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The development of leader–member exchanges: Exploring how personality and performance influence leader and member relationships over time

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ABSTRACT

Scholars have long recognized the importance of leader–member relationships for a host of important outcomes, including satisfaction, performance, and citizenship behaviors. Yet, relatively little research has explored how these relationships develop over time. Using a longitudinal design and growth-curve modeling, we examine the development of leader–member relationships from the initial interaction through the early relationships stages (the first 8 weeks). Results based on 330 student dyads support predictions that leaders form differentiated exchanges with members. We find that team member extraversion and leader agreeableness influence the ratings of relationship quality at the initial interaction whereas leader and member performance influence the development of the relationship over time.

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Considerable research has shown that workplace relationships have a significant impact on important employee attitudes and behaviors. Research has found that positive relationships with coworkers and supervisors are related to lower stress and turnover intentions, increased employee job satisfaction, and increased performance and citizenship behaviors (Gerstner & Day, 1997; Humphrey, Nahrgang, & Morgeson, 2007; Ilies, Nahrgang, & Morgeson, 2007). Furthermore, workplace relationships have been shown to be important in the socialization process of employees (Major, Kozlowski, Chao, & Gardner, 1995). Because individuals' careers involve multiple transitions across organizational boundaries (e.g. Arthur & Rousseau, 1996; Greenhaus, 2003; Hall, 1996), it becomes increasingly important to examine leader–member relationships, which have been suggested to be the most important relationship for assimilating a new employee into an organization (Graen, 1976).

An important question posed by researchers is how leaders and members of a group develop and maintain these effective working relationships (Graen & Scandura, 1987; Graen & Uhl-Bien, 1995). One of the keys to leader–member relationships is to understand how the relationship develops from the initial interaction through the early stages of the relationship (Liden, Wayne, & Stilwell, 1993). This is particularly important as researchers have proposed that early relationship stages are a critical period that determines

subsequent relationship quality (Berlew & Hall, 1966; Dienesch & Liden, 1986; Graen & Cashman, 1975; Graen & Scandura, 1987; Liden & Graen, 1980).

Despite the empirical evidence demonstrating the significant influence of the leader–member relationship in assimilating employees into an organization (Major et al., 1995) and its impact on important outcomes (Gerstner & Day, 1997; Ilies et al., 2007; Wayne, Liden, Kraimer, & Graf, 1999), we know relatively little about how the relationship develops over time. Even less research has examined how the relationship develops from the initial interaction between the leader and member. Instead, the tendency of researchers has been to examine the relationship using cross-sectional designs and established dyads, a key weakness in the empirical research (Gerstner & Day, 1997; Liden, Sparrowe, & Wayne, 1997). Thus, we know little about what influences the early stages of the relationship and if these influences differ over time.

Although the theories supporting the leader–member relationship speculate about the reciprocal influence between leader and member and the importance of both parties in the relationship, this has rarely been examined. In fact, the prevailing practice in existing research has been to examine the relationship solely from the member's perspective (Scandura & Schriesheim, 1994). Given the emphasis on employees managing their own careers (Greenhaus, 2003; Hall, 1996; Sullivan, 1999), viewing the relationship from both perspectives enables the employee to understand the ways in which they influence the quality of the relationship, as well as understand the ways in which their leader influences the relationship's quality.

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We seek to address these gaps in previous research by examining three specific issues related to the development of the relationship between organizational members and their leader. First, we explore the development of leader–member relationships across the first 8 weeks of the relationship from the initial interaction between leader and member through the early stages of the relationship. This allows us to examine the critical early stages of the relationship, in which the leader and member begin to establish their relationship. Furthermore, we expect that there will be variability in the types of relationships leaders develop with their followers, which is a basic tenet of LMX theory. Examining the early stages allows us to understand how quickly differentiated relationships form and the extent to which they evolve and grow over time. Second, rather than focusing only on the team member's perspective of the relationship development (Scandura & Schriesheim, 1994), we also examine leader–member relationships from the leader's perspective. Due to the interpersonal nature of leader–member relationships, it is essential to take into account both parties' perspectives on the relationship as each partner's attributes and behaviors are likely to impact the relationship quality as perceived by their partner (Thibaut & Kelley, 1959). Third, we examine several influences on the quality of leader–member relationships during the early stages of the relationship. We expect personality to be important in the initial interaction, and performance to be important as the relationship develops. This extends previous research by examining the impact of Big Five personality characteristics on relationship quality, which has been rarely examined in previous research (see Bauer, Erdogan, Liden, & Wayne, 2006; Kamdar & Van Dyne, 2007; Phillips & Bedian, 1994 for exceptions) and by examining the impact of performance on changes in the relationship quality.

Development of leader–member relationships

Researchers theorize that leader–member relationships are developed or negotiated over time through a series of interactions or exchanges between leaders and members (Dienesch & Liden, 1986). Drawing from social exchange theory (Blau, 1964; Gouldner, 1960), leader–member exchange theory proposes that leaders form differentiated exchanges with members based on the effort, resources, and support exchanged between the two parties (Dansereau, Graen, & Haga, 1975; Graen & Uhl-Bien, 1995; Liden et al., 1997). Higher-quality leader–member relationships resemble social exchanges in that the exchange extends beyond what is specified in the formal job description (Liden & Graen, 1980; Liden et al., 1997). Because high trust, interaction, support, and rewards characterize higher-quality relationships, there is a perceived obligation on the part of subordinates to reciprocate higher-quality relationships (Dienesch & Liden, 1986). In contrast, similar to pure economic exchanges, lower-quality relationships are limited to exchanges that take place according to the employment contract. These relationships are characterized by low trust, interaction, support, and rewards (Dienesch & Liden, 1986).

It has been suggested that the typical leader–member relationship develops in three stages (Graen & Scandura, 1987), with the early stages critical to the development of the relationship (Dansereau et al., 1975; Graen & Scandura, 1987). The typical relationship begins with the role taking stage, where the leader attempts to discover the relevant talents, motivations, and limits of the member. The leader discovers this by initiating a sent role to the member, who receives the role and reacts. Through the feedback and behavior of the member, the leader evaluates the member and decides whether to initiate another sent role to the member. The relationship then progresses to the role making stage where the nature of the relationship begins to be defined, and finally enters the role

routinization stage where clear mutual understandings and expectations develop and the relationship stabilizes (Graen & Scandura, 1987).

One area of further investigation in leader–member relationships is the nature of the relationship quality over time. Although leaders differentiate between members in terms of higher-quality and lower-quality relationships, both types of relationships will evolve over time. It has been thought that as leaders and members have new and different experiences and learn more about each other, their relationship will evolve and grow (Gerstner & Day, 1997). This suggests that relationships, regardless of whether they are higher-quality or lower-quality, will have a general improvement in relationship quality over time. This has been supported in research on newly formed leader–member dyads. Liden and colleagues (Liden et al., 1993) found that leader and member perceptions of relationship quality increased across time. This leads us to expect that the quality of the relationship will demonstrate a positive rate of change across time.

Research in psychology on the mere exposure effect might help explain this positive rate of change in the quality of the relationship across time. This research demonstrates that repeated exposure to a stimulus will produce more positive attitudes toward the stimulus (Zajonc, 1968). Thus, after multiple interactions, we would expect that both the leader and the member would develop more positive attitudes towards the other individual in the dyad, compared to their initial attitude. Furthermore, in a leader–member relationship, the quality has important implications for one's career such as performance ratings and promotions (Gerstner & Day, 1997; Ilies et al., 2007). This suggests that it is in the best interest of both the leader and member to seek to enhance the quality of the relationship across time.

Based on these arguments, we first expect that within a work group, leaders will form differentiated exchanges with members, such that both higher-quality and lower-quality relationships will exist. Yet we also expect that regardless of whether the relationship is initially viewed as higher-quality or lower-quality, the quality will increase over time until later stages of the relationship where we expect the relationship to plateau or stabilize.

Hypothesis 1. Leaders will form differentiated relationships with members such that both higher-quality and lower-quality relationships will exist within a work group.

Hypothesis 2. The quality of leader–member relationships will increase over time and then stabilize, following a positive, non-linear developmental trajectory.

Influences on relationship development

The preceding hypotheses predict the formation of differentiated leader–member relationships and their developmental pattern over time. The hypotheses do not, however, discuss what determines the quality of the relationship. Although observable individual characteristics may enable members to make a good first impression on leaders, over time, their actual behavior will exert stronger influences on the relationship. Thus, as the relationship develops, behavioral factors, such as performance, will be more important in determining changes in the relationship's quality (Bauer & Green, 1996; Dienesch & Liden, 1986; Graen, 1976; Terborg, 1981).

Personality characteristics and initial interaction

It has been suggested that salient individual characteristics may impact initial interactions and assessments between leaders

and members (Dienesch & Liden, 1986). In the current study, we focus on the personality characteristics of extraversion and agreeableness for two reasons. First, these characteristics have been found to be influential for social interactions (Asendorpf & Wilpers, 1998; Feldman Barrett & Pietromonaco, 1997) and are fundamentally interpersonal in nature (Costa & McCrae, 1992). Second, empirical research shows that extraversion and agreeableness are salient characteristics which can be reliably judged by strangers within a relatively short amount of time (Carney, Colvin, & Hall, 2007; Gifford, 1991).

Traditional theories of leadership have focused primarily on the characteristics of the leader (e.g., Judge, Bono, Ilies, & Gerhardt, 2002), whereas most leader–member exchange studies have examined how member characteristics affect leader perceptions of the member (Liden et al., 1997). Yet, we believe it is important to examine both the leader's and member's personality, because the quality of a social relationship is a function of the personality of both participants (Asendorpf & Wilpers, 1998). Therefore, we will test the influence of both the leader and member personality characteristics on the quality of the relationship.

As a socially relevant personality dimension (Costa & McCrae, 1992), we expect extraversion to be an important factor in the initial interaction between leader and member. Extraverted individuals are described as sociable, assertive, and talkative (Costa & McCrae, 1988; McCrae & Costa, 1987). Furthermore, extraverted individuals are characterized as seeking out interaction opportunities, generally liking other people, and being gregarious (Costa & McCrae, 1992). Due to the social nature of the initial interaction between leader and member, we expect that extraverted individuals will seek out the opportunity to interact with their dyadic partner. Indeed, research finds that extraverts are more likely than introverts to seek social situations (Diener, Larsen, & Emmons, 1984). Thus, extraverted leaders are more likely to start up conversations with their members in an attempt to get to know the members, and are also more likely to be assertive in initiating sent roles to the member in order to discover the member's talents, motivations, and limits. Extraverted members will also seek out interaction opportunities with their leaders not only to gain satisfaction from interacting, but also to enhance the possibility of receiving a sent role from the leader (Phillips & Bedian, 1994).

In addition, due to their enhanced social skills (McCrae & Costa, 1999), we expect extraverted individuals to be more successful in their interactions with their partners. Research supports the success of extroverts in forming social relationships in that extraverted individuals have been found to have a higher number of peer relationships (Asendorpf & Wilpers, 1998). Likewise, individuals high in extraversion report interacting with more unique partners (Feldman Barrett & Pietromonaco, 1997). Due to their social and outgoing nature, extraverted leaders and members will be perceived positively by their partner.

Finally, we expect extraversion to play a key role in determining initial assessments of leader–member relationship quality due to the positive relationship it demonstrates with leader emergence (Judge et al., 2002). Individuals who emerge as leaders in leaderless groups are active, assertive, and energetic, which are also indicators of extraversion (Gough, 1988). Furthermore, extraversion is thought to be related to being perceived as leaderlike (Hogan, Curphy, & Hogan, 1994). Finally, empirical research has found a positive relationship between extraversion and LMX ($r = .26, p < .05$; Phillips & Bedian, 1994). Thus, we propose that both leader and member extraversion will be positively related to their partner's perception of the relationship at the initial interaction.

Hypothesis 3. Leader extraversion will be positively related to the member's perception of relationship quality at the initial interaction.

Hypothesis 4. Member extraversion will be positively related to the leader's perception of relationship quality at the initial interaction.

As another key interpersonal dimension of personality (Costa & McCrae, 1992), agreeableness is also likely to be important early in the leader–member relationship. Agreeable individuals are described as good natured, trusting, and cooperative (Costa et al., 1988; McCrae et al., 1987). Because trust is an important component of higher-quality leader–member relationships (Graen & Uhl-Bien, 1995; Liden et al., 1997), even after little interaction, we would expect that agreeable leaders and members will place more trust in the relationship. This would be due to their general propensity to trust others. The higher level of trust in the relationship will result in a higher-quality relationship with the partner.

In addition, the leader–member relationship is a cooperative relationship where the two parties must work together. Agreeable individuals are more likely to work cooperatively with others (Hogan & Holland, 2003; LePine & Van Dyne, 2001) due to their helpful nature (Neuman & Wright, 1999). Thus, at the initial interaction, agreeable leaders are more likely to initiate sent roles in an effort to work cooperatively with members. Likewise, agreeable members are more likely to accept the sent roles and be more helpful to their leader, which will increase the quality of the relationship. Indeed, recent empirical research has found a positive relationship between agreeableness and LMX ($r = .24, p < .01$; Kamdar & Van Dyne, 2007). Thus, we propose that both leader and member agreeableness will be positively related to their partner's perception of the relationship at the initial interaction.

Hypothesis 5. Leader agreeableness will be positively related to the member's perception of relationship quality at the initial interaction.

Hypothesis 6. Member agreeableness will be positively related to the leader's perception of relationship quality at the initial interaction.

Behavioral influences on relationship quality development

Following initial interactions, the behavior of leaders and members become important influences on relationship development. In the current study, we investigate the influence of performance on the quality of the relationship. A key component in relationship development is the relationship testing that occurs through sent roles and responses. In the role taking phase, the leader sends the roles and evaluates the member's behavior (Graen & Scandura, 1987). If the member fulfills the formal role requirements, the leader will continue to send roles to the member and the quality of the relationship will continue to build. If the member does not fulfill the formal role requirements, the leader will be reluctant to send another role, and the quality of the relationship will suffer.

As the leader and member progress to the role making phase, both the leader and member can initiate sent roles (Graen & Scandura, 1987). Thus, we expect that the performance of the leader will also play a key role in the development of the relationship. That is, a member will continue to build more trust and support for a leader that performs well. For both leaders and members there is reciprocity of trust in that when each individual performs well, they trust they will be rewarded with a stronger relationship (Bauer & Green, 1996). In addition, a leader's performance will also impact the amount of respect a member has for the leader, which is an important dimension of LMX (Liden & Maslyn, 1998). Therefore, we expect that the performance of the leader and the member will influence changes in the quality of the relationship, such that performance will be positively related to changes in the relationship.

Research supports the positive relationship between performance and leader–member relationship quality. For example, Liden and colleagues found that member performance was positively related to leader LMX in the early stages of the relationship (Liden et al., 1993). Similarly, in their meta-analytic summary of the LMX literature, Gerstner and Day (1997) found a positive relationship ($\rho = .55$) between leader ratings of the relationship's quality and performance (as rated by leaders). They also found a positive relationship ($\rho = .30$) between member ratings of the relationship's quality and performance (as rated by leaders). In the current study, we seek to go beyond this past research by examining the extent to which member and leader performance predicts changes in relationship quality. There has been relatively little research examining the impact of leader performance (as rated by members) on relationship quality as most of the research has been cross-sectional in nature. The two studies which have examined the impact of leader performance on relationship quality found a positive relationship between leader performance and relationship quality (Deluga, 1998; Varma, Srinivas, & Stroh, 2005).

Hypothesis 7. Leader performance will be positively related to change in relationship quality from the member's perspective.

Hypothesis 8. Member performance will be positively related to change in relationship quality from the leader's perspective.

Method

Participants and setting

The study was conducted in an experiential class setting at a large Midwestern United States university. The data used to test the hypotheses is part of a larger data collection effort. Of the member-related variables included in the current study, none have been included in any other report with the exception of member performance (in addition, the current sample contains 125 new member responses). None of the leader-related variables have been included in other reports. As such, this study includes completely new data from 194 participants, thus representing a considerably larger sample than previous research that included the measure of member performance (DeRue & Morgeson, 2007; Ilies, Wagner, & Morgeson, 2007).

In the class, a master of business administration student leads a team of 4–6 undergraduate students. The class was designed to model the organizational context in that the leader is responsible for all aspects of team formation, development, and performance across a fifteen week semester. Similar to entry-level managers forming their first team, the leader was responsible for selecting and recruiting team members, training and developing team members, and leading them throughout the semester. Teams and leaders had extensive interaction inside and outside the class setting. Finally, teams and leaders compete with other teams in 12 highly interactive team-based computer simulations. Like leaders in organizational settings, the leaders in the current study were formally responsible for all aspects of team functioning, and at the end of the course leaders gave performance appraisal feedback to each team member.

We believe the current study design offers several advantages to studying the development of leader–member relationships. First, we were able to assess leader–member relationships from the initial interactions through the early stages of the relationship. During these early stages, the leaders and members worked together intensively which allows us to assess how quickly differentiated exchanges develop and what influences their development. Second, given our focus on understanding the

influences on the development of the relationship, the study design also allows us to control for differences in tasks, tenure, and group size which might otherwise influence the development of the relationship.

Participants included 69 leaders and 330 team members. Thus, there were 330 leader–member dyads. The average age of the leaders was 28 years ($SD = 3.5$ years) and average work experience was 4.5 years ($SD = 3.0$ years). Sixty-one percent of the leaders were male and 71 percent were Caucasian. The average age of the members was 22 years ($SD = 2.7$ years). Fifty-seven percent of the members were male and 85 percent were Caucasian.

Nature of the team task

The team task in this study was a modified version of the Distributed Dynamic Decision-Making (DDD) Simulation developed for the Department of Defense for research and training purposes (for a complete description, see Hollenbeck et al., 2002; Miller, Young, Kleinman, & Serfaty, 1998). The DDD simulation is a command-and-control simulation in which team members work interdependently to protect a restricted zone. In order to protect this restricted zone, team members use military assets to monitor and disable friendly and enemy targets. Participants in this study competed with other teams on 12 simulations, each of which lasted 30 min. The simulation environment varied over time such that there were changes in the number and types of targets, the direction of those targets, and the configuration of assets possessed by the team members. Each team works together in the same room where they are free to communicate with each other. Most teams engaged in high levels of communication across all 12 computer simulations. To ensure adequate motivation, performance on the simulations had a large impact on the participants' grades (20% of total grade).

In terms of performance, members worked interdependently to detect, identify, and disable enemy targets while avoiding disabling friendly targets. Thus, each team member had to work independently to make decisions and take actions, but also had to work with other team members to coordinate plans and actions. In terms of their performance, team leaders were responsible for coordinating and directing the team's efforts, motivating and inspiring the team, and clarifying roles and objectives.

Measures

Throughout the course of the semester, we collected data on leader and member individual characteristics, ratings of relationship quality, and performance ratings. Each team met during a scheduled class time on a specific day and time. Teams continued to meet at this same scheduled time across the 8 weeks of data collection. During the team's first week of interaction (i.e., the first time they interacted as a team), we collected leader and member ratings of the relationship's quality. In the current study, this time period will be considered Time 0, and subsequent weeks of data collection will be labeled as Time 1, 2, and so on.

Extraversion and agreeableness

Extraversion and agreeableness were measured at the beginning of the semester (i.e., five weeks prior to the initial leader–member interaction) using 12 items taken from the revised NEO personality inventory for each trait (NEO-PI-R; Costa & McCrae, 1992). For this study, the coefficient alpha reliability for extraversion was .75 and .83 for leaders and members, respectively. Coefficient alpha for agreeableness was .71 and .75 for leaders and members, respectively.

Leader–member exchange (LMX)

The quality of the leader–member relationship was assessed using the LMX-7 scale (Graen & Uhl-Bien, 1995). Both leaders and members rated the quality of the relationship at Time 0, 4, 6, and 8. Example items for leaders included “I recognize this team member’s potential” and “He/she would characterize our working relationship as effective.” Example items for members included “This team leader recognizes my potential” and “This team leader and I have an extremely effective working relationship.” Coefficient alpha ranged from .86 to .91 for leaders and .89 to .95 for members.

Leader performance

Leader performance was rated by the member using 4 items adapted from Liden et al. (1993). These items included “This team leader’s performance is very high,” “This team leader is very effective,” “This team leader performs very well,” and “This team leader’s overall effectiveness is excellent.” The member’s ratings of performance utilized in the current study were collected at Time 3, 5, and 7. Coefficient alpha ranged from .95 to .96.

Member performance

Member performance was assessed by the leader using four items from Liden et al.’s (1993) performance measure. Example items included “The overall level of performance that I have observed for this team member is outstanding” and “My personal view of this team member is that he or she is very effective.” The leader’s ratings of member’s performance utilized in the current study were collected at Time 3, 5, and 7. Coefficient alpha ranged from .92 to .93.

Analyses

To analyze the nature of change in leader–member relationship quality and the predictors of the developmental trajectory over time, we followed procedures in the analysis of longitudinal dyadic data (see Kenny, Kashy, & Cook, 2006; Kurdek, 1998; Raudenbush, Brennan, & Barnett, 1995; Singer & Willett, 2003). We analyzed the data by means of a three-level hierarchical linear model (HLM; Raudenbush & Byrk, 2002). Level 1 captured the within-dyad and intraindividual variability in the leader–member relationship and member and leader performance across time, whereas Level 2 captured interindividual variability (i.e., between-dyad and between-member). Specifically, Level 2 included the member’s personality traits whereas Level 3 captured intergroup variability (i.e., between-team and between-leader) and specifically included the leaders’ personality traits.

To model the development of the leader–member relationship, we used growth-curve analysis. Two of the central issues in growth-curve analysis include the functional form of the growth curve (i.e., the trajectory) and the definition of time zero (Kenny et al., 2006; Singer & Willett, 2003). In terms of defining time zero, we centered the relationship quality such that the intercept represented the initial interaction between leader and member. The linear and quadratic components were then defined by the number of weeks that had elapsed since the initial interaction (see Kenny et al., 2006; Singer & Willett, 2003). With a quadratic growth-curve analysis, we were able to examine the level of relationship quality at the initial interaction (intercept), the rate of change in the relationship quality over time (e.g., a linear increase), and the acceleration/deceleration of change in the relationship quality over time (e.g., a curvilinear pattern such that relationship quality increases from the initial interaction and then stabilizes).

To investigate whether or not leaders form differentiated exchanges with members of their team (Hypothesis 1), we examined whether substantial within-team variance existed in LMX ratings. This was examined by estimating a null model where we parti-

tioned leader–member relationship quality from both the leader and member perspectives at Time 0, 4, 6, and 8 into within- and between-team variance. We also compared the fixed and random models of the growth-curve model using deviance statistics. For a given set of data, deviance statistics quantify how much worse the current model is in comparison to the best possible model. Models with large deviance statistics are worse than models with small deviance statistics. Deviance statistics are used to compare the goodness-of-fit of estimated models (Singer & Willett, 2003).

To investigate Hypothesis 1 using deviance statistics, we tested three models in which member and leader intercepts, member and leader linear slopes, and member and leader quadratic slopes were estimated and the parameter variances were either treated as random or set to zero in order to compare the goodness-of-fit for the models. To test the hypotheses regarding the influence of individual characteristics on the initial interaction, we included member personality traits as level 2 predictors of the leader’s intercept, and leader personality traits as level 3 predictors of the member’s intercept. We first investigated the influence of member and leader extraversion (Hypotheses 3 and 4) in the same model. We then investigated the influence of member and leader agreeableness (Hypotheses 5 and 6) in a separate model. When entered into the models, extraversion and agreeableness were centered around the grand mean.

To investigate behavioral influences on the quality of the relationship across time, we entered leader performance and member performance as level-1 time-varying predictors of member LMX and leader LMX, respectively. Thus, time 3 performance predicted time 4 LMX, time 5 performance predicted time 6 LMX, and time 7 performance predicted time 8 LMX. For Hypotheses 7 and 8, we tested the influence of leader and member performance as level-1 time-varying predictors of member LMX and leader LMX, respectively. When entered into the models, leader and member performance were centered around the grand mean.

Results

Table 1 provides the descriptive statistics, correlations, and scale reliabilities for the study variables. Member extraversion was significantly related to leaders’ ratings of LMX, and leader agreeableness was significantly related to members’ ratings of LMX. In general, the mean of both member and leader ratings of LMX increased from Time 0 to Time 8. Although member ratings slightly decreased from Time 6 to Time 8, overall, the means indicate a positive trend across time. One can also see that across time, member and leader reports of LMX were positively correlated and the correlation became more positive and statistically significant, changing from $r = .09$ (*n.s.*) at Time 0 to $r = .27$ ($p < .01$) at Time 8, which demonstrates increasing agreement in the leader–member perspectives across time. Table 1 also shows that both leader and member performance were positively correlated with leader and member reports of LMX.

Relationship differentiation and developmental trajectory

Hypothesis 1 suggested that leaders would develop both high-quality and lower-quality relationships with members in their team. Results from the null model which partitioned the variance in the quality of the leader–member relationships show that when assessed from the leader’s perspective, within-team variance in LMX scores increased from 22% at Time 0 to 32% at Time 8. This indicates that leaders do develop different quality relationships with members, and the extent to which their relationship with different subordinates is distinct increases over time. Analyses of member LMX indicate that within-team variance in LMX scores

Table 1
Descriptive statistics and correlations

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
Leader extraversion	3.93	.40	(.75)											
Member extraversion	3.83	.53	.11*	(.83)										
Leader agreeableness	3.96	.40	.34**	-.01	(.71)									
Member agreeableness	3.92	.47	.13*	.33**	-.01	(.75)								
Leader LMX–Time 0	3.72	.58	.23**	.10	-.04	.01	(.91)							
Leader LMX–Time 4	4.19	.48	.34**	.13*	.05	.04	.58**	(.88)						
Leader LMX–Time 6	4.24	.46	.35**	.19**	.22**	.06	.32**	.63**	(.86)					
Leader LMX–Time 8	4.27	.49	.34**	.18**	.20**	.04	.39**	.63**	.57**	(.88)				
Member LMX–Time 0	3.94	.52	.07	.20**	.12*	.15**	.09	.10	.12	.11	(.89)			
Member LMX–Time 4	4.24	.55	.10	.16**	.11*	.06	.18**	.22**	.21**	.18**	.42**	(.92)		
Member LMX–Time 6	4.31	.55	.11*	.21**	.12*	.09	.17**	.21**	.26**	.23**	.42**	.72**	(.94)	
Member LMX–Time 8	4.25	.70	.09	.15**	.08	.06	.17**	.16**	.21**	.27**	.33**	.54**	.68**	(.95)
Leader performance–Time 3	4.44	.58	.01	.10	-.04	.13*	.04	.08	.04	.04	.37**	.57**	.53**	.36**
Leader performance–Time 5	4.28	.65	.00	.03	.13*	.04	.02	.12*	.14*	.15*	.30**	.58**	.58**	.53**
Leader performance–Time 7	4.25	.68	.03	.01	.14*	.06	.11	.17**	.18**	.17**	.19**	.52**	.62**	.55**
Member performance–Time 3	4.12	.71	.17**	.18**	.06	.03	.34**	.46**	.43**	.41**	.08	.18**	.21**	.28**
Member performance–Time 5	4.14	.72	.09	.22**	.05	-.05	.24**	.46**	.45**	.41**	.11	.21**	.24**	.26**
Member performance–Time 7	4.11	.77	.16**	.22**	-.05	-.05	.23**	.49**	.57**	.54**	.10	.27**	.29**	.36**
Variable			13	14	15	16	17	18						
Leader performance–Time 3			(.95)											
Leader Performance – Time 5			.51**	(.95)										
Leader Performance – Time 7			.35**	.57**	(.96)									
Member Performance – Time 3			.07	.15*	.20**	(.92)								
Member Performance – Time 5			.04	.19**	.13*	.58**	(.93)							
Member Performance – Time 7			.10	.21**	.22**	.59**	.72**	(.93)						

Note. Scale reliabilities (Cronbach's alphas) appear on the diagonal. N ranges from 257–330. LMX = leader–member exchange.

* $p < .05$.

** $p < .01$.

was 89% at Time 0 and 78% at Time 8. This indicates that members perceive they each have their own unique relationship, or different quality relationship, with the same leader.

Results comparing the deviance statistics for the fixed and random coefficients of the growth-curve models found that the model in which member and leader intercepts, member and leader linear slopes, and member and leader quadratic slopes were estimated and the parameter variances were treated as random was the best fit for the data, indicating that there was residual variability in LMX. The deviance statistic for this model was 2390.39 ($df = 49$). In contrast, the model in which the variances for the leader intercept, leader linear slope, and leader quadratic slope were set to zero, and the variances for the member intercept, member linear slope, and member quadratic slope were treated as random had a deviance statistic of 3630.54 ($df = 19$). The model in which the variances for the member intercept, member linear slope, and member quadratic slope were set to zero, and the variances for the leader intercept, leader linear slope, and leader quadratic slope were treated as random had a deviance statistic of 3560.98 ($df = 19$). Both of these models show a significant decline from the full random model ($\Delta\chi^2 = 1240.15$, $df = 30$, $p < .01$; $\Delta\chi^2 = 1170.59$, $df = 30$, $p < .01$; respectively). We can conclude from these analyses that there is within-team variability in LMX, which supports Hypothesis 1. In other words, differentiated exchanges develop between leaders and members within a team.

In Hypothesis 2, we hypothesized that the quality of leader member relationships would increase over time and then stabilize, following a positive, non-linear development. Results examining the developmental trajectory of the leader–member relationship for both leaders and members can be seen in Table 2. The six parameters estimates were all statistically different from zero. In this model, the leader intercept, leader linear slope, and leader quadratic slope did not have significant level-2 random variation. Thus, the variances at level-2 were set to zero. The deviance statistic for this model was 2486.08 ($df = 34$). The form of the average developmental trajectories for leaders and members can be seen

in Fig. 1, which demonstrates that the average trajectory of both leader and member increase over time and then plateau, or stabilize. Thus, Hypothesis 2 is supported. This suggests that leader–member relationships develop fairly quickly and remain stable after they have formed (Dienesch & Liden, 1986; Graen & Cashman, 1975; Liden & Graen, 1980). Leader and member's ratings of LMX also grow closer over time until at Time 8 the leader and member's ratings of LMX are essentially the same. Thus, across time, the leader and member ratings of LMX become more aligned.²

Influence of leader and member characteristics and behaviors

Hypothesis 3 suggested that leader extraversion would be positively related to the member's perception of the relationship at the initial interaction and Hypothesis 4 suggested that member extraversion would be positively related to the leader's perception of the relationship at the initial interaction. Results of the analysis can be seen in Table 3. Leader extraversion was not significantly related to member's perceptions of the relationship at the initial interaction (i.e., member intercept), thus, Hypothesis 3 was not supported. As hypothesized, member extraversion was significantly related to the leader's perceptions of the relationship at the initial interaction (i.e., leader intercept). The estimated influence for member extraversion on the leader's perception of the relationship at the initial interaction was positive ($b = .07$, $p < .01$). Thus, Hypothesis 4 was supported. The deviance statistic for this model was 2468.14 ($df = 36$). This model shows a significant improvement from the trajectory model ($\Delta\chi^2 = 17.94$, $df = 2$,

² We also conducted a supplemental analysis related to the estimated growth curve model (Hypothesis 2). Because the first and second measurements were made four weeks apart (where the subsequent measurements were two weeks apart), there may have been an initial drop in LMX quality during this four week period. Fortunately, we do have member LMX ratings at these “missing” time periods (i.e., at Time 1, 3, 5, and 7). We examined this data and estimated a growth curve and found the same positive, nonlinear trend for members as the trend shown in Fig. 1.

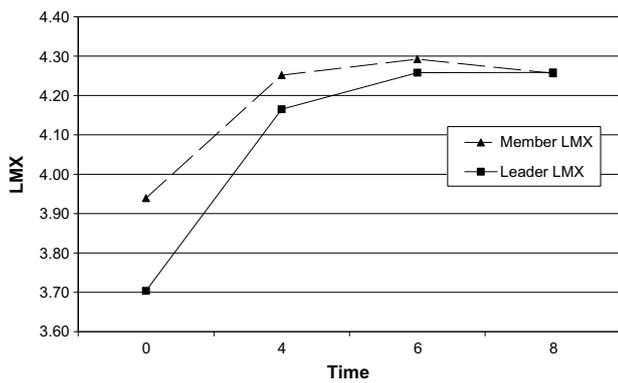


Fig. 1. Trajectory of leader and member relationship quality across early stages of relationship.

$p < .01$).

Hypothesis 5 suggested that leader agreeableness would be positively related to the member's perception of the relationship at the initial interaction and Hypothesis 6 suggested that member agreeableness would be positively related to the leader's perception of the relationship at the initial interaction. Results of the analysis can be seen in Table 3. As expected, leader agreeableness did have a significant relationship with the member's perception of the relationship at the initial interaction (i.e., member intercept; $b = .12$, $p < .05$). The results indicated that member agreeableness was not significantly related to the leader's perception of the relationship (i.e., leader intercept). The deviance statistic for this model was 2482.55 ($df = 36$). Although this model shows an improvement from the trajectory model, the difference is not statistically significant ($\Delta\chi^2 = 3.53$, $df = 2$, $n.s.$). The pattern of results suggests support for Hypothesis 5 and no support for Hypothesis 6.³

Hypotheses 7 and 8 posited that leader performance would be positively related to the change in member perceptions of LMX, and member performance would be positively related to the change in leader perceptions of LMX, respectively. Results of this analysis can be found in Model 1 in Table 4. As hypothesized, member performance significantly predicted the change in the quality of leader LMX across time ($b = .20$, $p < .01$). Likewise, leader performance significantly predicted the change in the quality of member LMX across time ($b = .29$, $p < .01$). Thus, Hypotheses 7 and 8 were supported. As also shown in Table 4, the linear and quadratic slopes for leaders became non-significant, whereas the linear slope for members became less significant and the quadratic

³ We also conducted supplemental analyses related to the influence of other Big Five characteristics on relationship quality at the initial interaction and to the influence of personality on the quality of LMX over time. First, we investigated whether or not other Big Five personality characteristics were correlated with relationship quality at the initial interaction. We found that member conscientiousness and member emotional stability were both related to relationship quality at the initial interaction. Thus, we performed a supplemental analysis where we controlled for these two variables when testing Hypotheses 3–6. We found that member extraversion remained significantly related to the leader's perception of relationship quality at the initial interaction. Likewise, leader agreeableness remained significantly related to the member's perception of relationship quality at the initial interaction. In Hypotheses 3–6, we investigated the influence of personality on the quality of LMX at the initial interaction. Because these analyses did not examine whether personality influences later judgments of LMX, we investigated the influence of personality on the quality of LMX over time. Although personality influences the quality of LMX at the initial interaction (as reported in Hypotheses 3–6), personality does not influence the development of the relationship across time. This is consistent with LMX theory which suggests that salient, individual characteristics will influence the initial interaction, whereas behaviors will influence later stages of the relationship (Dienesch & Liden, 1986). As personality did not influence the development of the relationship across time, we did not include it as a control variable when investigating the influence of performance (i.e., Hypotheses 7 and 8).

Table 2

Parameters estimates for leader–member relationship quality

	Fixed effects estimates		
	Coefficient	SE	t
<i>Leader</i>			
Intercept	3.71	0.07	56.99**
Linear	0.16	0.02	7.38**
Quadratic	−0.01	0.00	−4.88**
<i>Member</i>			
Intercept	3.94	0.04	110.56**
Linear	0.12	0.02	7.61**
Quadratic	−0.01	0.00	−5.27**
<i>Goodness-of-fit</i>			
Deviance			2486.08
df			34

** $p < .01$, one-tailed.

Table 3

Estimates of personality influences on leader–member relationship quality

	Extraversion		Agreeableness	
	H3: Leader coefficient (SE)	H4: Member coefficient (SE)	H5: Leader coefficient (SE)	H6: Member Coefficient (SE)
<i>Leader</i>				
Intercept		0.07** (0.02)		0.02 (0.02)
<i>Member</i>				
Intercept	0.06 (0.07)		0.12* (0.07)	
<i>Goodness-of-fit</i>				
Deviance			2468.14	2482.55
Δ				

Deviance

17.94**

3.53 df

36

36 $p < .05$, one-tailed.

** $p < .01$, one-tailed.

slope for members became non-significant. The slope parameters can be interpreted as conditional rates of change in LMX, controlling for the effects of the time-varying predictors of member performance and leader performance. Thus, in the presence of performance, time is no longer a significant predictor (or is a less significant predictor) of LMX quality. In other words, the trajectory of LMX quality over time excluding the initial interaction is due to changes in member performance and leader performance. The deviance statistic for this model was 1357.44 ($df = 36$). This model showed a significant improvement over the trajectory model ($\Delta\chi^2 = 1128.64$, $df = 2$, $p < .01$).

Supplemental analyses

In addition to the analyses reported above, we conducted several supplemental analyses to more fully understand the nature of the hypothesized relationships.⁴ The supplemental analyses concern the impact of gender similarity and personality similarity between leader and member on LMX quality. Previous research has found that the extent to which individuals are similar predicts important outcomes in dyadic relationships (e.g., Bauer & Green, 1996; Tsui & O'Reilly, 1989). We found that gender similarity and extraversion similarity did not significantly predict leader or member relationship quality at the initial interaction. Agreeableness sim-

⁴ We thank the Editor and Reviewers for these suggestions.

Table 4
Estimates of performance influences on leader–member relationship quality

	Model 1		
	Coefficient	SE	t
<i>Leader</i>			
Intercept	4.23	0.35	12.07**
Linear	–0.01	0.12	–0.07
Quadratic	0.00	0.01	0.23
Member Performance	0.20	0.02	10.48**
<i>Member</i>			
Intercept	3.34	0.26	12.88**
Linear	0.17	0.08	2.02*
Quadratic	–0.01	0.01	–1.78
Leader Performance	0.29	0.04	7.40**
<i>Goodness-of-fit</i>			
Deviance			1357.44
Δ Deviance			1128.64**
df			36

* $p < .05$, one-tailed.

** $p < .01$, one-tailed.

ilarity did not significantly predict relationship quality at the initial interaction as rated by the leader, but did significantly predict relationship quality at the initial interaction as rated by the member. Specifically, if a leader is high in agreeableness, the quality of LMX at the initial interaction remains high. However, if both the leader and member are low in agreeableness it results in a very low quality relationship at the initial interaction (as rated by the member). Based on this, it would appear that high leader agreeableness compensates for low member agreeableness. In other words, member agreeableness has virtually no influence on LMX quality at the initial interaction when leader agreeableness is high.

Discussion

The present research had two primary goals. First, we sought to understand the critical early stages of leader–member relationships by exploring the differentiation that occurs and how the relationship develops over time. As expected, we found there was substantial within-team variability in the quality of the leader–member relationships, indicating that differentiated exchanges develop between leaders and members within a team. Furthermore, we found that regardless of the differentiation that occurs, on average, relationship quality increases over time and then stabilizes.

The second goal of this research was to examine influences on the quality of leader–member relationships during the early stages. We found that the influences differed based on the stage of the relationship and on whether it was the leader or member's perspective of the relationship. In particular, leaders base their initial judgments of relationship quality in part on the extraversion of the member whereas members base their judgments on the agreeableness of the leader. Thus, leaders are looking for members who are assertive and willing to seek out interaction opportunities with the leader. In contrast, members value leaders who are trusting and cooperative. After they have interacted, however, actual behavior becomes more important for relationship quality. For both leaders and members, the performance of their dyadic partner is a key predictor of relationship quality.

The current research has several strengths worth mentioning. First, we employed a longitudinal design, with multiple measures of constructs across time. This enabled us to explore changes in leader–member relationships. Second, we were able to assess the quality of the leader–member relationship from its initiation through dissolution. Although often suggested (Gerstner & Day, 1997; Liden et al., 1997), this has rarely been done in empirical studies (see Bauer & Green, 1996; Liden et al., 1993 for exceptions).

This enabled us to assess the development of the relationship across the early stages in the relationship, and empirically test how quickly differentiation occurs within a team. We were also able to determine how influences on the relationship's development change over time, from individual characteristics at the initial interaction, to performance at later stages in the relationship.

Third, we utilized growth-curve modeling to examine the developmental trajectory of leader–member relationship quality, as assessed by both leaders and members. This allowed us to describe the pattern of change in leader–member relationships across time for each of the two perspectives. From the growth-curve modeling, we were able to examine the dynamic nature of the relationship by assessing the quality of the relationship at the initial interaction, the rate of change in the quality of the relationship over time, and the deceleration of change in the quality over time.

Theoretical implications

These results have at least three important theoretical implications. First, theory has proposed that higher and lower-quality leader–member relationships tend to develop fairly quickly and remain stable after they have formed (Dienesch & Liden, 1986; Graen & Cashman, 1975; Liden & Graen, 1980). In the current study, we found that differentiation does occur in the early stages of the relationship. Furthermore, although previous evidence found that leaders differentiate within 2 weeks to 2 months from the start of the relationship (Dansereau et al., 1975; Liden et al., 1993, respectively) our findings suggest that this occurs as early as the initial interaction. Yet, it is important to recognize that the relationships examined in the study were relatively short-term in nature (i.e., about 8 weeks long). Participants knew that their interactions would be limited, and thus the lifespan of the interactions were compressed relative to ongoing leader–member exchanges in organizational settings. The relatively short-term nature of the dyadic relationships in this study could be a potential boundary condition to our findings.

Second, the current research is one of the few studies that test the proposition that different factors are important for relationship quality early in the relationship than later in the relationship. As such, it represents a partial test of Dienesch and Liden's (1986) theoretical model. Our findings confirm their theorizing that individual characteristics like extraversion and agreeableness influence the assessment of the initial leader–follower interaction. We also extend research by finding that the characteristics (and the underlying behaviors they imply) themselves are important in influencing the initial interaction. Furthermore, we add to their model by finding that leader performance is important in determining the development of the relationship.

Third, theorizing has argued that leader–member exchanges influence the dyadic relationships between leader and follower (Graen & Uhl-Bien, 1995). Yet, the prevailing practice has been to assess the relationship only from the member's perspective (Scandura & Schriesheim, 1994) rather than from both parties involved in the relationship. This practice continues despite the fact that assessing a relationship from only one perspective may provide an incomplete or inaccurate depiction of the relationship (Greguras & Ford, 2006). The current study highlights the importance of assessing the relationship from both perspectives (Gerstner & Day, 1997; Scandura & Schriesheim, 1994; Schriesheim, Neider, & Scandura, 1998), as the personality characteristics found to influence the relationship differed for leaders and members.

Specifically, the current study illuminates what is salient to leaders versus members in the early stages of the relationship. We found that member extraversion influences initial LMX quality from the leader's perspective. Thus, leaders look for enthusiastic, participative, and gregarious members. In contrast, we found lea-

der agreeableness influences initial LMX from the member's perspective. Thus, members look for leaders who are pleasant, trusting, and cooperative. Interestingly, the converse influences did not exist in that leader extraversion and member agreeableness did not influence relationship quality from the member and leader perspectives, respectively. As such, we contribute to theory by finding that different characteristics are salient and influence relationship quality depending on the perspective.

Practical implications

In addition to these theoretical implications, the current research also has several practical implications. As previous research has shown (Liden et al., 1993), leader–member relationships develop quickly. This suggests that leaders and members should take this into account when they first interact as initial interactions are important to relationship quality. This perhaps should not be surprising, as other research has shown that individuals often make very quick judgments based on relatively “thin slices” of behavior (Ambady & Rosenthal, 1992; Borkenau, Mauer, Riemann, Spinath, & Angleitner, 2004). Members who are not extraverted or leaders low in agreeableness who wish to have a positive relationship with their dyad partner, should take care to display the behaviors characteristic of extraversion (e.g., sociable, assertive, and talkative) and agreeableness (e.g., good natured, trusting, and cooperative). Beyond personality characteristics, the current research also shows that performance of both the leader and the member is an important determinant of the relationship quality in the early stages.

The current research also lends insight into how both leaders and members can manage their own career by developing higher-quality relationships. For example, members may be able to manage their career by engaging in more extraverted behaviors (e.g., being outgoing and assertive) and focusing on enhancing their performance. Leaders, on the other hand, can manage their career by also focusing on their performance as well as engaging in more agreeable behaviors (e.g., being trusting and cooperative). From an organizational perspective, managing these higher-quality relationships is important as coworker and supervisor relationships are key factors for socialization and for reducing stress and turnover of employees, both of which are important organizational outcomes.

Limitations and future research

There are at least four potential limitations of our study that should be kept in mind when interpreting the results and highlight areas of future research. First, the study utilized students as both leaders and members. Thus, it is unclear if the current results will generalize to an organizational context where there are full-time workers. We do not, however, have any theoretical reasons to expect that there would be differences between a student sample and an organizational sample. Thus, generalizability is not necessarily more at stake than if the study had been conducted in a specific company (Brown & Lord, 1999). Furthermore, research in leadership has tested the same hypotheses in both student and field samples and found that results replicate over the samples (van Knippenberg & van Knippenberg, 2005). In addition, the participants in the current study were highly involved and motivated and the context was a realistic simulation of the kind of interaction leaders and members are likely to have in organizational settings. Leaders were MBA students who upon graduation typically take first-line managerial jobs that involve leading a similar set of team members. Finally, the leaders in the current study had considerable prior work experience (4.5 years on average) and were older than typical student samples (with an average age of 28). Notwithstand-

ing this, it is clear that additional research should be conducted in organizational settings in order to establish a broader basis for our conclusions.

Second, although the design of our study enabled us to explore the critical early stages of leader–member relationships, the duration of these relationships was relatively short (8 weeks). As such, the leader–member relationships are unlikely to have reached a “mature partnership,” which is characterized by an extended history of reciprocity (Graen & Uhl-Bien, 1995). It is not clear how the leader–member relationship investigated in the current study may have further developed. Future research should examine the development of the relationship past the early stages through mature partnerships. Although the current study finds that LMX relationships become established in the early stages of the relationship, it would also be useful for future research to explore whether or not critical events change the nature of LMX relationships even in mature stages of the relationships. As the current research found that both leader and member characteristics and behaviors influence the quality of the relationship, future research should take into account both party's perspective and attributes when assessing the quality of the relationship. Another limitation of the current study is the gap in our LMX measurements. It is possible that there was an initial drop in LMX quality during these measurement periods. We believe this is possible, but unlikely, especially given our supplemental analysis on member relationship quality.

Third, although we examined two personality factors that are important during the initial interaction, there could be other characteristics of leaders and members that influence the quality of the relationship at the initial interaction. Beyond extraversion and agreeableness, other Big Five personality characteristics which may influence relationship quality include emotional stability and conscientiousness. In the current study, member emotional stability and conscientiousness were positively related to relationship quality at the initial interaction, although they were not significant predictors when in the presence of member extraversion or agreeableness. Yet, there are additional individual differences beyond the Big Five personality characteristics which may influence the quality of the relationship at the initial interaction. For example, some have suggested that positive and negative affect and competence (i.e., ability) are important inputs both leaders and members bring to the relationship (Bauer & Green, 1996; Day & Crain, 1992; Hui, Law, & Chen, 1999). Future research should explore these individual differences.

Finally, we investigated the influence of member and leader performance on the quality of leader–member relationships. A limitation in the current study is that performance and relationship quality were measured from the same source. This was mitigated however, by their measurement at different time periods. There are several other areas of future research that could be conducted related the influence of behaviors on relationship quality. For example, further research could investigate the influence of member and leader contextual performance on relationship quality. Additionally, an extension of role theory would be to investigate other role behaviors that individuals perform in teams and how they impact leader–member relationship quality. Research demonstrates that task, social, and boundary spanning roles are key roles in teams (Mumford, Campion, & Morgeson, 2006; Mumford, Van Iddekinge, Morgeson, & Campion, 2008), and thus may be important behaviors that influence the development of leader–member relationships.

Conclusion

In sum, we examined the development of leader–member relationships from initial interactions through early stages of the relationships. This study investigated how relationship quality develops over time and offered a test of the basic tenet of LMX the-

ory, that of differentiated relationships. We also examined the development of the relationship from both leader and member perspectives, and found that at the initial interaction, members based their initial judgments on the agreeableness of the leader whereas leaders based their initial judgments on the extraversion of the member. We also found that after leaders and members have interacted, behaviors such as performance become the key predictors of relationship quality for both leaders and members.

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