind about this finding is that the ratings of perceptions which I tested were ratings of perceptions before the team members interacted with one another. Thus, the fact that heterogeneity on individualism was the only dimension that predicted ratings of perceptions, and that the cultural dimensions which were found to interact with the leader manipulation included all of the dimensions *except* for individualism, is a finding that can begin to help understand the implications of cultural diversity in teamwork. This study has examined the important role of leadership in influencing multi-cultural team collaboration. Moreover, it has highlighted that diversity on certain dimensions (i.e., individualism and collectivism) were not unique predictors in predicting team processes or performance nor did they interact with the leadership condition.

Practical Implications

While the results of this study require further examination and cross-validation, there are two important implications for managers of global organizations who lead diverse teams that should be discussed. First, the fact that this research demonstrated that the nature of the interaction between cultural dimensions and the leader manipulation differed for males and females suggests that consideration of the gender composition of a

team is important. My findings seem to suggest that female teams reacted more positively to close leaders when the outcomes are affect, processes and viability. However, they reacted more positively to distant leaders when the outcome was performance. On the other hand, the data suggests that male teams responded better to distant leaders when the outcome was team processes but they responded more positively to close leader when the outcome was team affect. Although additional research is necessary to truly determine the impact of leader social distance in a team, leaders should understand that their behavior has differential impact on female and male team members. In complex or highly creative tasks where it is critical to success for team members to engage in team processes such as information sharing, shared leadership, and discussion participation, managers should be aware of how their behaviors can impact team members' ability (or even resistance) to engage in these types of behaviors.

Second, my findings also suggest that the interaction between leadership and culture was extremely dependent on the dimension of culture. These results are relevant for leader development. The differential impact of cultural dimensions is apparent in the results of this study. The goal of leader development programs is to develop the skills and abilities of leaders to influence others, the information garnered from this study can provide data to help leaders understand how cultural differences of team members interact with leader's behavior and the effect it has on team affect, behaviors and outcomes. Leaders may facilitate higher levels of team affect and team processes in female teams with high levels of heterogeneity in tolerance for ambiguity if they reduce the emphasis of their authority over the team. On the contrary, when leaders are

responsible for leading male teams leading them by emphasizing the distance between them and the team on authority and power may increase the potential for the team to engage in effective team processes.

Study Limitations and Future Research

Although the current study makes a valuable contribution to the theory of leader distance and to explaining its impact on team-level outcomes, several limitations must be acknowledged. First, it should be noted that the use of a student sample limits the external validity of the findings. However, it should be noted that this lab study was conducted to better understand the construct of leader social distance and whether it impacted team level outcomes. Moreover, the goal was to isolate a construct and test its relations to other conceptual variables.

Second, another limitation of this study was that the teams were ad-hoc teams being led by a leader they had no prior knowledge of or experience with. Although great efforts were made to provide a back-story regarding the leader's expertise in the game and role within the team, the design features might be expected to weaken the effect of leader social distance since the participants had little at stake.

Another limitation of the study that should be noted is the task that was used. Although the task demonstrated to be a suitable collaborative task in theory, the complexity of the game may have been too much for an ad-hoc team to learn and perform in such a limited amount of time. The lack of findings associated with outcome performance may be attributed to this study flaw.

A limitation that should also be noted is that leader social distance was examined in a controlled lab study rather than in an organizational context. Although this may question the external validity of this study, it should be emphasized that the goal of this study was to isolate a construct, leader social distance, and examine how it related to other conceptual variables. An additional limitation of this study is that leader social distance was examined at two extreme ends of the continuum, the very socially distant and the very socially close. Future research which examines this construct using field data should consider examining if leaders can truly be categorized in such discrete ways. It is likely that a leader who may act in a protypically distant manner may not always act distant. Examining how different levels of social distance impact teams would be an interesting next step in this line of research.

Finally, common method variance also serves as a potential limitation of the current study. With the exception of performance outcome data, variables were collected using survey methodology. To avoid common method variance, it would be worthwhile to use multiple approaches to data collection. For example, if resources were available gathering observational data would add to our understanding of the impact of leader distance.

Given the novelty of empirical research on leader social distance and the link between leader social distance and team diversity, further study is warranted. Future studies may explore other important potential outcomes. These include individual outcomes such as individual level performance, trust in the leader, or evaluation of leader effectiveness. Researchers should also broaden the study of leader social distance to

include the other sub-dimensions of leader-follower distance (i.e., psychological and interaction). A research program can be based on examining the sub-dimensions and whether they are or are not unique measureable dimensions as proposed by Antonokis and Atwater (2002). Better understanding of the construct can come also with research that examines if leader social distance is a skill that can be developed, similar to that of transformation leadership (Barling, Weber, & Kelloway, 1996).

Moreover, other mediating or moderating mechanisms should be included in future examinations of the impact of leader social distance. They may include, but are not limited to, leader-follower identity, task characteristics, or implicit motives by the leader and/or the followers. Moreover, the current thesis was based on the interaction between leadership and diversity in teams based on culture, future research could examine the impact of social distance on other operationalizations of diversity. For example, future research could examine whether the relationships found in this study hold up in functionally diverse teams.

The current study used a basic science lab methodology to study the construct of leader distance. Future studies should choose to investigate this construct in organizations. Moreover, research should consider investigating the bi-directional impact between leaders and followers in the context of to leader distance. Specifically, examining how followers affect leader distance would be a compelling study that would inform the theory of leader distance. Finally, future research on leader social distance could attempt at identifying the potentially negative effects of leader distance. For

example, one could argue that leader distance may create an environment which could lead to deviant behaviors.

Conclusion

This study represents one of the first attempts to systematically evaluate the construct of leader social distance. The primary purpose of the current study was to explore the moderating impact of this construct. The secondary purpose included investigating the interaction of leader social distance and team diversity. A laboratory-based study in which leadership was manipulated was used to examine two levels of leader social distance (i.e., socially distant and socially close). The results of the study indicate a significant moderating effect on team processes. Moreover, there were indications that specific cultural dimensions did interact with leader social distance.

Results indicated that for male teams, diversity on the cultural dimension of tolerance for ambiguity distance leaders interacted with leader social distance such that when leaders were distant the teams perceived better team processes than when leaders were close. On the other hand, when examining affect variables as the dependent variable, diversity on the cultural dimension of collectivism was positively related to levels of affect in the team when leaders were socially close and negative when leaders were socially distant. In other words, close leaders were able to create a positive relationship between diversity on collectivism and levels of team affect, where as distant leaders created a negative relationship.

Results for female teams indicated that socially close leaders were able to create a positive relationship between diversity on cultural variables (e.g., tolerance for ambiguity

and power distance) and affect and process variables, where as socially distant leaders created a negative relationship between diversity variables and affect and process variables. However, when examining the impact of the interaction between cultural diversity and leader social distance on performance for female teams results indicated that teams with socially distant leaders had a positive relationship between diversity and performance, where as socially close leaders created a negative relationship between diversity on tolerance for ambiguity and performance.

As organizations continue to increase in diversity, it will be important to continue to understand how leadership impacts individual, team and organizational performance. This study should serve as a point of departure for researchers who choose to continue working on unpacking the black box of leadership. In total, these findings provide some insight on the construct of leader social distance but also provide support that this concept needs further development and empirical examination.

APPENDIX A: UCF IRB APPROVAL LETTER

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **Deborah J. DiazGranados, Eduardo Salas, Shawn Burke**

Date: **November 01, 2010**

Dear Researcher:

On November 1, 2010, the IRB approved the following human participant research until 10/31/2011 inclusive:

Type of Review:	UCF Initial Review Submission Form Approval was granted for an alteration of the consent process for this research which involves deception.
Project Title:	Assessing the impact of leader distance on a multicultural team.
Investigator:	Deborah J DiazGranados
IRB Number:	SBE-10-07164
Funding Agency:	Army Research Office(ARO), University of Maryland
Grant Title:	Dynamic Models of the Effect of Culture on Collaboration and Negotiation
Research ID:	N/A

NOTE: Before you begin this research, the Department of Defense must also review and approve this study including approval of a waiver or alteration of the consent process. Please submit a copy of the approval letter when it becomes available.

The Continuing Review Application must be submitted 30days prior to the expiration date for studies that were previously expedited, and 60 days prior to the expiration date for research that was previously reviewed at a convened meeting. Do not make changes to the study (i.e., protocol, methodology, consent form, personnel, site, etc.) before obtaining IRB approval. A Modification Form **cannot** be used to extend the approval period of a study. All forms may be completed and submitted online at https://iris.research.ucf.edu .

If continuing review approval is not granted before the expiration date of 10/31/2011, approval of this research expires on that date. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

Use of the approved, stamped consent document(s) is required. The new form supersedes all previous versions, which are now invalid for further use. Only approved investigators (or other approved key study personnel) may solicit consent for research participation Participants or their representatives must receive a copy of the consent form(s).

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Joseph Bielitzki, DVM, UCF IRB Chair, this letter is signed by:

APPENDIX B: CULTURE DEFINITION PRESENTED TO PARTICIPANTS

PRESENT THE GRAPHS (an excerpt from the RA script)

- Experimenter says [standing near the door at the front of the table]:

[Pass Out Graphs]

"The purpose of this study is to investigate culture and teams. The first set of surveys you completed asked you questions to determine your cultural orientation. Based on how you just answered the questions, graphs have been created to show how each of you are in regards to 4 specific characteristics of culture. These graphs DO represent how you really responded to the surveys you completed earlier. There is no right or wrong answers this is just a manner in which we can describe ourselves."

"Look at the first graph which is labeled Collectivism. Each bar represents a person on your team, and corresponds to your seat number. The first graph depicts each team member's level of collectivism. Group membership, such as with family, friends, or religious or social organizations, is a central aspect of identity for people who are high on collectivism. A high bar represents an emphasis is placed on sacrifice for the common good of the group and maintaining in-group harmony with others."

"Look at the second graph, labeled Individualism. This shows how individualistic each of you are. It emphasizes how independent you are. A high bar represents that you are more individualistic, this means you value your independence, you look out for yourself and tend to enjoy individual rewards and recognition."

"Now, look at the third graph labeled Tolerance for Ambiguity. This shows each team member's level of Tolerance for Ambiguity. Tolerance for Ambiguity refers to how comfortable you are in uncertain or unfamiliar situations. A high bar indicates that you are comfortable with uncertain or unfamiliar situations. A low bar indicates that you DISLIKE uncertain or unfamiliar situations."

"Look at the last graph. This graph shows how you rated with respect to a dimension called Power Distance. This refers to the degree that inequality between people of different statuses is accepted as guiding rules for interaction. For example between a supervisor and a subordinate, a teacher and a student, or a parent and a child. A high bar indicates you believe that differences in status should define how people interact. A low bar indicates you believe that differences in status should NOT define how people interact."

"I'm going to give you a minute to look over the graphs."

APPENDIX C: LEADER SCRIPT WITH LEADER BEHAVIORS

SOCIAL DISTANCE DEFINED	• Social distance is defined as, "perceived differences in status, rank authority, social standing, and powers, which affect the degree of intimacy and social contact that develop between followers and their leader" (p. 682, Antonakis & Atwater). • Unique expertise in particular domain (Bogardus, 1927) • Psychological distance "psychological effects of actual and perceived..differences between the supervisor and subordinate" (pp. 328-329, Napier & Ferris, 1993); including demographic distance (age, race, gender), power distance (acceptance of power differentials between follower and leader), perceived similarity (degree to which an individual believes she is similar to target individual) and values similarity (similarity of beliefs, values, or attitudes)

LEADER BEHAVIOR	MESSAGE CONTENT	Socially Close	Socially Distant
Introduction	Why wasn't this set up properly? Next time have it set up. Close your laptops now so we can start. As you've been told I've played this game before. I'm here today because I was chosen as the best player and the most effective leader.	Oh, this wasn't set up right. Hey [experimenter name], could you clean up the board next time? Thanks. Please close your laptops so we can start. As you were told, I've played this game before. I'm here today because I was chosen as the best player.	Why wasn't this set up properly? Next time have it set up. Close your laptops now so we can start. As you've been told I've played this game before. I'm here today because I was chosen as the best player and the most effective leader.
Structure and Plan • Define and	I will work as the leader of the team. Prior	I've been assigned as the leader of the team. Prior to the actual mission I will	I am the leader of this team, so I will tell you my

structure own work and work of team • Identifies when key aspects of work need to be done • Works with team to develop best approach to work • Develop or helps develop SOPs • Clarifies task performance strategies • Makes sure members have clear roles	to the actual mission I will provide you with some additional tips and knowledge that I learned from participating in similar missions last semester and earlier this year.	provide you with some additional tips and knowledge that I learned from participating in similar missions last semester and earlier this year.	expertise prior to your actual mission. Last semester and earlier this year I've led many teams, so I have additional tips and knowledge that will lead you to success.
Defining Mission • Ensure team has clear direction • Emphasize importance of collective sense of mission • Develop and articulate clear team mission • Ensure team has clear understanding of purpose • Helps provide clear vision of where team is going	The World Health Organization has recently received reports that four deadly diseases have broken out and are spreading at an alarming rate.	The World Health Organization has recently received reports that four deadly diseases have broken out and are spreading at an alarming rate.	I have recently received a report from The World Health Organization indicating that four deadly diseases have broken out and are spreading at an alarming rate.

Sensemaking • Assist in interpreting things happening inside team • Assist in interpreting things happening outside team • Facilitate team understanding of events/situations • Help team interpret internal or external events • Help the team make sense of ambiguous situations	During training you learned about how to move around the board, based on my experience I have found that each of the actions have tradeoffs Specifically, they differ in terms of the time it takes to reach destinations and the type of resources needed to do them. In terms of speed: driving is the slowest, all other methods take approximately the same time assuming you have the resources needed. In terms of the resources needed. • To Drive: There must be a red line connecti	Now, during training you learned about how to move around the board by making basic actions. Know that each of the actions have tradeoffs. Actions differ in terms of the time it takes to reach destinations and the type of resources needed to do each action. In terms of efficiency: driving is the least efficient, all other methods rate the same on efficiency assuming you have the resources needed. Remember that: • To Drive- There must be a red line connecting the cities of interest • To Shuttle a flight- There must be at least 2 research stations on the board. You can shuttle between any two. No cards necessary. • To take a charter or direct	Now, during training you learned about how to move around the board by making basic actions. Based on my experience I have found that each of the actions have tradeoffs. Actions differ in terms of the time it takes to reach destinations and the type of resources needed to do each action. In terms of efficiency: I've played this a lot and I've determined that driving is the least efficient, all other methods rate the same on efficiency assuming you have the resources needed. Remember that: • To Drive- There must be a red line connecting the cities of interest • To Shuttle a

	ng the cities of interest • To use the Shuttle: There must be at least 2 research stations on the board. You can shuttle between any two. No cards necessary. • To take a charter or direct flight you need a player card which enables this move. Based on my experience I have found that one way to reduce potential outbreaks is to be aware of the number and	flight you need a player card in your hand which enables this move. In training you also learned about outbreaks. I have been told one way to reduce potential outbreaks is to be aware of the number and type of disease cubes on the board – when possible treat the disease cubes as it will reduce the number and impact of outbreaks	flight- There must be at least 2 research stations on the board. You can shuttle between any two. No cards necessary. • To take a charter or direct flight you need a player card in your hand which enables this move. In training you also learned about outbreaks. Based on my experience I have found that one way to reduce potential outbreaks is to be aware of the number and type of disease cubes on the board – when possible treat the disease cubes as it will reduce the number and impact of outbreaks

	type of disease cubes on the board – when possible treat the diseases (thereby removing the disease cube from the board) as it will reduce the number and impact of outbreaks		
Structure and Plan • Define and structure own work and work of team • Identifies when key aspects of work need to be done • Works with team to develop best approach to work • Develop or helps develop SOPs • Clarifies task performance strategies • Makes sure members have clear roles	At this time I would like to set up some norms and procedures for how we will operate as a team. • Each turn will be organized into three steps. First, a decision needs to be made on the four actions that you would like to make to best advance the team's mission. Second, you need to draw 2	So you are clear on what to do, I would like to set up some rules and procedures for how you will operate as a team. In training you learned how to make both basic and special actions. Your turn will be organized into three steps. First, a decision needs to be made on the four actions that you would like to make to best reach the team's objective. I am allowing a pass to count as an action. Second, you need to draw 2 player cards. Finally, infection cards need to be drawn so you can get an update on where the disease is spreading. Operating in this manner has assisted teams in making	As your leader, I will set up some rules and procedures that will guide how the team operates. I expect you to follow them. In training you learned how to make both basic and special actions. • I need you to organize your turn into three steps. First, a decision needs to be made on the four actions that you would like to make to best reach the team's objective. I

	player cards. Finally, an infection card needs to be drawn so you can get an update on where the disease is spreading. Operating in this manner has proven to assist teams in completing decisions and developing strategies in a timely manner. • To assist me in preparing my feedback to the team you will need to clearly say out loud the moves you decide upon for your turn. Verbalize each action. This will	decisions and developing strategies in a timely manner. • So that your team and I are aware of the actions you take for each turn please clearly say out loud the moves you decide to make for your turn. That means verbalize each action. This will help me prepare my feedback to the team. Let's imagine that it is player 3's turn, player 3 if you would decide to make the following 4 actions on your turn, you would say: One, drive to Manila; Two, treat disease cube; Three, drive to Sydney; and Four, treat disease cube. • Finally, based on the time constraints, once you take your hand off your pawn your move is complete and you can't	am allowing a pass to count as an action. Second, you need to draw 2 player cards. Finally, infection cards need to be drawn so you can get an update on where the disease is spreading. I know that following these procedures has proven to assist the teams I've led in making decisions and developing strategies in a timely manner. • I need you to do something so that I can provide you with a critique at the end of your mission. You will need to clearly say out loud the moves you decide to make for your

	also help to keep your team members informed of what is going on. • Finally, based on our time constraints, once you take your hand off your pawn your move is complete and you can't change it. This procedure will keep the team moving forward in a timely manner given our time constraints.	change your move. This procedure will keep the team moving forward in a timely manner.	turn. Let me be clear, you need to verbalize each action. For example, player 3 if you would decide to make the following 4 actions on your turn, you need to say: One, drive to Manila; Two, treat disease cube; Three, drive to Sydney; and Four, treat disease cube. • Finally, based on the time constraints I am setting upon you, once you take your hand off your pawn your move is complete and you can't change it. I am sure this procedure will keep the team moving forward in a timely manner.
Defining Mission	Your mission is	Your mission is to work as a	So listen up your

• Ensure team has clear direction • Emphasize importance of collective sense of mission • Develop and articulate clear team mission • Ensure team has clear understanding of purpose • Helps provide clear vision of where team is going	work as part of a four-person multi-disciplinary disease control team at the World Health Organization. Your team is tasked with working together to find cures for the diseases, plan a strategy of eradication, and prevent additional outbreaks of the four identified diseases. As the diseases are capable of spreading very quickly we only have 20 minutes for our mission before we must attend to other regions of the world. If the team is not able to keep the diseases contained before finding the necessary cures, the planet will be overrun and your mission will be considered a	four-person multi-disciplinary disease control team for the World Health Organization. Your team is tasked with working together to find cures for the diseases, plan a strategy of eradication, and prevent additional outbreaks of the four identified diseases. As the diseases are capable of spreading very quickly there is only 20 minutes for your mission before the team must move on to other regions of the world. If the team is not able to keep the diseases contained before finding the necessary cures, the planet will be overrun and your mission will be considered unsuccessful.	mission is to work as a four-person multi-disciplinary disease control team for the World Health Organization. I expect your team to work together to find cures for the diseases, plan a strategy of eradication, and prevent additional outbreaks of the four identified diseases. As the diseases are spreading very quickly I have decided that you must complete your mission within 20 minutes before moving on to other regions of the world. I will consider your mission a failure if the team fails to keep the diseases contained before finding the necessary cures.

	failure.		
Structure and plan • Define and structure own work and work of team • Identifies when key aspects of work need to be done • Works with team to develop best approach to work • Develop or helps develop SOPs • Clarifies task performance strategies • Makes sure members have clear roles	You will be working as a member of a four person disease control team where each member will have specific roles and responsibilities. The team will be comprised of a medic, researcher, scientist, and communications expert. The medic will use his knowledge to cure diseases and save lives…….--The medic can cure diseases and save lives. [2 bullets per role, with responsibilities. Work as a team, etc.] --Immediately prior to our performance mission I will give you more detailed information about our roles During the mission I will be providing	You will be working as a member of a four person disease control team where each member will have specific roles and responsibilities. Your roles are defined as the medic, researcher, scientist, and communications expert. The medic has resources which enable the efficient curing of diseases and promoting human life. The researcher is able to search for knowledge and conduct investigations in order to establish facts. The scientist makes new discoveries and makes it possible to operate in a safe environment. The communications expert helps to create or deliver news and other information to the team. Immediately prior to your performance mission I will give you more detailed information about your roles.	You will be working as a member of a four person disease control team where each member will have specific roles and responsibilities. I've defined your roles as the medic, researcher, scientist, and communications expert. The medic has resources which enable the efficient curing of diseases and promoting human life. The researcher is able to search for knowledge and conduct investigations in order to establish facts The scientist makes new discoveries and makes it possible to operate in a safe environment.

	the team with updates gathered from external sources regarding other things which are happening outside the immediate team that may impact your mission. However, my primary role during the mission is to observe the team such that I can deliver an after action review/feedback to the team at the end of the first mission. This information will assist the team in preparing for the next mission you perform.	During the mission I will be receiving information from sources outside the team that may or may not impact your mission. I will provide you with those updates as I receive them. However, the other job I have to do during the mission is to observe the team such that I can deliver feedback to you at the end of the first session. This information will assist the team in preparing for your second mission.	The communications expert helps to create or deliver news and other information to the team. Immediately prior to your performance mission I will give you more detailed information about your roles. As the team leader, I am privy to receiving sensitive information from sources outside the team. Some of this information may impact your mission and some may not, I will decide what information needs to be passed on to you. The other job I have to do during the mission is to observe the team so that I can critique your performance at the end of the first session. The

			information I give you will assist the team in preparing for your second mission.
Establishing expectations and goals • Defines and emphasizes team expectations • Asks members to follow standard rules and regs • Communicates expectations • Communicates expectations of high performance • Maintains clear performance standards • Sets or helps set challenging and realistic goals • Ensure clear performance goals • Assist in development of performance goals • Reviews team goals for realism, challenge,	I expect you to work together as a team to develop strategies to eradicate existing diseases and control/ minimize outbreaks. You have 20 minutes to focus on the diseases in this part of the world before we have to hand it off to a relief team. I will consider our portion of the mission unsuccessful if the team: experiences 8 outbreaks, runs out player cards or any one color of disease cubes.	Let me do a review, your team will work together to develop strategies to eradicate existing diseases and minimize outbreaks. You have 20 minutes to focus on the diseases in this part of the world. This portion of the mission will be considered unsuccessful if the team: experiences 8 outbreaks, runs out of player cards or runs out of any one color of disease cubes.	To reiterate, this is what I expect of you. Based on my expertise I have found that working together as a team to develop strategies to eradicate existing diseases and minimize outbreaks is the best way to achieve success. I expect you to work this way. Like I said before, I have decided the team has 20 minutes to focus on the diseases in this part of the world. Based on my standards, I will consider the mission a failure if the team: experiences 8 outbreaks, runs out of player cards or runs out of any one color

necessity **--Put in leverage of his expertise? (asking questions)**			of disease cubes.
Roles and Responsibilities		In these envelopes, you'll find 3 sheets. One, which I created, is a tips sheet. The second is a sheet which provides you with the resource assessment on each move you can make around the board. The green sheet is specific information about your role, and the color of your pawn. Take a moment to read all the information within the envelope while I set up the board.	In these envelopes, you'll find 3 sheets. One, which I created for you, is a tips sheet. The second is a sheet which provides you with the resource assessment on each move you can make around the board. The green sheet is specific information about your role, and the color of your pawn. Take a moment to read all the information within the envelope while I set up the board.
Beginning of Training round (15 minutes)		It is best if you have an opportunity to play a training round. This round will last for 15 minutes and is only for training purposes. You can ask questions during this round, so be sure to ask any questions you have. Keep in mind though,	I have found that it is best if I provide you with an opportunity to play a training round. This round will last for 15 minutes. You can ask

		that I will only answer questions about HOW to play correctly, not what moves you should make. Strategies for winning will come from what I've already shared with you, and from working together with your teammates. Participant 2 will go first, and then the person to their left will go next, and so on.	questions during this round, so be sure to ask any questions you have. However, I will only answer questions about HOW to play correctly, not what moves you should make. Strategies for winning will come from what I've already told you, and from working together with your teammates. Participant 2 will go first, and then the person to their left will go next, and so on.
Monitoring Team • Monitor changes in team's external environment • Monitor team and member performance • Keeps informed about what other teams are doing • Requests task-relevant information from members • Notices flaws in	Starting the timer now, because diseases are spreading quickly, you must complete your mission within 20 minutes. I will provide you with a warning at 10 minutes and 5 minutes. There are 10 minutes remaining in	I'm starting the timer now and I will provide you with a warning at 10 minutes and at 5 minutes. You may begin. Just to let you know there are 10 minutes remaining in this mission Checking in with a time update…there are 5 minutes remaining in the mission Time is up.	I'm starting the timer now and I will provide you with a warning at 10 minutes and 5 minutes. Begin. Listen up, there are 10 minutes remaining in this mission Attention …there are 5 minutes remaining in the mission Time is up we

task procedures or inputs	this mission There are 5 minutes remaining in the mission Time is up we have to move on.	Please pass me all the player cards and direct your attention back to [experimenter name].	have to move on. Give me all the player cards and direct your attention back to [experimenter name].
Beginning of Performance 1 round (20 minutes)		Please close your laptops so that we can continue. OK, so you just finished your training round. In a minute you will begin the first of 2 performance missions. Remember, one of my jobs is to observe and provide your team with feedback, so I will be keeping track of how you play. If I see that you make an incorrect move, I will let you know. Before you begin, please help me by placing disease cubes on the following cities to setup the board:	Close your laptops now so that we can continue. You just finished your training round. In a minute you will begin the first of 2 performance missions. As I said before, one of my jobs is to observe and critique your team, so I will be keeping track of how you play. If I see that you make an incorrect move, I will correct you. Before you begin, I need you to place disease cubes on the following cities to setup the board:
Monitoring the	Starting the	Participant 3 will go first,	Participant 3 will

Team • Monitor changes in team's external environment • Monitor team and member performance • Keeps informed about what other teams are doing • Requests task-relevant information from members • Notices flaws in task procedures or inputs	timer now, because diseases are spreading quickly, you must complete your mission within 20 minutes. I will provide you with a warning at 10 minutes and 5 minutes.	and then the person to their left will go next, and so on. I'm starting the timer now. Because, diseases are spreading quickly, you have to complete your mission within 20 minutes. I will provide you with a warning at 10 minutes and 5 minutes. You may begin.	go first, and then the person to their left will go next, and so on. I'm starting the timer now, because diseases are spreading quickly, you must complete your mission within 20 minutes. I will provide you with a warning at 10 minutes and 5 minutes. Begin.
Manage team boundaries/Provide resources • Buffers the team from external forces or events • Helps different teams, communicate with one another • Acts as a representative of the team with other organizational parts • Advocates on behalf of the team to others in organization	I have just received some information from outside sources indicating that there is a plane in the vicinity that has some extra passenger space and has offered to help our team. This means that the team now has the opportunity to move one pawn to any city on the board. It can be any players' pawn and doesn't have to	Oh listen to this, I just got some information. When you cure a disease you no longer have to add cubes of that color to the board. I have just received some information indicating that there is a plane in the vicinity that has some extra passenger space and has offered to help the team. This means that the team now has the opportunity to move one pawn to any city on the board. It can be any players' pawn and doesn't have to be your turn or your pawn, as long as your team	I just got some information from the World Health Organization. Based on this information, I've decided when you cure a disease you no longer need to add cubes of that color to the board. I just received a top secret intelligence report…. indicating that there is a plane in the vicinity with some extra passenger space.

• Helps to resolve difficulties between teams	be your turn or your pawn, as long as your team member agrees to being moved.	member agrees to being moved.	I have requested and garnered approval to use this plane for a portion of your mission. Based on my expertise with the game the team should strongly consider using this additional resource to move one pawn to any city on the board. It can be any players' pawn and doesn't have to be your turn or your pawn, as long as your team member agrees to being moved.
Monitoring the team • Monitor changes in team's external environment • Monitor team and member performance • Keeps informed about what other teams are doing • Requests task-relevant information from members		Just to let you know there are 10 minutes remaining in this mission.	Listen up; there are 10 minutes remaining in this mission.

• Notices flaws in task procedures or inputs			
Manage team boundaries/ Provide resources • Buffers the team from external forces or events • Helps different teams, communicate with one another • Acts as a representative of the team with other organizational parts • Advocates on behalf of the team to others in organization • Helps to resolve difficulties between teams	I have just received an intelligence update letting us know that there is a cargo plane in our area that has the resources needed to build an research station. The pilot has agreed to pass along those resources to your team. This means that any one player can add a research station and it will not cost you an action.	I just received a situation update that says there is a cargo plane in the area that has the resources needed to build a research station. I have been able to secure the resources for the team. This means that any one player can add a research station anywhere and it will not cost you an action.	I just received a top secret intelligence update. My sources indicate there is a cargo plane in the area that has the resources needed to build a research station. I was approved for the use of the extra cargo for your mission. Based on this additional resource, one player can add a research station anywhere and I will not count it as an action.
Monitoring the team • Monitor changes in team's external environment • Monitor team and member performance • Keeps informed about what other teams are doing • Requests task-		Checking in with a time update…there are 5 minutes remaining in the mission Time is up. You have now finished your first performance. Please pass me all the player cards and direct your attention back to [experimenter name].	Attention… There are 5 minutes remaining in the mission. Time is up we have to move on. You have now finished your first performance. Give me all the

relevant information from members • Notices flaws in task procedures or inputs			player cards, and direct your attention back to [experimenter name]
Provide Feedback • Reward performance of members according to standards • Reviews relevant performance results with team • Communicates business issues, operating results, and team performance results • Provides positive feedback when team does well • Provides corrective feedback	Based on the observations I made during your last performance session here is feedback on how your team performed. In terms of process the team shared knowledge through the transference of cards [# times]. In terms of outcomes the team built [#] research stations, cured [#] diseases, and experienced [#] outbreaks.	Now that your first mission has concluded, I will offer some feedback based on the team goals that were set early on. *This feedback can be used to prepare for your next mission.* You took the information that I shared with you to heart. In terms of process the team shared knowledge through the transferring of cards [#] times. In terms of outcomes the team built [#] research stations, cured [#] diseases, and experienced [#] outbreaks.	Now that your first mission has concluded, I will provide the team with a critique of your performance based on the goals I set for the first mission. *As I said use this critique to prepare for your next mission.* I found that you utilized my expertise to your advantage. In terms of process the team shared knowledge through the transferring of cards [#] times. In terms of outcomes the team built [#] research stations, cured [#] diseases, and experienced [#] outbreaks.
Beginning of Performance 2 Round (20		Please, close your laptops so that we can continue.	Close your laptops now so that we can

minutes)		You just finished your 1st performance round. In a minute you will begin the 2nd performance mission. I will still be keeping track of how you play. If I see that you make an incorrect move, I will let you know. Before you begin, please help me by placing disease cubes on the following cities to setup the board:	continue. You just finished your 1st performance round. In a minute you will begin the 2nd performance mission. I will still be keeping track of how you play. If I see that you make an incorrect move, I will correct you. Before you begin, I need you to place disease cubes on the following cities to setup the board:
Monitoring the team • Monitor changes in team's external environment • Monitor team and member performance • Keeps informed about what other teams are doing	I'm starting the timer now. Because diseases are spreading quickly, you must complete your mission within 20 minutes. I will provide you with a warning at 10 minutes	Participant 4 will go first, and then the person to their left will go next, and so on. I'm starting the timer now. Because diseases are spreading quickly, you have to complete your mission within 20 minutes. I will provide you with a warning	Participant 4 will go first, and then the person to their left will go next, and so on. I'm starting the timer now. Because diseases are spreading quickly, you

• Requests task-relevant information from members • Notices flaws in task procedures or inputs	and 5 minutes. You may now begin.	at 10 minutes and 5 minutes. You may begin.	must complete your mission within 20 minutes. I will provide you with a warning at 10 minutes and 5 minutes. Begin.
Manage team boundaries/Provide resources • Buffers the team from external forces or events • Helps different teams, communicate with one another • Acts as a representative of the team with other organizational parts • Advocates on behalf of the team to others in organization • Helps to resolve difficulties between teams	I have just received some information indicating that there is a plane in the vicinity that has some extra passenger space and has offered to help our team. This means that the team now has the opportunity to move one pawn to any city on the board. It can be any players' pawn and doesn't have to be your turn or your pawn, as long as your team member agrees to being moved.	Alright, so I have just received some information indicating that there is another plane in the vicinity that has some extra passenger space and has offered to help the team. This means that the team now has the opportunity to move one pawn to any city on the board. It can be any players' pawn and doesn't have to be your turn or your pawn, as long as your team member agrees to being moved.	I just received a top secret intelligence report…indicating that there is another plane in the vicinity with some extra passenger space. I have again garnered approval to use this plane for a portion of your mission. My experience again tells me the team should strongly consider using this additional resource to move one pawn to any city on the board. It can be any players' pawn and doesn't have to be your turn or your pawn, as long as your team member agrees to being moved.

Monitoring the team • Monitor changes in team's external environment • Monitor team and member performance • Keeps informed about what other teams are doing • Requests task-relevant information from members • Notices flaws in task procedures or inputs	There are 10 minutes remaining in this mission	Just to let you know there are 10 minutes remaining in this mission	Listen up, there are 10 minutes remaining in this mission.
Manage team boundaries/Provide resources • Buffers the team from external forces or events • Helps different teams, communicate with one another • Acts as a representative of the team with other organizational parts • Advocates on behalf of the team to others in organization	I just received a situation update from higher up letting us know that there is a cargo plane in our area that has the resources needed to build a research station. I have been able to secure the resources for the team. This means that any one player can add a research station and it will not cost you an action.	I just received a situation update again saying that that there is a cargo plane in the area that has the resources needed to build a research station. I have been able to secure the resources for the team. This means that any one player can add a research station anywhere and it will not cost you an action.	I just received another top secret intelligence update. My sources indicate there is a cargo plane in your area that has the resources needed to build a research station. I was approved for the use of the extra cargo for your mission. Be aware that based on this additional resource, one player can add a research station anywhere and I will not count it as an action.

• Helps to resolve difficulties between teams			
Monitoring the team • Monitor changes in team's external environment • Monitor team and member performance • Keeps informed about what other teams are doing • Requests task-relevant information from members • Notices flaws in task procedures or inputs	There are 5 minutes remaining in the mission. Time is up we have to move on.	Checking in with a time update…there are 5 minutes remaining in the mission Time is up. You have now finished your final performance. Please give me all the player cards and direct your attention back to [experimenter name].	Attention…there are 5 minutes remaining in the mission. Time is up; we have to move on. You have now finished your final performance. Give me all the player cards and direct your attention back to [experimenter name]
Feedback • Reward performance of members according to standards • Reviews relevant performance results with team • Communicates business issues, operating results, and team performance results • Provides	Based on the observations I made during your last performance session here is feedback on how your team performed. In terms of process the team shared knowledge through the transference of cards [# times]. In terms of outcomes the team built [#]	Now that your second mission has concluded, I will provide the team with some feedback on your performance based on the goals that were set. You took the information that I shared with you and utilized it during the task. In terms of process the team shared knowledge through the transferring of cards [#] times. In terms of outcomes the team built [#] research stations, cured [#] diseases, and experienced [#]	Now that your second mission has concluded, I will provide the team with another critique of your performance based on the goals I set for your mission. I found that you utilized my expertise to your advantage. In terms of process the team shared knowledge

positive feedback when team does well • Provides corrective feedback	research stations, cured [#] diseases, and experienced [#] outbreaks.	outbreaks. Please, direct your attention back to [experimenter name] for the rest of the session.	through the transferring of cards [#] times. In terms of outcomes the team built [#] research stations, cured [#] diseases, and experiences [#] outbreaks. Direct your attention back to [experimenter name] for the rest of the session.

APPENDIX D: CULTURE DIMENSION MEASURES

Individualism and Collectivism

Oyserman, D., Coon, H., & Kemmelmeier, M. (2002). Rethinking individualism and collectivism: Evaluation of theoretical assumptions and meta-analyses. *Psychological Bulletin, 128,* 3-73.

Scale:

1 = Strongly Disagree
2 = Somewhat Disagree
3 = Neither Agree nor Disagree
4 = Somewhat Agree
5 = Strongly Agree

Items:

1. It is important to me to develop my own personal style.
2. I often turn to my family or friends for social and emotional support.
3. Learning about the traditions, customs, values, and beliefs of my family and friends is important to me.
4. Though I may have some things in common with others, my personal attributes are what make me who I am.
5. My family or friends is central to who I am.
6. I know I can always count on my family or friends to help me.
7. It is important to me to respect decisions made by my family or friends.
8. I prefer being able to be different from others.
9. I am different from everyone else, unique.
10. Family or friends is more important to me than almost anything else.
11. I enjoy being unique and different from others in many respects.
12. It is important for me to be myself.
13. For me, hard work and personal determination are the keys to success in life.
14. To know who I really am, you must examine my achievements and accomplishments.
15. If you know what groups I belong to, you know who I am.
16. A person of character focuses on achieving his/her own goals.
17. Whenever my family or friends needs something I try to help.
18. To know who I really am, you must see me with members of my group.
19. I enjoy looking back on my personal achievements and setting new goals for myself.
20. It is better for me to follow my own ideas than to follow those of anyone else.
21. My personal happiness is more important to me than anything else.
22. Individual happiness and the freedom to attain it are central to who I am.
23. My relationships with others are a very important part of who I am.
24. The history and heritage of my religious, national, or ethnic group are a large

part of who I am.
25. A person of character helps his/her national, ethnic or religious group before all else.
26. My personal achievements and accomplishments are very important to who I am
27. If I make my own choices I will be happier than if I listen to others.
28. I have respect for the leaders of my religious, national, or ethnic groups.
29. My happiness depends on the happiness of those around me.
30. It is important to me to think of myself as a member of my religious, national, or ethnic group.
31. It is important for me to remember that my personal goals have top priority.
32. In some ways it is my relationships that make me who I am.
33. I often have personal preferences.
34. In the end a person feels closest to members of his/her own religious, national, or ethnic group.
35. I will sacrifice my self-interest for the benefit of the group I am in.
36. When I hear about an event I automatically wonder whether it will be good or bad for my religious, national, or ethnic group.

Tolerance for Ambiguity

Mclain, D. L. (1993). The Mstat-I: A new measure of an individual's tolerance for ambiguity. *Educational and Psychological Measurement, 53,* 183-189.

Scale:

1 = Strongly Disagree
2 = Somewhat Disagree
3 = Neither Agree nor Disagree
4 = Somewhat Agree
5 = Strongly Agree

Items:

1. I don't tolerate ambiguous situations well. (R)
2. I find it difficult to respond when faced with an unexpected event. (R)
3. I don't think new situations are any more threatening than familiar situations.
4. I'm drawn to situations which can be interpreted in more than one way.
5. I would rather avoid solving a problem that must be viewed from several different perspectives. (R)
6. I try to avoid situations which are ambiguous. (R)
7. I am good at managing unpredictable situations.
8. I prefer similar situations to new ones. (R)
9. Problems which cannot be considered from just one point of view are a little threatening. (R)
10. I avoid situations which are too complicated for me to easily understand. (R)
11. I am tolerant of ambiguous situations.

12. I enjoy tackling problems which are complex enough to be ambiguous.
13. I try to avoid problems which don't seem to have only one "best" solution. (R)
14. I often find myself looking for something new, rather than trying to hold things constant in my life.
15. I generally prefer novelty over familiarity.
16. I dislike ambiguous situations. (R)
17. Some problems are so complex that just trying to understand them is fun.
18. I have little trouble coping with unexpected events.
19. I pursue problem situations which are so complex some people call them "mind boggling."
20. I find it hard to make a choice when the outcome is uncertain. (R)
21. I enjoy an occasional surprise.
22. I prefer a situation in which there is some ambiguity.

Power Distance

Maznevski, M. L., DiStefano, J. J., Gomez, C., Nooderhaven, N. G., & Wu, P. (1997). *Variations in cultural orientations within and among five countries.* Paper presented at the Academy of International Business Annual Meeting, Monterrey, Mexico.

Scale:

1 = strongly disagree
7 = strongly agree

Items:

1) Organizations should have separate facilities, such as eating areas, for higher-level managers
2. A hierarchy of authority is the best form of organization.
3. People at higher levels in organizations have a responsibility to make important decisions for people below them.
4. The highest-ranking manager in a team should take the lead.
5. Employees should be rewarded based on their level in the organization.
6. People at lower levels in organizations should carry out the requests of people at higher levels without question.
7. People at lower levels in the organization should not have much power in organization.

APPENDIX E: AFFECT MEASURES

Team Psychological Safety

Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly, 44*, 350-383.

Scale:

1= never
5= always

Items:

1. If you make a mistake on this team, it is often held against you. (R)
2. Members of this team are able to bring up problems and tough issues.
3. People on this team sometimes reject others for being different. (R)
4. It is safe to take a risk on this team.
5. It is difficult to ask other members of this team for help. (R)
6. No one on this team would deliberately act in a way that undermines my efforts.
7. Working with members of this team, my unique skills and talents are valued and utilized.

Adapted from May, D. R., Gilson, R. L., & Harter, L. M. (2004). The psychological conditions of meaningfulness, safety and availability and the engagement of the human spirit at work. *Journal of Occupational and Organizational Psychology, 77*, 11-37.

Scale:

1= never
5= always

Items:

1. I am not afraid to be myself with this team
2. I am afraid to express my opinions in this team (R)
3. There is a threatening environment on this team (R)

Collective Efficacy

Chen, G., Gully, S. M., & Eden, D. (2001). Validation of a new general self-efficacy scale. *Organizational Research Methods, 4,* 62-83.

Scale

1 = Strongly Disagree
2 = Somewhat Disagree
3 = Neither Agree nor Disagree
4 = Somewhat Agree
5 = Strongly Agree

Items

1. *We* will be able to achieve most of the goals that *we* have set for *ourselves*
2. When facing difficult tasks, *we* are certain that *we* will accomplish them
3. In general, *we* think that *we* can obtain outcomes that are important to *us*
4. *We* believe *we* can succeed at most any endeavor to which *we* set *our* minds
5. *We* will be able to successfully overcome many challenges
6. *We* are confident that *we* can perform effectively on many different tasks
7. Compared to other people, *we* can do most tasks very well
8. Even when things are tough, *we* can perform quite well

Cohesion

Hoegl, M., & Gemuenden, H. G. (2001). Teamwork quality and the success of innovative projects. *Organization Science, 12,* 435-449.

Scale

1=Strongly Disagree
7=Strongly Agree

Items:

1. It was important to the members of our team to be part of this game.
2. The team members were strongly attached to this game.
3. The team was important to succeeding in the game.
4. All members were fully integrated in our team.
5. There were many personal conflicts in our team. R
6. Our team was sticking together.
7. The members of our team felt proud to be part of the team.
8. Every team member felt responsible for maintaining and protecting the team.

Team Safety Climate

Adapted from Anderson, N. R. and West, M. A. (1994). *The Team Climate Inventory. Manual and Users' Guide*, Assessment Services for Employment, NFER-Nelson, Windsor, U.K.

1. We share information generally in the team rather than keeping it to ourselves.
2. We have a “we are in it together” attitude.

APPENDIX F: PROCESS MEASURES

Information sharing

Bunderson, J. S. and K. M. Sutcliffe (2002). Comparing alternative conceptualizations of functional diversity in management teams: Process and performance effects. *Academy of Management Journal, 45*: 875-893.

Scale:

1= Strongly Disagree
7= Strongly Agree

Items:

1. Information used to make key decisions was freely shared among the members of my team.
2. My team members worked hard to keep one another up to date on their activities.
3. My team members were kept "in the loop" about key issues affecting our team.

Discussion participation

Scale:

1= strongly disagree
7= strongly agree

Items:

1. As a member in this team, I have a real say in how the team carries out its work.
2. Most members in this team get a chance to participate in decision making.
3. My team is designed to let everyone participate in decision making.

Teamwork Quality

Hoegl, M., & Gemuenden, H. G. (2001). Teamwork quality and the success of innovative projects. *Organization Science, 12,* 435-449.

Scale:

1= strongly disagree
7= strongly agree

Items:

1. There was frequent communication within the team.
2. Project-relevant information was shared openly by all team members.
3. In our team there were conflicts regarding the openness of the information flow. R
4. The team members were happy with the usefulness of the information received from other team members.
5. The team members helped and supported each other as best they could.
6. Suggestions and contributions of team members were respected.
7. Suggestions and contributions of team members were discussed and further developed.
8. Every team member fully pushed the project.
9. Every team member made the project their highest priority.
10. Our team put much effort into the project.
11. There were conflicts regarding the effort that team members put into the project. R

Shared leadership

Hiller, N. J., Day, D. V., & Vance, R. J. (2006). Collective enactment of leadership roles and team effectiveness: A field study. *The Leadership Quarterly, 17*, 387-397.

Scale:

1= never
7= always

Items:

1. How often did team members share in planning how the work gets done?
2. How often did team members share in organizing tasks so that work flows more smoothly?
3. How often did team members share in deciding how to go about our team's work?
4. How often did team members share in providing helpful input about team's work plans?
5. How often did team members share in deciding on best course of action when problems arise?
6. How often did team members share in diagnosing problems quickly?
7. How often did team members share in using our team's combined expertise to solve problems?
8. How often did team members share in finding solutions to problems affecting team performance?

9. How often did team members share in providing support to team members who need help?
10. How often did team members share in fostering a cohesive team atmosphere?
11. How often did team members share in helping to develop each other's skills?
12. How often did team members share in learning skills from all other team members?

APPENDIX G: OUTCOME MEASURES

Team viability

Scale:

1 = not at all
5 = very much

Items:

1. How much did you enjoy working with other group members?
2. How much would you like to come back and work with your team on a different project if there were to be a follow-up study in the future?
3. Do you agree that your team members look forward to working together?
4. Do you agree that the team members carried their own weight?
5. Do you agree that the team members are highly committed to the team?

APPENDIX H: CONTROL VARIABLE SCALES

Demographic Information

Items:

1. What is your sex:
   - ☐ Male
   - ☐ Female
2. What is your age?

   _____
3. What is your race or ethnic background? (check all that apply):
   - ☐ White/Caucasian, Anglo, European American; not Hispanic
   - ☐ Black/African American
   - ☐ Hispanic or Latino, including Mexican American, Central American
   - ☐ Asian or Asian American, including Chinese, Japanese
   - ☐ Pacific Islander or Native Hawaiian
   - ☐ American Indian
   - ☐ Alaskan Native
   - ☐ Middle Eastern, including Northern African, Arabic, West Asian, and others
   - ☐ Other: Please Describe_____
4. If you chose more than one race or ethnic group in the previous question, which one do you most identify with?
   - ☐ White/Caucasian, Anglo, European American; not Hispanic
   - ☐ Black/African American
   - ☐ Hispanic or Latino, including Mexican American, Central American
   - ☐ Asian or Asian American, including Chinese, Japanese, and others
   - ☐ Pacific Islander or Native Hawaiian
   - ☐ American Indian
   - ☐ Alaskan Native
   - ☐ Middle Eastern, including Northern African, Arabic, West Asian, and others
   - ☐ Other: Please Describe_____
5. If you marked Middle Eastern in the previous question, which ethnic group are you a descendant of? (Mark all that apply)
   - ☐ Arabs
   - ☐ Turks
   - ☐ Persians
   - ☐ Jews
   - ☐ Kurds
   - ☐ Aramean Syriacs
   - ☐ Armenians
   - ☐ Azeris
   - ☐ Circassians
   - ☐ Greeks
   - ☐ Georgians
   - ☐ Emiratis
   - ☐ Iranians

☐ South Asians
☐ Other: Please Describe_____

6. What is your Mother's race or ethnicity?
☐ White/Caucasian, Anglo, European American; not Hispanic
☐ Black/African American
☐ Hispanic or Latino, including Mexican American, Central American
☐ Asian or Asian American, including Chinese, Japanese
☐ Pacific Islander or Native Hawaiian
☐ American Indian
☐ Alaskan Native
☐ Middle Eastern, including Northern African, Arabic, West Asian
☐ Other: Please Describe_____
7. What is your father's race or ethnicity?
☐ White/Caucasian, Anglo, European American; not Hispanic
☐ Black/African American
☐ Hispanic or Latino, including Mexican American, Central American
☐ Asian or Asian American, including Chinese, Japanese
☐ Pacific Islander or Native Hawaiian
☐ American Indian
☐ Alaskan Native
☐ Middle Eastern, including Northern African, Arabic, West Asian
☐ Other: Please Describe_____

8. Where were you born? (City, State; Country if outside the US)
_____
9. Is there a country other than the country in which you were born that you identify most with?
_____
10. Where was your mother born? (City, State; Country if outside the US)
_____
11. Where was your father born? (City, State; Country if outside the US)
_____
12. Are you fluent in more than one language? If so, which languages, in order of most fluent to least fluent?
_____
13. What language does your mother speak? If she speaks more than one language, list the languages in order of most fluent to least fluent.
_____
14. What language does your father speak? If he speaks more than one language, list the languages in order of most fluent to least fluent.
_____
15. Marital Status:
☐ Single

- ☐ Married
- ☐ Separated
- ☐ Divorced
- ☐ Widowed
- ☐ Living with Another
- ☐ Domestic Partnership

16. Class:
    - ☐ Freshman
    - ☐ Sophomore
    - ☐ Junior
    - ☐ Senior

    If Senior – please indicate your year (i.e. 4th year, 5th year, etc.)

    _____
17. How many credit hours are you enrolled in this semester? _____
18. Major: _____
19. Minor: _____
20. Do you have any other degrees?
    - ☐ Yes
    - ☐ No

    If Yes, please list them here: _____
21. What is your employment status?
    - ☐ Not Employed
    - ☐ Self-Employed
    - ☐ Student
    - ☐ Employed Full-Time
    - ☐ Employed Part-Time
22. UCF GPA (or high school if you haven't started classes): _____
23. SAT Score: _____

    Verbal:_____

    Math: _____
24. ACT Score: _____
25. Are you the first one in your immediate family to attend college? (Yes/No)
26. What is the highest education level of your mother?
    - ☐ High School
    - ☐ Some College
    - ☐ 2-year College Degree
    - ☐ 4-year College Degree
    - ☐ Some Graduate School
    - ☐ Master's Degree
    - ☐ Doctorate (including a Juris Doctorate – law degree)
27. What is the highest education level of your father?
    - ☐ High School
    - ☐ Some College
    - ☐ 2-year College Degree

☐ 4-year College Degree
☐ Some Graduate School
☐ Master's Degree
☐ Doctorate (including a JD)

Personality

Donnellan, M. B., Oswald, F. L., Baird, B. M., & Lucas, R. E. (2006). The Mini-IPIP scales: Tiny-yet-effective measures of the Big Five factors of personality. *Psychological Assessment, 18(2)*, 192-203.

Scale:

1. (Very Inaccurate)
2. (Moderately Inaccurate)
3. (Neither Inaccurate nor Accurate)
4. (Moderately Accurate)
5. (Very Accurate)

Items:

Below you will see phrases describing people's behaviors. Please use the rating scale below to describe how accurately each statement describes you. Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence. Please read each statement carefully, and then fill in the bubble that corresponds to the number on the scale.

I…

1. Am the life of the party. (E)
2. Sympathize with others' feelings. (A)
3. Get chores done right away. (C)
4. Have frequent mood swings. (N)
5. Have a vivid imagination. (I)
6. Don't talk a lot. (r) (E)
7. Am not interested in other people's problems. (r) (A)
8. Often forget to put things back in their proper place. (r) (C)
9. Am relaxed most of the time. (r) (N)
10. Am not interested in abstract ideas. (r) (I)
11. Talk to a lot of different people at parties. (E)
12. Feel others' emotions. (A)
13. Like order. (C)
14. Get upset easily. (N)
15. Have difficulty understanding abstract ideas. (r) (I)

16. Keep in the background. (r) (E)
17. Am not really interested in others. (r) (A)
18. Make a mess of things. (r) (C)
19. Seldom feel blue. (r) (N)
20. Do not have a good imagination. (r) (I)

Trust

Wildman, J. L., Fiore, S. M., & Salas. E. (2009). Development of trust and distrust measures. *Unpublished Working Draft.* Institute for Simulation and Training, University of Central Florida.

Scale

1 = Not at all
6 = Very much so

Items

To what extent do you feel:

1. Faith that your teammate can do the task at hand?
2. Certain that your teammate will perform well?
3. Confident that your teammate will do as he/she says?
4. Assured that your teammate will make intelligent decisions?
5. Positive that your teammate will try and do what is best for the team?
6. Convinced that you can rely on your teammate to try their hardest?
7. Confident in your teammate's ability to complete a task?
8. Confident that your teammate will try to do things that benefit the team?

Self-concept

Selenta, C., & Lord, R. G. (2005). *Development of the levels of self-concept scale: Measuring the individual, relational, and collective levels*. Unpublished manuscript.

Scale

1 = Strongly Disagree
2 = Somewhat Disagree
3 = Neither Agree nor Disagree
4 = Somewhat Agree
5 = Strongly Agree

Items

Individual level—Comparative identity subscale

1. I thrive on opportunities to demonstrate that my abilities or talents are better than those of other people.
2. I have a strong need to know how I stand in comparison to my coworkers.
3. I often compete with my friends.
4. I feel best about myself when I perform better than others.
5. I often find myself pondering over the ways that I am better or worse off than other people around me.

Relational level—Concern for others subscale

1. If a friend was having a personal problem, I would help him/her even if it meant sacrificing my time or money.
2. I value friends who are caring, empathic individuals.
3. It is important to me that I uphold my commitments to significant people in my life.
4. Caring deeply about another person such as a close friend or relative is important to me.
5. Knowing that a close other acknowledges and values the role that I play in their life makes me feel like a worthwhile person.

Collective-level—Group achievement focus subscale

1. Making a lasting contribution to groups that I belong to, such as my work organization, is very important to me.
2. When I become involved in a group project, I do my best to ensure its success.
3. I feel great pride when my team or group does well, even if I'm not the main reason for its success.
4. I would be honored if I were chosen by an organization or club that I belong to, to represent them at a conference or meeting.
5. When I'm part of a team, I am concerned about the group as a whole instead of whether individual team members like me or whether I like them.

Self-construal

Oetzel, J. G., & Ting-Toomey, S. (2003). Face concerns in interpersonal conflict: A cross-cultural empirical test of the face negotiation theory. *Communication Research, 30*, 599-624.

Scale

1 = Strongly Disagree
2 = Somewhat Disagree
3 = Neither Agree nor Disagree
4 = Somewhat Agree
5 = Strongly Agree

Items

Independent

2. It was important for me to be able to act as a free and independent person.
3. I preferred to be self-reliant rather than depend on others.
4. I tried not to depend on others.

Interdependent

1. I respected the decisions made by the other person.
2. I was sensitive to the wishes of the other person.
3. My relationship with the other person is more important than winning the conflict.
4. My satisfaction would depend on the satisfaction of the other person.
5. I sacrificed my self-interest for the benefits of our relationship.

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