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Differentiated leader-member exchange and group effectiveness: a dual perspective

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DIFFERENTIATED LEADER-MEMBER EXCHANGE AND GROUP EFFECTIVENESS: A DUAL PERSPECTIVE

by

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An Abstract

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ABSTRACT

Leader-member exchange (LMX) differentiation, the extent to which the leader forms different quality exchange relationships with group members, is the fundamental premise of LMX theory. The present study tests whether, why, and when LMX differentiation increases group outcomes. More specifically, I suggest a dual perspective model of LMX differentiation and group effectiveness, which includes both leaders' and members' perspectives on LMX differentiation. To explicate the effects of leader- and member-rated LMX differentiation on group effectiveness, I delineate two group processes (task and socio-emotional processes) to link LMX differentiation to two aspects of group effectiveness (group performance and group viability). I propose that leader-rated LMX differentiation increases group performance via task group processes (group role clarity and group coordination) whereas member-rated LMX differentiation decreases group viability via socio-emotional processes (relationship conflict and group potency). Furthermore, I propose moderators (distributed expertise, leader-leader exchange, leader prototypicality, and group power distance) suggesting when leader-rated LMX differentiation relates to task group processes more strongly and positively, and when member-rated LMX differentiation relates to socio-emotional group processes less strongly and negatively.

Survey data, based on the US and South Korean employees working in 57 teams, were collected from three different sources (group leaders, members, and upper-level managers) at two points in time (with 3-month time lag). Results revealed three important findings: (a) leader-rated LMX differentiation is positively correlated with group role clarity, group coordination, and group potency and negatively correlated with relationship conflict, (b) group mean member LMX and group mean leader LMX were more robustly, positively related to most group process and effectiveness variables, and (c) leader prototypicality moderates the relationship between member-rated LMX

differentiation and relationship conflict such that the negative relationship is significant only when members perceptions of leader prototypicality was high.

The present study contributes to the LMX and team leadership literature by (a) providing a theoretical framework of a dual perspective to understand the LMX differentiation-group effectiveness relationship at the group level, (b) providing empirical evidence showing that leader-rated LMX differentiation is positively related to some group processes although these relationships were not significant when controlling for group mean LMX, (c) finding that the leaders' and members' perspectives on LMX differentiation are not highly correlated, and (d) emphasizing the role of leader prototypicality in understanding the effect of member-rated LMX differentiation at the group level. Based upon these findings, I suggest future research directions such as ways to improve measurement and operationalization of LMX differentiation, development of a theoretical model explaining the low level of LMX agreement between members and leaders, and examining LMX differentiation in broader contexts (e.g., HR systems or strategy and cultural contexts).

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CERTIFICATE OF APPROVAL

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PH.D. THESIS

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This is to certify that the Ph.D. thesis of

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CHAPTER I

INTRODUCTION

In the leadership literature, it is a well-known premise that leaders build different quality relationships with members within a group[1] (Cashman, Dansereau, Graen, & Haga, 1976; Dansereau, Graen, & Haga, 1975; Dienesch & Liden, 1986; Graen & Uhl-Bien, 1995). This is partly because internal selection processes and competition for the limited resources and opportunity (e.g., pay increases and promotions) require that leaders make distinctions among their employees (Sparrowe & Liden, 1997). However, members may not always react favorably to the different and unique relationships the leader develops with each team member. It may be because, when members have different quality relationships with the leader, members are likely to be more concerned with whether they have a high quality relationship with the leader and compare one's relationship quality to others' (Henderson, Wayne, Shore, Bommer, & Tetrick, 2008; Vidyarthi, Liden, Anand, Erdogan, & Ghosh, 2010). In other words, members have a strong tendency to engage in social comparison processes to know whether they are being well treated by the leader. Thus, the leader's differentiation among group members may lead to feelings of unfairness and a breakdown of group cohesion and cooperation.

Consistent with this debate, in the leadership literature, theoretical rationale and empirical findings are controversial with regard to whether leaders' differential treatments of group members help or hurt group effectiveness (Anand, J. Hu, Liden, & Vidyarthi, 2011). For example, some scholars have suggested leaders' differentiation helps group effectiveness and motivates individual effort (e.g., Halevy, Chou, Galinsky,

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[1] Groups and teams are sometimes distinguished from each other, and some researchers noted that they differ in terms of the degree of interdependence, such that teams refer to the groups that develop a high degree of interdependence. However, many researchers have not differentiated these two terms (Cohen & Bailey, 1997; Morgeson, DeReu, & Karam, 2010). Consistent with the second set of researchers, I will use the terms *group* and *team* interchangeably.

2011; Liden & Graen, 1980), while others have suggested it hurts social cohesiveness and solidarity among group members (e.g., Hooper & R. Martin, 2008; Northouse, 2010; Scandura, 1999; Wu, Tsui, & Kinicki, 2010), and thus, group efficiency (Beal, Cohen, Burke, & McLendon, 2003).

This controversy has to be reconciled given that groups and teams are now central to organizational success and team leadership has been an emerging area in the management literature (Mathieu, Maynard, Rapp, & Gilson, 2008; Morgeson, DeRue, & Karam, 2010). Moreover, because teams are interdependent, understanding differentiated leader-member relationships in the team context is complicated and needs closer investigation. As such, the fundamental question that is the focus of the current study is as follows:

> *Can leaders optimize team performance by forming differentiated relationships with each of their followers without suffering negative consequences due to team members' feelings of unfairness or dissatisfaction?*

A relevant theory that would help to address this issue of how leaders could effectively make "reliable and credible" distinctions among team members is leader-member exchange (LMX) theory. LMX theory is built upon the assumption that the leader and member develop unique relationships with each other (Cashman et al., 1976; Dansereau et al., 1975). According to LMX theory, the quality of this exchange relationship, or LMX, can be defined in terms of affect, loyalty, contribution, and professional respect (Liden & Maslyn, 1998). LMX differentiation is defined as "a process by which a leader, through engaging in differing types of exchange patterns with subordinates, forms different quality exchange relationships (ranging from low to high) with them" (Henderson, Liden, Gilbkowski, & Chaudhry, 2009, p. 519). It has been operationalized as the standard deviation (Nishii & Mayer, 2009; M. Stewart & Johnson, 2009) or variance (Erdogan & Bauer, 2010; Liden, Erdogan, Wayne, & Sparrowe, 2006) of LMX ratings within a group. Despite LMX theory originating more than 35 years ago, LMX differentiation research still remains underdeveloped, its empirical evidence is

equivocal with regard to *whether* LMX differentiation helps or hurts group effectiveness, and very little is known about *why* and *when* LMX differentiation increases group effectiveness (Anand et al., 2011).

Building upon LMX theory, this study will address the fundamental issue of "*whether leaders should or should not differentiate among their members*" (Sparrowe & Liden, 1997, p. 544) at the group level by examining the effect of LMX differentiation on group effectiveness. Group effectiveness is captured by two indicators: group performance (i.e., the extent to which the group accomplishes goals and expectations about task duties) and group viability (i.e., "a team's potential to retain its members through their attachment to the team, and their willingness to stay together as a team"; Balkundi & Harrison, 2006, p. 52). In particular, I examine LMX differentiation from both the leaders' and group members' perspectives and expect that leaders' perspective on LMX differentiation is *positively* related to group performance (i.e., task-related aspect of group effectiveness) whereas members' perspective on LMX differentiation is *negatively* related to group viability (socio-emotional aspect of group effectiveness). In addition, this study examines the mediating and moderating processes that may explain *why* and *when* LMX differentiation relates to group effectiveness.

In the sections that follow, first, I will briefly review LMX theory. Next, I will explain why leaders' and members' perspectives of LMX differentiation are important. Then, I will delineate a research model that includes the influences of both leaders' and members' perspectives of LMX differentiation on group performance and group viability. Finally, I will discuss the contributions of the proposed study.

Leader-Member Exchange Theory

Leader-member exchange theory (Graen & Uhl-Bien, 1995) takes a relationship-based approach to explain leadership processes and outcomes and emphasizes that both the leaders and members develop the dyadic exchange relationship to generate bases of

leadership influence (Gerstner & Day, 1997; Graen & Uhl-Bien, 1995; Schyns & Day, 2010; Uhl-Bien, 2006). The fundamental premise of LMX theory (Graen & Uhl-Bien, 1995) is that leaders develop different types of mutual and reciprocal exchange relationships with their members. LMX represents the quality of exchange relationships between the leader and group members. In a low quality relationship, the leader and member have exchanges based primarily on the formal employment contract, whereas in a high quality relationship, they have developed mutual trust, loyalty, respect, support, openness, and honesty (Graen & Scandura, 1987).

Social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960) can explain why a higher quality LMX relationship is linked to more favorable outcomes for members. According to this perspective, when the leader offers the valued resources to the member (e.g., assigning challenging tasks, sharing information, and providing socio-emotional support), the member, in turn, may reciprocate by putting forth greater effort and initiative on tasks and by showing greater levels of satisfaction and commitment (Liden, Sparrowe, & Wayne, 1997). Previous meta-analytic findings (e.g., Gerstner & Day, 1997; Ilies, Nahrgang, & Morgeson, 2007) support this prediction showing that high quality LMX relationships positively influence members' attitudinal and behavioral outcomes such as job satisfaction, organizational commitment, in-role performance, and organizational citizenship behaviors (OCBs).

Nonetheless, some critical research questions remain unexamined in the LMX literature. First, despite the fact that LMX was originally suggested to operate at multiple levels (e.g., Dansereau, Alutto, Markham, & Dumas, 1982; Gerstner & Day, 1997; Graen & Uhl-Bien, 1995; Schriesheim, Castro, & Cogliser, 1999), the vast majority of LMX studies have only examined individual-level perceptions of LMX quality and individual attitudinal and behavioral outcomes. It should be noted, however, that the vertical dyad linkage (VDL) model (Dansereau et al., 1975) was originally suggested to explain "how leaders' differential treatment of multiple subordinates in a work group influences

activity within the group" (Henderson et al., 2009, p. 517). Group members share a common leader and thus LMX relationships are nested within a group (Henderson et al., 2008; Vidyarthi et al., 2010). Further, group-level LMX relationships (e.g., group-mean LMX [GLMX] and LMX differentiation) can be shaped on the basis of dyadic exchanges within the group (Henderson et al., 2008) and influence work group climates and group-level outcomes (e.g., Cogliser & Schriesheim, 2000; Kozlowski & Doherty, 1989; McClane, 1991; Nishii & Mayer, 2009). Initial research evidence suggests that GLMX has positive relationships with group outcomes such as cohesiveness (Cogliser & Schriesheim, 2000), group potency (Boies & Howell, 2006), and group-mean satisfaction with the leader, their tasks, and coworkers (McClane, 1991). However, the effect of LMX differentiation, from members' perspectives, on group performance has been much more complicated. Most researchers have failed to support that LMX differentiation has a positive relationship with group performance; instead, they found it is the case only under certain conditions (Liden et al, 2006; M. Stewart & Johnson, 2009). Theoretical logic regarding the emergence and effects of group-level LMX relationships is not yet fully developed, and empirical evidence is scarce. To fill this gap, I propose two group-level mechanisms (task and socio-emotional mechanisms) to explain why LMX differentiation impacts two aspects of group effectiveness (i.e., group performance and group viability). These task-oriented and socio-emotional mechanisms have been included in models of team effectiveness (Bales, 1950; Mathieu et al., 2008; G. Stewart, Fulmer, & Barrick, 2005).

Second, the vast majority of studies on LMX have been performed only based upon members' perspectives, not leaders' perspectives (Nahrgang, Morgeson, & Ilies, 2009; Scandura & Schriesheim, 1994; Wilson, Sin, & Conlon, 2010). This is a critical omission since LMX relations are theoretically conceptualized as dyadic and reciprocal meaning that both leaders and members form perceptions of the quality of the relationship (Greguras & Ford, 2006). The recent meta-analysis by Sin, Nahrgang, and

Morgeson (2009) showed that the correlation between leader-rated and member-rated LMX is moderate, indicating that leaders and members do not seem to perceive their quality of LMX in the same ways. Research on the development of LMX relations has found that LMX quality is determined by such factors as both the leader's and members' individual characteristics, their expectations of the exchange, and their assessment of and reaction to the exchange (Uhl-Bien, Graen, & Scandura, 2000). Thus, we could expect that leaders and members have different and idiosyncratic characteristics, expectations, and perceptions regarding the exchange relationship. By examining a dual perspective on LMX relationships, it will help us better understand how leaders and members build a high quality of exchange relationships with each other and why they build different types of LMX relationships within a group (Liden et al., 1997; Nahrgang et al., 2009; Wilson et al., 2010). Specifically, I suggest, based upon the previous findings (e.g., Engle & Lord, 1997; Maslyn & Uhl-Bien, 2001), that leaders' ratings of LMX differentiation relate to task-oriented processes whereas members' ratings of LMX differentiation relate to socio-emotional processes.

A third gap in the literature is that only a few LMX studies have been performed in countries outside of the U.S. (Anand et al., 2011). Thus, there is not a good understanding regarding whether LMX theory generalizes to other national cultures. In particular, in their recent review, Anand and colleagues (2011) noted that researchers have only begun to examine the generalizability of LMX theory across different cultures (e.g., Aryee & Z. Chen, 2006; Schyns, Paul, Mohr, & Blank, 2005; Varma, Srinivas, & Stroh, 2005) and the role of cultural values in understanding LMX and its outcomes (e.g., Erdogan & Liden, 2006; Schaubroeck & Lam, 2002). National culture and cultural values are particularly important to understand how leaders and members build a high quality LMX relationship with each other as well as how leaders or members react to the LMX relationships of other members (Avolio, Walumbwa, & Weber, 2009). In the cross-cultural management literature (e.g., Gelfand, Erez, & Aycan, 2007) and leadership

literature (Javidan, Dorfman, de Luque, & House, 2006; Kirkman, G. Chen, Farh, Z. Chen, & Lowe, 2009), cultural values not only affect individuals' work experiences but also shape beliefs regarding what traits and behaviors are expected to be effective leaders and followers. Thus, the proposed study will fill a gap in the LMX literature by testing the hypotheses with data collected from both US and South Korean employees.

To summarize, LMX scholars have shown that a high quality LMX is related to numerous favorable outcomes for individual group members and recently have begun to examine LMX differentiation as a group-level construct. However, much less research exists regarding three issues: (a) examination of LMX at the group level, (b) the leaders' perspective on LMX relationship, and (c) the role of cultural values or societal and national culture in understanding the antecedents and outcomes of LMX. An especially critical research gap, as further detailed in the next section, is that research has focused primarily on the member's perspective, and not the leader's perspective.

Importance of a Dual Perspective on Leader-Member Exchange

There are three reasons to believe that examination of both parties of the dyad is particularly important in leader-member exchange research. First, we can more fully understand how leaders and members take different perspectives in developing and reacting to different quality relationships with each other. LMX theory emphasizes the mutual and reciprocal relations between two parties of the dyads and its empirical findings suggest that leaders and members have different perspectives on LMX development (Greguras & Ford, 2006; Liden & Maslyn, 1998; Nahrgang et al., 2009). Although Graen and Uhl-Bien (1995) argued that leaders and members are expected to strongly agree on their LMX quality, extant LMX research has shown that leaders and members perceive their quality of relationship in different and unique ways (Gerstner & Day, 1997; Nahrgang et al., 2009; Sin et al., 2009). In an experimental study, for

example, Nahrgang and her colleagues (2009) found that leaders' and members' perceptions of their LMX relationship quality are influenced by different individual characteristics. Specifically, different personality traits influence the LMX quality for leaders and members: leader agreeableness was positively related to members' perceptions of LMX quality, while member extraversion was positively related to leaders' perceptions of LMX quality at the initial LMX development stage. This suggests that examining both member and leader perspectives will help us better understand how the quality of LMX relationships are perceived and interpreted differently by leaders and members. We therefore need to explain "how the unique and relative perspectives from both parties of the dyad might be related, additively or jointly, to important organizational outcomes" (Sin et al., 2009, p. 1055).

A second reason to examine both leaders' and members' perspectives on LMX relationships is because it is believed that such an approach will better explain important work outcomes for leaders and members (Greguras & Ford, 2006; Sin et al., 2010). Examination of the members' perspectives on LMX relationships has been fruitful because it is a lens through which work experiences are viewed and interpreted, and thus a higher quality of LMX is linked to more favorable outcomes for members (Gerstner & Day, 1997). Yet leaders also benefit from high quality LMX relationships in many ways, such as high levels of members' effort, commitment, loyalty, OCBs, and performance because such members' contributions may directly or indirectly impact leader's pay level (Wilson et al., 2010), and thus, career progress (Wakabayashi & Graen, 1984; Wakabayashi, Graen, Graen, & Graen, 1988). Given these favorable outcomes that both leaders and members gain, they should be willing to develop high quality LMX relationships with each other (Nahrgang et al., 2009). Furthermore, Greguras and Ford (2006) demonstrated that members' work attitudes and behaviors can be more fully explained by examining both leaders' and members' perspectives: the members' ratings of LMX quality explained incremental variance in members' organizational commitment

and job involvement above and beyond the leaders' ratings of LMX quality, and the leaders' ratings of LMX quality explained incremental variance in members' job involvement, in-role performance, and OCBs above and beyond the members' ratings of LMX quality. Consistent with their findings that member-rated and leader-rated LMX more strongly contributed to different outcomes, with the exception of job involvement, I propose that leader-rated and member-rated LMX differentiation are associated with different measures of group effectiveness.

Third, the leaders' perspective on social exchange relationships such as LMX relations is particularly important because the leader is typically regarded not only as an interpersonal exchange partner but also as a symbolic representative of the organization (Henderson et al., 2008). Understanding the leaders' perspective on LMX relationships helps members to know how their leaders, *as a representative of the organization*, view members' contributions and influence the quality of their relationships (Nahrgang et al., 2009). Member-rated LMX quality is often closely and positively related to their work experiences (Gerstner & day, 1997) and perceptions regarding how the organization treats them (Wayne, Shore, & Liden, 1997). In other words, members may infer the quality of organizational treatments from their LMX quality perceptions. Understanding the leaders' perspective on LMX relationships means that members are likely to know what aspects of their contributions are valued and rewarded by the leader, which implies how the organization views members' effort and contributions. Thus, members can invest their time and effort more effectively while accomplishing their goals and objectives. For this reason, how the leader views the employee-organization relationships affects employees' levels of attitudes and behaviors such as affective commitment, task performance, and OCBs (Tsui, Pearce, Porter, & Tripoli, 1997). Consistent with this rationale, psychological contract research has emphasized the leader perceptions of and attributions for psychological contract breach (e.g., Z. Chen, Tsui, & Zhong, 2008; Lester, Turnley, Bloodgood, & Bolino, 2002; Morrison & Robinson, 2004;

Rousseau, 1989; Tekleab & Taylor, 2003). Specifically, Morrison and Robinson (2004) suggested that by understanding how leaders and members are different in their perceptions of psychological contract fulfillment and breach, they can not only allocate energy and resources effectively but also reduce the likelihood of misunderstood conflict and tension. In sum, for the above three reasons, I will examine LMX differentiation within a group from both leaders' and members' perspectives in this study.

Purpose of the Study

The primary purpose of this study is to determine whether, why, and when leader-member exchange differentiation in a work group enhances group effectiveness by examining the following questions:

(1) Does leader-rated and member-rated LMX differentiation each affect group effectiveness?

(2) By what mechanisms does leader- and member-rated LMX differentiation influence group effectiveness?

(3) When does leader- and member-rated LMX differentiation enhance or hurt group effectiveness?

The proposed model is shown in Figure 1. The model proposes that LMX differentiation influences group effectiveness; members' perspective on LMX differentiation relates to group viability (i.e., socio-emotional aspect of group effectiveness) whereas leaders' perspective on LMX differentiation relates to group performance (i.e., task-related aspect of group effectiveness). Specifically, the proposed model takes into account dual processes such that member-rated LMX differentiation influences socio-emotional mechanisms and outcomes, and leader-rated LMX differentiation influences task-related mechanisms and outcomes of group effectiveness. In addition, the model suggests some boundary conditions in which the positive impact of

LMX differentiation on group effectiveness may be amplified and its negative impact may be buffered.

First, as explained further below, member-rated LMX differentiation is proposed to decrease group viability in general, and this negative relationship will vary depending on certain situations (e.g., Liden et al., 2006; M. Stewart & Johnson, 2009). On the other hand, I propose that leader-rated LMX differentiation will be positively related to group performance. This is because leaders are primarily concerned with group task and productivity (Maslyn & Uhl-Bien, 2001) and build differentiated relationships with members based on their perceptions of members' capabilities, trustworthiness, and motivation to take greater responsibility (Leana, 1986; Liden & Graen, 1980). As a result, the differentiated LMX relationships within a group are suggested to be functional to the leader and group effectiveness (Dansereau et al., 1975). Although this rationale seems convincing, empirical research has yet to test this prediction.

With regards to the second question, I propose two processes that explain the relationship between LMX differentiation and group effectiveness. Specifically, I propose that member-rated LMX differentiation influences group viability via socio-emotional group mechanisms such as relationship conflict (i.e., interpersonal dislike, tension, and friction among group members as well as feelings of annoyance, frustration, and irritation; Jehn & Mannix, 2001) and group potency (i.e., group members' shared belief that group members as a whole can be effective; Shea & Guzzo, 1987), whereas leader-rated LMX differentiation influences group performance via task-related processes such as group role clarity (i.e., "the process of defining and specifying team members' tasks or role functions and job responsibilities within a team) and group coordination (i.e., "the process of orchestrating the sequence and timing of interdependent actions"; Marks, Mathieu, & Zaccaro, 2001, p. 367-368).

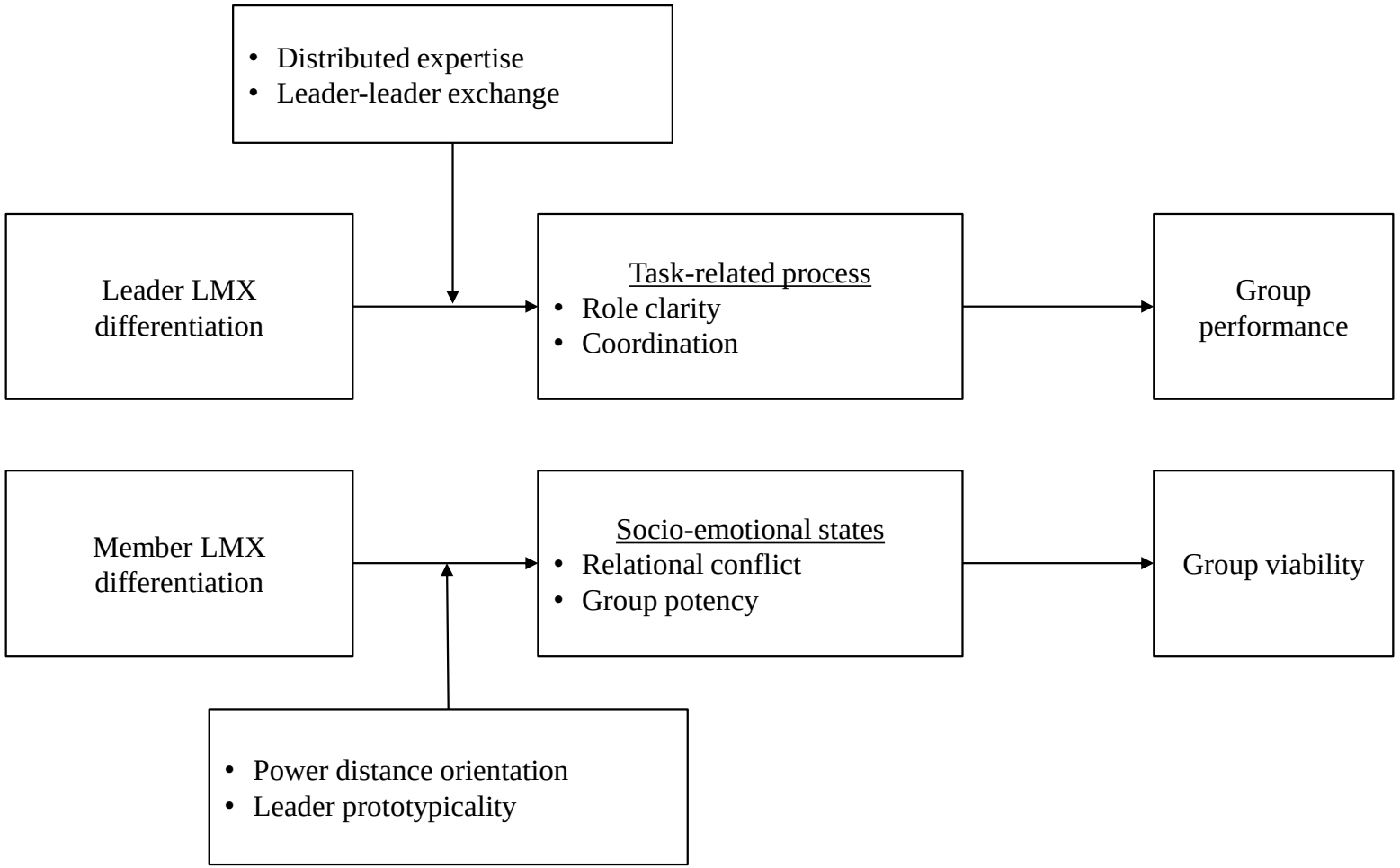

Figure 1
A group-level model of dual perspectives on leader-member exchange differentiation and group effectiveness

More specifically, as several researchers have suggested, high LMX differentiation triggers justice concerns among group *members* (Erdogan & Bauer, 2010; Sias & Jablin, 1995): when LMX relationships are highly differentiated, group *members* are likely to be concerned with whether differential treatments by the leader are fair (Henderson et al., 2009) and whether s/he has a close or distant relationship with the leader (Henderson et al., 2008; Vidyarthi et al., 2010). Through the sense-making and social comparison process, LMX differentiation for members can increase competition and decrease cooperation among group members (cf. J. D. Shaw, Gupta, & Delery, 2002). As a result, members in a high LMX differentiation group would experience more conflict (Hooper & R. Martin, 2008) and feel less confident in the capability of their team to successfully accomplish its goals and objectives. Accordingly, I expect these justice concerns will relate to a socio-emotional aspect of group effectiveness. Hence, I propose that relationship conflict and group potency mediate the negative relationship between LMX differentiation and group viability.

In contrast, leader-rated LMX differentiation, which has received much less research attention than member-rated LMX differentiation, may work differently. In particular, there is no compelling research evidence to conclude that *leaders* would be concerned with fairness issues and engage in social comparison processes when s/he has highly differentiated LMX relationships with group members. Instead, from the leader's perspective, LMX differentiation may facilitate development of the task-related structures within a group. Role theory suggests that leaders differentiate among group members in order to create role differentiation and to increase perceived legitimacy, thereby leading to greater group performance (Dienesch & Liden, 1986; Liden et al., 2006). In other words, one feasible group mechanism is that for the leader, high LMX differentiation within a group may reflect that s/he does differentiate group members' roles based on their capabilities and dependability (Leana, 1986; Liden & Graen, 1980) in order to achieve group goals and objectives more effectively. Through differentiation processes,

leaders are likely to identify, prioritize, clearly communicate team goals, and effectively assign tasks and roles (Marks et al., 2001). Thus, I propose that role clarity and group coordination will mediate the positive relationship between leader-rated LMX differentiation and group performance.

With regards to the third research question, I propose several moderators of the effect of leader- and member-rated LMX differentiation on group performance and group viability. This is particularly important given the inconsistencies across empirical findings on LMX differentiation and group effectiveness (Anand et al., 2011; Chae & Lee, 2010; Liden et al, 2006; M. Stewart & Johnson, 2009). Building upon LMX theory and the vertical dyad linkage (VDL) model, I suggest that leader-rated LMX differentiation facilitates task-oriented group processes if LMX differentiation is regarded to be based on credible and legitimate reasons. The most fundamental proposition of the VDL model (Dansereau et al., 1975) is that LMX differentiation helps improve unit functioning because of its basis upon merit, which means, at least from the leader's perspective, that LMX differentiation occurs based upon equity principles. The equity principles represent the notion that the input-output ratio should be equal across group members (Adams, 1965). Therefore, if group members' inputs and outputs are evaluated and rewarded in reliable and credible ways, leaders' LMX differentiation may be even more strongly and positively related to task-oriented group processes. I suggest two situations as follows.

One situation is when group members' expertise is highly distributed (i.e., team members bring the different amount of expertise, job knowledge, or information to team task accomplishment and decision making; Hollenbeck, Ilgen, Sego, Hedlund, Major, & Phillips, 1995). In such groups, there is greater need for the leader to clearly identify and quantify each member's contribution, and coordinate the group members' contributions in order to achieve group goals and objectives. The other situation is when the leaders have a good relationship with their own superiors, termed leader-leader exchange (LLX;

Tangirala, Green, & Ramanujam, 2007; Venkataramani, Green, & Schleicher, 2010). When leaders have developed a high quality of upward exchange relationships with their supervisors, they are likely to have better opportunities to get sufficient resources, power, and authority. Thus, they can offer more benefits to the more dependable members (Erdogan & Enders, 2007; Pelz, 1951; Tangirala et al., 2007; Venkataramani et al., 2010) by making reliable and credible differentiation (Dienesch & Liden, 1986). In such contexts, leader-rated LMX differentiation may increase members' efforts to accomplish group goals and objectives and help the leaders coordinate task-related group processes, which in turn leads to greater likelihood of high group performance.

I further expect that member-rated LMX differentiation will be less detrimental to socio-emotional group processes if members are less concerned with the fairness of LMX differentiation, which is consistent with empirical findings on member-rated LMX differentiation (e.g., Erdogan & Bauer, 2010). It should be noted, however, that fairness and legitimacy judgments are likely to be made in heuristic and automatic ways, rather than controlled and systemic ways (Lind, 2001). That is, group members tend to rely on social cues (e.g., coworkers), overall impressions, and cognitive schemas or implicit theories and to regard the leader's treatments as fair in heuristic and automatic ways. Then they may be free from controlled and systematic fairness and legitimacy judgments. Under certain conditions, therefore, members are less likely to be concerned with fairness issues and less likely to make systematic judgments regarding whether their leader develops differentiated LMX relations in reliable and credible ways. This may be due to the demanding nature of social interactions (Lord & Maher, 1991), and heuristic information processing makes members free from cognitive busyness, which otherwise leads them to calculate and compare all the possible alternatives (Lind, 2001). As a result, group members' values and leader prototypicality (i.e., the extent to which the leader represents "our" group) can be used as an anchor in whether members engage in systematic fairness and legitimacy judgments of LMX differentiation (Naumann &

Bennett, 2000; Ullrich, Christ, & van Dick, 2009; Yang, Mossholder, & Peng, 2007). Therefore, I propose two conditions where group members are less concerned with the fairness of LMX differentiation, thus making LMX differentiation less detrimental to socio-emotional group processes.

One is when group members have high power distance orientation (i.e., members, on average, expect and accept the unequal distribution of power between leaders and members as inherent; Hofstede, 1980; Yang et al., 2007). Another is when members identify their leader with *our group* (i.e., leader prototypicality; van Knippenberg & Hogg, 2003). If members endorse the unequal distribution of power, they would be more likely to believe that the leader has a prerogative to differentiate group members (Schwartz, 1992; Yang et al., 2007). Also, if members perceive their leaders as a representative of their group, they would be more willing to endorse and trust him or her as their leader (Platow & van Knippenberg, 2001; Ullrich et al., 2009). This may make members less sensitive to whether LMX differentiation is based upon fair treatment by the leader, and consequently group members are less likely to experience relationship conflict and to lose their confidence in performing tasks as a group. I will explicate the theoretical logic underlying these predictions in Chapter 3.

Contributions of the Study

The proposed research attempts to make three contributions to the literature by considering both leaders' and members' perspectives to examine the effect of LMX differentiation on group performance and group viability and its group-level mediators and moderators. First, this study provides a theoretical framework to understand the LMX differentiation-group effectiveness relationship at the group level. Specifically, I suggest two broad and fundamental mechanisms (task and socio-emotional perspectives) (Kabanoff, 1991; Katz & Kahn, 1978) from which to understand the effect of LMX differentiation on group effectiveness. In doing so, I examine group effectiveness from

two sides: group performance (task-related production) and group viability (maintenance of socio-emotional bonds). Further, I suggest LMX differentiation as exerting conflicting influences on group effectiveness; it increases group performance from leaders' perspectives but decreases group viability from members' perspectives. In addition, this study also provides empirical findings regarding when LMX differentiation is more positively related with group performance and less negatively related with group viability. Examination of the task and socio-emotional categorization will help to understand LMX differentiation better by providing a more parsimonious and fundamental framework, thereby indicating how differentiation should be enacted to increase group effectiveness: "greater productivity gain and less solidarity loss".

Second, this study will contribute to the team and leadership literatures by examining how leaders differentiate among group members in order to increase group performance. The group-level approach to LMX (e.g., Nishii & Mayer, 2009; Schriesheim et al., 1999; Vidyarthi et al., 2010) will make it possible to examine Dansereau et al.'s (1975) original conceptualization of LMX differentiation as a group-level construct and further test whether, why, and when LMX differentiation has a unique influence on group performance and viability above and beyond group-level mean LMX (GLMX). Examination of the mediators and moderators will explain why and when LMX differentiation helps or hurts group performance and viability, and thereby shed light on the relevant team leadership literature (e.g., transformational leadership) in which differentiated leadership within a group has been known to hurt group performance (e.g., Wu et al., 2010).

Third, this study addresses one key research gap in the LMX literature: the lack of leader-oriented research (Liden et al., 1997; Wilson et al., 2010). A high quality LMX is not only important to members but also to leaders (Wakabayashi & Graen, 1984; Wakabayashi et al., 1988; Wilson et al., 2010). To completely understand the mutual and reciprocal nature of LMX relationships, both the leader and members must be taken into

account (Greguras & Ford, 2006; Nahrgang et al., 2009; Sin et al., 2009). Likewise, at the group level, the present study extends the LMX literature, by examining how the leader and members are different in perceiving and interpreting their differentiated LMX relationships and thereby its influence on group effectiveness.

Research Context

In the present study, the data will be obtained from the US and South Korea. These two countries have different cultural values. The US culture is characterized as individualism which emphasizes independent self and personal goal attainment. South Korean culture is, on the other hand, characterized as relationism (or relational collectivism) which emphasizes harmonious interpersonal relationships and mutual cooperation with only closely connected people (Igarashi et al., 2008). As such, we could expect group dynamics between in- and out-group members to be much more prominent and complicated in South Korea. South Korea is also a high power distance society (Hofstede, 1991) where leaders have greater influence on how groups function (e.g., Schaubroeck, Lam, & Cha, 2007). Therefore, the study also attempts to fill a research gap in the LMX literature in that there has been minimal LMX differentiation research in the East Asian context (Liao, Liu, & Loi, 2010, for exception).

CHAPTER II

LITERATURE REVIEW

This chapter presents a review of the theories and empirical research that provide a foundation to my proposed theoretical model. I first review leader-member exchange theory and LMX differentiation literature. Second, I explain why leaders' ratings of LMX are different and unique from members' ratings, suggesting that leaders have a more task-oriented view whereas members have a more socio-emotional view toward the dyadic exchange relationship. Third, I review the research on team dynamics. This review focuses on the research that has examined task and social-emotional processes within a group that impact group effectiveness. I review the teams and leadership research in relation to LMX theory.

Overview of Leader-Member Exchange Theory

Leader-member exchange theory has focused on the quality of the exchange relationship between the leader and member (Gerstner & Day, 1997; Graen & Uhl-Bien, 1995; Liden et al., 1997; Uhl-Bien, 2006). Dansereau and colleagues (1975) originally developed the vertical dyadic linkage (VDL) model to explain why different types of relationships develop between the leader and members within work units. In out-group exchanges, leaders and members usually exchange material goods and resources only based on the employment contract. On the other hand, within in-group exchanges, leaders and members are willing to build the exchange relationship beyond what is specified in the formal contract, including the exchange of both material and non-material goods and resources (Liden et al., 1997). Based on this VDL conceptualization, high LMX quality relationships (i.e., in-group exchanges) are defined as the exchange relationship between the leader and members characterized by the physical and mental effort, mutual trust, loyalty, respect, emotional support, openness, and honesty (Graen & Scandura, 1987), whereas low LMX quality relationships refer to out-group exchanges

and a lack of effort, trust, etc. Over the past three decades, much empirical research has been conducted on the VDL model and LMX in particular.

Several reviews and meta-analyses have been conducted to summarize these research findings and suggest future research questions in the LMX literature. In a seminal review, Graen and Uhl-Bien (1995) noted that LMX theory has evolved through four stages: vertical dyad linkage, LMX, leadership making, and team-making competence network. In the first stage (VDL), the primary question that researchers focused on was whether "effective supervision" (defined as the average leadership style suggested by the Ohio State and Michigan studies) could be applied to all group members. Contrary to the assumptions of the average leadership style, the empirical research generally found that leaders do tend to develop different quality of LMX relationships with their members (Dansereau, Cashman, & Graen, 1973; Dansereau et al., 1975; Graen & Cashman, 1975). In particular, these early VDL research findings showed that significant variation exists in group members' responses to their leader behaviors and the quality of LMX (Graen & Uhl-Bien, 1995), thus, leadership processes occur at the dyadic level within a group. The VDL researchers also speculated that the reason why leaders build differentiated LMX relations with different group members is because it allows them to effectively use their limited time and resources to facilitate work unit functioning (Dansereau et al., 1975; Dienesch & Liden, 1986; Graen & Uhl-Bien, 1995).

In the second stage, researchers began to examine the antecedents and outcomes of LMX quality. The focus shifted from a description of differentiated LMXs within a group to understanding how the dyadic relationships between the leader and members are developed and also whether high LMX relationships lead to favorable organizational outcomes. In terms of LMX development, Graen and Scandura (1987) proposed the role making process to explain how LMX relationships are formed. The role making process includes three stages: role taking, role making, and role routinization. First, the member takes the roles from the leader and the leader tests the member's potentials and

capabilities. Second, each leader and member define and make the roles. That is, the leader typically provides an opportunity for the member to perform unstructured work tasks. If the opportunity is accepted by the member, their dyadic relationship would develop in to a high quality LMX over time (Liden et al., 1997). Finally they have clear mutual expectations for each other's roles through collaboration on tasks and thus the quality of LMX relationship matures over time. Based upon the role making model, many empirical studies have found that the members' ability, competence, and initial performance are important antecedents of LMX development (e.g., Day & Crain, 1992; Dockery & Steiner, 1990; Liden, Wayne, & Stilwell, 1993).

Furthermore, based upon attribution theory, role theory, social exchange, and upward influence, Dienesch and Liden (1986) provided an integrated model that proposed various leader characteristics and member characteristics that may influence the development of LMX. They also emphasized the role of attributions that the leader and members make in the role making processes; the leader makes attributions regarding the member's performance and the member makes attributions regarding the leader's role assignments in an attempt to explain other party's behaviors (Liden et al., 1997). Given the role of attributions, it has been shown that LMX development processes are impacted by members' upward influence tactics and both leaders' and members' liking of each other as well as members' performance (e.g., Deluga & Perry, 1991, 1994; Dockery & Steiner, 1990; Liden et al., 1993; Wayne & Ferris, 1990).

With regards to the outcomes of LMX, social exchange theory and the norm of reciprocity (Blau, 1964; Gouldner, 1960) are the primary theories used by most researchers to explain why LMX quality relates to positive member outcomes. The theory argues that members reciprocate the leaders' favorable treatments by putting forth more effort "over and above that specified by the employment bargain" (Graen, 1976, p. 1224). Most of the research supported social exchange theory explanations for why LMX quality is positively related to members' outcomes, such as performance (e.g.,

Judge & Ferris, 1993; Liden & Graen, 1980; Scandura & Schriesheim, 1994; Vecchio & Gobdel, 1984), reduced turnover (e.g., Ferris, 1985; Vecchio, Griffith, & Hom, 1986), job satisfaction (e.g., Dansereau et al., 1975; Liden & Graen, 1980; Vecchio et al., 1986), organizational commitment (e.g., Nystrom, 1990; Settoon, Bennett, & Liden, 1996), and organizational citizenship behavior (e.g., S. Anderson & Williams, 1996; Settoon et al., 1996). Specifically, in their meta-analysis, Gerstner and Day (1997) concluded that "LMX is consistently correlated with member job performance, satisfaction (overall and supervisory), commitment, role perceptions, and turnover intentions" (p. 836). In addition, Ilies and his colleagues' (2007) meta-analysis showed that LMX quality is positively related to members' OCB. In sum, the second stage of LMX research has uncovered an impressive number of antecedents and outcomes to LMX quality.

In the third stage, some researchers challenged the VDL assumptions that leaders develop a high quality of LMX relationships with only *some* group members. Instead, Graen and colleagues (Graen, Novak, & Sommerkamp, 1982; Graen, Scandura, & Graen, 1986; Scandura & Graen, 1984) argued that leaders may develop a high quality LMX with *all* group members over time. In these studies, the authors found that if leaders were trained to make an offer to develop a high quality relationship to all the group members, the members who accepted the offer by the leader increased their performance dramatically (Graen & Uhl-Bien, 1995). Building upon this finding, the Leadership Making model by Graen and Uhl-Bien (1991) suggested that each LMX relationship between the leader and member can mature. In their model, the LMX development processes begin with a "stranger" phase, move to the "acquaintance" phase, and finally grow to the "mature partnership" phase. As LMX relationships mature, the LMX quality is increased and the type of dyadic exchanges is changed from economic-based exchanges to social exchanges (Graen & Uhl-Bien, 1991, 1995). Thus, the core argument of the mature partnership stage is that, given the beneficial organizational outcomes of positive LMX relationships, leaders should be encouraged to make an offer

to develop high quality LMX relationships to all group members. While their arguments still need to be further examined empirically, the favorable results of an initial test of their Leadership Making model suggests that the important implication for group-level LMX research would be that "overall unit performance (hard productivity gain) was enhanced by increasing the number of high quality LMX relationships" (Graen & Uhl-Bien, 1995, p. 230).

In the fourth and most recent stage, researchers have begun to examine LMX relationships within a group or organizational context. Graen and Uhl-Bien (1995) noted that LMX dyads need to be aggregated into larger collective systems such as groups and organizations because leader-member dyads within a group and organization are likely to be interdependent (Graen & Scandura, 1987). The main question at this stage then is how dyadic LMX relationships are aggregated within a group and how varied levels of LMX relationships affect group processes and effectiveness (Gerstner & Day, 1997; Graen & Uhl-Bien, 1995). In this vein, one emerging area in the LMX literature is the examination of LMX differentiation within a work group (e.g., Erdogan & Bauer, 2010; Henderson et al., 2008, 2009; Liden et al., 2006). LMX differentiation is defined as the extent to which the leader forms different quality exchange relationships with group members. Although researchers have provided theoretical rationale and initial empirical evidence regarding whether LMX differentiation is beneficial or detrimental to individual and group functioning, we still know very little about LMX at the group level (Anand et al., 2011). In a recent review of the leadership literature, Avolio and his colleagues (2009) noted:

> LMX research has also been criticized for failing to conceptualize the social context in which leaders and followers are embedded. With a few exceptions, "the majority of research is, quite explicitly, located at the dyadic level, with very little theorizing or empirical work examining LMX work at the group level" (Hogg, R. Martin, & Weed, 2004, p. 22) (p. 434).

Given the paucity of group-level LMX research, therefore, future research linking varied levels of LMX relationships to group outcomes should be pursued. In this study, I suggest that LMX differentiation is one promising area to be further investigated because there is a long debate regarding whether leaders should differentiate group members or not. Moreover, examination of LMX differentiation can provide a practical guidance in regard to how leaders can maximize group performance by optimally building differentiated LMX relations with group members.

In sum, LMX theory and research has evolved for the past 35 years. Early researchers have found that it is a natural phenomenon within a group that the leader and members develop different quality of relationships. Since then, a plethora of research has supported the benefits of high quality LMX relationships in predicting numerous individual outcomes. Further, building upon role theory (Katz & Khan, 1978), Graen and colleagues (e.g., Graen & Scandura, 1987) focused on development of the dyadic relationship over time and suggested that it should be possible to train leaders to build a high quality LMX relationship with each group member over time, thereby leading to increased individual and group performance. However, recent LMX research findings at the group-level show that varied levels of LMX relationships exist within groups and LMX differentiation directly and indirectly affects group outcomes. Although the notion of whether leaders should differentiate among group members remains controversial, researchers need to further examine whether LMX differentiation helps or hurts group effectiveness and by what mechanisms the LMX differentiation effect on group effectiveness can be explained. This controversy is the subject of the next section.

Should Leaders Differentiate among Group Members?

In an attempt to examine LMX differentiation at the group-level, one critical issue is whether leaders should differentiate among group members and whether LMX differentiation increases or decreases the level of group performance. Originally, the

VDL model took a descriptive approach and suggested that LMX differentiation is prevalent and intentional for leaders in order to increase group outcomes (Erdogan & Bauer, 2010; Liden & Graen, 1980). Liden and Graen (1980) noted that:

> [T]he leader is responsible for the unit's output. He or she alone is not capable of executing all important aspects of the unit's function and therefore delegates some of these more critical tasks to those subordinates who can perform them well. Because poor unit performance would be a bad reflection on the leader and could affect his/her future in the organization, the leader naturally does not want subordinates who cannot be trusted to work on critical tasks (p. 452).

On the other hand, as described in the prior section, the role making approach by Graen and Scandura (1987) and the leadership making model of Graen and Uhl-Bien (1991) argue that the leader develops a high quality LMX with each member through role taking, role making, and role routinization processes. Accordingly, some researchers have taken a prescriptive approach and suggested that leaders should build high quality LMX relationships with every group member rather than just a few (Graen & Uhl-Bien, 1995; Northouse, 2010). By doing so, leaders can avoid inequities and negative consequences from being out-group members (Northouse, 2010). Northouse (2010, p. 154) noted:

> *Prescriptively*, LMX theory is best understood within the leadership making model of Graen and Uhl-Bien (1991). Graen and Uhl-Bien (1991) advocated that leaders should create a special relationship with all subordinates, similar to the relationships described as in-group relationships…. Furthermore, leaders should nurture high-quality exchanges with their subordinates. Rather than focusing on the differences between in-group and out-group members, the leadership-making model suggests that leaders should look for ways to build trust and respect with all their subordinates, thus making the entire work unit an in-group [emphasis added].

It should be noted, however, that the role making model (Graen & Scandura, 1987) and the leadership making model (Graen & Uhl-Bien, 1991) take the dyadic level approach rather than the group-level approach. According to these models, it seems possible to eventually build high quality LMX relationships with all members at the

dyadic level. Considering all the dyads at the group level, some dyadic relationships will be expected to grow faster than others. Accordingly, the quality of some LMX relationships would be higher than that of others at any given point of time, and the varied levels of LMX relationships are expected to have some combined effects on group effectiveness. Hence, the shift from the dyadic-level to the group-level approach makes LMX differentiation more complicated.

The controversy and complexity embedded in LMX differentiation is well noted in Sparrowe and Liden's (1997) review. They noted that a leader has to make a wise decision regarding whether to differentiate the group members. While an extreme differentiation would be detrimental to some low LMX members (Yukl & Van Fleet, 1992), at least for a leader, differentiation is not avoidable when managing group members. This is because "organizational effectiveness may be dependent upon internal selection processes and competition for promotions in which the differentiation process plays a crucial role" (Sparrowe & Liden, 1997, p. 545). Relatedly, Brass (1995) noted that if a leader attempts to develop generalized reciprocity (i.e., a high quality of LMX) with all the members, s/he may have to overinvest time and resources. Thus, as indicated by role theory, there are clear arguments to expect that group effectiveness will be enhanced when leaders differentiate among the group members (Liden et al., 2006).

In short, although some researchers have taken a prescriptive approach suggesting that leaders should not differentiate group members (e.g., Graen & Scandura, 1987; Graen & Uhl-Bien, 1991; Northouse, 2010; Schyns & Day, 2010), other researchers have noted that leaders' differentiation processes would be crucial given the internal selection processes and competition for promotions (Sparrowe & Liden, 1997). Taking a descriptive approach rather than a prescriptive approach to LMX differentiation at the group level, I suggest that it is more likely that leaders develop the differentiated LMX relationships with the group members and LMX differentiation does influence group

effectiveness. Therefore, I will review the LMX differentiation research and its empirical findings in the next section.

Leader-Member Exchange Differentiation

Dansereau and his colleagues critiqued the traditional average leadership style approach by suggesting that differences in group members' perceptions of the leader's behaviors should not be treated as measurement error but rather be regarded as a valid reflection of differences in leader-member exchange relationship quality (Dansereau, 1995; Dansereau, Cashman, & Graen, 1973; Dansereau et al., 1975; Dansereau et al., 1998). Dansereau et al. (1975) further noted in their conclusion that "[c]ontrary to the views of most organizational scientists, organizational units were shown to be differentiated based upon the relationships between the superior and each of his members" (p. 70). Erdogan and Bauer (2010) concur with this conclusion: they explained that LMX differentiation occurs because leaders want to more effectively use their limited time and resources, members make differential contributions, and both leaders and members put forth different amounts of effort to develop a high quality of LMX. Thus, LMX differentiation is a natural, intentional, and prevalent phenomenon in the workplace (Liden & Graen, 1980). Accordingly, LMX scholars have called for research to examine the effects of individual-level LMX and group-level LMX differentiation on group functioning (Graen & Uhl-Bien, 1995; Henderson et al., 2009; Schriesheim et al., 1999) in order to advance LMX theory (House & Aditya, 1997).

To date, empirical research evidence regarding the outcomes of LMX differentiation remains inconclusive and underdeveloped (Anand et al., 2011). Specifically, as summarized in Appendix A, some researchers have found that LMX differentiation is negatively related to attitudinal and behavioral outcomes at the individual and group levels. For example, at the group level, LMX differentiation has been found to be negatively related to within-group agreement on group climate (Ford &

Seers, 2006; Kozlowski & Doherty, 1989), group members' aggregated attitudes (Schyns, 2006), and group-level mentoring behavior (Williams, Scandura, & Gavin, 2009). For individual-level outcomes, in a group in which LMX relations are highly differentiated, members tend to report lower levels of job satisfaction (Hooper & R. Martin, 2008) and interpersonal justice perceptions (Mayer, 2008) and higher levels of team conflict perceptions (Hooper & R. Martin, 2008).

In contrast, other studies have shown that LMX differentiation is positively related to individual and group performance under certain situations. For instance, LMX differentiation increases group performance when (a) group tasks are highly interdependent (Liden et al., 2006), (b) group members have a low quality LMX as a whole (Liden et al., 2006), or (c) group members are heterogeneous in gender and have a high quality LMX on average (M. Stewart & Johnson, 2009). For individual performance, LMX differentiation increases individual members' performance when his or her LMX quality is poor (Liden et al., 2006). For coworker relations, Erdogan and Bauer (2010) showed that LMX differentiation is positively related to helping coworkers when distributive justice climate is high. Finally, Chae and Lee (2010) hypothesized and found an inverted U-shaped relationship between LMX differentiation and group performance such that group performance was highest when LMX differentiation was moderate.

In another set of studies, LMX differentiation has been hypothesized as a moderator which interacts with other psychological, social, and group properties (e.g., Boies & Howell, 2006; Henderson et al., 2008; Liao et al., 2010; Nishii & Mayer, 2009; van Breukelen, Konst, & van der Vlist, 2002). In these studies, scholars have suggested that when LMX relationships are highly differentiated within a group, the individual LMX quality or group members' average LMX quality (i.e., GLMX) becomes more or less critical to the individual- and group-level outcomes. For the individual-level outcomes, for example, when LMX relationships are highly differentiated within a group,

employees' own LMX quality becomes more positively related to individuals' group commitment (van Breukelen et al., 2002) and psychological contract fulfillment perception (Henderson et al., 2008). For the group-level outcomes, when LMX differentiation is high, group mean LMX becomes more influential to team potency and conflict (Boies & Howell, 2006) and a high level of group demographic diversity increases turnover (Nishii & Mayer, 2009).

Underlying these findings is the implication that high LMX differentiation within a group creates work group contexts where group members may be more likely to be concerned with fairness issues. In such situations, they may pay more attention not only to their own LMX but also to other members' LMX relationships. This could lead some group members to wonder whether differentiation is generated based upon fair treatments and whether they are treated well compared to other group members (Henderson et al., 2008; Erdogan & Bauer, 2010; Vidyarthi et al., 2010). Thus, these researchers have used organizational justice and social comparison processes to explain the outcomes of LMX differentiation (e.g., Erdogan & Liden, 2002; Erdogan & Bauer, 2010; Henderson et al., 2008; Henderson et al., 2009; Scandura, 1999; Vidyarthi et al., 2010). In general, they showed that LMX differentiation is not detrimental to members' outcomes as long as it is perceived as fair because in such situations, members will not attribute leaders' differentiated behavior to leaders' bias, self-interest, or negative intentionality (Henderson et al., 2009).

Despite the empirical support for the organizational justice approach, one important limitation is that research has focused only on LMX differentiation where members rated the LMX quality (which I refer to as member-rated LMX differentiation). None of the research has examined the effects of LMX differentiation when leaders rated LMX quality with each member (i.e., leader-rated LMX differentiation). Originally, Dansereau and his colleagues (1975) noted that LMX differentiation by the *leaders* may be instrumental to adequate unit functioning but lead to low levels of job attitudes and

high levels of turnover of *members* and concluded that the *leader* "may invest his most valued resource, his own time and energy, most efficiently to assure adequate unit functioning" (p. 75) via LMX differentiation. Liden and Graen (1980) noted that the main finding from the vertical dyad linkage model (Dansereau et al., 1975; Graen & Cashman, 1975) is that "in nearly all units leaders differentiate among their subordinates in terms of leader behavior" (p. 451). Yet no published studies have examined whether LMX differentiation from leaders' perspectives is positively related to the group-level outcomes, and as a result, it is unclear whether organizational justice and social comparison approaches can be applied to explain the effects of leader-rated LMX differentiation.

In summary, LMX researchers have begun to examine the outcomes of member-rated LMX differentiation within work groups and used the organizational justice and social comparison approach as a framework to examine whether, why, and when LMX differentiation increases group performance. Yet empirical research findings remain inconsistent, which indicates one key limitation. Unfortunately, no empirical studies have examined leaders' perceptions regarding differentiated relationships with their subordinates and how it influences group and leader outcomes. As discussed in the next section, research has found that there are discrepancies between the leaders' and members' LMX ratings (e.g., Sin et al., 2009). Thus, it is theoretically and empirically important to examine this issue from both members' and leaders' perspectives. To extend the LMX differentiation research by including both the leaders' and members' perspectives, I propose that leaders take a more task-oriented perspective whereas members take a more socio-emotional perspective on LMX relationships. To make this argument, I will first review the literature to make it clear why the perspectives from the leaders and members are unique and different.

A Dual Perspective on Leader-member Exchange

Extant leader-member exchange research has shown that leaders and members perceive their quality of relationship differently (Gerstner & Day, 1997; Sin et al., 2009; van Gils, van Quaquebeke, & van Knippenberg, 2010; X. Zhou & Schriesheim, 2009). In particular, meta-analyses have reported a moderate correlation between leader-rated and member-rated LMX (ρ = .37; Gerstner & Day, 1997; Sin et al., 2009). Therefore, as Sin and his colleagues (2009) noted, the leaders' and members' perspectives on LMX may be unique and relative, and thus it is a worthy endeavor to better understand why the two perspective differ and examine how the two perspectives are related to important individual and group outcomes. In this study, I suggest two theoretical reasons for the differences in leaders' and members' LMX quality ratings: information processing due to the unique rater source and implicit leader/follow theory. First, I begin with a review of the performance ratings literature, focusing on rater source effects, to explain the idiosyncratic nature of leaders' and members' ratings of LMX relationships. Second, I turn to the implicit theories literature to explain perceptual differences between leaders and members. Specifically, I describe how leaders' and members' information processing and perceptual categories are different, focus on implicit leader/follow theory that leaders and members hold, such as an "effective/ineffective" member or a "good/bad" leader, and then relate this to LMX.

Leaders and Members as Unique Rater Sources

Differences in leader- and member-rated LMX are in part because they are different and unique raters. Self-other rating difference, particularly subordinate-supervisor rating difference, has been well known in the performance ratings literature (e.g., Atwater & Yammarino, 1997; Ostroff, Atwater, & Feinberg, 2004); a meta-analytic finding revealed that the corrected self-supervisor correlation is low to moderate (ρ = .35; Harris & Schaubroeck, 1988). Accordingly, research has been conducted to identify the

source of variance in multisource performance ratings building upon Wherry's performance rating theory (Wherry & Bartlett, 1982), which specifies three sources that influence performance ratings: the ratee's true job performance, rater biases, and measurement error.

The main conclusion from empirical evidence is that performance rating scores are mostly influenced by raters because they have (a) idiosyncratic tendencies including self-serving bias, halo, and leniency errors (i.e., idiosyncratic rater effects) and (b) different organizational perspectives as leaders or group members (i.e., rater source effects). In other words, idiosyncratic rater effects represent variance in performance ratings due solely to an individual rater and not shared by other raters, while rater source effects reflect variance in performance ratings shared by raters only from the same source (Hoffman, Lance, Bynum, & Gentry, 2010). Empirical studies have reported that these two rater effects account for 60-70% of the performance rating variance (e.g., Hoffman et al., 2010; Scullen, Mount, & Goff, 2000). Although idiosyncratic rater effects are apparently pervasive in performance ratings, it should be noted that rater source effects also account for a significant amount of variance in overall performance ratings (Hoffman et al., 2010); idiosyncratic rater effects and rater source effects combined are approximately three times larger than the impact of ratings of the ratee's actual performance dimensions.

Building upon the findings in regard to rater source effects, leaders and members can be viewed as different raters holding unique perspectives (e.g., Borman, 1997; Murphy & Cleveland, 1995; Scullen et al., 2000). They are likely to observe different aspects of others' behaviors, apply different weighting schemes to the same aspect of behaviors, and use a different sample of behaviors in their rating of others' performance (Borman, 1997). In this vein, some researchers have emphasized that rater source effects should possibly be considered as the actual performance component (Hoffman et al., 2010). On the basis of these arguments, we can expect that the differences between

leaders' and members' LMX relationship perceptions may not be due to measurement error. Instead, their unique and different perspectives should be taken into account to better understand dyadic relationships and their combined interactions within a group.

With regards to LMX perceptions, leaders and members will likely have unique tendencies to perceive, interpret, and respond to each other's efforts and contributions. These unique tendencies of leaders and members can be understood from the implicit theories literature. Thus, I briefly review theories on information processing and implicit theories as related to LMX in the next section.

Leaders and Members as Different Implicit Theories Holders

The other reason for the differences in leaders' and members' leader-member exchange quality ratings is that leaders and members hold different implicit leader/follow theories, which refer to the assumption that leaders and members hold about the ideal or successful leaders/followers. To explain the differences in their implicit theories, I begin with a review of theories on information processing, which explain why the implicit theories that leaders and members hold play an important role in understanding leaders' and members' perceptual differences in LMX quality ratings.

Leader-member Exchange and Heuristic Information Processing

Given that social interactions often require a high level of information processing, leaders and members tend to rely on the pre-existing knowledge structure pertaining to an ideal leader's or follower's traits to perceive and interpret other party's behavior (Lord & Maher, 1991). Doing so leads to different behavioral expectations and interpretation of behaviors in social exchange relationships (Engle & Lord, 1997). In other words, leaders and members form general impressions and expectations with regard to job-related capabilities and their similarities (Liden et al., 1993) and thus categorize the other party as a "good" or "bad" member/leader at the very beginning of the dyadic history. Once

the categorization is formed, they are likely to perceive and interpret the other party's behaviors based on their pre-existing categorization (Lord & Maher, 1991).

Specifically, given that leaders have limited time and resources, they are likely to simplify social information and use their pre-existing knowledge structure to make decisions about their members. That is, leaders as well as members are like "cognitive misers" who tend to use the limited amount of cognitive resources in order to process social information in fast and efficient manners (Fiske & Talyor, 1984) and rely on implicit theories, cognitive heuristics, and schemas in social situations in order to lighten the burden of complex information-processing (Lord & Maher, 1991). The utility of implicit theories based on individuals' limited information processing capacity has been applied to leadership (e.g., Engle & Lord, 1997; Lord, Foti, & De Vader, 1984; Mitchell, Larson, & Green, 1977), fairness (Lind, 2001), motivation (e.g., Dweck, 2006), performance appraisal (e.g., Feldman, 1981; Heslin, Latham, & VandeWalle, 2005), strategic decision making (e.g., Dutton & Jackson, 1987), and social perceptions (Nisbett & Ross, 1980).

For example, in the organizational justice literature, scholars have emphasized the role of heuristic information processing in both fairness heuristic theory and in the uncertainty management model (e.g., Lind, 2001; Lind & van den Bos, 2002; van den Bos & Lind, 2002). Those researchers asserted that individuals have incomplete information regarding authorities' trustworthiness and often rely on overall impression to make judgments from day-to-day experiences regarding whether the other person is trustworthy. Further, Erdogan and Bauer (2010) used this rationale to explain why LMX differentiation becomes less detrimental to employee attitudes when justice climates are high than when they are low.

Extending this line of reasoning, I propose that implicit theories that the leader and members hold provide a reference point by which the other party's contribution is expected, perceived, and interpreted. As individuals use external cues (e.g., justice

climates) to make heuristic judgments regarding whether the other party is trustworthy, they also use internal cues (e.g., implicit theories) to perceive and interpret each party's contribution to their dyadic exchange relationship. In summary, leaders and members have different implicit theories and, as a result, they view their mutual and reciprocal relationships from different perspectives. In the following section, I explain these different implicit theories.

Implicit Leadership Theories and Implicit Follower Theories

In the leadership literature, implicit leadership theories (ILTs) refer to the assumption that employees hold about the ideal or successful leaders: namely, employees' cognitive structures or schemas specifying successful leaders' traits and behaviors. ILTs reflect a resurgence of a trait approach in leadership whereby its content remains stable over time and unaffected by age, organizational tenure, and organizational position (Epitropaki & R. Martin, 2004). Further, the authors noted that:

> Within the ILTs context, traits do not represent objective realities inherent to gifted individuals but rather perceptual abstractions or summary labels that followers use to categorize individuals in leadership positions and help them subsequently make sense of the behaviors that those leaders exhibit (Epitropaki & R. Martin, 2004, p. 293).

In other words, on the basis of ILTs, leaders and members expect, perceive, and interpret each party's behaviors and contributions to mutual exchange relationship development. Leadership categorization theory (Lord, 1985) suggests that leadership perceptions are based upon recognition and inference processes. People are categorized as leaders if their traits and behaviors are recognized to be matched with individuals' pre-existing leader prototype, and the leaders' behaviors are inferred and reconstructed on the basis of ILTs (Lord & Maher, 1991).

In addition to ILTs, leaders also have a tendency to classify their subordinates as either "effective" or "ineffective" followers. Engle and Lord (1997) suggested implicit

performance theories (IPTs) to examine the leaders' impression of effective subordinates, and van Gils and colleagues (2010) labeled it differently as implicit follower theories (IFTs) in their theoretical discussion. Sy (2010, p. 74) defined IFTs as "individuals' personal assumptions about the traits and behaviors that characterize followers." He noted that for leaders, IFTs capture *performance expectations for effective group members* and thus provide a comprehensive mental framework to form performance expectations, which thereby impact group members' outcomes. On the basis of this cognitive heuristic perspective, I argue that leaders and members rate their LMX relationship quality differently because of different ILTs and IFTs they hold.

The Role of Implicit Theories in Leader-member Exchange

In the LMX literature, the roles of expectation and behavioral interpretation in LMX development have been well documented (e.g., Dienesch & Liden, 1986; Liden et al., 1993). Dienesch and Liden (1986) emphasized the role of cognitive information processing in LMX development, noting that "individuals sometimes use a minimum of basic cues to *categorize stimuli automatically* into certain categories" (p. 628, emphasis added). Dansereau et al. (1975) noted that the leader develops high quality relationships with only some group members who are "dependable" but the "dependability" of group members would be differently defined by different leaders. Further, they showed that the different LMX relationships within a group were formed based on information collected during the first month of the dyadic interaction. From implicit theories perspective, it may be because the leaders have different implicit theories for a "good" follower and thus they define dependability in different ways.

Particularly, Liden et al. (1993) emphasized the critical roles of affective variables such as expectation, perceived similarity, and liking in developing LMX relationships. They found that leader's (or member's) expectations of members (or leaders) at the early stage in the life of the dyad (less than 5 days) strongly predict LMX quality 2 weeks and 6 weeks later. Furthermore, they demonstrated that LMX is formed within the first 2

weeks and does not change from 2 weeks to 6 months. The authors argued that leaders are likely to form an impression of the member's job-related capabilities within 2 weeks and this initial impression of performance is less likely to change. One implication from Liden and his colleagues' (1993) finding would be that the IFTs/ILTs held by leaders and members are crucial in LMX development, because they capture mutual expectations about each other's role and appropriate contributions to LMX development (van Gils et al., 2010).

ILTs have been applied to explain LMX development at the conceptual and empirical levels (e.g., Engle & Lord, 1997; Epitropaki & R. Martin, 2005; Lord & Maher, 1991). In an empirical study, Epitropaki and R. Martin (2005) found that differences between implicit and explicit leadership traits predict employee attitudes and well-being via LMX quality. When their leaders' actual traits are perceived similar to prototypical traits and different from anti-prototypical traits, employees reported a high quality of LMX, thereby leading to high levels of organizational commitment, job satisfaction, and well-being. They also found that differences between implicit and explicit leadership traits significantly predict LMX quality one year later.

Despite empirical evidence being limited, leaders and members are likely to have both ILTs and IFTs, and due to differences in their ILTs and IFTs, they may have different perspectives on LMX. ILTs and IFTs are expected to play an important role in LMX development for both parties of the dyad because implicit theories guide individuals not only to perceive, categorize, and interpret the other party's behaviors but also to generate their own behaviors in socially desirable ways (Lord & Maher, 1991). For example, the leader may use IFTs to perceive, categorize, and interpret group members' behaviors and may generate his/her own leadership behaviors based upon ILTs that s/he holds. Likewise, the members may understand the leader's treatment on the basis of ILTs and may put forth efforts based upon IFTs to build a better relationship with the leader.

In general, I suggest that implicit theories are a useful framework to explain leaders' and members' idiosyncratic tendencies in perceiving, categorizing, and interpreting the dyadic experiences. As a result, leaders and members tend to differently rate their LMX relationship quality. If these differences in implicit theories exist, the next question would be how they are different from each other. The answer to this question lies in the fact that leaders and members represent difference rater sources.

In particular, due to differences in their positions in organizational hierarchies, leaders are more likely than members to have control over organizational actions and be able to alter the employment relationship in their favor (Lester et al., 2002). Leaders tend to identify themselves with management (Lester et al., 2002) and be less likely to take and understand their members' perspectives (Galinsky, Magee, Inesi, & Gruenfeld, 2006), which may be related to a lack of empathy (Parker & Axtell, 2001). It may be because leaders (the powerful) are more likely to view the subordinates (the powerless) in terms of qualities that serves the leader's goals and interests, thereby resulting in their giving less attention to the human aspect of the subordinates (e.g., Galinsky et al., 2006; Gruenfeld, Inesi, Magee, & Galinsky, 2008).

Indeed, prior research has shown that the importance of goals may vary depending on one's position in the organization (Swann, 1984) and that leaders tend to exhibit more goal-oriented behaviors (Galinsky, Gruenfeld, & Magee, 2003). For example, leaders are more likely to be concerned with productivity of the group (Huang, Wright, Chiu, & C. Wang, 2008) and thus emphasize such components that can be objectively measured (i.e., result-based measures such as productivity and sales volume). Therefore, leaders are likely to differentiate among their members based on results-based (objective) measures (Murphy & Cleveland, 1995).

On the other hand, members are more likely to be concerned with the interpersonal aspect of their relationships with the leader (Huang et al., 2008; Pfeffer & Salancik, 1975); they expect their leaders to have a high level of interpersonal skills (Fox

& Bizman, 1988) and appropriately facilitate group processes (Hooijberg & Choi, 2000). This may be because they form evaluations regarding the quality of treatment by leaders as well as fairness of procedures and outcomes which in turn determine their self-worth beliefs (e.g., Tyler & Lind, 1992). Members also have trust-related concerns because leaders have authority to make decisions that affect members' outcomes such as pay, promotion, and layoffs (Dirks & Ferrin, 2002). Accordingly, they have a tendency to compare themselves with other members to make sure that they are receiving the same treatment (Festinger, 1954), and if they have not received what they think deserved, they seek managerial explanations for why that happened (J. C. Shaw, Wild, & Colquitt, 2003).

In support of this contention, a meta-analysis by Judge, Piccolo, and Ilies (2004) found that leader consideration behaviors (e.g., demonstrating concerns and respect for subordinates' welfare, and providing support) have stronger relations with outcomes such as follower satisfaction and leadership effectiveness ratings than initiating structure (e.g., defining and organizing subordinates' roles, and establishing communication channels to facilitate goal attainment). In order to further explain why considerate leaders are more effective than task-oriented leaders, they predicted that consideration would be linked to *organizational fairness* and *group members' affect or liking*. Particularly, they noted that "perhaps it [liking] is, instead, a mediating variable that explains why considerate leaders are more satisfying to followers" (p. 45). They called for future LMX research to address this issue.

Consistent with these notions, empirical research has tested the role of the task versus social orientation distinction between leaders and members. Specifically, a few LMX studies have yielded support for the proposition that leaders would be more concerned with task and goal accomplishment and members would be more concerned with social and developmental needs. For example, Dockery and Steiner's (1990) experimental study revealed that member ability was the best predictor of leader-rated

LMX quality followed by liking, whereas ability was not related to member-rated LMX. In another experimental study, Day and Crane (1992) found that leaders use both members' ability and affect (i.e., positive affectivity) information but members only use leaders' affect information when judging the quality of the relationship. Accordingly, ability seems to play a less critical role in members' exchange quality judgments than in leaders' judgments (X. Zhou & Schriesheim, 2009). Using a multi-dimensional LMX scale (Liden & Maslyn, 1998), Maslyn and Uhl-Bien (2001) also found that members' report of effort by the leader is positively related to their perceptions of social dimensions of LMX such as loyalty and professional respect but not to those of task-related dimensions such as contribution.

One empirical study by Huang et al. (2008) directly examined the structures of implicit theories and cognitive schemas that leaders and members hold. Assuming that leaders and members use different cognitive schemas to evaluate the quality of their LMX relationships, they examined the roles of implicit theories and schemas that both the leader and the member hold in perceiving their LMX quality. Their results showed that LMX schemas of leaders and members are different; leaders' LMX schemas for members are team player, reliability (work efficiency), self-directedness, and commitment to work, whereas members' LMX schemas for leaders consist of mutual understanding, learning and development, friendly attitudes, and ability to influence (overall leadership). Also, their findings showed that leaders are more likely to be concerned with task and work efficiency, while members are more likely to be concerned with social and developmental needs. One caveat is, however, that the authors asked respondents to evaluate the current characteristics and behaviors of their dyad partners to measure LMX schemas. Given that the prototypicality of traits and behaviors is typically measured in the ILT research, Huang and colleagues' (2008) findings may not exactly represent the "schematic" nature of the dyadic partner's traits and behaviors but represent

perceived actual traits and behaviors that contribute to a high quality of LMX development.

Taken together, leaders and members may not pay the same attention to the same aspect of the other party's contributions while developing LMX relationships. As a result, their perceptions of LMX quality quite often can be incongruent. One likely explanation for this incongruence is because leaders and members hold different positions and take different roles in the organizational hierarchy. Some initial research evidence (e.g., Day & Crane, 1992; Dockery & Steiner, 1990) supported the notion that leaders and members have different concerns and perspectives, such that leaders tend to be more concerned with task-oriented issues whereas members tend to be more concerned with relationship-oriented issues. Research on leaders' and members' implicit theories and schemas also seems to support this contention. In the following section, therefore, I discuss task and socio-emotional mechanisms as two fundamental group processes to explain differences in leader- and member-rated LMX differentiation and their impacts on group effectiveness.

Task and Socio-emotional Mechanisms

In 1911, Frederick Taylor's book, *The Principles of Scientific Management*, suggested that organizational productivity can be improved by strictly controlling and standardizing operating procedures (time and motion). His task- and economic incentive-based approach to management was challenged by the Hawthorne studies conducted at Western Electric's Hawthorne plant from 1927 to 1932. The Hawthorne studies in general revealed that work performance is determined not only by environmental factors but also by human relations and social processes (Franke & Kaul, 1978). Since then, organizational behavior researchers have investigated the task- and people-related concerns and suggested that these two mechanisms (or sub-systems) are fundamental and pervasive in organizational settings (Kabanoff, 1991; Katz & Kahn, 1978; Polley, 1987).

Consistent with this view, research has suggested that task and socio-emotional mechanisms are important to team functioning. Accordingly, first, I will review the leadership literature that has identified task and socio-emotional concerns as central to leadership theories. Then I will review the teams literature to investigate the task and socio-emotional group processes as explanatory mechanisms for the effect of the differentiated LMX relationships on group effectiveness.

Task and Socio-emotional Leadership

In the leadership literature, the task and socio-emotional concerns have been apparent. Early behavioral theories of leadership included task and social dimensions of behaviors: Initiating Structure and Consideration in the Ohio State studies (e.g., Stogdill, 1950) and Production- and Employee-centered leadership in the Michigan studies (e.g., Likert, 1961). Bales (1958) also pointed out that effective group leadership occurs in either type of task leadership or socio-emotional leadership activities but not in both. Despite several theoretical and empirical challenges regarding task and social dimensions of leadership behaviors, a recent meta-analysis of Initiating Structure and Consideration by Judge et al. (2004) showed that the Ohio State leadership behaviors, the "forgotten ones", are positively related to various follower and leader outcomes such as follower satisfaction, follower leader satisfaction, follower motivation, leader job performance, group-organization performance, and leader effectiveness (ρs ranged from .22 [Initiating Structure-follower satisfaction] to .78 [Consideration-follower leader satisfaction]). They concluded (p. 44) that "both Consideration and Initiating Structure have important main effects on numerous criteria that most would argue are fundamental indicators of effective leadership. … [T]hese behaviors—Consideration and Initiating Structure—are important pieces in the leadership puzzle." In order to increase individual, group, and organizational effectiveness, leaders, therefore, should be able to demonstrate both types of behaviors (theoretically, they are regarded as being independent of one another). This

is because "[o]rganizations are both task and social systems that involve simultaneous pressures for economic performance and the maintenance of social cohesion" (Kabanoff, 1991, p. 421).

However, it is not always practical to enhance productivity and maintain social cohesiveness simultaneously. In an experimental study at Harvard University, Bales and Slater (1955) found that two types of leader, a task leader and a socio-emotional leader, usually emerge in a group but it is less likely for a person to be effective in both task and socio-emotional leadership. Bales (1953) further noted the "equilibrium problem" which refers to the difficulty in establishing and maintaining a balance between task and socio-emotional mechanisms in a group. I suggest that one possible reason for this difficulty is because the pursuit of organizational goals as a group always raises tensions regarding how to allocate resources: equity *or* equality, rather than both equity *and* equality. If increasing task productivity is a primary goal, leaders tend to adopt equity principles based on each member's contribution, capability, and dependability, whereas if maintaining social cohesiveness is a primary goal, leaders tend to adopt equality principles by treating each member equally. The potential problem is that although task productivity and social cohesiveness are jointly pursued in many organizations, its corresponding distributive rules cannot stand together; the equity rule is inherently and unavoidably incompatible with the equality rule (Kabanoff, 1991).

As J. Martin and Harder (1988) found, one way for leaders to reconcile this tension may be to use different rules to allocate different resources; leaders can use the equity rule to distribute tangible resources (e.g., pay increases and promotions) and use the equality rule to allocate intangible resources (e.g., affect and loyalty) to compensate unequal distribution of tangible resources. Nonetheless, it is less likely to be the case given the fact that most organizations allocate tangible resources based upon their subjective judgments such as performance ratings. Objective and results-based performance measures are not available for most jobs, and thus individual contributions

are not easily identified (Rynes, Gerhart, & Parks, 2005). As a result, it is difficult to objectively identify, evaluate, and reward individual contributions, and consequently it is hard to apply the equity rules to increase task productivity. Rather, the equity and equality rules are often entangled and conflict with each other in reality, and as a result, organizations may face inevitable conflict between increasing productivity and maintaining cohesiveness.

To summarize, improving task productivity and maintaining social cohesiveness are important broadly-defined goals and objectives for most organizations (Kabanoff, 1991; Katz & Khan, 1978). Accordingly, task and social mechanisms have long been discussed in the team and leadership literatures (Bales, 1950; DeRue, Nahrgang, Wellman, & Humphrey, 2011; Judge et al., 2004; G. Stewart et al., 2005). Theoretically, these two mechanisms are expected to be complementary and incorporated together in order to accomplish group goals and objectives. Practically and empirically, however, they conflict with each other because it is not always viable to apply the equity principles to motivate group members due to difficulties in identifying and rewarding individual contributions in objective ways. One implication for LMX differentiation research is that because LMX differentiation is based on the equity principle by nature, it may require the violation of the equality principles to a greater or lesser extent (Kabanoff, 1991). In other words, leaders may differentiate among group members to enhance group productivity but, in the process, hurt cohesiveness which may be the primary goal of group members. This problem would be exacerbated given the fact that members' contributions cannot fully be identified and measured in most jobs and group tasks become more interdependent in the group contexts (Rynes et al., 2005).

Thus, I suggest that examination of the dynamics of the task and social mechanisms, or productivity and cohesiveness, would lead to better understanding of the LMX differentiation-group effectiveness relationship at the group level. Specifically, I argue that leaders have more task-oriented perspectives and members have more socio-

emotional perspectives toward developing LMX relationships. Accordingly, I will review the team and groups literature to examine whether the task and socio-emotional mechanisms can be applied to better understand the LMX differentiation-group effectiveness relationship.

Task and Socio-emotional Group Processes

In the team and groups literature, team process is defined as "members' interdependent acts that convert inputs to outcomes through cognitive, verbal, and behavioral activities directed toward organizing task work to achieve collective goals" (Marks et al., 2001, p. 357). A number of researchers have suggested that team inputs (e.g., group composition, task design, and context) are transformed into team outcomes through team processes and thus team process plays a central role in team effectiveness models (Cohen & Bailey, 1997; Hackman, 1987; Ilgen, Hollenbeck, Johnson, & Jundt, 2005; LePine, Piccolo, Jackson, Mathieu, & Saul, 2008; Marks et al., 2001; Mathieu et al., 2008; McGrath, 1964). Specifically, several researchers tested the role of team processes as a linking mechanism between team leadership and group performance (e.g., G. Chen, Kirkman, Kanfer, Allen, & Rosen, 2007; G. Stewart & Barrick, 2000).

Marks and colleagues (2001) developed an important taxonomy of team processes based on their arguments that team goals are accomplished in temporal cycles of goal-directed activities. In a conceptual paper, they suggested that teams are performing multiple *tasks* through a series of transition and action phases. Transition phases are "periods of time when teams focus primarily on evaluation and/or planning activities to guide their accomplishment of a team goal or objective," and action phases are "periods of time when teams are engaged in acts that contribute directly to goal accomplishment (i.e., taskwork)" (Marks et al., 2001, p. 360). They further suggested that these two task-related processes can be facilitated by *interpersonal* processes whereby teams manage interpersonal relationships such as conflict management, motivating/confidence building,

and affective management. While it is not explicitly discussed in their paper, their taxonomy seems to reflect how team tasks (transition and action) and interpersonal processes transform team inputs into desirable outcomes (Mathieu et al., 2008).

Other research has also supported the view that socio-emotional and task processes are important to team outcomes. G. Stewart and Barrick (2000, p. 136) noted that "[m]ost measurements of intrateam process have been based on the work of Bales (1950) and include assessments of both *task and socioemotional* interactions (Gladstein, 1984; McGrath, 1984)." More explicitly, G. Stewart, Fulmer, and Barrick (2005) directly tested whether the task and social role structures explain team outcomes. They proposed that individual tasks and social roles are aggregated into team role structures via composition (i.e., the mean level of team members' roles) and compilation (i.e., the variance in team members' roles) and predict team social cohesion and team performance. Their results showed that teams with higher mean levels of social roles exhibited higher social cohesion, teams with higher levels of task role variance exhibited lower social cohesion, and teams with higher levels of social role variance exhibited lower social cohesion and team performance. The authors concluded that "[o]ur findings converge with these perspectives [task and social perspectives] to suggest task and social grouping as critical categorizations that can be used to classify fundamental work goals and behavioral roles" (p. 358-359).

In summary, group processes have been examined as linking variables between group inputs and group outcomes. Traditionally, group processes have been examined to capture task and socio-emotional aspects of team interactions (Bales, 1950; Gladstein, 1984; Hackman, 1987; McGrath, 1984; G. Stewart et al., 2005). Marks et al. (2001) developed the taxonomy of group processes which takes the role of time into account and divides task processes into transition and action processes. Further, some researchers (e.g., G. Chen et al., 2007; G. Stewart & Barrick, 2000) examined how such group processes mediate the influence of group leadership on group outcomes. Building upon

these findings, I will examine the roles of the task and socio-emotional group processes in explaining the relationship between LMX differentiation and group effectiveness. In the next section, I will describe four specific group process variables used in this study.

Group Process Variables

To capture the task and socio-emotional group processes in this study, four group process variables will be used to capture the task and socio-emotional mechanisms in a group. First, role clarity and coordination are expected to serve as indicators of the task mechanisms. Group role clarity refers to the process of defining and specifying team members' tasks or role functions and job responsibilities within a team, and coordination is defined as "the process of orchestrating the sequence and timing of interdependent actions" (Marks et al., 2001, p. 367-368). Second, the socio-emotional mechanism is manifested by two variables: relationship conflict and group potency. Relationship conflict includes interpersonal dislike, tension, and friction among group members as well as feelings of annoyance, frustration, and irritation (Jehn & Mannix, 2001). Group potency is defined as group members' shared belief that group members as a whole can be effective (Shea & Guzzo, 1987).

These variables are expected to represent a broad nature of the task and socio-emotional group mechanisms for the following reasons. First, group role clarity and coordination capture not only how team members' roles and tasks are specified and clarified but also their actual engagement in task activities in order to accomplish group goals. Through effective group role clarity and coordination, group goals can become more specific, attainable, practical, and valuable, and group members can align their contributions with goal accomplishment (Marks et al., 2001). Second, relationship conflict and group potency represent key aspects of socio-emotional mechanisms; they capture interpersonal interactions among group members as well as the affective component and cognitive belief of group members. Third, measurement deficiency can

be avoided by including four representative group processes (LePine et al., 2008). Building upon Marks et al.'s (2001) taxonomy, group role clarity, coordination, relationship conflict, and group potency represent different group processes, which are transition, action, interpersonal processes, and emergent states, respectively. In conducting group processes research, Marks and colleagues (2001) recommended that "[w]hen the research goal is to examine a broad range of processes, we suggest representing each superordinate category (transition, action, and interpersonal) with a process dimension most relevant to the research context" (p. 370).

In sum, this study examines the task and socio-emotional group mechanisms by measuring four group process variables (group role clarity, coordination, relationship conflict, and group potency). I propose that these group mechanisms mediate the relationship between leader- and member-rated LMX differentiation and group effectiveness. As will be discussed in the next chapter, leader-rated LMX differentiation is expected to facilitate group role clarity and coordination by effectively allocating group resources and assigning tasks to members depending on their capability, whereas member-rated LMX differentiation is expected to increase relationship conflict and decrease group potency by leading group members to be susceptible to fairness issues and to engage in social comparison processes with other group members.

Group Effectiveness

In this study, group effectiveness will be examined with two group outcome variables: group performance (the extent which the group accomplishes goals and expectations about task duties) and group viability ("a team's potential to retain its members through their attachment to the team, and their willingness to stay together as a team"; Balkundi & Harrison, 2006, p. 52). Group performance captures the more task-oriented aspects and group viability captures the more socio-emotional aspects of group effectiveness (Guzzo & Shea, 1992), and many researchers have recognized that both

aspects of group effectiveness need to be examined (e.g., Balkundi & Harrison, 2006; Barrick, G. Stewart, Neubert, & Mount, 1998; Kozlowski & Bell, 2003; Wu et al., 2010). Moreover, these two outcome variables have been suggested to be theoretically distinct and not necessarily affected by the same antecedents (Balkundi & Harrison, 2006; Gladstein, 1984; Hackman 1987). Consistent with this argument, I argue that group performance and group viability represent task and socio-emotional dimensions of group effectiveness and that they would be affected by leader- and member- rated LMX differentiation, respectively.

Summary of Chapter II

Over the past 35 years, leader-member exchange theory has been further expanded beyond its original model, the vertical dyadic linkage theory. Although the VDL model originally suggested that leaders build different LMX relationships with in-group and out-group members (Dansereau et al., 1975; Graen & Cashman, 1975), this notion was challenged by the role making model of LMX (Graen & Scandura, 1987) and the leadership making model (Graen & Uhl-Bien, 1991) proposing that every dyadic relationship between the leader and each member can mature over time. This controversial view on LMX differentiation has not yet been resolved, and many researchers (e.g., Erdogan & Bauer, 2010; Liden et al., 2006) have reported that differentiated LMX relationships do exist within a group. As a result, one remaining important research question is "whether leaders should or should not differentiate among their members" (Sparrowe & Liden, 1997, p. 545).

The research evidence on whether LMX differentiation positively relates to group effectiveness has been equivocal. In order to explain this inconsistency, I argue that the impact of LMX differentiation on group effectiveness can be understood better by separately examining LMX from leaders' and members' perspectives. A dual perspective on LMX differentiation is supported by theories and research on idiosyncratic rater

tendencies and rater source effects. In particular, because leaders and members have different organizational perspectives, and hold different implicit theories and cognitive schemas, they may perceive the same LMX relationship differently.

Finally, I suggest that leader-and member-rated LMX differentiation each impact group effectiveness, but through different mediating mechanisms. Leader-rated LMX differentiation can be explained by task (i.e., productivity-enhancing) and member-rated LMX differentiation can be explained by socio-emotional (cohesiveness-maintaining) mechanisms. The task and socio-emotional structures have been suggested to be important to organizational functioning (Kabanoff, 1991; Katz & Kahn, 1978) and thus have been widely examined in the group and leadership literatures (Bales, 1950; McGrath, 1984; G. Stewart et al., 2005). In the following chapter, I will develop specific hypotheses and provide more detailed discussion of the proposed relationships in order to explore whether, why, and when LMX differentiation increases group effectiveness.

CHAPTER III

HYPOTHESES DEVELOPMENT

The primary purpose of this study is to examine the relationship between leader-member exchange differentiation and group effectiveness (defined in terms of group performance and viability). Specifically, I examine this relationship by adopting a dual perspective approach, which includes both leaders' and members' perspectives on LMX relationships within a group. LMX differentiation refers to the extent to which the leader forms different quality exchange relationships with group members. In this study, leader-rated LMX differentiation is based on leaders' ratings of the LMX relationship with group members, whereas member-rated LMX differentiation is based on members' ratings of the LMX relationship with the leader. Building upon the groups and leadership literatures, as reviewed in the preceding chapter, the two group mechanisms (the task and socio-emotional mechanisms) are suggested to mediate the relationship between LMX differentiation and group effectiveness. In particular, I expect that leader- and member-rated LMX differentiation will be related to group effectiveness via the task and socio-emotional mechanisms, respectively. Hence, leader-rated LMX differentiation is expected to influence group performance (as the task-related aspect of group effectiveness) and member-rated LMX differentiation is expected to influence group viability (as the socio-emotional aspect of group effectiveness).

The first part of this chapter introduces the proposed research model (see), which reflects the above mentioned relationships. Then, I introduce the research hypotheses, including (a) the relationship of leader- and member-rated LMX differentiation with group performance and group viability, (b) the mediating roles of task and socio-emotional mechanisms in the LMX differentiation-group effectiveness relationship, and (c) the boundary conditions in which the suggested relationships become stronger or weaker.

Overview of the Proposed Model

The proposed model examines mediating and moderating mechanisms that link leader-member exchange differentiation to group effectiveness. In general, I expect to find a positive relationship between leader-rated LMX differentiation and group performance and a negative relationship between member-rated LMX differentiation and group viability. I propose four mediating mechanisms (two each for leader- and member-rated LMX differentiation) and four moderating mechanisms.

In terms of the mediators, based on the traditional inputs-process-outputs (IPO) framework (Hackman, 1987; McGrath, 1964) and the extended inputs-mediators-outputs (IMO) model (Mathieu et al., 2008), I suggests that task and socio-emotional mechanisms link LMX differentiation with group effectiveness. To examine these two mechanisms, the study includes four specific group-level variables: group role clarity and group coordination representing the task mechanism, and relationship conflict and group potency representing the socio-emotional mechanism. Each of these four variables captures the group processes and emergent state. Specifically, group role clarity and coordination are the measures of transition and action group processes (Marks et al., 2001) and are expected to mediate the proposed positive relationship between leader-rated LMX differentiation and group performance. Relationship conflict and group potency are measures of interpersonal group process and emergent state (Marks et al., 2001) and are expected to mediate the proposed negative relationship between member-rated LMX differentiation and group viability.

In addition, the current model addresses some boundary conditions such that leader- and member-rated LMX differentiation will not always relate to the task-related and socio-emotional mechanisms at the group level. Instead, those relationships are expected to vary depending on situational moderators. In the LMX differentiation literature, researchers (e.g., Erdogan & Bauer, 2010; Graen, 1976; Liden et al., 2006; Scandura, 1999) have suggested that LMX differentiation should be equitable and fair in

order to help groups function effectively. Hence, I suggest several boundary conditions in which LMX differentiation is perceived to be more equitable and fair. Specifically, I will propose that the positive effect of leader-rated LMX differentiation on the task-related group processes will be stronger when (a) group members have highly different expertise and (b) the group leader has a high quality upward exchange relationship with his or her supervisor (i.e., high leader-leader exchange; LLX). I expect that the negative effect of leader-rated LMX differentiation on the socio-emotional group processes will be weaker when (a) group members believe that the distribution of power within a group is unequal (high group power distance) and (b) group members believe that their leader represents their group (leader prototypicality). The specific hypotheses are developed theoretically next.

Leader-member Exchange Differentiation and Group Effectiveness

To explain the direct relationship between LMX differentiation and group effectiveness, I suggest that the leaders' and members' perspectives on LMX differentiation will be related to different aspects of group effectiveness: leader-rated LMX differentiation will be positively related to group performance and member-rated LMX differentiation will be negatively related to group viability.

Leader Perspective

There are two reasons why leader-rated LMX differentiation will increase group performance. First, based on the role-making process model (Graen & Scandura, 1987), leaders assign and routinize different roles with different group members. When group members work together as a group, not all group members make the same contributions to group outputs (Bauer & Green, 1996). In order to accomplish goals and objectives more efficiently, leaders must coordinate different group members' contributions (Henderson et al., 2009) and thus want to use their limited time and resources in the most

effective ways. That is, it is likely that leaders want to invest their limited time and resources selectively by delegating some tasks to dependable group members to maximize group outcomes (Dansereau et al., 1975; Dienesch & Liden, 1986; Liden & Graen, 1980). Thus, the leader usually initiates the relationships with group members by assigning roles to them based on his/her perceptions and expectations of each member's dependability (Graen & Scandura, 1987). This role making process establishes role differentiation within a group, from the leader's perspective, which has been suggested to increase group performance (Slater, 1965; Stogdill, 1959). In other words, the group leader develops differentiated LMX relationships with group members in an attempt to differentiate group members' roles depending on their capability. Consequently, this will help the leader coordinate group members' contributions in the most effective ways (Dansereau et al., 1975; Liden et al., 2006).

The second reason why leader-rated LMX differentiation will be related to group performance is because leaders tend to have task and work oriented schemas (Engle & Lord, 1997; Huang et al., 2008), and thus members' performance or competence is a critical antecedent of leaders' ratings of LMX quality (Day & Crane, 1992; Dockery & Steiner, 1990). In a meta-analysis by Gerstner and Day (1997), for example, individual performance was found to be more strongly and positively related to leader-rated LMX than member-rated LMX. In a recent empirical study, Nahrgang and her colleagues (2009) found that over an 8-week period, both leaders and members develop differentiated relationships with each other and that their relationship quality increases quickly over time and stabilizes. Interestingly, if members' performance level is taken into account, time is not a significant predictor of leader-rated LMX quality, whereas both time and leaders' performance are significantly related to member-rated LMX quality. When developing LMX relationships, members' performance level is the more important and significant antecedent of leaders' perceptions of LMX quality than is dyadic tenure (i.e., how long the leader and member have worked together). Therefore,

Nahrgang et al.'s (2009) finding may be seen as supporting this contention that leaders are more likely than members to be more concerned about task- and performance-oriented issues in developing relationships with their members.

It is plausible, therefore, that leaders tend to develop differentiated LMX relationships with group members intentionally based on each member's level of performance and contributions. Given the leaders' concerns and responsibility for group productivity, leader-rated LMX differentiation should be positively associated with group performance. Leaders are likely to differentiate group members' roles based upon their evaluation of each member's performance and dependability in an attempt to invest their limited time and resources wisely, thereby facilitating group functioning (Slater, 1965; Stogdill, 1959). Leaders build higher quality of LMX relationships with high performers and low quality relationships with low performers, thereby leading them to invest more time and resources to highly capable and dependable members (i.e., high performers). By doing so, leaders assign different role requirements to group members, make different roles with different members, and subsequently build the differentiated role structure within a group. At the group level, this differentiated role development will allow the leaders to use each member's knowledge, skills, and capabilities in more efficient ways and keep them from overinvestment of group resources to less 'dependable' group members. For this reason, previous researchers have suggested the benefit of role differentiation in increasing group performance (e.g., Druskat & Kayes, 2000; Humphrey, Hollenbeck, Meyer, & Ilgen, 2007; Hyatt & Ruddy, 1997). Although this proposed relationship was originally well documented in the VDL research (e.g., Dansereau et al., 1975; Graen & Cashman, 1975), whether the leaders' perspective on LMX differentiation increases group performance has never been examined empirically. Therefore, I propose that:

Hypothesis 1: Leader-rated LMX differentiation is positively related to group performance.

Member Perspective

As explained in the previous chapter, group members are more likely to have socio-emotional concerns when it comes to leader relationships. This in turn indicates that member-rated leader-member exchange differentiation is more likely to relate to the socio-emotional aspect of group effectiveness; that is, group viability, rather than group performance. This may be one explanation for why previous research has failed to support the direct relationship between member-rated LMX differentiation and group performance. Group viability is conceptually distinct from group performance (Gladstein, 1984; Hackman 1987). It is an affect- and attitude-laden construct, which captures general satisfaction of group members (Barrick et al., 1998). As noted by Dansereau et al. (1975), the downside of LMX differentiation is that it undermines group members' (especially out-group members') satisfaction. Thus, it seems natural to predict that member-rated LMX differentiation will relate to group viability negatively.

This prediction is well supported by Heider's (1958) balance theory. According to his theory, a balanced state in an interpersonal relationship occurs when two individuals have a positive relationship with each other and the same relationship with a third party (for example, both have positive relationships with a third party), or when the two have a negative relationship with each other and a different relationship with a third party (for instance, one has a positive and the other has a negative relationship with the third party). Therefore, Heider's (1958) balance theory predicts that group members will have positive interpersonal relationships if *all* the group members have a high (or poor) quality of LMX relationships with the leader. If the members have varied levels of exchange relationships with the leader, then the quality of their relationships with each other will also vary, which in turn negatively impacts their satisfaction with the group as a whole and willingness to work together as a group (i.e., group viability). Empirical findings have supported this prediction. For example, Schyns (2006) found that member-rated LMX differentiation is negatively related to group-level job satisfaction and

commitment. More importantly, Sherony and Green (2002) tested this prediction using data from 110 coworker dyads and found that the quality of coworker exchanges increased when both an employee and his/her coworker had high quality LMXs with their leader. Furthermore, they found that employees who have varied levels of coworker exchanges are less likely to be committed to the organization. Henderson and Liden (2007) replicated Sherony and Green's (2002) findings using social network data.

In support of the negative relationship between members' perceptions of differentiation and group outcomes, Wu and his colleagues (2010) have recently examined the effect of differentiated transformational leadership on group effectiveness. In their study, differentiated leadership referred to "the case when the leader exhibits varying levels of individual-focused leadership behavior across different group members" (p. 90) measured by a coefficient of variation of two transformational leadership dimensions, those of individualized consideration and intellectual stimulation. Their finding showed that differentiated leadership was negatively related to group performance and group viability. This supports the negative relationship between members' perceptions of differentiation and group effectiveness in the transformational leadership literature. Although transformational leadership is similar to LMX, they differ in terms of their theoretical emphases. Previous researchers have shown that transformational leadership is a set of leader *behaviors* that forms high quality LMX *relationships* and a sense of common fate with group members (Deluga, 1992; H. Wang, Law, Hackett, D. Wang, & Z. Chen, 2005). Given that members' LMX quality perceptions are strongly influenced by transformational leadership behaviors, it is likely that differentiated exchange relationships (not just a specific set of behaviors) also influences group outcomes. Taken together, member-rated LMX differentiation is expected to explain better the socio-emotional group outcomes (i.e., group viability) rather than task-related outcomes (i.e., group performance) in a group. Therefore, based

upon relevant theoretical rationale and empirical findings (e.g., Heider, 1958; Sherony & Green, 2002; Wu et al., 2010), I offer the following hypothesis.

Hypothesis 2: Member-rated LMX differentiation is negatively related to group viability.

Mediators of the Effect of Leader-member Exchange Differentiation on Group Effectiveness

In the previous section, I proposed the direct effects of leader- and member-rated leader-member exchange differentiation on group performance and group viability. The next research question aims to examine why leader- and member-rated LMX differentiation is associated with the group effectiveness criteria. In the following sections, I propose that the task (group role clarity and coordination) and socio-emotional (relationship conflict and group potency) group processes will mediate the relationships between leader-rated LMX differentiation and group performance and between member-rated LMX differentiation and group viability, respectively.

Task-related Group Mechanisms: The Leader Perspective

Theoretically, leader-rated LMX differentiation is expected to be positively related to group performance because the role making process encourages leaders to clarify team members' roles and coordinate team tasks across individual members. In particular, in forming relationships with members, leaders assign the members specific tasks and roles and lead them to meet or exceed performance standards and group goals (Graen & Scandura, 1987). As some members meet or exceed leader's expectations and other members do not, the leader forms different quality relationships with their members (Liden et al., 1993). In turn, LMX differentiation facilitates on-going role differentiation (Liden et al., 2006; McClane, 1991). Accordingly, differentiated LMX relationships should result in group members having differentiated roles within the group. Through the

differentiated roles, leaders can facilitate the following two group processes with regard to task- and goal-related group activities.

First, from the leaders' perspective, LMX differentiation increases group performance via group role clarity—clear specification of group members' roles or tasks for accomplishment of group and organizational goals. Through the role making process (Graen & Scandura, 1987), as emphasized in the earlier sections, the group leader builds high quality LMX relationships with the group members who accepted challenging and unstructured task assignments and met performance expectations and standards. While assigning roles to the group members, the leader is likely to clearly communicate the goals and objectives to be achieved and the assignment of specific tasks and roles, which further clarifies role expectations of the group members (Graen, 1976; Humphrey et al., 2007). This explicit communication between the leader and group members would help each group member clearly identify their roles and/or tasks and prioritize group goals and objectives.

In addition to each member's understanding of group goals and their own roles, the group members can recognize one's own role and the roles of others and understand how their roles contribute to group goal accomplishments through communication with the leader. This is because the role differentiation process allows the leader to explain how roles are structured within a group and how individual contributions are identified, quantified, and combined to accomplish goals and objectives within a group. Consequently, clear understanding and acceptance of one's own role and the roles of others will facilitate not only clear understanding of their own roles but also development of collective strategies as a group, which, in turn, increases group performance (Liden et al., 2006; Stogdill, 1959). Therefore:

Hypothesis 3a: The relationship between leader-rated LMX differentiation and group performance is partially mediated by group role clarity.

Second, from the leaders' perspective, LMX differentiation increases group performance via effective coordination—orchestrating the sequence and timing of task activities. As explained above, the leaders are more likely to build efficient relationships with the group members based on their competence, idiosyncratic expertise and contributions, and motivation through the role making processes. Accordingly, it is expected that highly differentiated LMX relationships as enacted by the leader will result in the differentiated skill/ability structure within a group (Leana, 1986; Liden & Graen, 1980). When leaders recognize and acknowledge members' unique skills and abilities, the leader encourages group members to apply their own knowledge, skills, and capabilities in the most effective ways to accomplish group goals and objectives (Stogdill, 1959). For example, some group tasks require only routine work but other tasks require high levels of technical and social skills, and thus the leaders, through LMX differentiation, can align each member's knowledge, skills, and abilities with task requirements of the group (Graen, 1976). Therefore, LMX differentiation by the leaders is expected to facilitate group coordination. It augments mutual understanding of each member's expertise and mutual adjustment of the pace and sequencing of their contributions, which in turn increases group performance.

Hypothesis 3b: The relationship between leader-rated LMX differentiation and group performance is partially mediated by coordination.

Socio-emotional Group Mechanisms: The Member Perspective

From the members' perspective, I suggested that leader-member exchange differentiation decreases the satisfaction of the group and willingness to stay as a group (i.e., group viability). This is because LMX differentiation establishes a status hierarchy for the members in that the quality of LMX relationship indicates the extent to which the leader recognizes and values contributions of group members (Liden et al., 2006;

Sparrowe, Soetjipto, & Kraimer, 2006). LMX differentiation makes the group members engage in social comparison processes, which in turn affects individual attitudes and behaviors (Vidyarthi et al., 2010). Considering that group members have social and developmental needs when developing LMX relationships with the leader (Huang et al., 2008), this LMX status difference within a group may be detrimental to maintaining their socio-emotional bonds within a group. Specifically, I expect that members of a group with high LMX differentiation may suffer from high relationship conflict and low group potency. Both relationship conflict (Balkundi, Barsness, & Michael, 2009; Jehn, Northcraft, & Neale, 1999) and group potency (Gully, Incalcaterra, Joshi, & Beaubien, 2002; Wu et al., 2010) have been shown to be related to group viability; conflict negatively and potency positively.

First, for group members, high LMX differentiation may provoke high relationship conflict within a group. Relationship conflict refers to interpersonal dislike, tension, and friction among group members as well as feelings of annoyance, frustration, and irritation (Jehn & Mannix, 2001). As balance theory (Heider, 1958) predicts, individuals seek the balanced state where two individuals like each other and share a positive (or negative) relationship with the third person. If the relationships among three individuals are unbalanced (i.e., two individuals have different relationships with the third person), the two individuals would feel discomfort and tension. By definition, a high LMX differentiation group means that some members will have positive relationships with the leader and others will have negative relationships, thus, the probability of there being unbalanced triads increases as LMX differentiation increases. Furthermore, in a high LMX differentiation group, members are less likely to share their group membership due to LMX status differences. Instead, in- and out-group members may categorize themselves into different subgroups (e.g., Hogg & R. Martin, 2003) and in such groups, group members are likely to experience hostility or animosity, thereby provoking relationship conflict within a group (Jehn et al., 1999).

Supporting this rationale, Sias and Jablin (e.g., Jablin & Sias, 2001; Sias & Jablin, 1995) highlighted that differential treatment of group members can decrease the quality of communication relationships among group members. Hooper and R. Martin (2008) found that LMX variability, that is, the extent to which group members perceive that different quality LMX relationships exist between members of a group, increases group relationship conflict. However, Hooper and R. Martin used a subjective measure to ask respondents to report the "work relationship distribution" within a group: the numbers of group members who have "very poor" (1), "poor" (2), "satisfactory" (3), "good" (4), and "very good" (5) working relationships with the leader. Subsequently, they calculated the group mean and standard deviation. Hence, the current study extends those findings to propose relationship conflict as the mediator between member-rated LMX differentiation and group viability using a more objective operationalization of LMX differentiation: the standard deviation of group members' LMX scores within a group. Therefore, I expect:

Hypothesis 4a: The relationship between member-rated LMX differentiation and group viability is partially mediated by relationship conflict.

Second, the present study postulates that high member-rated LMX differentiation hurts group viability because it lowers group potency which refers to group members' shared belief that group members as a whole can be effective (Shea & Guzzo, 1987). Due to LMX status differences within a group, high LMX differentiation may lead to self-efficacy divergence in a work group, which in turn inhibits group members' shared perceptions of their effectiveness as a group and subsequently decreases their satisfaction and intention to work together (Wu et al., 2010). At the individual level, previous research evidence has supported the positive relationships between LMX and such variables as psychological empowerment (G. Chen et al., 2007; Liden, Wayne, & Sparrowe, 2000) and self-worth (Keller & Dansereau, 1995). Deci, Connell, and Ryan (1989) have also noted that leaders influence their group members' self-worth beliefs through the interpersonal work climate. A high quality LMX engenders not only a

favorable interpersonal work climate but also meaningful work experiences, such as decision-making responsibilities and task challenges (Liden et al., 2000).

Accordingly, at the group level, highly diverse LMX relationships may ultimately engender self-efficacy divergence among members. As LMX relationship qualities differ among members, their levels of self-efficacy may diverge. Supporting this prediction, Wu et al. (2010) found that high self-efficacy divergence in a work group and low collective efficacy mediate the negative relationship between differential leadership measured by group members and group effectiveness. Collective efficacy is closely related to group potency and defined as "a group's shared belief in its conjoint capabilities to organize and execute the course of action required to produce given levels of attainments" (Bandura, 1997, p. 477). Conceptually, group potency is considered to capture broader perceptions and more generalized beliefs concerning group capability and group effectiveness on any tasks and jobs (Gully et al., 2002; Stajkovic, Lee, & Nyberg, 2009). Given the focus of this study on members' more generalized beliefs of their capability to perform any tasks and jobs rather than specific tasks, I will examine group potency in this study. Based upon these empirical findings, therefore, I expect:

Hypothesis 4b: The relationship between member-rated LMX differentiation and group viability is partially mediated by group potency.

The Boundary Conditions of the Effect of Leader-member Exchange Differentiation

In the previous section, I proposed the theoretical arguments to explain why leader-member exchange differentiation relates to group effectiveness. However, I also expect that leader- and member-rated LMX differentiation is more or less strongly related to the task and socio-emotional group processes under certain contexts. I suggest that leader-rated LMX differentiation will be more strongly and positively related to the two task processes when leaders can make more credible and reliable differentiation among

group members. In particular, for leader-rated LMX differentiation, the positive effects of LMX differentiation on group role clarity and coordination will be stronger when team members have highly different expertise and job knowledge in team tasks and when the group leader has a high quality leader-leader exchange relationship (LLX) with his or her supervisor. For member-rated LMX differentiation, I suggest that LMX differentiation will not be detrimental to the two socio-emotional group processes as long as group members are less concerned with fairness issues in a group. Specifically, the negative effects of LMX differentiation on relationship conflict and group potency will be weaker when the group leader is perceived as representing the group's standards, values, and norms (i.e., leader prototypicality) and when the group members have a high power distance belief. The proposed moderators represent conditions under which LMX differentiation is proposed to be more equitable and fair.

Moderators of the Effects of Leader-rated Leader-Member Exchange Differentiation on Task-related Group Processes

Despite the lack of empirical research, researchers have suggested that leaders' differentiation should be equitable (Liden et al., 2006). To do so, leaders must build differentiated exchange relationships with members in more credible and reliable ways. In this study, I suggest that leader-member exchange differentiation by leaders becomes more credible, reliable, and equitable in contexts where leaders face greater need to clarify group members' roles and coordinate group members' efforts (Liden et al., 2006) or have sufficient power, authority, and resources to make efficient and equitable differentiation among employees (Dienesch & Liden, 1986). Specifically, (a) when group members have the different levels of expertise or job knowledge to bring to group tasks and (b) when group leaders have a high quality of upward exchange relationships with their supervisors, LMX differentiation is more likely to be perceived credible, reliable, and equitable for the following reasons.

Distributed Expertise

Distributed expertise refers to the extent to which team members differ in the amount of expertise or job knowledge relevant to group task accomplishments (Hollenbeck et al., 1995). In groups with highly distributed expertise, group members have heterogeneous expertise or job knowledge where each member has specialization of expertise (Austin, 2003; Lewis, 2003; Wegner, 1985). Such groups have been suggested to be productive because group members can make more efficient use of team members' knowledge by reducing redundant efforts to attain a certain area of expertise and accessing a wide variety of expertise within a team (Austin, 2003; Hollingshead, 1998).

Despite these benefits, some researchers have noted that in highly distributed expertise teams, it is critical to recognize and utilize the distributed expertise (e.g., Bunderson, 2003; Hollenbeck et al., 1995). As individual expertise is highly distributed in the group, there exists greater pressure for clear communication and coordinated action among group members in order to accomplish group goals and to yield high group performance. In the current study, I suggest that distributed expertise creates situations where the positive influences of LMX differentiation on task-related group processes are amplified. In such groups, the group leader must take an active role in allocating tasks among members, developing collective strategies to attain group goals, and coordinating the contributions of group members. This is because team members are likely to recognize that their expertise and contributions are different and thus each member's role is expected to be differentiated based on his/her expertise and contribution. This differentiated role or performance expectation is then likely to be met by the group leader's LMX differentiation, and thus leader LMX differentiation becomes more beneficial to task-related team processes.

In particular, research evidence shows that groups yield better performance and outcomes when group members' expert levels align with their levels of influence on group decision making and outcomes (e.g., Bunderson, 2003; Libby, Trotman,& Zimmer,

1987; Littlepage, Schmidt, Whisler, & Frost, 1995). I propose that LMX differentiation by the leader is an important mechanism for aligning group members' expertise and influence. This proposition is based upon evidence showing that the differentiated LMX relationships by the group leader are primarily based on role differentiation (Graen & Scandura, 1987) and that group members having high quality LMX relationships are likely to receive status-elevating recognition (Anand, Vidyarthi, Liden, & Rousseau, 2010; Sparrowe & Liden, 2005). For example, group leaders are primarily responsible for group outcomes (Liden & Graen, 1980) and have task-oriented perspectives on LMX relationship development (Huang et al., 2008). They also evaluate each group member's performance and provide performance feedback, which helps group members recognize other members' expertise (Henry, Strickland, Yorges, & Ladd, 1996). Therefore, distributed expertise is expected to be an important moderator variable when examining leader-rated LMX differentiation, and accordingly this study tests this prediction from the leader's perspective on LMX differentiation and proposes that the moderating effect of LMX differentiation on group performance is through the moderator's effects on the task processes.

Accordingly, I suggest that given the increased need for effective coordination and collective strategy development, in a highly diverse expert group, leader-rated LMX differentiation may be more strongly and positively related to the two task-related group processes: group role clarity and coordination. However, when the level of distributed expertise is low, group members do not need to recognize and utilize each other's expertise and job knowledge to accomplish goals and objectives, and subsequently the group leader's differentiation are not as necessary to generate group outcomes. In such situations, leaders will be less likely to need to develop collective strategies, allocate time and resources, and coordinate each group member's contribution in order to maintain high performance level in a group. Therefore,

Hypothesis 5a: The relationship between leader-rated LMX differentiation and group role clarity is moderated by distributed expertise, such that the positive relationship between leader-rated LMX differentiation and group role clarity is stronger when group members' expertise is highly distributed.

Hypothesis 5b: The relationship between leader-rated LMX differentiation and coordination is moderated by distributed expertise, such that the positive relationship between leader-rated LMX differentiation and coordination is stronger when group members' expertise is highly distributed.

Leader-Leader Exchange Relationship

Furthermore, I suggest that the second situation, in which leader-rated leader-member differentiation may be more credible, reliable, and equitable, is when the leaders are in high quality upward relationships with their supervisor. Leader-leader exchange relationship (LLX) (e.g., Tangirala et al., 2007; Venkataramani et al., 2010) represents the quality of exchange relationships that team leaders have with their supervisors. When the leaders have higher quality LLX, they are expected to be capable of making more reliable and credible distinctions among the group members for three reasons: having a greater access to resources and information, creating supportive work contexts, and being perceived as holding higher status in the organization.

First, team leaders in high quality LLX relationships have greater access to information and psychological and material resources in the organization (Tangirala et al., 2007). Given their better access to psychological (e.g., emotional support, enhanced status at work, recognition) and economic resources (e.g., increased budgetary support, decision-making authority) in the organization, they are subsequently more able to pass these benefits on to group members, as compared to team leaders in low quality LLX relationships (Tangirala et al., 2007). These findings suggest that high LLX leaders may differentiate among group members more efficiently, because LMX theory suggests that leaders should have sufficient resources, power, and authority to effectively build

differentiated LMX relationships based on members' performance and efforts (Dienesch & Liden, 1986).

Second, high LLX leaders are expected to create supportive and constructive work contexts in groups, given that high LLX is closely related to high levels of group members' job satisfaction, psychological empowerment, and performance and low levels of turnover (e.g., Venkataramani et al., 2010; L. Zhou, M. Wang, G. Chen, & Shi, 2012). High LLX leaders would likely mobilize organizational resources to facilitate group members' task accomplishments and to provide discipline and rewards accordingly. High LLX leaders would generally lead to more supportive actions and behaviors to build high quality LMX relationships by modeling their supervisors' behaviors (L. Zhou et al., 2012). Examples of such supportive behaviors include showing confidence in employees, defending them to others, listening to them, providing feedback, being accessible, being willing to assist them, leading by example, treating them well, and being considerate. All of these behaviors suggest that all members may be valued, even the low LMX members.

Third, the leaders who have high quality exchange relationships with the organization, which is indicated by high levels of LLX, are perceived to possess greater status in the organization (Venkataramani et al., 2010). Empirical research findings suggest that group members are likely not only to have favorable attitudes toward the high-status leaders (Emerson, 1962) but also to put forth a greater amount of effort to build a better exchange relationship with such leaders and reciprocate with high levels of attitudinal and behavioral outcomes (Venkataramani et al., 2010).

Therefore, I propose that, when LLX is high, leader-rated LMX differentiation will be more strongly related to group role clarity and group coordination because high levels of LLX provides the leader with more resources, power, and authority to differentiate among members in a credible, reliable, and equitable manner. For example, when leaders in a high LLX relationship, they can differentiate among employees by providing greater rewards and resources to high performers and motivate low performers

to improve their performance. When leaders' LLX is low, leaders will be less able to reward the high performers and motivate the low performers, creating perceptions that LMX differentiation is less equitable (not based on performance). Therefore, high LLX leaders will be more likely to make credible, reliable, and equitable differentiations based on performance. Given high LLX leaders' greater access to resources and information and their behaviors creating supportive work contexts, they are more likely to be able to not only identify and clarify team members' roles but also coordinate team members' inputs based on their skills and capabilities.

Hypothesis 6a: The relationship between leader-rated LMX differentiation and group role clarity is moderated by the leader's LLX, such that the positive relationship between leader-rated LMX differentiation and group role clarity is stronger when the leader's LLX is high.

Hypothesis 6b: The relationship between leader-rated LMX differentiation and coordination is moderated by the leader's LLX, such that the positive relationship between leader-rated LMX differentiation and coordination is stronger when the leader's LLX is high.

Moderators of the Effects of Member-rated Leader-Member Exchange Differentiation on Socio-emotional Group Processes

From the member perspective, I propose two moderators that create situations in which the fairness of LMX differentiation is less of a concern to members: (a) when group power distance is high and (b) when the group leader is perceived as representing group members. When fairness is less of a concern to group members, leader-member exchange differentiation will be less detrimental to individual and group functioning (Erdogan & Bauer, 2010; Henderson et al., 2009; Mayer, 2008; Scandura, 1999; Sias & Jablin, 1995). LMX differentiation hurts individual and group functioning if group members perceive that it is unfair because they attribute leader differentiation to his/her

self-interest, personal bias, and negative affectivity (Henderson et al., 2009). For instance, Erdogan and Bauer (2010) found that member-rated LMX differentiation did not decrease individual job satisfaction and organizational commitment when distributive and procedural justice climate is well established—where group members are less likely to be concerned with fairness issues in a group. Thus, based on extant evidence, I propose that the members are less likely to be vulnerable to and concerned with fairness issues regarding LMX differentiation when group power distance and leader prototypicality are high, which in turn makes LMX differentiation less detrimental to the socio-emotional group processes.

Group Power Distance

I suggest that the effects of member-rated leader-member exchange differentiation on socio-emotional group processes vary depending on the level of group power distance, which refers to the extent to which group members as a whole expect and accept the unequal power distribution between leaders and members as inherent (Hofstede, 1980; Yang et al., 2007). Power distance orientation is associated with cultural values pertaining to status, authority, and power in the organization. Although originally suggested as national cultural value orientation (Brockner et al., 2001; Hofstede, 1980; Javidan et al., 2006; Kim & Leung, 2007), some researchers have examined power distance not only as an individual cultural value orientation (e.g., Kirkman et al., 2009; Lee, Pillutla, & Law, 2000), but also as a group value orientation (e.g., Earley & Gibson, 1998; Yang et al., 2007). In particular, Earley and Gibson (1998) called for a group-level study of power distance orientation, and Yang et al. (2007) adopted the group-level conceptualization of power distance in their empirical study. Consistent with this perspective, the current study also examines power distance as a group-level concept.

In a high power distance group, members as a whole share a belief that status, authority, and power can be distributed unequally within a group. Because they respect organizational hierarchy, they are willing to obey their leaders and organizational policies

and practices issued by those holding higher status in the organization without question (Kirkman et al., 2009; Javidan et al., 2006; Yang et al., 2007). In such contexts, group members are likely to endorse greater latitude with leaders (Yang et al., 2007), accept leader-imposed work tasks and roles (Schwartz, 1992), and be less sensitive to fair treatment by authorities (Yang et al., 2007). Consequently, they are likely to react less negatively to LMX differentiation than groups with average lower power distance orientation.

Empirical research findings support the prediction that power distance orientation moderates the effect of authorities' fair treatment on employees' attitudes and behaviors. For example, Brockner and his colleagues (2001) found that unfair treatment has a stronger negative influence on individuals' organizational commitment in low power distance cultures (e.g., the United States and Germany) than in high power distance cultures (e.g., China, Mexico, and Hong Kong). In studies defining power distance as an individual orientation, researchers have found that those with a low power distance orientation tend to be more strongly affected by how fairly they are treated and how well they are supported by the organization (Farh, Hackett, & Liang, 2007; Lee et al., 2000). Furthermore, at the group level, Yang et al. (2007) demonstrated that—when group power distance is high—group members' organizational commitment and organizational citizenship behavior toward the organization are less likely to be affected by the procedural fairness climate in their group.

Taken together, when group members share high power distance orientation, they are less likely to question the leader's role assignments and his/her execution of organizational policies, procedures, and practices. Thus, they may be more likely to engage in behaviors that benefit the leader and organization without questioning whether the leader treats them fairly (Javidan et al., 2006; Kirkman et al., 2009). In contrast, when group members share low power distance orientation, they are more willing to voice their opinions (Brockner et al., 2001) and value participation and involvement in

management practices (Kirkman et al., 2009). For this reason, transformational leadership has been found to have a stronger influence on employees' procedural fairness perception for those with low power distance orientation (Kirkman et al., 2009). Accordingly, members in a high power distance group are expected to be less likely to engage in fairness judgment processes regarding LMX differentiation, less concerned with fairness issues, and subsequently less likely to attribute LMX differentiation to the leader's personal bias, self-interest, and negative affectivity. Therefore, in high power distance groups, members are less likely to question whether the leader is biased towards certain group members even though some members have higher quality LMX relationships with the leader. As a result, group members will be less likely to attribute LMX differentiation to in-group favoritism or violation of fairness principles, resulting in the weaker negative effect of LMX differentiation on the two group socio-emotional processes.

> *Hypothesis 7a: The relationship between member-rated LMX differentiation and relationship conflict is moderated by group power distance, such that the negative relationship between member-rated LMX differentiation and relationship conflict is weaker when average group power distance is higher.*
>
> *Hypothesis 7b: The relationship between member-rated LMX differentiation and group potency is moderated by group power distance, such that the negative relationship between member-rated LMX differentiation and group potency is weaker when average group power distance is higher.*

Leader Prototypicality

When the leader is perceived to represent the group's standards, values, and norms, the leader is perceived as prototypical of the group (van Knippenberg & van Knippenberg, 2005). Group leaders also share group membership with other members they lead, and thus leader prototypicality has been proposed to influence leadership effectiveness in that the more prototypical group leaders are, the more effective,

influential, and charismatic they are perceived as group leaders (Platow & van Knippenberg, 2001; van Knippenberg & van Knippenberg, 2003, 2005). Their findings suggest that because non-prototypical leaders are less likely to be perceived as group-oriented, they must demonstrate more group-oriented (Platow & van Knippenberg, 2001) and self-sacrificial behaviors (van Knippenberg & van Knippenberg, 2005) to increase group productivity and be rated as effective leaders by group members. Furthermore, empirical findings have also shown that fair treatments of group members by a prototypical leader have a greater influence on group members' cooperation (De Cremer, van Dijke, & Meyer, 2010) and that group members endorse prototypical leaders even when they enact unfair procedures (Ullrich et al., 2009).

Therefore, based upon these findings, LMX differentiation enacted by a prototypical leader is less likely to be perceived by members as based on the leader's self-interest, personal bias, or negative affectivity because group members believe that their leader's disposition is group-oriented (cf. van Knippenberg & van Knippenberg, 2005). In other words, if the leader is perceived as prototypical, LMX differentiation is less likely to be regarded as unfair; even if it is perceived unfair, its negative influences on the socio-emotional group processes may be mitigated (Erdogan & Bauer, 2010). This is because prototypical group leaders are not only perceived as more effective leaders but also more trusted to value the group's best interest (Platow & van Knippenberg, 2001; van Knippenberg & Hogg, 2003; van Knippenberg & van Knippenberg, 2003, 2005). Therefore, LMX differentiation enacted by a prototypical leader would provoke less relationship conflict among group members and would be less detrimental to the shared belief of group members regarding their capability as a group because members believe such leaders are "one of them."

Hypothesis 8a: The relationship between member-rated LMX differentiation and relationship conflict is moderated by leader prototypicality, such that the negative

relationship between member-rated LMX differentiation and relationship conflict is weaker when the leader is more prototypical.

Hypothesis 8b: The relationship between member-rated LMX differentiation and group potency is moderated by leader prototypicality, such that the negative relationship between member-rated LMX differentiation and group potency is weaker when the leader is more prototypical.

Summary of Chapter III

Based upon the previous research findings and theoretical rationale described in the preceding chapter, research hypotheses were developed in this chapter. These hypotheses attempt to test whether, why, and when leader–member exchange differentiation is related to group effectiveness. To explicate the effects of LMX differentiation on group performance and group viability, four group processes were proposed that mediate the effects of leader- and member-rated LMX differentiation on group performance and viability. The fundamental argument is that leader-rated LMX differentiation increases the task-related aspect of group effectiveness (i.e., group performance) by facilitating the two task-related processes (i.e., group role clarity and coordination) whereas member-rated LMX differentiation decreases the socio-emotional aspect of group effectiveness (i.e., group viability) by increasing relationship conflict and decreasing group potency.

Building upon the notion that LMX differentiation should be equitable and fair in order to help groups function effectively, several boundary conditions were suggested, including team distributed expertise, leaders' upward exchange relationships (i.e., leader-leader exchange), leader prototypicality, and group power distance. Specifically, highly distributed expertise within a team and high quality of leaders' LLX are expected to create contexts in which the leader must and can identify team members' roles as well as coordinate group members' contributions, thereby making LMX differentiation by the

leader more reliable and credible. Meanwhile, group power distance and leader prototypicality are expected to create group contexts in which group members are less concerned with fairness issues, thereby leading them to perceive that LMX differentiation is not enacted due to the leader's personal bias, self-interest, and negative affectivity. In order to test the ten identified hypotheses, a field study with a survey will be conducted. The following chapter describes the samples, measures, and analytical strategies used to test the proposed hypotheses.

CHAPTER IV

METHODS

This chapter describes the study participants, procedures, research design, measures, and analytical procedures used to test the hypothesized model as depicted in .

Participants and Procedures

I recruited a total of 767 team members from 121 work teams in five organizations in South Korean and the United States for survey participation. These five organizations have formally implemented work teams, including tax and auditing teams, financial service teams at the general hospital, research and development teams and business planning teams at two manufacturing companies. Data were collected from three different sources (team members, team leaders, and upper-level supervisors) at two points in time (with 3-month time lag). By adopting this design, I intend to bolster causal inference regarding the effect of LMX differentiation on the group effectiveness variables and reduce common method bias between the exogenous and endogenous variables.

At Time 1, surveys were administered, separately, to team leaders and members. South Korean employees completed paper-based surveys and the US employees completed web-based surveys as requested by the participating companies. The South Korean employees received the paper-based survey packet (which includes the team member survey, recruiting letter, and a return envelope with the paid postage stamp) via postal mail, and the US employees received the link to the web-survey via electronic mail. Team members were asked to rate his or her quality of leader-member exchange relationship with the team leader, the two moderator variables (power distance orientation and perception of leader prototypicality), four types of group processes (group role clarity, coordination, relationship conflict, and group potency), and demographics and other control variables. Once the team member has completed this Time 1 survey, I sent the team leader survey packet (which includes the team leader survey, recruiting letter,

and a return envelope) to the South Korean team leaders and the link to the web-survey to the US team leaders via electronic mail. Team leaders were asked to rate the quality of LMX relationship with each group member, the two moderator variables (distributive expertise and his or her quality of upward exchange relationship with the upper-level supervisor, LLX), and demographics.

Four hundred twenty two (422) team members (56.1%) from a total of 110 teams completed their Time 1 survey. Ninety three team leaders (84.5%) also completed the Time 1 survey. After matching the team members' and leader's responses, two hundred eighty six team members from 63 teams (out of 93 teams) provided complete response data from three or more team members (yielding an effective team response rate of 52.1%).

Three months later, the second surveys were administered to the team members and team leaders, who participated in the Time 1 surveys, as well as to their upper-level supervisors. South Korean employees completed paper-based surveys and the US employees completed web-based surveys as at Time 1. In the second survey, the team members and upper-level supervisors were separately asked to assess group viability and group performance, respectively. One hundred eighty six team members (65.0%) and 62 upper-level supervisors (98.4%) completed the Time 2 surveys. After matching their responses, the final sample consists of a total of 57 teams (45 teams from South Korea and 12 teams from USA; see Table 1). Each team provided data from at least three team members (an average of 3.14), one team leader, and one upper-level supervisor and so they were included in the present analyses in order to adequately test the team-level hypotheses (e.g., Schneider, White, & Paul, 1995; Tracey & Tews, 2005).

In terms of demographic characteristics, 57 percent of the team members were male. Their average age was 34.7 years (s.d. = 12.1 years), their average organizational tenure was 4.21 years (s.d. = 5.85 years), and their average team tenure was 1.78 years (s.d. = 2.36 years). 80.4 percent of the team members held a bachelor or higher degree,

and 75.4 percent were Asian. Among the 57 team leaders, 66 percent were male. They had an average age of 46.6 years (s.d. = 8.73), an average organizational tenure of 7.32 years (s.d. = 8.37 years), and an average of team tenure of 2.55 years (s.d. = 2.74 years). 61.3 percent of the team leaders held a bachelor or higher degree, and 71.4 percent were Asian.

Table 1 Sample Composition

Organizations	The number of teams	Nation
Company 1 (Tax and Auditing)	32	South Korea
Company 2 (Manufacturing)	4	South Korea
Company 3 (Tax and Auditing)	3	USA
Company 4 (Manufacturing)	9	South Korea
Company 5 (Financial services)	9	USA

Measures

Established, valid, scales were used to measure all variables. For the South Korean employees, the scale items were translated into Korean. To verify the appropriateness and accuracy of translation of survey items, the items were translated and back-translated into Korean by two different people fluent in English and Korean (Brislin, 1980).

Member-rated leader-member exchange. The member's perception of leader-member exchange was assessed with the LMX-MDM (Liden & Maslyn, 1998). LMX-MDM is a 12-item measure which has four subscales with three items each: Affect (e.g., "I like my supervisor very much as a person"), Loyalty (e.g., "My supervisor defends my

work actions to a superior, even without complete knowledge of the issue in question"), Contribution (e.g., "I do work for my supervisor that goes beyond what is specified in my job description"), and Professional respect (e.g., "I am impressed with my supervisor's knowledge of his/her job"). The construct validity evidence of this scale has been reported in the previous studies (e.g., Greguras & Ford, 2006; Liden & Maslyn, 1998; Sparrowe et al., 2006). These studies have demonstrated that the four sub-dimensions load onto a higher-order LMX factor.

Supporting this, a second-order confirmatory factor analysis (CFA) in this study revealed that the four dimensions loaded on a second-order factor (γs ranged from .71 to .93), and this second-order factor structure fit the data relatively well (χ^2 = 149.95, *df* = 50; comparative fit index [CFI]=.96; Tucker–Lewis index [TLI]=.95; root mean square error of approximation [RMSEA] = .09; standardized root-mean-square residual [SRMR]=.06). Accordingly, I aggregated the 12 items to measure overall LMX. In the previous studies using this LMX-MDM scale, internal consistency reliability (α) for the aggregated scale was .94 (e.g., Erdogan, Liden, & Kraimer, 2006; Kraimer, Seibert, Wayne, Liden, & Bravo, 2011). Coefficient alphas for the Affect, Loyalty, Contribution, and Professional respect dimensions were .90, .74, .57, and .89, respectively in the organizational employee samples (Liden & Maslyn, 1998). In this study, coefficient alpha for the aggregated scale was .93, and those for the Affect, Loyalty, Contribution, and Professional respect dimensions were .90, .86, .81, and .94, respectively.

Leader-rated leader-member exchange. To assess leader-rated leader-member exchange, I used the SLMX-MDM developed by Greguras and Ford (2006) based on LMX-MDM. SLMX-MDM is also a 12-item measure which has four subscales with three items each: Affect (e.g., "I like my subordinate very much as a person"), Loyalty (e.g., "My subordinate defends my decisions, even without complete knowledge of the issue in question"), Contribution (e.g., "I provide support and resources for my subordinate that goes beyond what is specified in my job description"), and Professional

respect (e.g., "I am impressed with my subordinate's knowledge of his/her job"). In Greguras and Ford (2006), internal consistency reliability (α) for the aggregated scale was .90. Also, their CFA result revealed that the higher-order factor solution (all four dimensions are loaded on a single higher-order factor) fitted the data well (χ^2 (50) = 125.93, p <.05, CFI = .97, normed fit index [NFI] = .95, goodness of fit index [GFI] = .95, adjusted goodness of fit index [AGFI] = .92, and RMSEA = .06). The reliabilities (α) for the Affect, Loyalty, Contribution, and Professional respect dimensions were .85, .85, .75, and .91, respectively.

Consistently, a second-order CFA result in this study revealed that the four dimensions loaded on a second-order factor (γs ranged from .69 to .96), and this second-order factor structure fit the data well (χ^2 = 124.19, df = 50; CFI = .97; TLI =.97; RMSEA = .07; SRMR =.04). Thus, I aggregated the 12 items to measure overall leader-rated LMX. The reliabilities (α) for the aggregated scale, the Affect, Loyalty, Contribution, and Professional respect dimensions were .94, .90, .88, .86, and .93, respectively.

Group role clarity. Group role clarity was assessed by adopting Rizzo, House, and Lirtzman's (1970) 6-item scale. Following Chan's (1998) "reference-shift composition" model, I rephrased the items to refer to team members or team members jobs as a whole. Two example items include "Our team members know what our responsibilities are," and "Clear, planned goals and objectives exist for our jobs." In this study, coefficient alpha was .91.

Group coordination. Group coordination was assessed by Lewis's (2003) 5-item scale. Two example items include "Our team worked together in a well-coordinated fashion," and "Our team had very few misunderstandings about what to do." In her study, internal consistency reliability (α) ranged from .80 to .91. In this study, coefficient alpha was .71.

Relationship conflict. The group members reported their perceptions of relationship conflict within a group by responding to the 3-item measure developed by

Jehn and Mannix (2001). A sample item is "How much relationship tension is there in your work group?" All the individual scores will be aggregated to the group level. Internal consistency reliabilities (αs) were .94 in Jehn and Mannix's (2001) study and .90 in this study.

Group potency. Campion, Medsker, and Higgs's (1993) 3-item measure was used to measure group potency. The group members were asked to rate the three items. A sample item includes "Members of my team have great confidence that the team can perform effectively." In their study, internal consistency reliability (α) was .80. In this study, coefficient alpha was .90.

Leader-leader exchange relationship (LLX). Leaders were asked to rate his or her LLX using the LMX-MDM (Liden & Maslyn, 1998). A CFA result in this study revealed that the four dimensions loaded on a second-order factor (γs ranged from .58 to 1.00), and this second-order factor structure fit the data well (χ^2 = 59.21, *df* = 50; CFI =.98; TLI =.98; RMSEA = .06; SRMR = .06). Internal consistency reliability (α) for the aggregated scale was .93, and those for the Affect, Loyalty, Contribution, and Professional respect dimensions were .85, .88, .84, and .91, respectively in this study. Thus, 12 items were averaged to indicate the overall LLX construct.

Distributed expertise. I measured distributed expertise by adopting Lewis's (2003) scale of specialization. Two example items include "Each team member has specialized knowledge of some aspect of our project," and "Different team members are responsible for expertise in different areas." The group leaders were asked to assess the four items. In this study, internal consistency reliability (α) was .77.

Group power distance orientation. Group members reported their individual power distance orientation by responding to the 8-item measure originally developed by Earley and Erez (1997). Example items include "In work-related matters, managers have a right to expect obedience from their subordinates" and "Employees who often question

authority sometimes keep their managers from being effective." In the current study, internal consistency reliability (α) was .81.

Leader prototypicality. The six items used in van Knippenberg and van Knippenberg's (2005) study were used to measure the extent to which group members perceive their leader to be a representative of the group. Two example items are "This leader is a good example of the kind of people that are members of my team" and "This leader represents what is characteristic about the team." Internal consistency reliability (α) was .92 in van Knippenberg and van Knippenberg's (2005) study. In the current study, internal consistency reliability (α) was .95.

Group performance. Group performance was rated by upper-level supervisors by using the 3-item measure (Schaubroeck et al., 2007). An example item is "This team gets its work done very effectively." The alpha reliability (α) ranged from .90 to .94 in their study. In the current study, internal consistency reliability (α) was .87.

Group viability. Using the seven items developed by Hackman (1988), I asked the team members to rate the extent to which group members are willing to work together and are satisfied with other members. Two example items are "Members of my team care a lot about it, and work together to make it one of the best" and "Working with team members is an energizing and uplifting experience." In the current study, internal consistency reliability (α) was .88.

Control variables. Following Spector and Brannick's (2011) suggestion, we controlled for the following variables to test the hypotheses. First, group size and group members' and leaders' group tenures (in years) were controlled because these variables are potentially related with their ratings (perceptions) of group processes and effectiveness. Second, group-mean LMX was included because means and standard deviations across groups can be confounded due to its artifactual overlap (Harrison & Klein, 2007). Thus, it is recommended to statistically control for the within-group mean of LMX in testing the relationship between the LMX differentiation (operationalized as

the standard deviation within a group) and other variables. Finally, four dummy variables were created and controlled for as a categorical variable. When testing the hypotheses, only the control variables that were significantly correlated with the group effectiveness outcomes were included so as to conserve statistical power: this included three organization dummy variables and the within-group means of member and leader ratings of LMX (see and Table 6 in the next chapter).

The coefficients of alpha for all the scales from the South Korean and US samples are presented in Table 2 for informational purpose.

Data Aggregation

In the current study, all the hypotheses are to be tested at the group level, and some of the study variables are to be aggregated to measure the intended group-level construct. Additionally, given that the sample consists of five organizations, I also examined the effect of organizational membership on the study variables.

Aggregation to the Group Level

To capture the group-level properties, member-rated and leader-rated LMX differentiation were operationalized as the standard deviations of member-rated and leader-rated LMX scores within a group. Group mean member-rated LMX (member GLMX) scores were created by averaging the group members' ratings within a group, and group mean leader-rated LMX (leader GLMX) scores were created by averaging the group leaders' LMX ratings. The four group process variables, which were rated by group members, were formed by averaging the group members' ratings within a group. The two moderator variables that were also rated by group members— leader prototypicality and power distance orientation—were formed by averaging the group members' ratings within a group. Group performance, one of the group effectiveness variables, was rated by upper-level supervisors, and group viability, the other group

effectiveness variable, was formed by averaging the group members' ratings within a group (see Table 3).

Table 2 Scale Reliabilities

Scales	South Korea	US	Combined
Member-rated leader-member exchange	.93	.95	.93
Leader-rated leader-member exchange	.94	.94	.94
Group role clarity	.92	.90	.91
Group coordination	.56	.90	.69
Relational conflict	.90	.93	.91
Group potency	.91	.81	.89
Leader-leader exchange	.91	.96	.93
Distributed expertise	.72	.88	.77
Power distance orientation	.81	.71	.81
Leader prototypicality	.94	.97	.95
Group performance (Time 2)	.88	.91	.89
Group viability (Time 2)	.88	.92	.89

I then performed a one-way analysis of variance (ANOVA) to examine between-group variability of role specification, coordination, relationship conflict, group potency, leader prototypicality, group power distance, and group viability. Accordingly, intraclass correlations—the values of ICC (1) and ICC (2)—and *F* value were examined. In addition, $r_{wg(j)}$ (using a uniform null distribution) was also examined to verify within-group agreement (James, Demaree, & Wolf, 1984). ICC (2) values greater than .60 and

$r_{wg(j)}$ values greater than .70 are considered sufficient to warrant aggregation (Bliese, 2000; Glick, 1985); for ICC (1), values usually range from .05 to .20 (Bliese, 2000). Table 3 summarizes these values.

Table 3 Summary of Data Aggregation

Variables	Source	Statistic	ICC(1)	ICC(2)	$r_{wg(j)}$	*F*
Member GLMX	M	Mean	.20	.53	.97	2.13***
Leader GLMX	L	Mean	-	-	-	-
Member LMXD	M	SD	-	-	-	-
Leader LMXD	L	SD	-	-	-	-
Group role clarity	M	Mean	.23	.56	.96	2.28***
Group coordination	M	Mean	.15	.43	.94	1.76**
Relationship conflict	M	Mean	.13	.38	.90	1.61**
Group potency	M	Mean	.20	.51	.91	2.03***
Distributed expertise	L	Single score	-	-	-	-
LLX	L	Single score	-	-	-	-
Leader prototypicality	M	Mean	.16	.45	.94	1.83**
Power distance orientation	M	Mean	.19	.51	.96	2.01***
Group performance	S	Single score	-	-	-	-
Group viability	M	Mean	.23	.48	.95	1.91**

Note. GLMX = group-mean leader-member exchange; LMXD = leader-member exchange differentiation; LLX = leader-leader exchange; M = member; L = leader; S = supervisor of team leader; SD = standard deviation within group; Mean = mean of group members.

*** $p < .001$; ** $p < .01$

In this study, all the $r_{wg(j)}$ values were above .70, and the ICC (1) values ranged from .13 (relationship conflict) to .23 (group viability), meaning that the seven variables aggregated using the group means showed a high level of within-group agreement and that 13-23% of the total variances in these variables can be explained by group membership. It should be noted, however, that although these $r_{wg(j)}$ values above .70, and ICC (1) values can justify aggregation, the ICC (2) values, the reliability of group means, lower than desired; ranged from .38 to .56. It may be in part due to the small sizes of work groups in the current sample, which is typical in many organizational survey studies (Bliese, 2000). Despite the low ICC (2) values, the other evidence ($r_{wg(j)}$, ICC (1), and significant F statistics at $p = .01$ level) provides justification to aggregate these seven variables to the group level.

Aggregation across the Organizations

Across the five organizations, ANOVA results showed that significant mean differences exist in the following seven variables: group role clarity (F [4, 56] = 11.58, $p < .001$), group coordination (F [4, 56] = 6.50, $p < .001$), relationship conflict (F [4, 56] = 7.60, $p < .001$), group potency (F [4, 56] = 39.92, $p < .001$), LLX (F [4, 56] = 3.16, $p < .05$), power distance orientation (F [4, 56] = 15.08, $p < .001$), and group performance (F [4, 56] = 5.59, $p < .05$). Further examination of the mean differences indicated that the means differed in only three of the organizations. Thus, to test the hypotheses with a large enough sample, I pooled the data across all five organizations but included the three organization dummy variables to control for these mean differences.

Analytical Strategies

Before testing the hypotheses, I performed a discriminant validity test of the 12 study variables at the team level. Given the relatively small sample size (the number of groups), I first created item parcels combining item scores and use them as indicators (Little, Cunningham, Shahar, & Widaman, 2002). Overall model fit will be assessed with

RMSEA, SRMR, and CFI. Good fits are indicated by RMSEA and SRMR values less than .08 and a CFI value greater than .90 (L. Hu & Bentler, 1999).

In order to test the hypotheses simultaneously in a multivariate manner at the team level, path analyses were performed using maximum likelihood estimation methods. To prevent potential biases in parameter estimation due to model misspecification, the hypothesized model was compared with several alternative models; (a) models with all paths from leader- and member-rated LMX differentiation to four group process variables, (b) models with all paths from four group process variables to two group effectiveness variables, and (c) partial mediation models that included direct paths from leader- and member-rated LMX differentiation to the two group effectiveness variables. Then, each interaction term was added, one at a time, to test each of Hypotheses 5a-8b in the combination of mediation and moderation using a path analytic framework. They are hierarchically nested models and thus the χ^2 differential test and the other fit indices were considered (J. Anderson & Gerbing, 1988). All these CFA and path analyses were performed with MPlus 7.0 (Muthén & Muthén, 1998-2012).

CHAPTER V

RESULTS

This chapter describes the results of the present analyses to test the hypotheses. First, I examined the discriminant validity of the 12 study variables. Second, I examined the descriptive statistics of and zero-order correlations among study variables at the group level. Third, I compared the hypothesized model with alternative models to test Hypotheses 1-8b.

Testing Discriminant Validity

To test the discriminant validity, I compared the hypothesized factor model with 12 alternative models. Alternative models included a model that combined member- and leader-rated LMX, a model that combined the two group effectiveness variables (group performance and group viability), a model that combined the two member-rated leadership variables (LMX and leader prototypicality), models that combined distributed expertise and group processes, models that combined group processes, and models that combined member- rated LMX, leader-rated LMX, and LLX.

As presented in Table 4, CFA results indicated that the hypothesized model of 12 correlated factors (χ^2 = 863.33, *df* = 431; CFI =.76; RMSEA = .13; SRMR= .09) fit the data significantly better than any other alternative models as judged by a chi-square difference test; an increase in chi-square indicates worse fit. For example, the model that combined member- and leader-rated LMX (Model 2) resulted in a significant decrement in fit ($\Delta\chi^2$ = +113.70, Δdf = 1; $p < .001$). And, the models that combined group performance and group viability (Model 3; $\Delta\chi^2$ = +95.27, Δdf = 1; $p < .001$) and that combined the four group processes (Model 12; $\Delta\chi^2$ = +197.55, Δdf = 6; $p < .001$) failed to yield a better fit to the data. Finally, a model that combined member- and leader-rated LMX and LLX showed a worse fit to the data as well (Model 13; $\Delta\chi^2$ = +183.15, Δdf = 3; $p < .001$).

Table 4 Comparison of Alternative Measurement Models

Models	χ^2	*df*	$\Delta\chi^2$ (Δdf) [ab]	CFI	RMSEA	SRMR
1. 12-factor model	863.33	431		.76	.13	.09
2. Member- and leader-rated LMX combined	977.03	432	113.70 (1)	.70	.15	.14
3. Group performance and viability combined	958.60	432	95.27 (1)	.71	.15	.14
4. Leader-rated LMX and LLX combined	932.43	432	69.10 (1)	.73	.14	.10
5. Leader prototypicality and member-rated LMX combined	869.36	432	6.03 (1)	.76	.13	.09
6. Distributed expertise and group role clarity combined	877.61	432	14.28 (1)	.76	.14	.10
7. Distributed expertise and group coordination combined	874.11	432	10.78 (1)	.76	.13	.10
8. Distributed expertise and relationship conflict combined	874.41	432	11.08 (1)	.76	.13	.10
9. Distributed expertise and group potency combined	877.39	432	14.06 (1)	.76	.13	.10
10. Group role clarity and coordination combined	889.04	432	25.71 (1)	.75	.14	.10
11. Relationship conflict and group potency combined	935.53	432	72.20 (1)	.73	.14	.10
12. All four group processes combined	1060.88	437	197.55 (6)	.67	.16	.11

Table 4 (cont'd)

13. Member-rated LMX, leader-rated LMX, and LLX combined	1046.48	434	183.15 (3)	.67	.16	.15

Note. CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; LMX = leader-member exchange; LLX = leader-leader exchange. Two additional models (single factor model and three rater factor model) were tested but not converged. In the three rater factor model, member-rated LMX, power distance orientation, leader prototypicality, four group processes, and group viability were combined (member factor), and leader-rated LMX, LLX, and distributed expertise (leader factor) were combined.

[a] Values were compared to Model 1 (12-factor model).

[b] All chi-square values were significant at the $p < .05$ level.

Although the fit statistics for the 12-factor model were not within the desired cut-off values (likely due to the small sample size; see Table 4), these model comparisons suggest that the 12-factor model fit better than alternative models. Thus, the 12 factors were included in the subsequent path models to test Hypotheses 1-8b[2]. All the factor loadings were significant ($p < .05$) as shown in Appendix C (Table C1).

Descriptive Statistics

Table 5 shows means and standard deviations of all the study variables across the five organizations. As noted in the previous chapter, ANOVA results yielded significant variation in seven variables among the five organizations. A post hoc Scheffé test showed that team members from organization 4 reported (a) a higher level of power distance orientation ($M = 3.82$; $SD = .26$) than those from any other organizations, (b) a lower level of group role clarity ($M = 3.03$; $SD = .31$) than those from organization 1 ($M = 3.95$; $SD = .31$) or organization 3 ($M = 4.21$; $SD = .24$), (c) a lower level of group coordination ($M = 3.04$; $SD = .14$) than those from organization 3 ($M = 3.88$; $SD = .55$), (d) a higher level of relationship conflict ($M = 3.36$; $SD = .42$) than those from organization 5 ($M = 2.36$; $SD = .81$), (e) a lower level of group potency ($M = 2.36$; $SD = .37$) than those from any other organizations, and (f) they showed a lower level of group performance ($M = 3.41$; $SD = .46$) than those from organization 3 ($M = 4.89$; $SD = .19$).

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[2] Given the poor fit statistics, I performed separate CFAs for member- and leader-rated measures using individual level data. For member-rated measures, the 8-factor model (LMX, group role clarity, group coordination, relationship conflict, group potency, leader prototypicality, power distance, and group viability) was tested. CFA results indicated that the 8-factor model showed a reasonable fit ($\chi^2 = 428.40$, $df = 169$; CFI =.89; RMSEA = .10). For leader-rated measures, the 2-factor model (LLX and distributed expertise) showed a good fit ($\chi^2 = 43.68$, $df = 19$; CFI =.88; RMSEA = .15).

Table 5 Descriptive Statistics of the Study Variables (N = 57)

	Organization1		Organization2		Organization3		Organization4		Organization5		Total		
Variables	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*F*
1. Member LMXD	0.64	.27	0.63	.32	0.45	.19	0.33	.29	0.69	.35	0.59	.30	2.47
2. Leader LMXD	0.42	.26	0.21	.15	0.58	.25	0.24	.12	0.33	.22	0.37	.24	2.35
3. Leader prototypicality	3.45	.50	3.17	.32	3.83	.28	3.67	.45	3.58	.85	3.51	.56	.93
4. Power distance orientation	3.00 ^{a}	.38	2.96 ^{a}	.14	2.80 ^{a}	.49	3.82 ^{b}	.26	2.70 ^{a}	.23	3.07	.48	15.08***
5. LLX	4.19 ^{ab}	.57	3.19 ^{a}	.41	4.39 ^{b}	.55	4.16 ^{ab}	.34	4.09 ^{ab}	.66	4.11	.59	3.16*
6. Distributed expertise	4.35	.55	3.75	.35	4.00	.90	4.03	.32	4.13	.76	4.20	.59	1.51
7. Group role clarity	3.95 ^{bc}	.31	3.30 ^{ab}	.29	4.21 ^{c}	.24	3.03 ^{a}	.31	3.57 ^{abc}	.69	3.70	.53	11.58***
8. Group coordination	3.58 ^{ab}	.28	3.18 ^{a}	.26	3.88 ^{b}	.55	3.04 ^{a}	.14	3.69 ^{ab}	.60	3.50	.42	6.50***
9. Relationship conflict	2.49 ^{ab}	.40	3.30 ^{b}	.41	2.56 ^{ab}	.68	3.36 ^{b}	.42	2.36 ^{a}	.81	2.66	.62	7.60***
10. Group potency	3.78 ^{bc}	.31	3.40 ^{b}	.13	4.04 ^{c}	.45	2.36 ^{a}	.37	3.96 ^{bc}	.33	3.57	.63	39.92***
11. Group performance	4.28 ^{ab}	.59	4.00 ^{ab}	.82	4.89 ^{b}	.19	3.41 ^{a}	.46	4.23 ^{ab}	.55	4.15	.66	5.59**

Table 5 (cont'd)

12. Group viability	3.91	.52	3.51	.14	4.16	.31	3.84	.59	3.78	.49	3.86	.50	.87
13. Member GLMX	3.87	.45	3.57	.33	4.03	.47	4.02	.27	3.83	.56	3.87	.44	.82
14. Leader GLMX	4.23	.50	3.72	.25	3.72	.17	4.03	.26	3.86	.52	4.07	.48	2.53

Note. LMXD = leader-member exchange differentiation; LLX = leader-leader exchange; GLMX = group-mean leader-member exchange. Superscript text denotes significant mean differences. Means with the same superscript are not significantly different from one another at the $p < .05$ level (Scheffé test).

*** $p < .001$; ** $p < .01$; * $p < .05$.

Furthermore, team members from organization 2 reported (a) a lower level of group coordination (M = 3.18; SD = .26) than those from organization 3 (M = 3.88; SD = .55), and (b) a lower level of group potency (M = 3.40; SD = .13) than those from organization 3 (M = 4.04; SD = .45).

Zero-order Correlations among the Study Variables

Table 6 shows zero-order correlations among the study variables. Some correlations were noteworthy. First, leader-rated LMX differentiation was significantly correlated with all of the four group processes (rs ranged from -.29 to .37) whereas member-rated LMX differentiation was significantly correlated with only group potency (r = .27, p < .05). Second, member- and leader-rated LMX differentiation scores were nearly uncorrelated (r = -.05) and the group-mean scores of member- and leader-rated LMX were slightly and positively correlated (r = .10). Third, member-rated LMX differentiation and group-mean member LMX were negatively and significantly correlated (r = -.33, p < .05) whereas leader-rated LMX differentiation and group-mean leader LMX were not significantly correlated (r = -.12). This indicates that the degree of statistical interdependence between the group-mean LMX score and LMX differentiation was higher in members' ratings than leaders' ratings. Fourth, distributed expertise was significantly correlated with the three group processes (group role clarity [r = .27, p < .05]; group coordination [r = .37, p < .01]; and relationship conflict [r = -.39, p < .01]) and group performance (r = .28, p < .05), and power distance orientation was significantly correlated with all of the four group processes (rs ranged from -.35 to .37) and group performance (r = .31, p < .05). Fifth, the four group process variables were highly correlated with each other (rs ranged from -.84 to .75). Sixth, group performance and viability were positively but nonsignificantly correlated (r = .11). Seventh, the four group process variables were significantly correlated with group performance (rs ranged from -.47 to .51) and group viability (rs ranged from -.30 to .32).

Table 6 Intercorrelations among Study Variables (N = 57)

	1	2	3	4	5	6	7	8	9	10
1. Leader team tenure (years)										
2. Member team tenure (years)	.27*									
3. Team size	-.31*	.06								
4. Member GLMX	.27*	.09	.28*							
5. Leader GLMX	-.06	-.08	.11	.10						
6. Organization 2 [a]	.11	-.08	-.20	-.19	-.20					
7. Organization 3 [b]	.11	-.05	-.08	.08	-.17	-.07				
8. Organization 4 [c]	.48***	.23	-.37**	.15	-.04	-.12	-.10			
9. Organization 5 [d]	.03	.48***	.05	-.04	-.21	-.13	-.11	-.20		
10. Member LMX differentiation	-.27*	-.20	.05	-.33*	-.02	.04	-.11	-.37**	.16	
11. Leader LMX differentiation	-.20	-.07	.16	.10	-.12	-.19	.20	-.24	-.08	-.05

Table 6 (cont'd)

	1	2	3	4	5	6	7	8	9	10
12. LLX	-.17	-.04	.36**	.17	.54***	-.43***	.11	.04	-.01	-.00
13. Distributed expertise	-.14	.07	.28*	.19	.68***	-.21	-.08	-.13	-.06	-.04
14. Leader prototypicality	.23	.14	.20	.85***	.08	-.17	.14	.13	.06	-.31*
15. Power distance	.28*	-.05	-.30*	.26*	.09	-.06	-.13	.69***	-.36**	-.19
16. Group role clarity	-.05	-.19	.07	.27*	.16	-.21	.23	-.55***	-.12	.05
17. Group coordination	.10	-.07	.18	.30*	.07	-.22	.21	-.48***	.21	-.07
18. Group potency	-.09	-.29*	.21	.19	.13	-.08	.18	-.84***	.29	.27*
19. Relationship conflict	-.10	.24	-.11	-.27*	-.11	.29*	-.04	.49***	-.23	.01
20. Group performance (Time 2)	-.18	-.02	.08	-.05	.32*	-.06	.27*	-.49***	.06	.11
21. Group viability (Time 2)	-.09	.07	.05	.24	.11	-.19	.14	-.02	-.08	.10

Table 6 (cont'd)

	11	12	13	14	15	16	17	18	19	20
12. LLX	-.01									
13. Distributed expertise	.22	.55***								
14. Leader prototypicality	.07	.11	.10							
15. Power distance	-.15	.01	-.10	.27*						
16. Group role clarity	.27*	.15	.27*	.26	-.35**					
17. Group coordination	.30*	.13	.37**	.26*	-.49***	.75***				
18. Group potency	.26*	.06	.25	.20	-.53***	.67***	.64***			
19. Relationship conflict	-.29*	-.09	-.39**	-.25	.37**	-.68***	-.84***	-.62***		
20. Group performance (T2)	.19	.11	.28*	-.00	-.31*	.51***	.51***	.50***	-.47***	
21. Group viability (T2)	.09	.15	.13	.32*	.08	.32*	.31*	.32*	-.30*	.11

Note. LMX = leader-member exchange; LLX = leader-leader exchange; GLMX = group-mean leader-member exchange.

*** $p < .001$; ** $p < .01$; * $p < .05$.

[a] Organization 2 = 1; Organizations 1, 3, 4, and 5 = 0

[b] Organization 3 = 1; Organizations 1, 2, 4, and 5 = 0

[c] Organization 4 = 1; Organizations 1, 2, 3, and 5 = 0

[d] Organization 5 = 1; Organizations 1, 2, 3, and 4 = 0

Testing Hypotheses 1-4b

Hypotheses 1 and 2 predicted that leader- and member-rated LMX differentiation are positively and negatively related to group performance and viability, respectively. Hypotheses 3a and 3b predicted that the relationship between leader-rated LMX differentiation and group performance is mediated by group role clarity (Hypothesis 3a) and group coordination (Hypothesis 3b). Hypotheses 4a and 4b predicted that the relationship between member-rated LMX differentiation and group viability is mediated by relationship conflict (Hypothesis 4a) and group potency (Hypothesis 4b).

To test Hypotheses 1-4b, the hypothesized mediation model was compared with 12 alternative models, and each alternative model included one additional path. The hypothesized model included three organization dummy variables that were found to be significantly correlated with group performance and group viability (See Table 6). And, the paths from the member GLMX and leader GLMX to the group processes, group performance, and group viability were included to control for statistical confounding due to artifactual overlap. In addition to intercorrelations among all the exogenous variables, covariances among disturbance terms of the mediator variables and those of the dependent variables were freed to specify potential common causes that were not measured. The hypothesized mediation model is depicted in Figure 2.

First, I examined if the paths from leader-rated LMX differentiation to socio-emotional group processes and those from member-rated LMX differentiation to task group processes. To do so, the hypothesized mediation model was compared with alternative models (M_1 –M_4 in Table 7) that included a corresponding additional path. As shown in Table 7, chi-square differences test results showed that none of the four additional paths significantly increased a model fit to the data ($\Delta\chi^2$ values with $\Delta df = 1$ ranged from .19 to 2.00; p values ranged from .16 to .66; see Table 7).

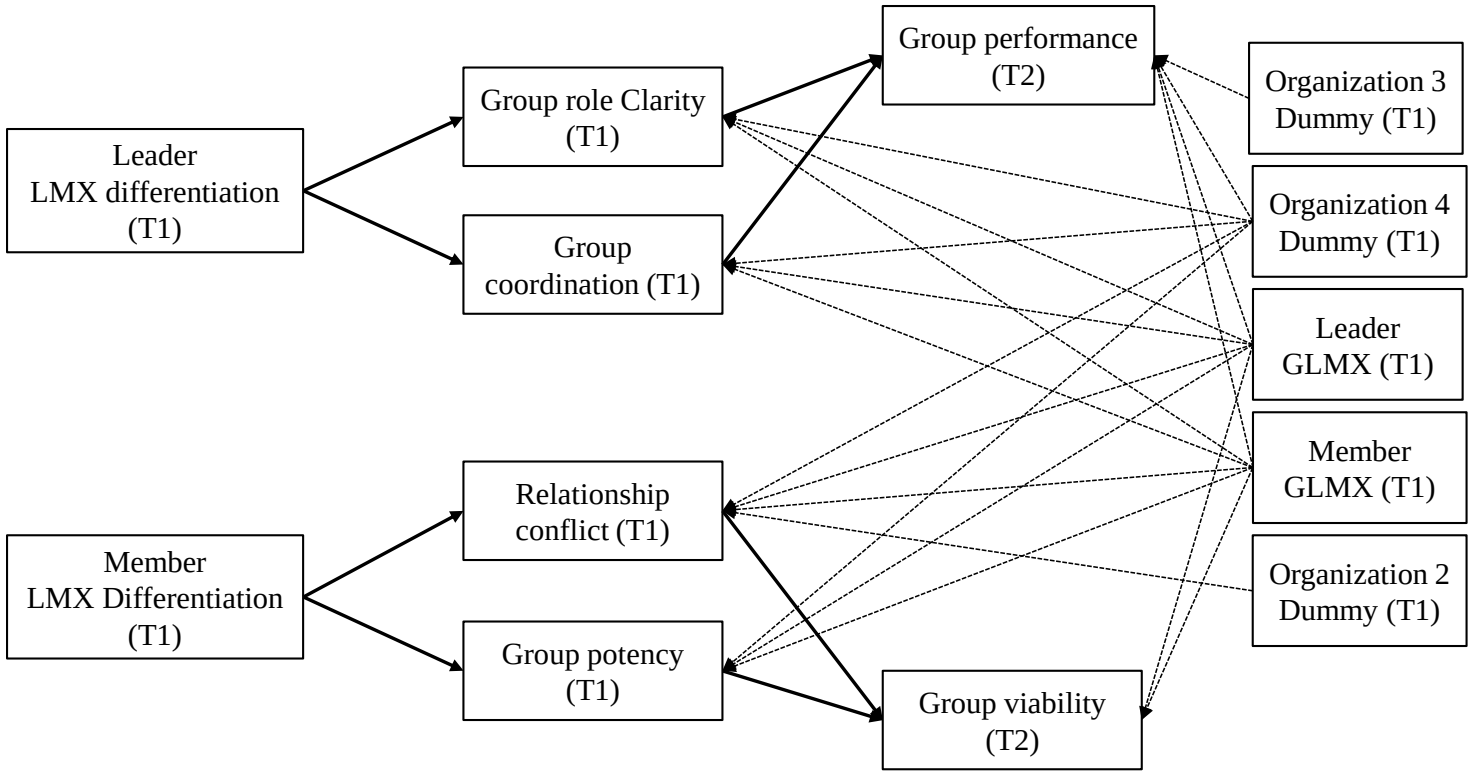

Figure 2
The hypothesized mediation path model

Note. LMX = leader-member exchange; GLMX = group-mean leader-member exchange. The paths with solid lines are hypothesized. For the sake of clarity, intercorrelations among exogenous variables, covariances among disturbance terms of the mediators, and covariances among disturbance terms of the dependent variables are omitted.

Table 7 Comparison of the Hypothesized Mediation Model with Alternative Models to Test Hypotheses 1-4b

Models	χ^2	*df*	$\Delta\chi^2$ [a]	CFI	RMSEA	SRMR
Hypothesized mediation model	23.98	23		1.00	.03	.05
Additional path						
M_1: Member LMXD → group role clarity	23.79	22	0.19	.99	.04	.05
M_2: Member LMXD → group coordination	21.98	22	2.00	1.00	.00	.05
M_3: Leader LMXD → relationship conflict	23.25	22	0.73	1.00	.03	.05
M_4: Leader LMXD → group potency	23.72	22	0.26	.99	.04	.05
M_5: Leader LMXD → group performance	23.91	22	0.07	.99	.04	.05
M_6: Leader LMXD → group viability	23.85	22	0.13	.99	.04	.05
M_7: Member LMXD → group performance	23.96	22	0.02	.99	.04	.05
M_8: Member LMXD → group viability	22.58	22	1.40	1.00	.02	.05
M_9: Relationship conflict → group performance	23.47	22	0.51	1.00	.03	.05
M_{10}: Group potency → group performance	23.98	22	0.00	.99	.04	.05

Table 7 (cont'd)

M_{11}: Group role clarity → group viability	23.88	22	0.10	.99	.04	.05
M_{12}: Group coordination → group viability	23.07	22	0.91	1.00	.03	.05

Note. LMXD = leader-member exchange differentiation; CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual.

[a] Values were compared to the hypothesized mediation model and all the degrees of freedom differences are 1.

Second, the hypothesized mediation model was compared with four alternative models (M_5 –M_8 in Table 7) to examine if the direct paths from member- and leader rated LMX differentiation to group effectiveness outcomes are significant. However, results showed that none of the four additional paths were significant ($\Delta\chi^2$ values with $\Delta df = 1$ ranged from .02 to 1.40; *p* values ranged from .24 to .89; see Table 7).

Third, I also examined whether the paths from task group processes to group viability and those from socio-emotional group processes to group performance (M_9 –M_{12} in Table 7). Again, however, none of the added four paths were significant ($\Delta\chi^2$ values with $\Delta df = 1$ ranged from 0 to .91; *p* values ranged from .34 to 1.0; see Table 7).

Accordingly, the hypothesized mediation model ($\chi^2 = 23.98$, $df = 28$, $p = .40$; CFI = 1.00; RMSEA = .03; SRMR = .05) fit the data better than any other alternative mediation models. Figure 3 depicts the standardized paths coefficients of the hypothesized mediation model. To test Hypotheses 1-4a, I also included direct paths from the independent variables to dependent variables, because such paths are needed to test the mediation predictions (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). Table 8 shows total, direct, and indirect effects of leader- and member-rated LMX differentiation on group performance and group viability. Indirect effects were calculated by using the "product of coefficients" technique which multiplies the coefficients of independent variable → mediator and mediator → dependent variable (MacKinnon et al., 2002).

Hypothesis 1 predicted that leader-rated LMX differentiation would be positively related to group performance. Hypothesis 1 was not supported as the total effect of leader-rated LMX differentiation on group performance was positive but not significant ($b = .14$, $p = .62$). Hypothesis 2 predicted that member-rated LMX differentiation would be negatively related to group viability. Hypothesis 2 was not supported as the total effect of member-rated LMX differentiation on group viability was not significant ($b = .30$, $p = .20$). Taken together, these results show that leader- and member- rated LMX

differentiation were not significantly related to group performance and group viability, respectively.

Hypotheses 3a-4b predicted the mediating roles of group processes. Specifically, Hypothesis 3a predicted that the relationship between leader-rated LMX differentiation and group performance would be mediated by group role clarity. Hypothesis 3a was not supported as the specific indirect effect was not significant (b = .02, p = .67). Hypothesis 3b predicted that the relationship between leader-rated LMX differentiation and group performance would be mediated by group coordination. Hypothesis 3b was not supported as its specific indirect effect was positive but not significant (b = .05, p = .45). Hypothesis 4a predicted that the relationship between member-rated LMX differentiation and group viability would be mediated by relational conflict. Hypothesis 4a was not supported as the specific indirect effect was not significant (b =.00, p = .97). Hypothesis 4b predicted that the relationship between member-rated LMX differentiation and group viability would be mediated by group potency. Hypothesis 4b was not also supported as the specific indirect effect was not significant (b =.01, p = .67).

To summarize, although the correlations of leader-rated LMX differentiation with group role clarity (r = .27, p < .05), group coordination (r = .30, p < .05), relationship conflict (r = -.29, p < .05), and group potency (r = .30, p < .05) were statistically significant (see Table 6), the present results failed to yield support for the significant relationships of leader- and member-rated LMX differentiation with group performance and viability, respectively. Furthermore, group processes were not found to mediate the proposed LMX differentiation-group effectiveness relationships. In the following analyses, therefore, I tested the proposed moderating roles of distributed expertise, LLX, power distance orientation, and leader prototypicality.

Table 8 Decomposition of Total, Direct, and Indirect Effects

Relationships	Total effect	Direct effect	Indirect effect	Mediators	Specific indirect effect
Leader LMX differentiation → group performance	.14 (.28)	.08 (.28)	.07 (.08)	Group role clarity	.02 (.03)
				Group coordination	.05 (.07)
Member LMX differentiation → group viability	.30 (.23)	.29 (.24)	.01 (.03)	Relationship conflict	.00 (.00)
				Group potency	.01 (.03)

Note. LMX = leader-member exchange; values in parentheses are standard errors.

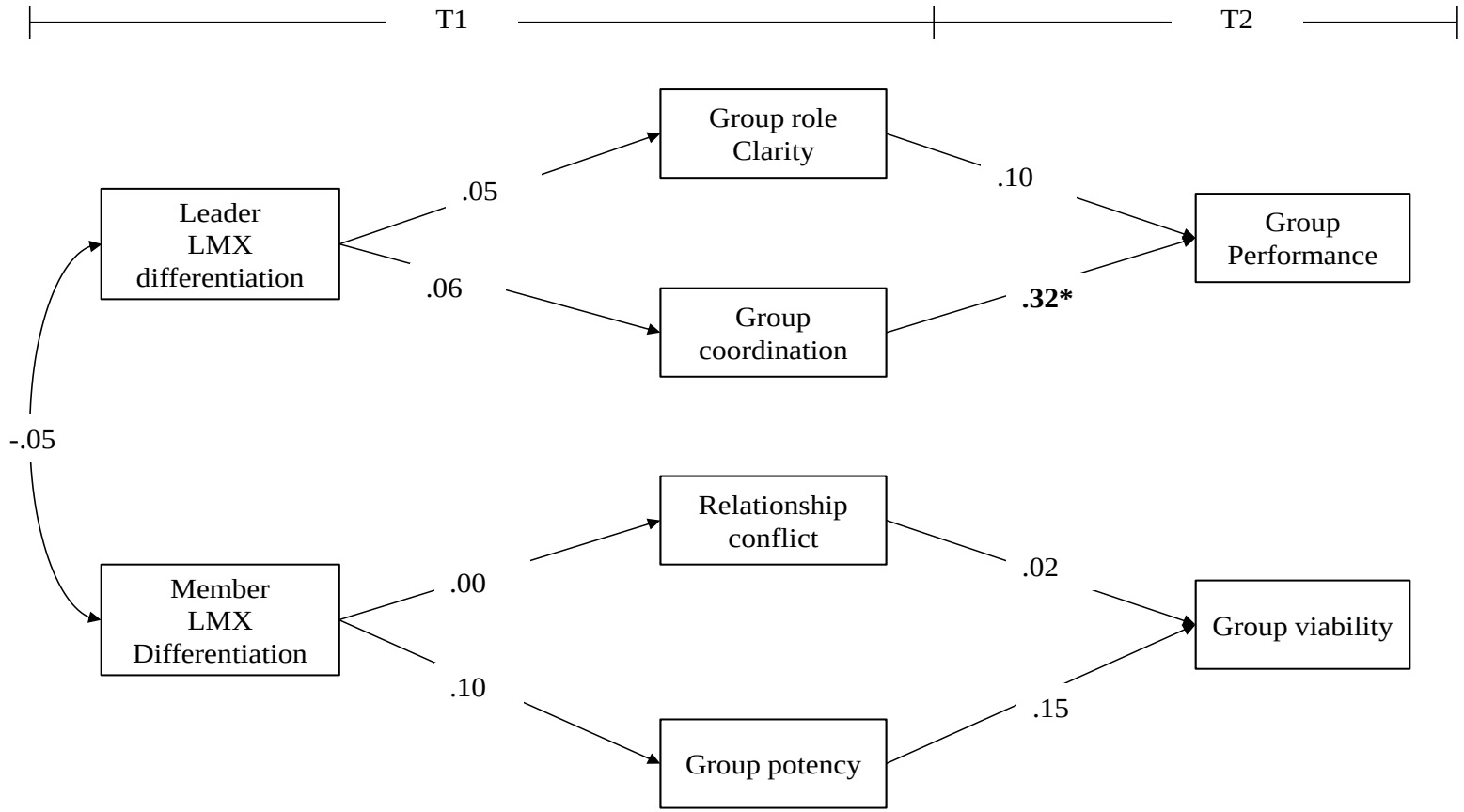

Figure 3
Results of path analyses of the hypothesized mediation model

Note. LMX = leader-member exchange. For the sake of clarity, intercorrelations among exogenous variables, covariances among disturbance terms of the mediators, and covariances among disturbance terms of the dependent variables are omitted. * $p < .05$.

Testing Hypotheses 5a-8b

To test Hypotheses 5a-8b, each moderator's direct path was added to the alternative mediation model and then each interaction term was added to test whether the added interaction term improved a fit to the data. Four interaction terms were created and tested against the four group process variables.

Hypothesis 5a predicted the moderating role of distributed expertise in the relationship between leader-rated LMX differentiation and group role clarity. As shown in Table 9, chi-square difference test results suggested that adding the interaction term between leader-rated LMX differentiation and distributed expertise (M_2) did not increase a fit to the data significantly (M_1 vs. M_2; $\Delta\chi^2 = .00$, $\Delta df = 1$; $p = 1.00$). Thus, Hypotheses 5a did not receive support. Hypothesis 5b predicted the moderating role of distributed expertise in the relationship between leader-rated LMX differentiation and group coordination. Hypothesis 5b was not supported as a model that included the interaction term between leader-rated LMX differentiation and distributed expertise (M_4) did not increase a fit to the data significantly (M_3 vs. M_4; $\Delta\chi^2 = 2.60$, $\Delta df = 1$; $p = .11$).

Hypothesis 6a predicted the moderating role of LLX in the relationship between leader-rated LMX differentiation and group role clarity. When the interaction term between leader-rated LMX differentiation and LLX was freed (M_6), a model fit was not significantly increased (M_5 vs. M_6; $\Delta\chi^2 = .27$, $\Delta df = 1$; $p = .60$). Therefore, Hypotheses 6a did not receive support. Hypothesis 6b predicted the moderating role of LLX in the relationship between leader-rated LMX differentiation and group coordination. Hypothesis 6b was not supported as a model that included the interaction term between leader-rated LMX differentiation and LLX (M_8) did not yield a significantly better fit to the data than a model that constrained the interactional term as zero (M_7 vs. M_8; $\Delta\chi^2 = 2.95$, $\Delta df = 1$; $p = .09$).

Table 9 Comparison of Path Models to Test Hypotheses 5a-8b

Models	χ^2	*df*	CFI	RMSEA	SRMR	$\Delta\chi^2$ [a]
M_1: Only distributed expertise → group role clarity	50.16	34	.95	.09	.06	
M_2: Leader LMXD ×distributed expertise → group role clarity	50.16	33	.94	.10	.06	M_1 vs M_2: 0.00
M_3: Only distributed expertise → group coordination	49.75	34	.95	.09	.06	
M_4: Leader LMXD ×distributed expertise → group coordination	47.15	33	.95	.09	.06	M_3 vs M_4: 2.60
M_5: Only LLX → group role clarity	40.96	34	.98	.06	.05	
M_6: Leader LMXD ×LLX → group role clarity	40.69	33	.97	.06	.05	M_5 vs M_6: 0.27
M_7: Only LLX → group coordination	38.66	34	.98	.05	.05	
M_8: Leader LMXD ×LLX → group coordination	35.71	33	.99	.04	.05	M_7 vs M_8: 2.95
M_9: Only power distance → relationship conflict	44.50	34	.96	.07	.06	
M_{10}: Member LMXD × power distance → relationship conflict	41.89	33	.97	.07	.06	M_9 vs M_{10}: 2.61
M_{11}: Only power distance → group potency	47.42	34	.95	.08	.06	

Table 9 (cont'd)

M_{12}: Member LMXD × power distance → group potency	47.38	33	.95	.09	.06	M_{11} vs M_{12}: 0.04
M_{13}: Only leader prototypicality → relationship conflict	58.16	34	.92	.11	.05	
M_{14}: Member LMXD × leader prototypicality → relationship conflict	47.35	33	.95	.09	.05	M_{13} vs M_{14}: 11.81^{***}
M_{15}: Only leader prototypicality → group potency	55.36	34	.93	.10	.05	
M_{16}: Member LMXD × leader prototypicality → group potency	51.17	33	.94	.09	.05	M_{15} vs M_{16}: 4.19^{*}

Note. LMXD = leader-member exchange differentiation; LLX = leader-leader exchange; CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual.

*** $p < .001$; * $p < .05$.

[a] All the degrees of freedom differences are 1.

Hypothesis 7a predicted the moderating role of power distance in the relationship between member-rated LMX differentiation and relational conflict. Hypothesis 7a did not receive support as a model that included the interaction term between member-rated LMX differentiation and power distance (M_{10}) did not increase a fit to the data significantly (M_9 vs. M_{10}; $\Delta\chi^2 = 2.61$, $\Delta df = 1$; $p = .11$). Hypothesis 7b predicted the moderating role of power distance in the relationship between member-rated LMX differentiation and group potency. When the interaction term between member-rated LMX differentiation and power distance was freed (M_{12}), a model fit was not significantly increased (M_{11} vs. M_{12}; $\Delta\chi^2 = .04$, $\Delta df = 1$; $p = .84$). Therefore, Hypothesis 7b did not receive support.

Hypothesis 8a predicted the moderating role of leader prototypicality in the relationship between member-rated LMX differentiation and relational conflict. Hypothesis 8a was supported as a model that included the interaction term between member-rated LMX differentiation and leader prototypicality (M_{14}) yielded a significantly better fit to the data than a model that constrained the interactional term as zero (M_{13} vs. M_{14}; $\Delta\chi^2 = 11.81$, $\Delta df = 1$; $p < .001$).

To interpret the significant interactions, which are graphed in Figure 4, I presented the simple slopes at one standard deviation above and below the mean of leader prototypicality (Aiken & West, 1991). Member-rated LMX differentiation increased relationship conflict when team leaders are perceived as less prototypical but when team leaders are perceived as more prototypical, member-rated LMX differentiation decreased relationship conflict. Simple slope test results showed that the relationship between member-rated LMX differentiation and relationship conflict was positive but not significant when leader prototypicality was low ($b = .29$; $t = .85$, $p = .40$), whereas this relationship was negative and significant when leader prototypicality was high ($b = -.68$, $t = -1.91$, $p < .10$).

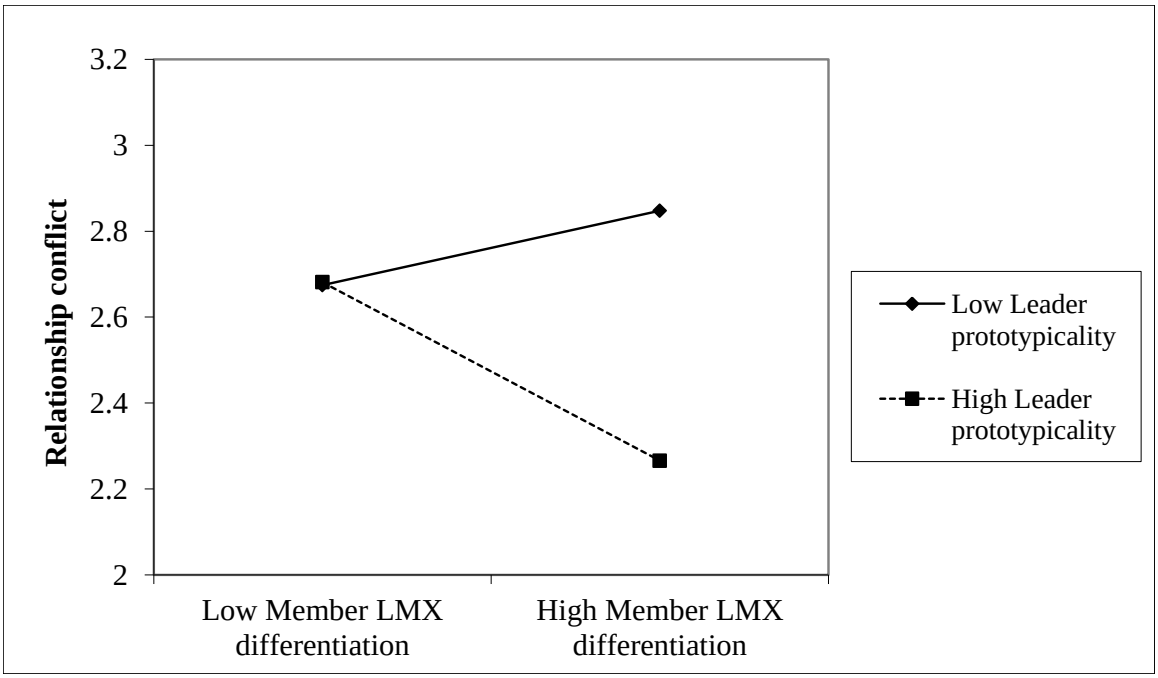

Figure 4
Interaction of member LMX differentiation and leader prototypicality predicting relationship conflict

Hypothesis 8b predicted the moderating role of leader prototypicality in the relationship between member-rated LMX differentiation and group potency. As shown in Table 9, results suggested that adding the interaction term between member-rated LMX differentiation and leader prototypicality (M_{16}) increased a model fit to the data significantly (M_{15} vs. M_{16}; $\Delta\chi^2 = 4.19$, $\Delta df = 1$; $p < .05$). As graphed in Figure 5, member-rated LMX differentiation was found to be positively related to group potency regardless of members' perceptions of the leaders' prototypicality. However, simple slope test results showed that the positive relationship between member-rated LMX differentiation and group potency was slightly stronger, although not significant, when leader typicality was low ($b = .17$; $t = 1.01$, $p = .32$) compared to when leader typicality was high ($b = .08$, $t = .44$, $p = .66$). Hence, it should be noted that although the path model comparison

results yielded a significant effect for the interaction of member LMX differentiation and leader prototypicality, the pattern of the interaction did not support Hypothesis 8b.

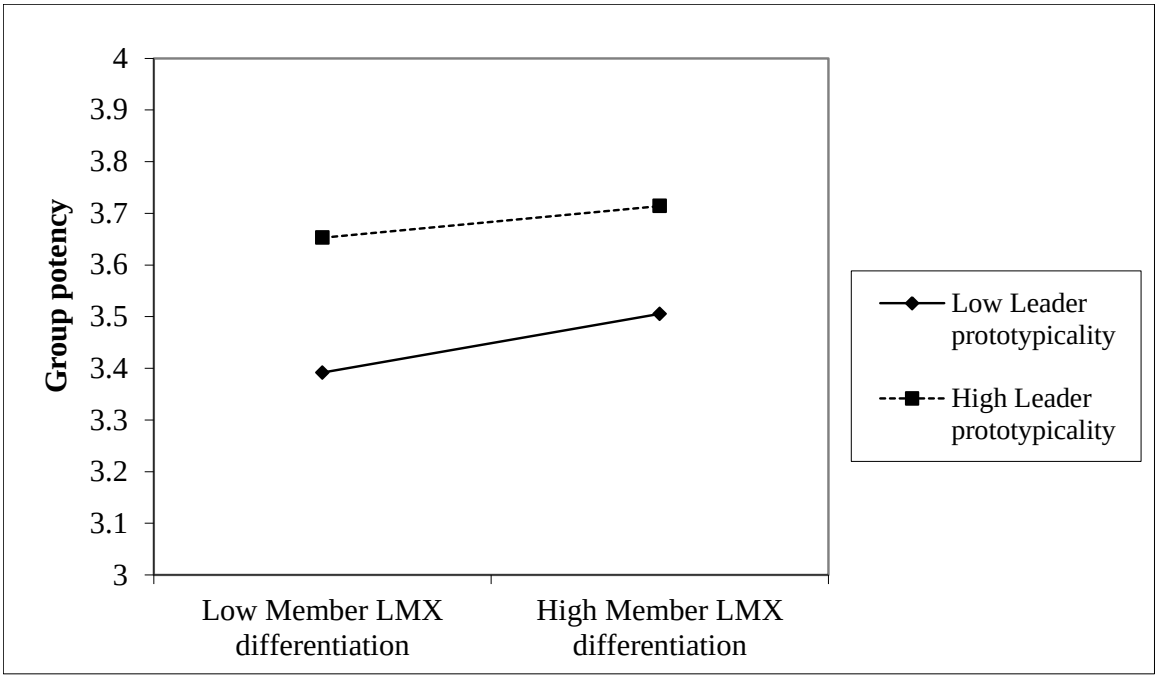

Figure 5
Interaction of member LMX differentiation and leader prototypicality predicting group potency

With regard to the control variables, group-mean member LMX was significantly related to group role clarity (γ = .35, p < .01), group coordination (γ = .37, p < .01), relational conflict (γ = -.29, p < .05), and group viability (γ = .21, p < .05). Group-mean leader LMX was positively related to group performance (γ = .33, p < .01). Performance of groups from Organization 3 was rated higher than that of other groups (γ = .23, p < .05). Group members from organization 4 reported lower levels of group role clarity (γ = -.59, p < .001), group coordination (γ = -.52, p < .001), and group potency (γ = -.85, p < .001) as well as a higher level of relationship conflict (γ = 57, p < .001) than those from any other organizations (see Table 10).

Taken together, although the main effects on leader- and member-rated LMX differentiation on group performance and viability were not significant, the relationship between member-rated LMX differentiation and relationship conflict varied depending on the level of team leaders' protypicality. Specifically, member-rated LMX differentiation decreased relationship conflict when team members as a whole perceive their team leader as representing their team and team members. Figure 6 and Table 10 report the standardized path coefficients of the moderated mediation model.

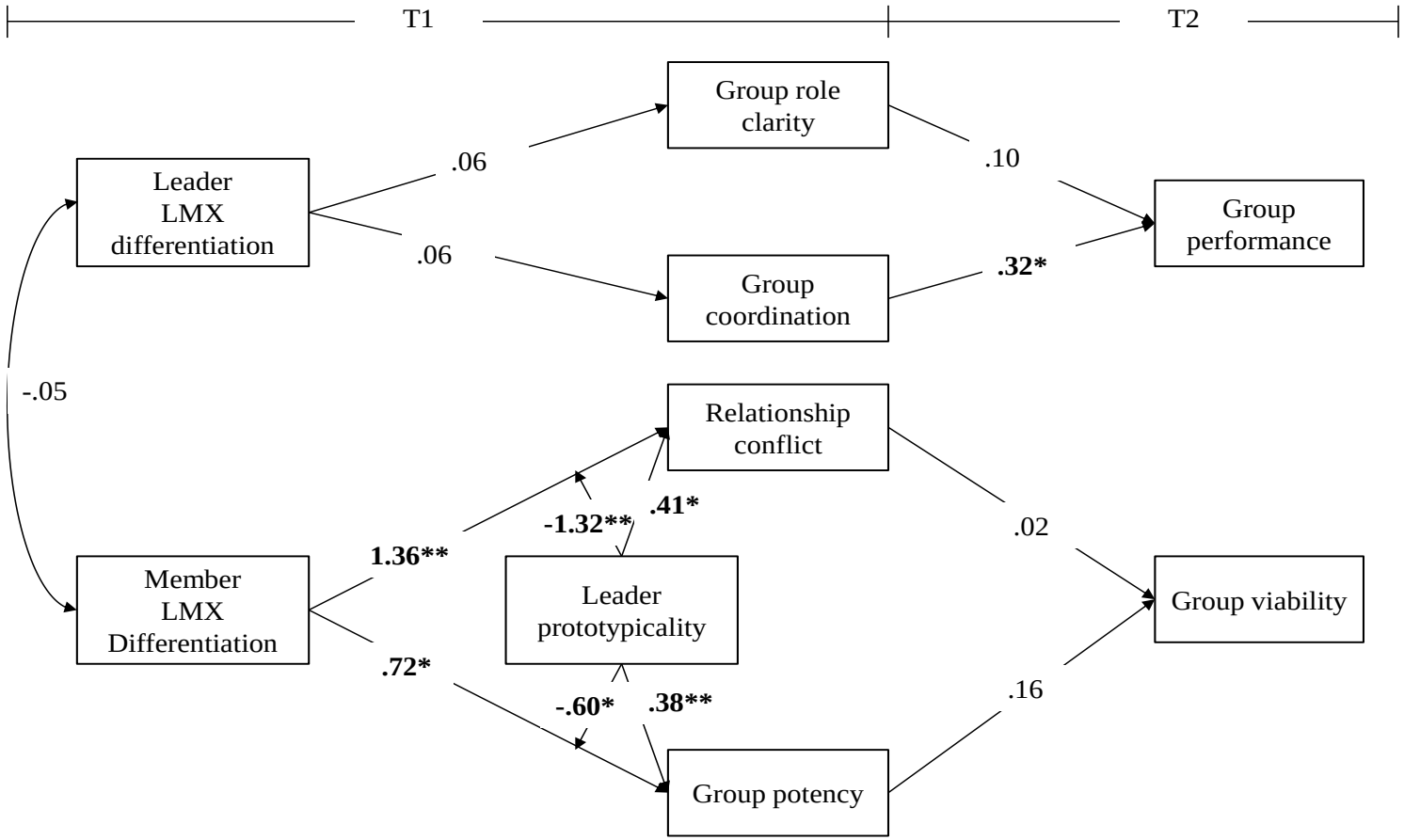

Figure 6
Results of the moderated mediation path model

Note. LMX = leader-member exchange; For the sake of clarity, the paths from each of the control variables are omitted; standardized path estimates are reported (N = 57); ** $p < .01$; * $p < .05$ (two-tailed).

Table 10 Path Coefficients of the Moderated Mediation Model

Variables	Group role clarity	Group coordination	Relationship conflict	Group potency	Group performance	Group viability
Member GLMX	.35***	.37***	-.29*	.19	-.20	.21*
Leader GLMX	.11	.02	.07	.10	.33**	.08
Organization 2 [a]			.19*			
Organization 3 [b]					.23*	
Organization 4 [c]	-.59***	-.52***	.57***	-.85***	-.22	
Member LMX differentiation (A)			1.36**	.72*		
Leader LMX differentiation	.06	.06				
Group role clarity					.10	
Group coordination					.32*	
Relationship conflict						.02
Group potency						.16
Leader prototypicality (B)			.41*	.38**		

Table 10 (cont'd)

Variables	Group role clarity	Group coordination	Relationship conflict	Group potency	Group performance	Group viability
(A) × (B)			-1.32**	-.60*		

Note. GLMX = group-mean leader-member exchange; LMX = leader-member exchange; all coefficients are standardized path estimates (N = 57).

*** $p < .001$; ** $p < .01$; * $p < .05$ (two-tailed).

[a] Organization 2 = 1; Organizations 1, 3, 4, and 5 = 0

[b] Organization 3 = 1; Organizations 1, 2, 4, and 5 = 0

[c] Organization 4 = 1; Organizations 1, 2, 3, and 5 = 0

CHAPTER VI

DISCUSSION

The main three questions that I intended to examine in this study are whether, why, and when LMX differentiation influences team effectiveness. I examined these research questions by analyzing the survey data collected from the US and South Korean teams with a 3-month time lag. In the following sections, the findings will be briefly summarized. Next, I will discuss theoretical and practical implications. Then, I will conclude this chapter after describing study limitations and future research questions.

A Summary of Findings

The first question was whether LMX differentiation influences team effectiveness. By adopting a dual perspectives model, both team leaders' and team members' perspectives were examined at the team level. Group effectiveness was operationalized by two variables: group performance and group viability. I hypothesized that leader-rated LMX differentiation is positively related to group performance (Hypothesis 1) and that member-rated LMX differentiation is negatively related to group viability (Hypothesis 2). The results showed that neither leader-rated nor member-rated LMX differentiation is significantly related to group performance and group viability, respectively. The null finding on the leader-rated LMX differentiation and group performance is consistent with Liden et al. (2006) and M. Stewart and Johnson (2009) showing that LMX differentiation (rated by team members) are neither positively nor negatively related to group performance. It should be noted, however, that the current finding on the relationship between member-rated LMX differentiation and group viability is different from previous studies. For example, Schyns (2006) found that member-rated LMX differentiation on the contribution dimension is negatively related to team-level job satisfaction and commitment. Instead, in the current study, the results

indicated that leader-rated group-mean LMX (GLMX) is positively related to group performance. Furthermore, member-rated GLMX is positively related to group viability.

The second question was why LMX differentiation may influence team effectiveness. To explain the intervening mechanisms, four group processes were examined as potential mediators of the LMX differentiation-group effectiveness relationships (Hypotheses 3a-4b). The results showed that although leader-rated LMX differentiation is significantly correlated with all of the four group processes, none of the indirect effects of member-rated and leader-rated LMX differentiation on group performance and group viability were significant. Thus, this may indicate that the four types of group processes may not be the mechanisms linking LMX differentiation to group performance and viability. Despite the lack of support for the potential mediating mechanisms, I found that the relationship between group coordination and group performance was positive and significant as expected. Although not hypothesized, member-rated GLMX is positively related to group role clarity and group coordination and negatively related to relationship conflict.

The third question was when LMX differentiation relates to team effectiveness. To examine this question, four boundary conditions were tested (Hypotheses 5a-8b). Support was found for one of the moderators. The results showed that leader prototypicality (the extent to which team members believe their leader represents the team and team members as a whole) moderated the relationship between member-rated LMX differentiation and relationship conflict (Hypothesis 8a). Specifically, when team leaders are believed to represent the team (e.g., team norms and values) and team members, member-rated LMX differentiation is negatively related to relationship conflict. Similar empirical findings were reported by Schyns (2006) who showed that member-rated LMX differentiation can be positively or negatively related to group goal fulfillment depending on whether group members as a whole have positive or negative work values. Taken together, these findings suggest that LMX differentiation has neither

positive nor negative relationships with group performance and group viability. Instead, it is important to examine boundary conditions to determine when LMX differentiation increases or decreases group effectiveness.

Theoretical Implications

The current findings have some important theoretical implications to the existing LMX literature. In particular, many researchers have called for empirical research that examines both leaders' and members' perspectives (e.g., Gerstner & Day, 1997; Greguras & Ford, 2006; Sin et al., 2010). Yet, only a limited number of studies have been performed on this issue at the individual or dyadic level, and no prior studies have examined LMX differentiation from both perspectives at the group level. Thus, a first and key theoretical implication to the LMX and team leadership literature is the examination of both leader- and member-rated LMX at the group level in a single study. Filling this research gap, I developed the dual perspective model of LMX differentiation to examine the relationship between LMX differentiation and team effectiveness.

Although support was not found for the hypothesized model, some other empirical findings should be emphasized. The zero-order correlation analyses did reveal that leader-rated LMX differentiation was positively correlated with group role clarity, group coordination, and group potency and negatively correlated with relationship conflict. This finding may insinuate that team leaders can facilitate group processes by forming differentiated relationships with team members, however, the group mean level of LMX needs to also be considered. Specifically, group mean LMX (GLMX) was found to play a critical role in predicting group processes and group effectiveness. In the final moderated mediation model (Figure 6 and Table 10), member GLMX was positively related to group role clarity, group coordination, and group viability, and was negatively related to relationship conflict. Leader GLMX was positively related to group performance. Although the relationships of member and leader GLMX with these group

processes and effectiveness were not a priori hypothesized, such empirical evidence can be also found in the previous studies (e.g., J. Hu & Liden, 2013; Liden et al., 2006). Hence, the current results suggest that it is more beneficial to group processes for team leaders to build high quality relationships with all team members, rather than differentiate across team members. This conclusion may be regarded premature given the limited number of prior studies. Nonetheless, this study emphasizes that investigation of both team leaders' and members' sides is a critical starting point to bridge the group-level LMX research and the broader team leadership and teams/groups literature.

Second, the present study provided empirical evidence supporting the distinctiveness of member-rated and leader-rated LMX differentiation. To explain the idiosyncrasy associated with each perspective on LMX, this study provided theoretical frameworks based on the performance appraisal and implicit leadership theory in addition to role testing theory (Graen & Scandura, 1987). As noted by Dulebohn et al. (2012, p. 1718), "a thread running through the quality of LMX relationships is the dual process of leaders evaluating followers and followers assessing leaders." Yet the LMX studies have consistently reported a moderate correlation between leaders' and members' perceptions of LMX quality. In the current sample, the correlation between leader-and member-rated LMX differentiation was r = -.05, the correlation between the group mean scores of leader- and member-rated LMX was r = .10, and the correlation between the individual-level scores of leader- and member-rated LMX was r = .15. None of these values are significantly different from zero. The low degree of correlation between leader-and member-rated LMX differentiation in particular indicates that team leaders and members perceive the LMX quality among members in the team differently. This evidence makes it imperative for future LMX researchers to develop a model specifying the underlying reasons for this divergence. It seems that team leaders and members perceive their LMX quality differently due to their own perceptions, interpretations, and attributions of dyadic working experiences.

A third implication to the LMX differentiation research is the empirical evidence on the moderating role of leader prototypicality in the relationship between member-rated LMX differentiation and relationship conflict. As reviewed in the earlier chapters, a handful of studies have thus far examined the boundary conditions of the LMX differentiation effect and found four boundary conditions: task interdependence (Liden et al., 2006), group-level LMX (i.e., the median value of LMX scores within a group; Liden et al., 2006), and team-level work value (Schyns, 2006). This study adds one more boundary condition, which is leader prototypicality: member-rated LMX differentiation negatively related to relationship conflict when members perceived the leader as being prototypical of the team. What these findings altogether suggest is that member-rated LMX differentiation is functional to group processes and/or effectiveness when (a) team tasks are highly interdependent, (b) group-level LMX relationship is low, or (c) team leader is prototypical of the team. For team-level work value, Schyns (2006) found the mixed results that LMX differentiation on the loyalty dimension was functional when team-level work value is positive whereas LMX differentiation on the respect dimension was functional when team-level work value is negative.

It is noteworthy, however, that the current finding also seems contradictory to Liden et al.'s (2006) finding. Both studies found that depending on team leadership properties (i.e., group-median LMX and leader prototypicality), the relationship between member-rated LMX differentiation and group processes and/or performance varies. However, Liden et al. (2006) found that member-rated LMX differentiation positively related to group performance when group-level LMX relationship is low (i.e., team members on average have a low quality LMX relationship), whereas I found that relationship conflict decreased (i.e., groups are more functional) when members perceive the team leader as more prototypical of the team. Note that research evidence showed that team members with a higher LMX quality are likely to perceive that their leader is more prototypical of the team (Epitropaki & R. Martin, 2005). It can be thus expected

that when team members perceive their leader prototypical, they are likely to have a high quality LMX relationship on average. To further explore the contradictory results between Liden et al. (2006) and the current finding, a multiple regression analysis was conducted using group-level LMX as the moderator and relationship conflict as the dependent variable with the results are shown in Table 11. The interaction between member-rated LMX differentiation and group-level LMX was significant (B = -1.39, p < .05). The interaction pattern was contradictory to Liden et al.'s (2006) pattern, such that member-rated LMX differentiation was negatively related to relationship conflict when group-level LMX relationship is high (see Figure 7).

Table 11 A Supplementary Multiple Regression Analysis Testing the Group-mean LMX by Member-rated LMX Differentiation Interaction

Variables	*B*	*t*
Constant	-8.04	-1.34
Group-mean LMX (A)	5.42	1.92†
Member LMX differentiation (B)	4.35	1.45
(A) * (B)	-1.63	-2.30*
Group-mean LMX squared	-.64	-1.91†
Member LMX differentiation squared	1.20	2.13*
R^2	.27**	

Note. LMX = leader-member exchange; the squared term of each cross-product term was entered to rule out the possibility of a spurious by-product of a curvilinear effect associated with each cross-product component term (Cole, Bedeian, Hirschfeld,& Vogel, 2011).

** p < .01;* p < .05; † p < .10 (two-tailed)

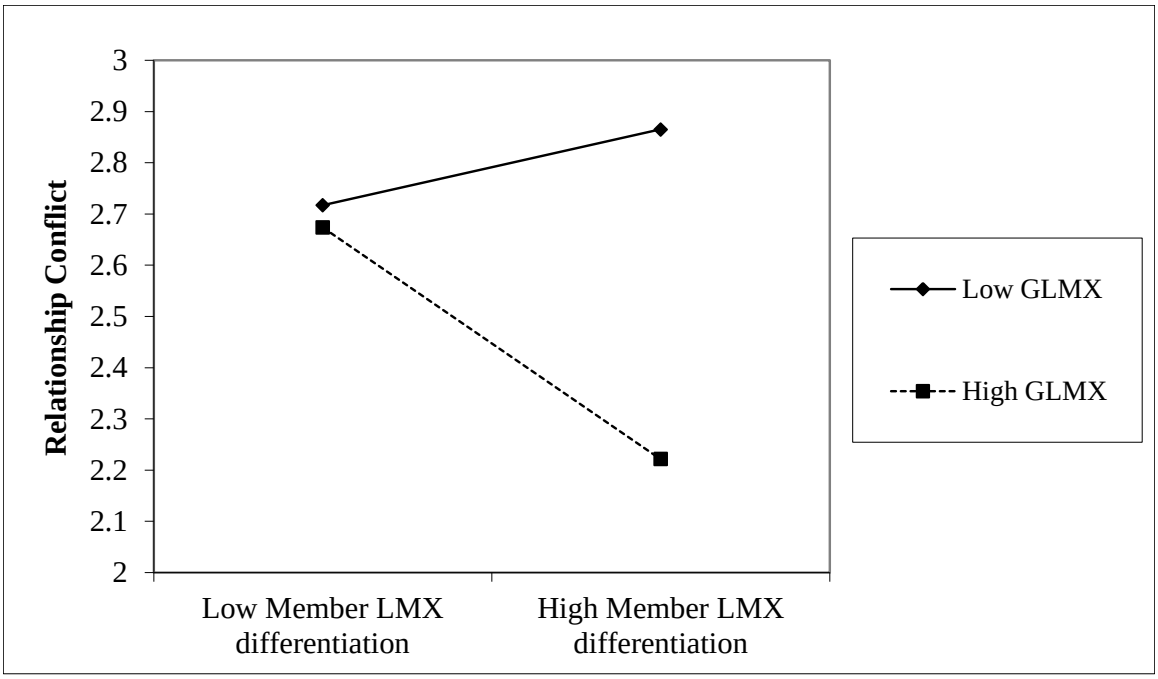

Figure 7
Interaction of member LMX differentiation and group-mean LMX predicting relationship conflict

They reasoned that when most team members do not form high quality LMX relationships with their team leader, the strategic distribution of resources by the leader's differentiation may create a clear role and status differentiation within a team, thereby leading to increased group performance. Given that their dependent variable was group performance, their theoretical rationale seemed to be more focused on task-related team mechanisms. On the other hand, the present finding can be meaningful from a socio-emotional standpoint. In explaining the relationship between LMX differentiation and relationship conflict, a more plausible mechanism is through reducing fairness and trustworthiness concerns (Erdogan & Bauer, 2010). When a team leader is prototypical (or most team members have a high quality LMX relationship with the team leader), team members are more willing to trust the team leader and perceive him or her as fair because they tend to believe the leader has the same motive as do they. More fair and trusting

leaders may help reduce relationship conflict among team members. In sum, it seems that one important boundary condition for the relationship of LMX differentiation with group effectiveness is team leadership property (e.g., group-level LMX and leader prototypicality). By providing empirical evidence supporting this rationale, this study intends to provide a link between the LMX research and the team leadership literature broadly.

In addition, this study has an important theoretical implication to the diversity research and team leadership literature. The moderating role of leader prototypicality indicates that the social identity perspective of team leadership (Hogg, 2001) can be one plausible theoretical framework to explain the relationship between LMX differentiation and group performance, thereby leading to integration of LMX differentiation research with the team diversity and leadership literature. Typically, team members are expected to be heterogeneous in their experiences, knowledge, and expertise. Accordingly differentiated task and role assignments by team leaders would be expected because leaders are likely to recognize and form attributions of team members' expertise and capabilities from team members' heterogeneous characteristics; such diversity may be a manifest cue pertaining to the levels of expertise and capabilities (Bunderson, 2003; Chae & Lee, 2010; Nishii & Mayer, 2009). Often in the social identity research, team diversity has been suggested to be more positive and functional than homogeneity unless it threatens team members' group membership and group identity, which reflect on how team members see the self (van Knippenberg, De Dreu, & Homan, 2004; van Knippenberg & Haslam, 2003).

Building upon the social identity theory, LMX differentiation can be interpreted as signaling threats and challenges to team members' identity by creating distinctive roles or functional structures within a team. In such contexts, LMX differentiation can become functional as long as team members' group membership is neither threatened nor challenged. The findings of this study provide support for the social identity perspective

as prototypical team leaders are less likely to make team members' group identity challenged because they represent the team members and understand team norms and core values. Consequently, they are trusted to have benign group-oriented motives as do team members. Therefore, the importance of leader prototypicality can bridge the finding of this study to the team diversity literature.

Furthermore, the role of leader prototypicality in understanding LMX differentiation at the group level should be emphasized as it has another important implication to the LMX differentiation and team leadership research. As suggested by De Cremer et al. (2010), it has been a traditional assumption that team leaders can form and change the vision and core values of teams that they lead (e.g., Shamir, House, & Arthur, 1993). Team members are accordingly regarded as more reactive than they are in reality; their attitudes and behaviors are largely influenced by team leaders' behaviors (e.g., Judge et al., 2004; G. Wang, Oh, Courtright, & Colbert, 2011). However, what leader prototypicality suggests is that team leadership can be better endorsed and shaped by understanding team members' characteristics, their norms, core values, and their needs and motives. The current finding stimulates this new direction of the team leadership research by highlighting the role of leader prototypicality in a context of LMX differentiation.

Practical Implications

Given that, in many jobs, team members' performance is determined by a team leader's subjective ratings (Rynes et al., 2005), leader-rated LMX quality is closely related to performance ratings (Gerstner & Day, 1997). In such contexts, LMX differentiation by team leaders presumably plays a critical role in understanding team processes and team effectiveness. Hence, examining whether, why, and when LMX differentiation matters to team effectiveness has some important practical implications.

In particular, this study has important practical implications to a better understanding of how to select and develop team leaders. The results showed that team leaders can facilitate team processes and effectiveness by building high quality relationships with team members on average, at least from the members' perspective of the LMX relationship. By doing so, team leaders can help members understand their roles clear, get team works coordinated, strengthen a shared belief about their capability as a team, and reduce relational conflict among team members. To do so, team leaders may have to put forth efforts not only to recognize and value each team member's expertise and contribution but also to understand the importance of satisfying each member's idiosyncratic needs and motives and linking them to the team's common goals and values (Hirschhorn, 1991).

Second, when team leaders are perceived as representing the characteristics of the team and their team members, differentiated exchange relationships between team leaders and members help reduce relationship conflict among team members. This indicates that prototypical team leaders are likely to use differentiated exchange relationships more effectively to reduce relationship conflict within a work team (or at least they are likely to be perceived as such). Research evidence has showed that prototypical leaders are perceived as more effective by team members (van Knippenberg & van Knippenberg, 2005) and are better at using fair procedures to promote cooperation among team members to achieve the team's goals (De Cremer et al., 2010). The main mechanism behind the effectiveness of prototypical team leaders is that if team leaders are prototypical, team members are likely to believe that their leader has the same needs and motivation as theirs. Accordingly they can trust the leaders (Hogg & van Knippenberg, 2003) and that their leader has positive leadership qualities such as charisma (Hogg, 2010).

From this finding, it should be highlighted, therefore, that as the need for differentiation increases within a team, selecting and developing prototypical leaders

seem to be critical in work team settings. When selecting or appointing team leaders, for example, it may be useful to search a team member who has worked within a team, understands team goals, values, and norms very well, and is therefore most prototypical (De Cremer et al., 2010; van Knippenberg, van Knippenberg, & van Dijk, 2000). Yet it may not be the case that the most prototypical leaders are always the most competent leaders. In reality, higher management may not select team leaders based on their prototypicality (De Cremer et al., 2010). Instead, often they appoint team leaders on the basis of many other factors. In such cases, it may be helpful for organizations to consider training team leaders in how they understand the characteristics (e.g., values, norms, and identity) of the team they lead. For example, rhetoric was found to be an effective technique that can help a leader categorize himself or herself as a prototypical team member (Reicher & Hopkins, 1996). This indicates that organizations can develop a training program that helps team leaders embody group prototype and understand core team values, norms, and identity. By doing so, team leaders can be better capable to build differentiated relationships with team members and to enact differentiated role assignments in such ways to facilitate team processes.

Study Limitations

This study is subject to several limitations that should be addressed. First, due to the relatively small sample size, sampling error is likely to be large and the statistical power to detect significant relationship could be lowered. For example, Cohen and Bailey (1997) reported that the average sample size in the team level studies was $N = 65$, and thus the lack of statistical robustness should be considered when interpreting the current findings. On a related note, due to the small sample size, the research models were tested by path model analyses which do not control for measurement error. Thus results might have been different if latent variable analyses were performed to test the hypothesized relationships. In addition, given the use of standard deviation as a

differentiation index, there was a low likelihood of finding a significant main effect of LMX differentiation. In a simulation study (Roberson, Sturman, & Simons, 2007), standard deviation, despite it deems to be the best index of LMX differentiation, was found to detect true relationship less than 30% of the time.

Second, only 21% of the current sample (12 teams) was the US teams, and thus the current results are less likely to equally represent the characteristics of the two nations. Although I controlled for the organization dummy variables in an attempt to mitigate this potential bias, it is necessary to collect more responses from the US work teams to obtain more representative results from both countries.

Third, although most teams in this study (95%) are work teams that are continuing work units and their membership is stable over time, some findings may apply better to other team settings such as parallel teams or management teams where team members' authority is parallel or hierarchically rank-ordered. In such team settings, authority or status differences might play a more critical role in understanding the relationship of LMX differentiation with team effectiveness.

Fourth, I examined the four team process variables and the two team effectiveness variables as representing task and socio-emotional team processes and effectiveness. Despite the selection of these mediating and dependent variables based upon the theoretical framework, there are other variables that are likely to be outcomes of LMX differentiation. For example, Marks et al. (2001) proposed 10 different team process variables, and team innovation is regarded as capturing the other important aspect of team effectiveness (e.g., West, Borrill, & Unsworth, 1998).

Fifth, any strong causal inferences regarding the proposed relationships cannot be drawn from this study. To mitigate this concern, I measured the group effectiveness variables at a separate time (a 3-month lag). Furthermore, based upon the input-process-output (IPO) framework, I suggested the team process variables be the mediators of the relationship between team leadership (i.e., LMX differentiation) and team effectiveness.

It should be noted, however, that responses on all the other variables were collected at the same time. Therefore, unless a longitudinal study design with repeated measures is employed, it is uncertain whether the causality is consistent with the temporal order of data collection.

Sixth, common source bias might be incurred in the relationships among some study variables. Although I measured the study variables from different sources, some variables were measured from the same rater. For instance, leader-rated LMX differentiation, LLX, and distributed expertise were measured by only team leaders, and member-rated LMX differentiation, leader prototypicality, power distance orientation, and group processes were measured by only team members. Thus, some correlations among independent and moderator variables could have been inflated, which potentially influences the statistical robustness of testing the interaction terms between them.

Seventh, some of the results could have been a function of the measure used for leader-rated LMX. Greguras and Ford's (2006) measure was used in this study and it asked team leaders to rate their view of what team members provided to him or her. However, one can use the other type of measure which asks team leaders' view of what she or he provides to team members. Thus, the findings on non-significant relationships between LMX differentiation and group performance and group viability are less likely to be generalized to situations where the other type of leaders' LMX measures is used.

Directions for Future Research

There are several avenues for future research by extending the current study. First, future research should examine the measurement issues in LMX quality. Although the call for research on LMX measurement has been made by many scholars (e.g., Dienesch & Liden, 1986; Graen & Uhl-Bien, 1995), there remains many issues to be resolved. Of particular importance is that LMX should be measured from both leaders' and members' perspectives to capture the "reciprocally interdependent" nature of LMX relationships

(e.g., Gerstner & Day, 1997; Scandura & Schriesheim, 1994; Schriesheim, Neider, & Scandura, 1998). In doing so, the leader ratings of LMX quality can be measured by two types of measures. Typically, some studies have used the "mirror version" of the member LMX scale in which the items in both versions focus on the members behaviors/attitudes towards the leader. For example, the item "I like my supervisor very much as a person" (Member LMX) is "they like me very much as a person" (Leader LMX). Although this type of measure can reflect both perspectives, it is less likely to capture the mutually interdependent nature of LMX relationships as the mirroring items measure whether leaders recognize what s/he does for his or her followers (Greguras & Ford, 2006). To better capture the mutuality between leaders and members, I therefore used the Greguras and Ford's (2006) parallel version of LMX items (e.g., "I like my subordinate very much as a person"). Given that this study was the first to examine leader-rated LMX differentiation, future research can compare the current findings on leader-rated LMX differentiation using the mirroring items which have been used more frequently in the LMX literature.

Furthermore, the underlying factors associated with leader ratings of LMX quality may be different across the levels of analyses. When leaders are asked to rate their LMX quality with a single team member (i.e., the dyadic level), their responses may be different from what they would respond when asked to rate their LMX qualities with all team members collectively (i.e., the team level). Hence, it seems that a great amount of empirical research is necessary to examine the LMX measurement issues and it should include such issues as comparing the types of leader-rated LMX measures and/or developing theoretical frameworks explaining the measurement models across the levels of analysis.

The second area is how to statistically operationalize LMX differentiation. With regard to operationalization of dispersion (or differentiation) constructs, a recent study by Cole et al. (2011) provided comprehensive guidelines. Following their suggestions,

future research should define the nature of the LMX differentiation construct. In doing so, the nature of LMX differentiation can be regarded as separation, variety, or disparity (Harrison & Klein, 2007). According to them, separation is defined as "composition of differences in (lateral) position or opinion among unit members, primarily of value, belief, or attitude; disagreement or opposition" (p. 1203) and typically best operationalized by standard deviation. Variety occurs when team members are diverse on a categorical attribute (e.g., functional background)—that is, they are qualitatively different from one another. Typically, variety is statistically operationalized by Blau's index (1977). And, disparity refers to within group differences in a share, amount, or a proportion of a socially valued or desired resource (e.g., pay, power, prestige, or status). Although Harrison and Klein did not explicitly state this, it seems that disparity assumes the distributed resource is (or is at least regarded) *tangible* because disparity measures, such as the coefficient of variation or the Gini coefficient, assume a ratio scale, meaning that the construct being measured has a non-arbitrary (absolute zero) point. In my view, the construct of LMX (or LMX differentiation) is an intangible resource and can be operationalized along a continuum (not qualitatively different). Therefore, LMX differentiation construct is likely to be better characterized as separation than variety or disparity, and should be operationalized in terms of the standard deviation as was done in this study.

It should be noted, however, that consensus has not yet been made among the LMX researchers regarding which operationalization is the best. The prior LMX differentiation studies instead have used several different statistics to operationalize LMX differentiation: standard deviation (e.g., Mayer, 2008; Nishii & Mayer, 2009; Schyns, 2006; M. Stewart & Johnson, 2009), variance (e.g., Erdogan & Bauer, 2010; Henderson et al., 2008; J. Hu & Liden, 2013; Liao et al., 2010; Liden et al., 2006: Williams et al., 2009), r_{wg} values (Bois & Howell, 2006), or the coefficient of variance (e.g., Chae & Lee, 2010; Hooper & R. Martin, 2008). Given Harrison and Klein's (2007) review, it is

recommended that future LMX differentiation studies use standard deviation of individuals' LMX scores within a team to operationalize LMX differentiation. This suggestion is also consistent with a recent simulation study by Roberson and her colleagues (2007). Their conclusion is when researchers are interested in the main effect of dispersion measure (i.e., LMX differentiation in this case), using standard deviation may be better than other indices such as average deviation, the coefficient of variation, and r_{wg} values (for more details, see Roberson et al., 2007).

Despite theoretical and empirical evidence favoring standard deviation over other indices, variance is most frequently used in the LMX differentiation studies. The main criticism on using variance is that the deviation from the mean is actually squared, which in turn exaggerates the extent of dispersion within a team and makes the dispersion index more susceptible to the influence of extreme values (Roberson et al., 2007). This problem will be more prominent in the typical team-level studies as the average sample size (i.e., the number of teams) in the empirical teams and group studies was 65 (Cohen & Bailey, 1997). Future LMX differentiation research is warranted to validate this suggestion in order to set a guideline on empirical examination and thus to make empirical results from different studies comparable.

A third area for future examination is in LMX agreement between leaders and members. As noted earlier, Graen and Uhl-Bien (1995) noted that the level of LMX agreement should be considered an indicator of the quality of data used in the LMX research, meaning that empirical results from data with the low level of LMX agreement between members and leaders is less likely to be valid. However, Sin et al.'s (2009) meta-analytic evidence showed that publication bias was not found in the level of LMX agreement between leaders and members. It seems that LMX (and differentiation) disagreement is reality; leaders and members do not seem to agree with their quality of exchange relationship, thereby leading to a low correlation between leader- and member-rated LMX differentiation scores (i.e., standard deviations of leader- and member-rated

LMX scores within a team). Although several empirical studies on the low level of agreement has been performed in the multi-source performance ratings literature (e.g., Hoffman et al., 2010; Scullen et al., 2000), no empirical studies in the LMX literature have been conducted to systemically examine the sources of variance in LMX scores and/or the underlying factors associated with LMX disagreement. A core question for LMX agreement research, then, is what extent of LMX disagreement is measurement error or bias (or true variance)? Future research is warranted to tease apart the sources of variance in both leader- and member-rated LMX scores. Furthermore, several theoretical frameworks including implicit leadership theories (ILTs) or implicit follower theories (IFTs) can be applied to help develop a model that specifies variance components of LMX responses. Example research questions built upon ILTs and IFTs include what extent of variance in leader- and member-rated LMX scores can be explained by implicit schemas regarding LMX relationships? Examining such questions also helps build a more nuanced theoretical model in regard to dual perspectives of LMX differentiation and their impacts on individual and team outcomes.

A fourth area for future research is building an integrative theoretical framework that explains whether, why, and when LMX differentiation is functional or dysfunctional to team effectiveness and individual effectiveness. In so doing, the contexts of team leadership and team diversity should be considered. Often leadership is defined as a process (e.g., Northouse, 2010). To further explicate this leadership process, Yukl (2012, p.1) emphasized that "leadership is a two-way, interactive event between leaders and followers rather than a linear, one-way event in which the leader affects the followers but not vice versa." Therefore, both leaders and followers should be factored in such an integrative model to better capture leadership process.

As the present findings underscore, the social identity perspective of leadership (Hogg, 2001) or self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) would be a good example of theory to be incorporated with the traditional

behavioral team leadership. This theory was also suggested as one of foundational theories when researchers are interested in dispersion (or differentiation) as separation within a team (Harrison & Klein, 2007). Such theoretical frameworks may be useful as the social identity theory of leadership can answer questions regarding how team leadership is evaluated and endorsed by team members (i.e., member-oriented approach) and the traditional behavioral leadership theories can address theoretical issues regarding why certain leader behaviors are functional to making teams effective (i.e., leader-oriented approach).

Although I intended to build and test such an integrative model by suggesting a dual perspective model of LMX differentiation, the lack of empirical support seems to indicate that this model should be refined in future research. In hindsight, the current model may oversimplify the reality of work team contexts by suggesting only the additive effect of leaders' task-oriented processes and members' socio-emotional (or social identity) processes. One plausible direction for future theoretical work is therefore to take into account not only the additive effect but also the interactions between task and social identity processes. In the team diversity literature, for example, van Knippenberg et al. (2004) developed a model suggesting that task-related information processing interacts with social identity processes in explaining the influence of team diversity on group performance. That is, team diversity is functional to group performance because it increases task-related information processing and elaboration and it is more likely to be the case if team members' social identity is not threatened or challenged.

A fifth direction is examination of the nature of LMX differentiation within a team. LMX differentiation can play a role not only as a direct cause of individual and team outcomes (i.e., an independent variable) but also as a context where the influences of individual and team characteristics on individual and team outcomes are strengthened or weakened (i.e., a moderator variable). Several studies have examined LMX differentiation as a team context. For example, a high level of LMX differentiation

creates a team context where team diversity features such as status hierarchies and ingroup-outgroup conflicts are ritualized by a legitimate authority (i.e., a team leader) (Nishii & Mayer, 2009), and team members become highly vigilant to social comparative evaluations (Henderson et al., 2008; Liao et al., 2010).

It is therefore important for future researchers to clearly define the role of LMX differentiation in their research model. If LMX differentiation is suggested to be a main cause of individual and team outcomes, why it is functional or dysfunctional would be a critical question. This question can be answered by examining mediators of the LMX differentiation effect. In the current study, the findings (Table 8) showed that, albeit nonsignificant, the direct effects of leader- and member-rated differentiation on group performance and group viability, respectively, are .08 (57.1% of its total effect) and .29 (96.7% of its total effect). It thus suggests that there may be other mediating mechanisms linking LMX differentiation to team effectiveness. Otherwise, the current null findings may indicate that LMX differentiation works differently—it influences individual and team effectiveness indirectly through interacting with other individual and team characteristics.

If researchers are interested in a team context where LMX relationships are highly differentiated as a moderator, it is imperative to understand what type of context high LMX differentiation teams create. It seems that LMX differentiation build a social context where a team member's LMX quality imbues more critical meaning to individual and team effectiveness (Johns, 2006). If this social context plays a role as a strong situational constraint or opportunity for other individual and team characteristics, the categorization by a high or low LMX quality should create a meaningful and salient context (Henderson et al., 2008). In such contexts, for example, team diversity is dysfunctional because LMX differentiation can be attributed to reflect differences among team members, which in turn creates conflict within a team (e.g., Nishii & Mayer, 2009).

A sixth area in need of future research is work context in which LMX differentiation can have different impacts on individual and team outcomes depending on specific work context characteristics. Although this call has been repeatedly made by the LMX researchers (e.g., Anand et al., 2011; Dienesch & Liden, 1986; Dulebohn et al., 2012; Gerstner & Day, 1997; Rockstuhl, Dulebohn, Ang, & Shore, 2012), a very small number of LMX differentiation studies have examined team contexts. In particular, future research is still warranted to investigate organizational and national/cultural contexts where development of LMX relationships is embedded. One example of organizational contexts is HR systems, and some important research questions include "is LMX differentiation functional to individual and team effectiveness when the organization has differentiation HR strategy and/or highly dispersed pay structure?" As for cultural contexts, some interesting research questions include "is LMX differentiation more congruent with the cultural beliefs, expectations, or stereotypes in some countries?" This type of cultural research questions should have been examined in the current study but due to the small sample size, this study is unable to provide valid evidence on this issue. By designing a multilevel study, researchers need to investigate the impacts of these broader contexts on the functional relationships of LMX differentiation and individual LMX quality with various individual and team outcomes. The multilevel examination with a longitudinal design is expected, therefore, to provide more nuanced empirical evidence, thereby leading to a fuller understanding of the dynamic and complex nature of LMX relationships in the dyad-, team-, and organization-levels of analysis.

Seventh, along with LMX differentiation, group-mean LMX (GLMX) may be worthy to be examined in the future LMX research. This suggestion is drawn from the current empirical findings that (a) there exists significant between group variance in member GLMX scores ($F = 2.13$, $p < .05$; see Table 3), (b) group members' LMX ratings have a high level of agreement ($r_{wg(j)} = .97$; see Table 3), and (c) member GLMX was significantly related to group processes and outcomes such as group role clarity, group

coordination, relationship conflict, and group viability (see Table 10). Hence, this empirical evidence may indicate that GLMX can be regarded as a shared unit property rather than a configural property (for more detailed discussion, see Kozlowski & Kline, 2000) and predict important group-level outcomes. It should be noted, however, that despite this positive evidence for GLMX, there is little theoretical evidence on how GLMX forms at the group level (c.f., Choi & Guay, 2010; Seibert, Kraimer, & Choi, 2009). Given that group members usually share a common leader, GLMX is likely to be a meaningful group-level construct. Future research is warranted to build theoretical frameworks that further explain why, how, and when GLMX matters in group contexts.

Conclusion

The question whether team leaders should differentiate or not (Sparrowe & Liden, 1997) is very critical in typical work team settings but has remained unsolved. Team leaders are challenged and required to lead their team by satisfying both each members' idiosyncratic needs and the whole members' common goals and values (Hirschhorn, 1991). In the line of this inquiry, based upon the dual perspectives of task and socio-emotional orientation, this study tested whether leader- and member-rated LMX differentiation influence the two aspects of group effectiveness (group performance and group viability) through two separate mediating mechanisms (task and socio-emotional group processes). Although the task and socio-emotional processes linking the dual perspectives of LMX differentiation to group effectiveness were not supported in this study, I found that leader-rated LMX differentiation is significantly correlated with the four group processes. For member-rated LMX differentiation, I found that it is negatively related to relationship conflict when team leaders are perceived as representing the team members and team (e.g., value, goals, and norms).

The most important contribution is that the current study examined dual perspectives of LMX at the group level and provided empirical evidence regarding

significant relationships of both member and leader GLMX with group processes and outcomes—albeit not a priori hypothesized. This finding, combined with the non-significant effects for LMX differentiation on the group processes in the test of the hypothesized model, suggests that leaders should form high quality relationships with all members and not differentiate. The second important contribution is that this study found leader prototypicality as one boundary condition of the relationship between member-rated LMX differentiation and relationship conflict. This finding therefore indicates that the social identity theory framework is likely to be a useful framework in understanding the impact of LMX differentiation at the group level. It seems to be critical for team leaders to be a prototypical team member, thereby leading team members to believe differentiation by the leader as their effort to maintain social identity or group identity. Overall, this study emphasizes that investigations of both team leaders' and members' sides is a critical starting point to bridge the LMX differentiation research with social identity theory, and the LMX and team leadership literature.

APPENDIX A

REVIEW OF LEADER-MEMBER EXCHANGE DIFFERENTIATION STUDIES

Table A1 A Summary of Prior Empirical Studies on LMX Differentiation and Group-level LMX

Study	Objectives	Methodological issues	Key findings	Theoretical implications
Kozlowski & Doherty (1989)	• Developing and testing the linkages between leadership and climate at the group level.	• The LMX-7 measure (4 point Likert scale) was used. • LMX differentiation was not examined. Rather they divided the sample into high (in-group) and low LMX (out-group). • LMX was reported by followers.	• Group mean LMX is positively correlated with work group climate scales (work structure, job understanding, responsibility, supervisor work emphasis, teamwork, intergroup cooperation, and management awareness and concerns). • In-group members (high LMX) showed greater consensus in group climate perceptions than did out-group members (low LMX). • In-group members' climate perceptions tend to be closer to the climate perceptions of their supervisors than were those of out-group members.	• Demonstrating that the quality of interactions between the supervisor and their subordinates affects subordinates' interpretation of organizational features, events, and processes.
McClane (1991)	• Exploring the impact of role differentiation on affective reactions at the group level.	• 4 Likert type items were used to measure negotiating latitude (Liden & Graen, 1980).	• Group mean negotiating latitude is negatively related to role differentiation. • Group mean negotiating latitude is positively related to group-mean satisfaction with the leader, their task and coworkers.	• Demonstrating that role differentiation within groups is significantly and negatively related to group members' satisfaction.

Table A1 (cont'd)

McClane (1991)		• Role differentiation was calculated by summing the absolute value of the difference between each member's negotiating latitude and the mean negotiating latitude of the corresponding group. • Negotiating latitude was reported by followers.	• Group members with high role differentiation reported, on average, a lower level of satisfaction with their task.	
Cogliser & Schriesheim (2000)	• Exploring the influences of group contexts on group-level LMX quality.	• The LMX-7 measure (5 point Likert scale) was used. • LMX differentiation was not examined. • LMX was reported by followers.	• Group mean LMX is positively correlated with work group cohesiveness, climates (conflict, autonomy, skill variety, support, social relations), and leader power (expert, referent, legitimate, and reward). • Group mean LMX is negatively correlated with coercive leader power.	• Demonstrating that LMX can occur both within and between groups. • LMX quality at the group level provides a means for interpretation of work group climate. • Group LMX quality is meaningfully related to leader power bases.
van Breukelen et al. (2002)	• Examining whether LMX and perceived LMX differentiation affect work group commitment at the individual level.	• The LMX-7 measure (5 point Likert scale) was used. • The LMX differentiation scale was developed; what extent their supervisors differentiated among the various members of the group in terms of friendliness and feedback (p.224). • LMX was reported by followers.	• LMX is positively related to work group commitment. • Perceived LMX differentiation is not meaningfully related to work group commitment. • The positive relationship between LMX and work group commitment is stronger when perceived LMX differentiation is low than high.	• Demonstrating that individuals' perceived LMX differentiation tempers the positive influence of individual LMX on work group commitment.

Table A1 (cont'd)

Boies & Howell (2006)	• Examining the influences of group mean LMX and LMX differentiation on team potency and team conflict at the group level.	• Using the LMX-7 measure (5 point Likert scale), LMX differentiation was calculated by r_{WG}. • LMX was reported by followers.	• Group mean LMX is positively related to team potency and negatively related to team conflict. • When LMX differentiation is high rather than low, the positive (negative) relationship between mean LMX and team potency (team conflict) is stronger.	• Showing that group-mean LMX and LMX differentiation jointly influence team emergent states such as potency and conflict.
Ford & Seers (2006)	• Investigating whether the group-mean LMX and LMX differentiation are associated with work climate agreement at the group level.	• Using the LMX-7 measure (5 point Likert scale), LMX differentiation was calculated by DLMX which is created by calculating within-group SD on each item and then averaging those within-group SDs across items. • LMX was reported by followers.	• Group-mean LMX is positively related to work group agreement on group climate (e.g., supportive management, contribution, and challenge). • LMX differentiation is negatively related to work group agreement on group climate (e.g., supportive management and contribution).	• Demonstrating that group-mean LMX and LMX differentiation directly influence within group agreement on climate.
Liden et al. (2006)	• Exploring the influence of LMX differentiation on both individual and group performance.	• Using the LMX-13 and LMX-MDM measures (7 point Likert scale), LMX differentiation was calculated by within group variance. • The within group median score of LMX was used to capture group-level LMX. • LMX was reported by followers.	• Neither group-level LMX nor LMX differentiation is significantly related to individual and group performance. • The relationship between LMX differentiation and individual performance is only significant and positive for individuals with low LMX.	• Examining the question whether LMX differentiation hurts or enhances individual and group performance. • Demonstrating the moderators of the LMX differentiation-performance relationship.

Table A1 (cont'd)

Liden et al. (2006)			• The relationship between LMX differentiation and group performance is only significant and positive for groups with high task interdependence. • The relationship between LMX differentiation and group performance is only significant and positive for groups with low LMX median.	
Schyns (2006)	• Examining the effect of LMX differentiation on work attitudes at the group level.	• The LMX-MDM measure (7 point Likert scale) was used. • LMX differentiation was calculated by SD. • LMX was reported by followers.	• LMX differentiation in contribution dimension is negatively related to group level job satisfaction and commitment. • LMX differentiation in loyalty dimension increases group goal fulfillment in groups with high work value but decreases group goal fulfillment in groups with low work value. • LMX differentiation in respect dimension increases percentage of group goal fulfillment only in groups with low work value.	• Demonstrating that LMX differentiation influences team members' attitudes and group goal fulfillment. • Examining LMX differentiation in specific dimensions and group work value as a moderator of the LMX differentiation-goal fulfillment relationship.
Hooper & R. Martin (2008)	• Examining the effect of perceived LMX variability on job satisfaction and wellbeing at the individual level.	• The LMX-7 measure (5 point Likert scale) was used. • To measure perceived LMX variability, a single-item LMX distribution measure was used and then coefficient of variance was calculated.	• Perceived LMX variability negatively affects job satisfaction and wellbeing and positively affects team conflict, after controlling for individuals' own LMX.	• Examining the influence of LMX variability on work attitude and wellbeing after controlling for individuals' own LMX. • Testing the role of perceived team conflict as a mediator.

Table A1 (cont'd)

Hooper & R. Martin (2008)		• LMX was reported by followers.	• Team conflict mediates the relationships between LMX variability and job satisfaction and wellbeing.	
Mayer (2008)	• Examining the influences of group mean LMX and LMX differentiation on individuals' interactional justice perception at the cross level.	• Using the LMX-7 measure (5 point Likert scale), LMX differentiation was calculated by SD. • LMX was reported by followers.	• Group mean LMX is positively related to interactional justice perceptions, after controlling individual LMX. • LMX differentiation is negatively related to interactional justice perceptions, after controlling individual LMX. • The relationship between LMX differentiation and interactional justice is significantly negative only when group mean LMX is low than high.	• Demonstrating that group mean LMX and LMX differentiation have direct and joint effects on individuals' interactional justice perceptions after controlling individual LMX.
Henderson et al. (2009)	• Examining how individual LMX and LMX differentiation at the group level influence employees' perception of psychological contract fulfillment and associated behaviors.	• Using the LMX-7 measure (7 point Likert scale), LMX differentiation was calculated by within group variance. • Relative LMX (RLMX) score is a within-group deviation score. • LMX was reported by followers.	• Relative LMX (RLMX) is positively associated with psychological contract fulfillment after controlling for individual LMX. • The positive relationship between RLMX and psychological contract fulfillment is stronger when LMX differentiation is high than low.	• Providing empirical evidence showing that LMX operates at multiple levels (individual, individual-within-group, and group levels). • Demonstrating that LMX works in comparison to others' LMX at the individual level.

Table A1 (cont'd)

Henderson et al. (2009)			• Psychological contract fulfillment mediates the relationships between RLMX and in role performance and sportsmanship after controlling for individual LMX.	
Nishii & Mayer (2009)	• Examining group mean LMX and LMX differentiation as moderators of the diversity-turnover relationship at the group level.	• Using the LMX-7 measure (5 point Likert scale), LMX differentiation was calculated by SD. • LMX was reported by followers – they described that "it is a follower's own view of whether he or she is involved in a high-quality relationships with the manager that drives subjective perceptions about status, inclusion, and worth within the group" (p. 1422).	• LMX differentiation is not significantly related to turnover. • When LMX differentiation is high, the relationship between demographic diversity and turnover is positive. • When LMX differentiation is low, the relationship between tenure diversity and turnover is negative. • When LMX differentiation is low around a high LMX mean, the relationship between demographic diversity and turnover is negative (best scenario), whereas when LMX differentiation is high around a high LMX mean, the relationship between demographic diversity and turnover is strongly positive (worst scenario).	• Demonstrating the moderating role of group level LMX in the diversity-turnover relationship. • Group mean LMX and LMX differentiation jointly influence the diversity-turnover relationship.

Table A1 (cont'd)

M. Stewart & Johnson (2009)	• Examining group mean LMX and LMX differentiation as moderators of the diversity-performance relationship at the group level.	• Using the LMX-7 measure (4 point Likert scale), LMX differentiation was calculated by SD. • LMX was reported by followers. • An experimental study of US military.	• For groups with high mean LMX and gender heterogeneity, LMX differentiation increases group performance.	• Demonstrating that LMX quality at the group level is to be considered to better understand the group diversity-performance relationship.
Williams et al. (2009)	• Exploring group-level LMX as an antecedent of team-level career mentoring.	• Using the LMX-7 measure (4 point Likert scale), LMX differentiation was calculated by within group variance (but just as a control variable). • LMX was rated by followers.	• Group mean LMX is positively related to team-level career mentoring and individual team-source learning.	• Demonstrating that the relationship quality at the group level affects team interactions that support and encourage team-level career mentoring.
Chae & Lee (2010)	• Examining curvilinear relationship between LMX differentiation and group performance and group diversity as its moderator at the group level.	• Using the LMX-7 measure (5 point Likert scale), LMX differentiation was calculated by coefficient of variance (CV). • LMX was reported by followers.	• LMX differentiation has an inverted U-shaped relationship with group performance. • As age diversity increases, the positive influence of LMX differentiation gets stronger whereas its negative influence gets weaker. • As educational diversity increases, the positive influence of LMX differentiation gets weaker whereas its negative influence gets stronger. • As affective commitment diversity increases, the positive influence of LMX differentiation gets stronger whereas its negative influence gets weaker.	• Demonstrating that LMX differentiation has both positive and negative influences on group performance depending on the extent of differentiating group members. • Emphasizing the importance of contextual factors (group diversity) in group leader functioning.

Table A1 (cont'd)

Erdogan & Bauer (2010)	• Integrating LMX differentiation and justice research by examining the moderating role of justice climate in the relationship between LMX differentiation and attitudes and coworker relationship.	• Using the LMX-7 measure (7 point Likert scale), LMX differentiation was calculated by within group variance. • LMX was reported by followers.	• LMX differentiation is significantly and negatively related to job satisfaction only when procedural justice climate is low. • LMX differentiation is significantly and negatively related to organizational commitment only when procedural justice climate is low and distributive justice climate is low. • LMX differentiation is significantly and negatively related to satisfaction with coworkers only when procedural justice climate is low and distributive justice climate is low. • LMX differentiation is significantly and positively related to helping behaviors only when distributive justice climate is high.	• Testing whether the outcomes of LMX differentiation depend on fairness climate.
Liao et al. (2010)	• Examining LMX differentiation as a moderator of the relationships between LMX and self-efficacy and creativity.	• Using the LMX-7 measure (7 point Likert scale), LMX differentiation was calculated by within group variance. • LMX was reported by followers.	• LMX is significantly and positively related to self-efficacy only when LMX differentiation is low. • LMX is significantly and positively related to creativity via self-efficacy only when LMX differentiation is low.	• Testing that LMX quality interacts with LMX differentiation in predicting self-efficacy and creativity.

APPENDIX B

SURVEY ITEMS

Member-rated leader-member exchange (Source: members at time 1)

1. I like my supervisor very much as a person.
2. My supervisor is the kind of person one would like to have as a friend.
3. My supervisor is a lot of fun to work with.
4. My supervisor defends my work actions to a superior, even without complete knowledge of the issue in question.
5. My supervisor would come to my defense if I were "attacked" by others.
6. My supervisor would defend me to others in the organization if I made an honest mistake.
7. I do work for my supervisor that goes beyond what is specified in my job description.
8. I am willing to apply extra efforts, beyond those normally required, to meet my supervisor's work goals.
9. I do not mind working my hardest for my supervisor.
10. I am impressed with my supervisor's knowledge of his/her job.
11. I respect my supervisor's knowledge of and competence on the job.
12. I admire my supervisor's professional skills.

Leader-rated leader-member exchange (Source: members at time 1)

1. I like my subordinate very much as a person.
2. My subordinate is the kind of person one would like to have as a friend.
3. My subordinate is a lot of fun to work with.
4. My subordinate defends my decisions, even without complete knowledge of the issue in question.
5. My subordinate would come to my defence if I were 'attacked' by others.
6. My subordinate would defend me to others in the organization if I made an honest mistake.
7. I provide support and resources for my subordinate that goes beyond what is specified in my job description.
8. I am willing to apply extra efforts, beyond those normally required, to help my subordinate meet his or her work goals.
9. I do not mind working my hardest for my subordinate.
10. I am impressed with my subordinate's knowledge of his/her job.
11. I respect my subordinate's knowledge of and competence on the job.
12. I admire my subordinate's professional skills.

Group role clarity (Source: Members at time 1)

1. Members of my team feel secure about how much authority we have.
2. Clear, planned goals and objectives exist for my team.

3. Members of my group know that we have divided our time properly.
4. Team members know what his/her responsibilities are.
5. Our group members know exactly what is expected of us.
6. Explanation is clear of what has to be done.

Group coordination (Source: Members at time 1)

1. Our team worked together in a well-coordinated fashion.
2. Our team had very few misunderstandings about what to do.
3. Our team needed to backtrack and start over a lot. (R)
4. We accomplished the task smoothly and efficiently.
5. There was much confusion about how we would accomplish the task. (R)

Relationship conflict (Source: Members at time 1)

1. How much relationship tension is there in your work group?
2. How often do people get angry while working in your group?
3. How much emotional conflict is there in your work group?

Group potency (Source: Members at time 1)

1. Members of my team have great confidence that the team can perform effectively.
2. My team can take on nearly any task and complete it.
3. My team has a lot of team spirit.

Power distance orientation (Source: Members at time 1)

1. In most situations managers should make decisions without consulting their subordinates.
2. In work-related matters, managers have a right to expect obedience from their subordinates.
3. Employees who often question authority sometime keep their managers from being effective.
4. Once a top-level executive makes a decision, people working for the company should not question it.
5. Employees should not express disagreements with their managers.
6. Managers should be able to make the right decisions without consulting with others.
7. Managers who let their employees participate in decisions lose power.
8. A company's rules should not be broken, not even when the employee thinks it is in the company's best interest.

Leader prototypicality (Source: Members at time 1)

1. This leader is a good example of the kind of people that are member of my team.
2. This leader represents what is characteristic about the team.
3. This leader is representative of my team.
4. This leader stands for what people in my team have in common.
5. This leader is very similar to most people in my team.
6. This leader is an embodiment of our group norms.

Leader-leader exchange (Source: Leaders at time 1)

1. I like my supervisor very much as a person.
2. My supervisor is the kind of person one would like to have as a friend.
3. My supervisor is a lot of fun to work with.
4. My supervisor defends my work actions to a superior, even without complete knowledge of the issue in question.
5. My supervisor would come to my defense if I were "attacked" by others.
6. My supervisor would defend me to others in the organization if I made an honest mistake.
7. I do work for my supervisor that goes beyond what is specified in my job description.
8. I am willing to apply extra efforts, beyond those normally required, to meet my supervisor's work goals.
9. I do not mind working my hardest for my supervisor.
10. I am impressed with my supervisor's knowledge of his/her job.
11. I respect my supervisor's knowledge of and competence on the job.
12. I admire my supervisor's professional skills.

Distributed expertise (Source: Leaders at time 1)

1. Each team member has specialized knowledge of some aspect of our project.
2. Different team members are responsible for expertise in different areas.
3. The specialized knowledge of several different team members was needed to complete the project deliverables.
4. I know which team members have expertise in specific areas.

Group performance (Source: Upper-level managers at time 2)

1. This team is very competent.
2. This team gets its work done very effectively.
3. This team has performed its job well.

Group viability (Source: Members at time 2)

1. Members of my team care a lot about it, and work together to make it one of the best.
2. Working with team members is an energizing and uplifting experience.
3. There is a lot of unpleasantness among members in the team. (R)
4. Some members in the team do not carry their fair share of the overall workload.(R)
5. Sometimes, one of us refuses to help another team member out. (R)
6. As a team, this work group shows signs of falling apart. (R)
7. Every time we attempt to straighten out a member of the team, whose behavior is not acceptable, things seem to get worse rather than better. (R)

APPENDIX C

CONFIRMATORY FACTOR ANALYSIS RESULTS

Table C1 Standardized Factor Loadings in the 12-factor Model

	I	II	III	IV	V	VI	VII	VIII	VIIII	X	XI	XII
MLMX1	.90											
MLMX2	.79											
MLMX3	.62											
MLMX4	.86											
LLMX1		.91										
LLMX2		.87										
LLMX3		.83										
LLMX4		.75										
PDO1			.83									
PDO2			.93									
LPT1				.92								
LPT2				.93								
GRC1					.83							
GRC2					1.00							
GCD1						.89						
GCD2						.91						
DE1							.65					
DE2							.74					

Table C1 (cont'd)

	I	II	III	IV	V	VI	VII	VIII	VIIII	X	XI	XII
RC1								.90				
RC2								.92				
RC3								.77				
GPT1									.95			
GPT2									.96			
GPT3									.79			
LLX1										.84		
LLX2										.91		
LLX3										.69		
LLX4										.69		
GPF1											.85	
GPF2											.85	
GPF3											.87	
GV1												.77
GV2												1.00

Note. MLMX = member-rated leader-member exchange; LLMX = lead-rated leader-member exchange; PDO = power distance orientation; LPT = leader prototypicality; GRC = group role clarity; GCD = group coordination; DE = distributed expertise; RC = relationship conflict; GPT = group potency; LLX = leader-leader exchange; GPF = group performance; GV = group viability; all factor loadings are significant at $p < .05$ level.

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