Meta-Analytic Review of Leader–Member Exchange Theory: Correlates and Construct Issues

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The leader–member exchange (LMX) literature is reviewed using meta-analysis. Relationships between LMX and its correlates are examined, as are issues related to the LMX construct, including measurement and leader–member agreement. Results suggest significant relationships between LMX and job performance, satisfaction with supervision, overall satisfaction, commitment, role conflict, role clarity, member competence, and turnover intentions. The relationship between LMX and actual turnover was not significant. Leader and member LMX perceptions were only moderately related. Partial support was found for measurement instrument and perspective (i.e., leader vs. member) as moderators of the relationships between LMX and its correlates. Meta-analysis showed that the LMX7 (7-item LMX) measure has the soundest psychometric properties of all instruments and that LMX is congruent with numerous empirical relationships associated with transformational leadership.

Within the broad area of organizational leadership, leader–member exchange (LMX) theory has evolved into one of the more interesting and useful approaches for studying hypothesized linkages between leadership processes and outcomes. First proposed by Graen and colleagues (Dansereau, Cashman, & Graen, 1973; Dansereau, Graen, & Haga, 1975; Graen, 1976; Graen & Cashman, 1975), LMX is distinguished from other leadership theories by its focus on the dyadic relationship between a leader and a member. Unlike traditional theories that seek to explain leadership as a function of personal characteristics of the leader, features of the situation, or an interaction between the two, LMX is unique in its adoption of the dyadic relationship as the level of analysis. Although the theory has been modified and expanded since first proposed, this basic unit of analysis has remained unchanged.

According to LMX, the quality of the relationship that develops between a leader and a follower is predictive of outcomes at the individual, group, and organizational levels of analysis. Dyadic relationship development is grounded in role and exchange theories (see Graen & Uhl-Bien, 1995; Liden, Sparrowe, & Wayne, 1997; Uhl-Bien, Graen, & Scandura, 1997, for more detailed discussions of the theoretical background and development of LMX). After more than 25 years of empirical research and theoretical development, LMX continues to provide an operable alternative to the traditional leadership approaches focused on leader traits and behaviors (e.g., Bass, 1990; Mintzberg, 1973; Stogdill, 1948).

Although researchers remain enthusiastic about LMX, there is unresolved ambiguity about the nature of the construct, its measurement, and its relationships with other organizational variables. This ambiguity may be due in part to the evolving nature of LMX theory. In a recent review, Graen and Uhl-Bien (1995) classified the evolution of LMX theory into four stages: (a) work socialization and vertical dyad linkage where the focus was on the discovery of differentiated dyads (i.e., in-groups and out-groups), (b) LMX where the focus was on the relationship quality and its outcomes, (c) a prescriptive approach to dyadic partnership building, and (d) LMX as a systems-level perspective (i.e., moving beyond the dyad to group and network levels). The latter two stages are fairly recent developments, and most of the work associated with them is theoretical. The majority of empirical research
evaluating factors thought to contribute to high-quality exchanges and analyzing the connection between LMX and work-related outcomes occurred during the second stage of LMX theory development.

It could be argued that the last two stages show the most potential for describing leadership behaviors in complex organizations. Clearly, more research is needed to understand these extensions of LMX theory. The goal of this article is to quantitatively summarize and evaluate the existing LMX research base to build a foundation for future empirical work. More specifically, we consider issues related to the LMX construct, including measurement scale properties and leader–member agreement, as well as the correlates of LMX. We use the results of these quantitative summaries to draw conclusions about LMX and identify opportunities for future theoretical development and empirical research.

An Analysis of LMX Issues

Measurement and Dimensionality

Instruments. Despite claims of an apparently robust phenomenon (e.g., Graen & Uhl-Bien, 1995), there is surprisingly little agreement on what LMX is or how it should best be measured. The theoretical progression of LMX described above is illustrated by the changes in LMX measurement instruments over the years. The construct of LMX has evolved from the two-item measure of negotiating latitude (NL) to more elaborate, multidimensional scales (e.g., Liden & Maslyn, in press; Schriesheim, Neider, Scandura, & Tepper, 1992). Because different studies use different LMX scales, it is unclear whether conflicting results are due to deficiencies in the theory or in the operationalization of the core construct. Through the use of meta-analytic techniques, it was possible to examine the type of measurement instrument as a potential between-study moderator of outcomes. On the basis of the amount of research that has gone into its development and refinement, and the recent recommendation provided by Graen and Uhl-Bien (1995) that it be adopted as the standard measure of LMX, we expected that the seven-item LMX measure (LMX7; Graen, Novak, & Sommerkamp, 1982) would demonstrate the highest reliability (i.e., internal consistency) and largest correlations with other variables, as compared with other LMX measures.

Internal consistency and unidimensionality. An issue that has been raised by numerous researchers (e.g., Diener & Liden, 1986; Liden & Maslyn, in press; Liden et al., 1997; Schriesheim et al., 1992) concerns the potential multidimensionality of LMX. For example, Diener and Liden proposed that LMX is comprised of the dimensions of perceived contribution, loyalty, and affect. Graen and Uhl-Bien (1995) argued that LMX is comprised of the interrelated dimensions of respect, trust, and mutual obligation. We addressed the possibility of multiple dimensions underpinning the LMX scales by examining aggregated internal consistency (i.e., coefficient alpha) estimates of LMX.1 Graen and Uhl-Bien noted that Cronbach alphas for multidimensional LMX measures were consistently in the .80–.90 range. Therefore, they concluded that LMX may comprise several dimensions, but they are all highly related and can be adequately measured with a unidimensional measure of LMX. Thus, we expected that averaged alphas would be generally large (i.e., above .80), indicating the likelihood of one underlying LMX dimension summarized by the centroid item of the LMX7 scale (i.e., “How effective is your working relationship with your leader [follower]?”; Graen & Uhl-Bien, p. 236).

Perspective. LMX can be measured from both leader and member perspectives, but is it the same construct when measured from different perspectives? Empirical support for the relationship between leader LMX and member LMX has been equivocal. Graen and Cashman (1975) found a correlation of .50 between leader LMX and member LMX; however, others have reported much lower correlations (e.g., Scandura, Graen, & Novak, 1986, reported a correlation of only .24 between perspectives). The low correlation between leader and member exchange is consistent with meta-analytic research on self–supervisor agreement on performance ratings, which has demonstrated relatively low agreement ($r = .35$, corrected; Harris & Schaubroeck, 1988). Graen and Uhl-Bien (1995) suggested that the degree of leader–member agreement can be used as an index of the quality of data. They implied that an aggregate, sample-weighted correlation assessing the level of agreement between leader and member reports would be positive and strong. We tested this proposition by estimating the sample-weighted correlation between corresponding leader and member LMX ratings. We also examined measurement perspective as a potential between-study moderator of the relationship between LMX and its correlates.

Correlates

LMX is generally found to be associated with positive performance-related and attitudinal variables, especially

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1 Although a large alpha (e.g., > .80) cannot always be interpreted as evidence of scale unidimensionality (Cortina, 1993), it does provide information regarding the average interitem correlation. Thus, if the number of items is reasonably small (e.g., < 10), a large coefficient alpha estimate can be construed as meaning that the average item intercorrelation is also relatively large. It is possible that a scale with a relatively high alpha may represent a multidimensional construct; however, the dimensions are probably highly intercorrelated.
for members. These include (a) higher performance ratings (e.g., Liden, Wayne, & Stilwell, 1993), (b) better objective performance (e.g., Graen, Novak, & Sommerkamp, 1982; Vecchio & Gobbel, 1984), (c) higher overall satisfaction (e.g., Graen, Novak, & Sommerkamp, 1982), (d) greater satisfaction with supervisor (e.g., Duchon, Green, & Taber, 1986), (e) stronger organizational commitment (e.g., Nystrom, 1990), and (f) more positive role perceptions (e.g., Snyder & Bruning, 1985). Support for other relationships, such as member competence (cf. Kim & Organ, 1982; Liden et al., 1993) and turnover (cf. Graen, Liden, & Hoel, 1982; Vecchio, 1985), has been equivocal.

Our meta-analysis provided overall effect estimates for previously investigated correlates of LMX.2 In general, we expected that correlations between LMX and member performance and attitudinal variables would be positive and strong (the exceptions being turnover processes and role conflict, in which cases the direction was expected to be negative). We expected LMX scale reliability to be only moderately correlated. We proposed and tested specific moderating variables. In particular, we hypothesized that the LMX7 scale would demonstrate the best general predictive validity, although measures from the different perspectives (leader vs. member) might demonstrate divergent relationships due to variability in the construct’s meaning inherent in these perspectives.

Method

Literature Search

The studies included for analysis consisted of published articles, conference papers, doctoral dissertations, and unpublished manuscripts. We identified relevant published articles primarily through computer-based searches of the PsycInfo (1984–1996), PsycLit (1974–1984), and ABI/INFORM (1975–1996) databases using the keywords leader–member exchange, vertical dyad linkage, exchange quality, and dyadic leadership. We used the Social Sciences Citations Index to identify articles that referenced either of the seminal LMX articles (i.e., Dansereau et al., 1975; Graen & Cashman, 1975). The reference lists of identified empirical studies and theoretical reviews were also cross-checked for additional references. Finally, we conducted a manual search of Academy of Management Journal, Administrative Science Quarterly, Group and Organization Management, Human Relations, Journal of Applied Psychology, Organizational Behavior and Human Performance (later Organizational Behavior and Human Decision Processes), and Personnel Psychology from 1975 to 1996 to identify studies that measured LMX, although it may not have been the primary variable of interest. We identified conference papers presented during the period from 1990 to 1994 by manually searching the programs for the annual Society for Industrial–Organizational Psychology and Academy of Management meetings. We identified dissertations using the Dissertations Abstracts International (1975–1996) computer database. Although unpublished manuscripts were not actively solicited, some authors sent unpublished manuscripts when communicating about other published studies. These unpublished studies were also included in the analyses.

We identified a population of 164 studies using these procedures. The criteria for inclusion in the analyses were (a) dyadic exchange quality was measured in the study; (b) the reported results were sufficient to calculate an effect size for the relationship between exchange quality and a correlate, or between leader and member LMX perceptions; and (c) the relationship reported was also reported in at least five other studies. The last criterion was necessary to ensure that the number of studies for each meta-analysis was adequate for drawing generalizable conclusions about the proposed relationships. Although it has been suggested that a meta-analysis can be conducted with as few as two studies (Hunter, Schmidt, & Jackson, 1982), second-order sampling error poses a distinct threat to the validity of results when only a small number of studies are included (Hunter & Schmidt, 1990). There is no strict rule about the minimum number of studies to include in a meta-analysis, but we chose six as the cutoff for our study because of concerns about Type I and Type II errors in the moderator analyses (Sackett, Harris, & Orr, 1986; Spector & Levine, 1987). On the basis of these criteria, we retained 79 studies for the analyses.3 Six studies contained two samples; therefore, we worked with a total of 85 independent samples. The relationships analyzed are described in the following section.

Constructs Included in the Meta-Analyses

LMX. Although this term is commonly found in the literature to refer to the dyadic relationship between a leader and a member, construct operationalization is far from consistent. We identified seven different versions of the LMX scales developed by Graen and colleagues, two additional LMX measures (Liden & Maslyn, in press; Schriesheim et al., 1992), and several modified versions of these scales. The LMX7 scale (Graen, Novak, & Sommerkamp, 1982) is by far the most frequently used LMX measure. LMX7 differs from the earlier VDL measures in that it does not focus on the amount of negotiating latitude a leader allows a member but rather on the nature of their general working relationship.

To be included in the analyses, the study had to measure dyadic exchange quality in a manner consistent with the general themes found in the LMX7 scale. Because of the variability

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2 From a conceptual standpoint, it makes sense to divide the literature on LMX correlates into two categories: antecedents (i.e., those variables hypothesized to affect the development of leader–member relationships) and outcomes (i.e., those variables hypothesized to result from LMX). Because most of the empirical research reviewed in this article is correlational and cross-sectional, we avoid discussing them in terms of causal inferences regarding the direction of these relationships. For purposes of the present analyses, we treat them all as correlates.

3 A list of the reasons for study exclusion is available on request from Charlotte R. Gerstner.
found in scales explicitly labeled "LMX," we also included a few other measures that were used to assess the LMX construct (e.g., Leader Behavior Description Questionnaire; LBDQ). We included the LBDQ because it was used in the early empirical research before the specific LMX scales were developed (e.g., Graen, Dansereau, Minami, & Cashman, 1973). However, we included studies using the LBDQ only if the item referents were changed to reflect a dyadic perspective. We did not include studies that used the Multifactor Leadership Questionnaire (Bass, 1985) because these relationships are not consistently dyadic in nature and have recently been reviewed by Lowe, Kroeck, and Sivasubramaniam (1996). We evaluated studies on a case-by-case basis to determine if the constructs used could be classified as LMX. In cases of uncertainty, we contacted the author(s) to determine if they would classify their measure as LMX.

Performance ratings. This construct was operationalized as subjective, supervisory ratings of a member's job performance. We excluded global measures of competence (i.e., not related to performance in a specific job) from this analysis but analyzed them separately in the relationship between competence and LMX.

Objective performance. Objective performance referred to all measures of performance that did not rely on a subjective rating, which typically meant indexes of the quantity or quality of work, such as the total number of cases processed or the total sales in dollars (e.g., Graen, Novak, & Sommerkamp, 1982; Tanner & Castleberry, 1990).

Satisfaction. We examined two constructs related to work satisfaction in the meta-analysis: overall job satisfaction and satisfaction with the supervisor. Overall satisfaction referred to how satisfied a member was with the job in general or the organization, whereas satisfaction with the supervisor referred more explicitly to how satisfied a member was with his or her working relationship with a supervisor. Several different scales were used to measure satisfaction, including the Job Description Survey, Hoppock Scale, and Minnesota Satisfaction Questionnaire. Satisfaction with the supervisor was usually measured using one of the facet scales associated with these general measures of satisfaction.

Organizational commitment. Although there are many different types of commitment discussed in the literature, our analysis included only measures of members' commitment to the employing organization. Measures of both attitudinal and calculated (or behavioral) commitment were included. With two exceptions, all studies in this analysis used a version of the commitment scales developed by Mowday, Steers, and Porter (1979).

Role perceptions. Many different aspects of role perceptions have been linked to LMX; however, there was an insufficient number of studies available to meta-analyze all role perceptions. We conducted meta-analyses to assess the relationships between LMX and role conflict and role clarity. The analysis for role clarity also included studies that measured role ambiguity (reverse coded). The most common measure of role perceptions was a version of the scale developed by Rizzo, House, and Lirtzman (1970).

Turnover processes. We examined the relationship between LMX and turnover in two separate analyses. One analysis was conducted using actual turnover data whereas the second analysis included member self-reports of intentions to leave the organization.

Member competence. Measures of competence included both self- and supervisor ratings of general ability or expertise, cognitive ability tests, and experimental manipulations of competence. Because competence was conceptualized as a more global measure of ability, we did not use specific performance ratings in this analysis.

Leader-member agreement. This analysis did not refer specifically to a correlate of LMX but rather to the agreement between leader and member regarding LMX quality. All studies that reported a correlation between leader LMX and member LMX were included in this analysis.

Coded Variables

In addition to the correlations between LMX and the constructs described above, the following information was coded for each study: (a) date of publication, (b) publication form (i.e., article, conference paper, dissertation, book chapter, or unpublished manuscript), (c) type of sample (lab versus field, type of field sample), (d) sample size, (e) demographic information regarding leaders and members, (f) measurement instrument, (g) LMX measurement perspective (i.e., leader or member), (h) scale properties of LMX measure (i.e., reliability and range), and (i) measurement information for criterion variables (i.e., measurement instrument and reliability). All studies were coded independently by two raters (Charlotte R. Gerstner and a psychology doctoral student). A total of 1,075 coding decisions were made, with 86% agreement between the two raters. All disagreements were resolved through discussion with David V. Day.

Computation and Analysis of Effect Sizes

We used correlation coefficients in the computation of all effect sizes. If a correlation coefficient could not be calculated from the reported statistics, the study was dropped from further analyses. In order to preserve the independence of samples, we included only one effect size from each sample in each meta-analysis. We computed estimates of overall effect sizes and homogeneity of effect sizes according to the formulas set forth by Hedges and Olkin (1985). Before combining effect sizes, we converted rs to ds and corrected for sampling error. We then averaged the ds to obtain an estimate of the overall effect size, $d_\text{..}$.

When measurement reliability information was available for at least 75% of the effect sizes in a given analysis, we also corrected the corresponding sample-weighted correlations for measurement error. Although the application of corrections is traditionally associated with the Hunter and Schmidt (1990) approach to meta-analysis, Hedges and Olkin (1985) stated that this is an acceptable procedure provided that sufficient reliability information is available. In such instances, a closer estimate of the true population correlation can be attained by applying correction formulas to the study-level correlations, given that statistical artifacts such as measurement error can attenuate within-study correlations (Huffcutt, Arthur, & Bennet, 1993; Hunter & Schmidt, 1990). In the present meta-analyses, we
calculated summary effect sizes with both uncorrected and corrected correlations.

In addition to the estimates of overall effect size, we also calculated a homogeneity statistic (Q) for each analysis. A significant Q statistic indicates that the overall mean effect size does not adequately describe all the effect sizes and further moderator analyses are warranted. Because the formulas for homogeneity of effect sizes are inappropriate for disattenuated effect sizes, we did not interpret the Q statistics associated with the correlations corrected for measurement unreliability. We used the corrected correlations only to estimate a mean weighted effect size.

It is fairly common for overall effect sizes to be heterogeneous (Hedges, 1987). Although Hunter and Schmidt (1990) argued that nearly all heterogeneity can be attributed to statistical artifacts, heterogeneity may also result from other factors, such as between-study moderators and statistical outliers. Some researchers have advocated the removal of statistical outliers in an attempt to achieve homogeneity of effect sizes, as well as a more reliable estimate of the true population effect size (Hedges, 1987; Hedges & Olkin, 1985; Huffcutt & Arthur, 1995). In the present meta-analyses, we conducted both categorical moderator analyses and statistical outlier analyses to examine potential sources of heterogeneity.

On the basis of our review of the literature, we identified two a priori categorical moderators of overall effect sizes: (a) the LMX measurement instrument (i.e., LMX7 vs. all others), and (b) LMX perspective (i.e., leader vs. member), which we used to examine the impact of these two variables on the homogeneity of the overall effect sizes. These analyses are analogous to a one-way analysis of variance that compares effect sizes by a specified class variable determined on the basis of study characteristics. If a categorical moderator model completely fits the data, the between-class effect will be significant whereas the within-class effect will be nonsignificant (indicating homogeneity within classes; Johnson & Turco, 1992).

In addition to the categorical moderator analyses, we conducted outlier analyses to attain homogeneity of effect sizes. This was accomplished by ordering the effect sizes in each meta-analysis with regard to their deviations from the mean effect size and then sequentially eliminating the largest outlier until the overall Q statistic was nonsignificant (indicating homogeneity of effect sizes), or until 20% of the original studies were removed (see Hedges & Olkin, 1985, pp. 256–257). On the basis of the work of many statisticians, Hedges (1987) suggested a 20% cutoff as a rule of thumb for concluding whether the heterogeneity of effect sizes could be attributed to a few aberrant values. According to Hedges, when homogeneity can be achieved by removing fewer than 20% of the outliers, the overall effect size that is calculated from the remaining studies may better represent the population distribution of effects, as compared with the mean effect size based on all studies.

Results and Discussion

A summary of the relationships included in our study is reported in Table 1.4 We calculated overall effect sizes for the 10 LMX correlates, the relationship between leader and member reports of LMX, and the internal consistency estimates (i.e., coefficient alpha) of leader and member LMX reports. Overall effect sizes for all relationships are summarized and reported in Table 2. Moderator and outlier analyses are summarized in Tables 3–5. The results are organized into the following subsections: (a) reliability analysis, (b) leader–member agreement, and (c) LMX correlates.

Reliability

We analyzed the internal consistency (i.e., Cronbach's alpha) reliabilities of member LMX and leader LMX. For the members, the mean sample-weighted alpha was .85, with the average number of scale items estimated at 7.57. This estimated effect size was significantly heterogeneous and could not be rendered homogeneous with the removal of fewer than 20% of the effects. Thus, there appears to be sufficient variability in effects to pursue an analysis of potential moderators. The categorical moderator analysis for measurement instrument indicated a generally higher alpha for the LMX7 category (.89) than for the mean of all other instruments (.83). Overall, however, these results indicate generally acceptable internal consistency estimates from the members' perspective regardless of the type of measurement instrument.

For leaders' LMX reports, the average number of items was slightly greater (M = 8.36) than the average item number for members, although the average sample-weighted alpha was smaller (.76). As with the member reports, this effect was heterogeneous and could not be explained by outliers. Unlike the member results, however, there was no statistically significant difference between LMX7 internal consistency (.78) and the alpha estimated for the category of other measures (.76). Overall, results of these analyses suggest somewhat better reliability for members' (as compared with leaders') reports of LMX. Potential implications of this finding are examined along with recommendations for better LMX measurement in the final section, which addresses conclusions and future directions.

Leader–Member Agreement

The mean sample-weighted correlation between leader and member reports of LMX was .29 (.37 corrected for leader and member LMX unreliability). The moderating effect of measurement instrument was not supported for this relationship. It was necessary to remove nine outliers (38%) before a homogeneous effect size was obtained. Although the overall effect size was significant, the mag-

4 A detailed summary table describing individual study characteristics is available on request from Charlotte R. Gerstner.
Table 1

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Samples (k)</th>
<th>Aggregate sample size (N)</th>
<th>LMX α</th>
<th>Correlate α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance ratings (leader LMX)</td>
<td>12</td>
<td>1,509</td>
<td>.76</td>
<td>.83</td>
</tr>
<tr>
<td>Performance ratings (member LMX)</td>
<td>30</td>
<td>4,218</td>
<td>.85</td>
<td>.89</td>
</tr>
<tr>
<td>Objective performance</td>
<td>8</td>
<td>982</td>
<td>.80</td>
<td>—</td>
</tr>
<tr>
<td>Satisfaction with supervision</td>
<td>27</td>
<td>5,302</td>
<td>.82</td>
<td>.88</td>
</tr>
<tr>
<td>Overall satisfaction</td>
<td>33</td>
<td>6,887</td>
<td>.84</td>
<td>.81</td>
</tr>
<tr>
<td>Organizational commitment</td>
<td>17</td>
<td>3,006</td>
<td>.84</td>
<td>.87</td>
</tr>
<tr>
<td>Role conflict</td>
<td>12</td>
<td>3,728</td>
<td>.86</td>
<td>.80</td>
</tr>
<tr>
<td>Role clarity</td>
<td>14</td>
<td>4,105</td>
<td>.86</td>
<td>.74</td>
</tr>
<tr>
<td>Turnover</td>
<td>7</td>
<td>856</td>
<td>.81</td>
<td>—</td>
</tr>
<tr>
<td>Turnover intentions</td>
<td>14</td>
<td>1,074</td>
<td>.82</td>
<td>.85</td>
</tr>
<tr>
<td>Member competence</td>
<td>15</td>
<td>3,880</td>
<td>.84</td>
<td>.75</td>
</tr>
<tr>
<td>Leader–member agreement</td>
<td>24</td>
<td>3,460</td>
<td>.84</td>
<td>.77</td>
</tr>
<tr>
<td>Leader LMX reliability</td>
<td>22</td>
<td>3,329</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Member LMX reliability</td>
<td>69</td>
<td>13,885</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Note. Dashes indicate that the statistic could not be computed. k = number of studies that included the relationship of interest; \( N \) = total number of individuals across the \( k \) samples; \( \alpha \) = average reliability coefficient; LMX = leader–member exchange.

* In both cases, the performance measure was a supervisor’s rating of the member’s performance. The difference between the two analyses is the source of the LMX measure. * Member LMX reliability.

The mean sample-weighted correlation between member reports of LMX and member performance ratings was .28 (.30 corrected for LMX unreliability). These results demonstrate that member LMX perceptions are also correlated with leader performance ratings, although the relationship is not as strong as the correlation between leader LMX and performance ratings. It should be noted that the leader LMX-performance correlation may be confounded by same-source bias and the resulting effect size estimate may be artificially inflated. However, this bias is potentially of theoretical interest. Supervisory ratings may be influenced by many factors, but the perceptions of a supervisor regarding an employee’s performance become criteria on which important decisions are made. A tendency for a supervisor to rate someone favorably as a result of a positive LMX relationship can translate into favorable outcomes for the employee. Furthermore, creating positive or negative expectations about an employee through the development of LMX perceptions may change the actual performance level of employees (i.e., self-fulfilling prophecy) and not just affect performance ratings (Feldman, 1986). Although the correlation between leader LMX and ratings of member performance was high, our results also indicate they are empirically distinct constructs.

The moderating effect of measurement instrument for the correlations between member LMX and corresponding performance ratings was very similar to that estimated
Significance of Q statistics indicates rejection of the hypothesis.

Note. From the leader's perspective. Although there was a significant between-class difference, the effect sizes within each of the measurement classes remained heterogeneous. With regard to outliers, it was necessary to remove six studies (20%) to achieve homogeneity of effect sizes. When these studies were excluded, the mean sample-weighted correlation based on 22 studies was .27 (p < .01), thus suggesting that the outliers were symmetrically distributed around the mean.

We adopted two different approaches to test whether the difference between correlations of LMX with performance varied significantly as a function of measurement perspective. First, we conducted a categorical moderator analysis using the two categories of member and leader LMX. In order to do this, it was necessary to combine the two analyses for leader and member LMX and performance ratings. Although this violates the assumption of independence of effect sizes, some researchers have argued that this is an acceptable procedure when testing moderators of theoretical interest (e.g., Rosenthal, 1991).

We calculated an overall effect size (r = .32) and examined perspective by testing the difference between leader LMX-performance and member LMX-performance ratings. Although this violates the assumption of independence of effect sizes, some researchers have argued that this is an acceptable procedure when testing moderators of theoretical interest (e.g., Rosenthal, 1991). We also examined the impact of perspective by testing the difference between leader LMX-performance and member LMX-performance correlations. We conducted a t-test for dependent correlations using sample size and the correlations between (a) leader LMX and performance, (b) member LMX and performance, and (c) leader and member LMX (see Cohen & Cohen, 1983, p. 57). With the overall sample of studies (i.e., meta-analytic correlations; N = 1,909), these correlations were .41, .28, and .29, respectively. For the subset of studies (k = 9; N

### Table 2

<table>
<thead>
<tr>
<th>Correlate</th>
<th>95% CI d+</th>
<th>Lower</th>
<th>Upper</th>
<th>r</th>
<th>Corrected r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance ratings (leader LMX)</td>
<td>0.91</td>
<td>0.84</td>
<td>0.98</td>
<td>.41</td>
<td>.55*</td>
</tr>
<tr>
<td>Performance ratings (member LMX)</td>
<td>0.58</td>
<td>0.54</td>
<td>0.63</td>
<td>.28</td>
<td>.30*</td>
</tr>
<tr>
<td>Objective performance</td>
<td>0.19</td>
<td>0.11</td>
<td>0.28</td>
<td>.10</td>
<td>.11*</td>
</tr>
<tr>
<td>Satisfaction with supervision</td>
<td>1.59</td>
<td>1.55</td>
<td>1.64</td>
<td>.62</td>
<td>.71*</td>
</tr>
<tr>
<td>Overall satisfaction</td>
<td>1.03</td>
<td>1.00</td>
<td>1.07</td>
<td>.46</td>
<td>.50*</td>
</tr>
<tr>
<td>Organizational commitment</td>
<td>0.75</td>
<td>0.70</td>
<td>0.80</td>
<td>.35</td>
<td>.42*</td>
</tr>
<tr>
<td>Role conflict</td>
<td>-0.53</td>
<td>-0.58</td>
<td>-0.49</td>
<td>-.26</td>
<td>-.31*</td>
</tr>
<tr>
<td>Role clarity</td>
<td>0.73</td>
<td>0.69</td>
<td>0.78</td>
<td>.34</td>
<td>.43*</td>
</tr>
<tr>
<td>Turnover</td>
<td>-0.07</td>
<td>-0.16</td>
<td>0.03</td>
<td>-.03</td>
<td>-.04*</td>
</tr>
<tr>
<td>Turnover intentions</td>
<td>-0.58</td>
<td>-0.67</td>
<td>-0.50</td>
<td>-.28</td>
<td>-.31*</td>
</tr>
<tr>
<td>Member competence</td>
<td>0.53</td>
<td>0.48</td>
<td>0.57</td>
<td>.26</td>
<td>.28*</td>
</tr>
<tr>
<td>Construct issues</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leader–member agreement</td>
<td>.62</td>
<td>.57</td>
<td>.67</td>
<td>.29</td>
<td>.37*</td>
</tr>
<tr>
<td>Leader LMX reliability</td>
<td>2.40</td>
<td>2.33</td>
<td>2.46</td>
<td>.77</td>
<td>—</td>
</tr>
<tr>
<td>Member LMX reliability</td>
<td>3.25</td>
<td>3.21</td>
<td>3.29</td>
<td>.85</td>
<td>—</td>
</tr>
</tbody>
</table>

Note. Significant effect sizes are indicated by confidence intervals that do not include 0. Dashes indicate that the statistic could not be computed. d+ = mean sample-weighted effect size; CI = confidence interval; r = mean sample-weighted correlation; Corrected r = mean weighted correlation corrected for measurement unreliability; LMX = leader–member exchange.

* Correlations were corrected for unreliability of both LMX and criterion measures. * Correlations were corrected for only unreliability of LMX measure.

### Table 3

<table>
<thead>
<tr>
<th>Variable and class</th>
<th>Qk</th>
<th>k</th>
<th>r</th>
<th>Qv</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance ratings (combined)</td>
<td>55.10**</td>
<td>42</td>
<td>.32</td>
<td></td>
</tr>
<tr>
<td>Member LMX</td>
<td>30</td>
<td>.28</td>
<td>128.52**</td>
<td></td>
</tr>
<tr>
<td>Leader LMX</td>
<td>12</td>
<td>.41</td>
<td>343.80**</td>
<td></td>
</tr>
<tr>
<td>Member competence</td>
<td>9.03**</td>
<td>14</td>
<td>.25</td>
<td></td>
</tr>
<tr>
<td>Member LMX</td>
<td>8</td>
<td>.23</td>
<td>37.68**</td>
<td></td>
</tr>
<tr>
<td>Leader LMX</td>
<td>6</td>
<td>.31</td>
<td>266.92**</td>
<td></td>
</tr>
</tbody>
</table>

Note. Significance of Q statistics indicates rejection of the hypothesis of homogeneity. k = number of studies in each analysis; r = mean sample-weighted correlation; Qk = between-classes goodness-of-fit statistic; Qv = homogeneity of effect sizes within each class; LMX = leader–member exchange.

**p < .01.
<table>
<thead>
<tr>
<th>Variable and class</th>
<th>$Q_\sigma$</th>
<th>$k$</th>
<th>$r$</th>
<th>$Q_\sigma$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance ratings (LLMX)</td>
<td>19.49**</td>
<td>12</td>
<td>.41</td>
<td>15.10*</td>
</tr>
<tr>
<td>LMX7</td>
<td>6</td>
<td>.49</td>
<td>15.10*</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>.37</td>
<td>293.60**</td>
<td></td>
</tr>
<tr>
<td>Performance ratings (MLMX)</td>
<td>4.63*</td>
<td>30</td>
<td>.28</td>
<td>74.36**</td>
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<tr>
<td>LMX7</td>
<td>12</td>
<td>.31</td>
<td>74.36**</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>18</td>
<td>.26</td>
<td>70.57**</td>
<td></td>
</tr>
<tr>
<td>Objective performance</td>
<td>0.60</td>
<td>8</td>
<td>.10</td>
<td>11.97*</td>
</tr>
<tr>
<td>LMX7</td>
<td>4</td>
<td>.11</td>
<td>11.97*</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>.07</td>
<td>3.23</td>
<td></td>
</tr>
<tr>
<td>Satisfaction with supervision</td>
<td>202.87**</td>
<td>27</td>
<td>.62</td>
<td>154.07**</td>
</tr>
<tr>
<td>LMX7</td>
<td>8</td>
<td>.74</td>
<td>154.07**</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>19</td>
<td>.58</td>
<td>753.43**</td>
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<tr>
<td>Overall satisfaction</td>
<td>12.94**</td>
<td>33</td>
<td>.46</td>
<td>124.27**</td>
</tr>
<tr>
<td>LMX7</td>
<td>11</td>
<td>.50</td>
<td>124.27**</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>22</td>
<td>.45</td>
<td>203.48**</td>
<td></td>
</tr>
<tr>
<td>Organizational commitment</td>
<td>5.87*</td>
<td>17</td>
<td>.35</td>
<td>37.51**</td>
</tr>
<tr>
<td>LMX7</td>
<td>9</td>
<td>.38</td>
<td>37.51**</td>
<td></td>
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<tr>
<td>Other</td>
<td>8</td>
<td>.32</td>
<td>62.65**</td>
<td></td>
</tr>
<tr>
<td>Role conflict</td>
<td>29.05**</td>
<td>12</td>
<td>-.26</td>
<td>14.28*</td>
</tr>
<tr>
<td>LMX7</td>
<td>4</td>
<td>-.40</td>
<td>14.28*</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>-.24</td>
<td>40.80**</td>
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<td>Role clarity</td>
<td>13.70**</td>
<td>14</td>
<td>.34</td>
<td>76.71**</td>
</tr>
<tr>
<td>LMX7</td>
<td>4</td>
<td>.44</td>
<td>76.71**</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td>.33</td>
<td>79.78**</td>
<td></td>
</tr>
<tr>
<td>Turnover intentions</td>
<td>2.31</td>
<td>8</td>
<td>-.28</td>
<td>11.43</td>
</tr>
<tr>
<td>LMX7</td>
<td>6</td>
<td>-.27</td>
<td>11.43</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>-.37</td>
<td>1.21</td>
<td></td>
</tr>
<tr>
<td>Leader–member agreement</td>
<td>0.17</td>
<td>24</td>
<td>.29</td>
<td>89.68**</td>
</tr>
<tr>
<td>LMX7</td>
<td>11</td>
<td>.30</td>
<td>89.68**</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>13</td>
<td>.29</td>
<td>104.26**</td>
<td></td>
</tr>
<tr>
<td>Member competence</td>
<td>1.85</td>
<td>15</td>
<td>.26</td>
<td>59.26**</td>
</tr>
<tr>
<td>LMX7</td>
<td>7</td>
<td>.23</td>
<td>59.26**</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>.26</td>
<td>259.35**</td>
<td></td>
</tr>
<tr>
<td>Leader LMX reliability</td>
<td>1.63</td>
<td>22</td>
<td>.77</td>
<td>120.91**</td>
</tr>
<tr>
<td>LMX7</td>
<td>10</td>
<td>.78</td>
<td>120.91**</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>12</td>
<td>.76</td>
<td>721.45**</td>
<td></td>
</tr>
<tr>
<td>Member LMX reliability</td>
<td>392.91**</td>
<td>69</td>
<td>.85</td>
<td>476.98**</td>
</tr>
<tr>
<td>LMX7</td>
<td>28</td>
<td>.89</td>
<td>476.98**</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>41</td>
<td>.83</td>
<td>1,412.04**</td>
<td></td>
</tr>
</tbody>
</table>

Note. Significance of $Q$ statistics indicates rejection of the hypothesis of homogeneity, $k =$ number of studies in each analysis; $r =$ mean sample-weighted correlation; $Q_\sigma =$ between-classes goodness-of-fit statistics; $Q_\sigma =$ homogeneity of effect sizes within each class; LLMX = leader-reported LMX; MLMX = member-reported LMX; LMX7 = seven-item LMX measure; MLMLX = member LMX reliability; LMX = leader–member exchange.

* $p < .05$. ** $p < .01$.

In summary, it seems that LMX is positively related to performance ratings. This is consistent with recent work by Borman and colleagues demonstrating that the inclusion of interpersonal factors can increase the variance explained in performance ratings by as much as two times that explained by ability, job knowledge, and technical factors alone (Borman, White, & Dorsey, 1995). LMX is one example of such an interpersonal factor. However, the relationship between LMX and performance ratings may not be as straightforward as was first proposed. Our results indicate that the strength of this relationship depends on the perspective from which LMX is measured, as well as the type of measurement instrument used. Even after accounting for these moderators, there is considerable variability across effect sizes, suggesting the possibil-
Summary of Attempts to Reduce Heterogeneity

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Q</th>
<th>Support for measurement instrument</th>
<th>Number of outliers (% k)</th>
<th>Overall r (after removing outliers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance ratings (leader LMX)</td>
<td>873.85**</td>
<td>Partial</td>
<td>4 (33%)</td>
<td>—</td>
</tr>
<tr>
<td>Performance ratings (member LMX)</td>
<td>149.57**</td>
<td>Partial</td>
<td>6 (20%)</td>
<td>.27</td>
</tr>
<tr>
<td>Objective performance</td>
<td>15.80*</td>
<td>None</td>
<td>1 (13%)</td>
<td>.07</td>
</tr>
<tr>
<td>Satisfaction with supervision</td>
<td>1,110.37***</td>
<td>Partial</td>
<td>18 (67%)</td>
<td>—</td>
</tr>
<tr>
<td>Overall satisfaction</td>
<td>340.69**</td>
<td>Partial</td>
<td>14 (42%)</td>
<td>—</td>
</tr>
<tr>
<td>Organizational commitment</td>
<td>106.03**</td>
<td>Partial</td>
<td>4 (24%)</td>
<td>—</td>
</tr>
<tr>
<td>Role conflict</td>
<td>84.13**</td>
<td>Partial</td>
<td>4 (33%)</td>
<td>—</td>
</tr>
<tr>
<td>Role clarity</td>
<td>170.19**</td>
<td>Partial</td>
<td>6 (43%)</td>
<td>—</td>
</tr>
<tr>
<td>Turnover</td>
<td>31.83**</td>
<td>—</td>
<td>1 (14%)</td>
<td>-.01</td>
</tr>
<tr>
<td>Turnover intentions</td>
<td>14.95*</td>
<td>None</td>
<td>1 (13%)</td>
<td>-.30</td>
</tr>
<tr>
<td>Member competence</td>
<td>320.47***</td>
<td>None</td>
<td>7 (47%)</td>
<td>—</td>
</tr>
<tr>
<td>Leader–member agreement</td>
<td>194.11***</td>
<td>None</td>
<td>9 (39%)</td>
<td>—</td>
</tr>
<tr>
<td>Leader LMX reliability</td>
<td>844.00**</td>
<td>None</td>
<td>16 (68%)</td>
<td>—</td>
</tr>
<tr>
<td>Member LMX reliability</td>
<td>2,281.94**</td>
<td>Partial</td>
<td>45 (65%)</td>
<td>—</td>
</tr>
</tbody>
</table>

Note. Q = homogeneity statistic; significance of the Q statistic indicates rejection of the hypothesis of homogeneity. Partial support for the moderator analyses means that the between-class effect (Q_a) was significant, but the within-class effects (Q_w) were also significant. Number of outliers refers to the number of extreme cases that had to be removed before a homogeneous effect size was achieved. Overall r's after removing outliers were calculated only for analyses in which 20% or fewer outliers had to be removed to achieve a homogeneous effect size. Dashes indicate that the statistic could not be computed. LMX = leader–member exchange.

*p < .05. **p < .01.

ity of additional contingencies. Overall, our results suggest that LMX is related to supervisory performance evaluations.

**Other correlates.** We found significant positive correlations between LMX and objective performance, satisfaction with supervision, overall satisfaction, organizational commitment, and role clarity. We found significant negative correlations between LMX and role conflict and turnover intentions. Overall, the results suggest that having a high-quality relationship with one's supervisor can affect the entire work experience in a positive manner, including performance and affective outcomes. Our results also suggest that LMX is more strongly related to subjective performance ratings and member affective outcomes than to objective measures, such as productivity and turnover. The two smallest overall effect sizes were for objective performance (r = .10, p < .05) and actual turnover (r = -.03, ns). Although the effect size for objective performance was statistically significant, its practical meaningfulness is questionable. Furthermore, both overall effect sizes could be rendered homogeneously by the removal of one outlier (objective performance: Graen, Novak, & Sommerkamp, 1982; actual turnover: Graen, Liden, & Hoel, 1982). When these studies were removed from the analyses, the overall correlations were adjusted to .07 (p < .05) for objective performance and -.01 (ns) for turnover.

Although there is not enough evidence at present to support strong correlations between LMX and the objective outcomes of performance and turnover, we believe that these relationships are worthy of further examination. More complex models may be necessary to specify the nature of the relationships between LMX and objective outcomes. For example, actual turnover is a complex process that depends on numerous variables, such as employee attitudes and labor market conditions. As Vecchio, Griffeth, and Hom (1986) suggested, the relationship between LMX and turnover should not be abandoned but rather should be examined more closely by searching for variables that mediate and moderate this process. Given our results, it is reasonable to propose that LMX affects turnover through other attitudes, such as satisfaction and commitment.

There may also be methodological explanations for the differences in magnitude between subjective and objective outcome measures. Whereas the challenges inherent in the study of subjective phenomena (e.g., same-source bias) may serve to artificially inflate the correlations, those associated with objective phenomena may serve to attenuate the correlations. For example, many turnover studies are plagued by range restriction and low power to detect significant relationships. The design of the study may also impact the outcomes. The Graen, Novak, and Sommerkamp (1982) study consisted of a field experiment in which leaders were trained to maintain high-quality relationships with their members. In this case, the LMX intervention was very successful at increasing performance...
LMX correlations with performance may be attenuated the difference in correlations between leader and member certainly needed, however, to understand the degree to performance levels (Feldman, 1986). More research is developed with a member, which can influence actual expectations are likely shaped by the quality of LMX that relation between leader (as compared with member)

agreement suggests a couple of directions for future research. First, as suggested by other researchers (e.g., Scandura & Schriesheim, 1994), LMX should always be measured from both leader and member perspectives. Second, leader-member agreement should be examined as a relevant independent or dependent variable. Finally, leader-member agreement should be assessed using longitudinal designs. Graen and Scandura (1987) argued that range restriction in leader LMX may attenuate agreement between perspectives; however, leader reports should become less restricted over time and therefore demonstrate higher levels of agreement with member reports.

Our results also noted a systematic difference between leaders' and members' reports of LMX and the correlation with performance ratings. As stated above, the higher correlation between leader (as compared with member) LMX and ratings of members' performance may not be entirely attributable to same-source bias. A leader's expectations are likely shaped by the quality of LMX that is developed with a member, which can influence actual performance levels (Feldman, 1986). More research is certainly needed, however, to understand the degree to which same-source bias inflates the correlation between LMX and performance ratings. An interesting approach would be to compare the LMX-performance correlations for dyads in which LMX agreement (i.e., correlation between leader and member LMX) is high with dyads in which agreement is low. High agreement should reduce the difference in correlations between leader and member LMX reports and performance. In other words, member LMX correlations with performance may be attenuated as a result of disagreement with a leader's LMX rating.

There is an additional aspect to our results that should be considered. All overall effect sizes were heterogeneous, suggesting that mean correlations do not adequately describe all corresponding correlations. We conducted moderator and outlier analyses for the reported relationships in an attempt to reduce the heterogeneity of effect sizes. Although these analyses did explain some of the variation in effects, complete homogeneity was achieved for only a few of the relationships.6 Uhl-Bien et al. (1997) suggested several situational moderators of LMX-outcome relationships, such as task characteristics, time constraints, resources, physical setting, organizational climate, and culture. Unfortunately, there were not enough studies that reported on these variables to examine them as between-study moderators in our analyses.

Conclusions and Future Directions

The results of the present meta-analyses suggest that LMX contributes both theoretically and empirically to the organizational leadership literature. LMX is consistently correlated with member job performance, satisfaction (overall and supervisory), commitment, role perceptions, and turnover intentions. In addition to summarizing the extant literature, one purpose of the present meta-analysis was to identify issues that guide further theory development and empirical testing. Thus, the final section presents areas identified for additional theoretical and research attention, as well as our recommendations.

Measurement and Dimensionality

The lack of consistency with which the LMX construct is operationalized makes it difficult to argue that all measures are associated with an identical core construct. In particular, more work is needed to determine whether LMX is best considered to be multidimensional, or whether it can be adequately defined with a unidimensional scale. There are two conclusions from the aggregate reliability results that have relevance to this discussion. First, we found higher average alphas for the LMX7 measure as compared with the average reliability for all other LMX measures. In addition to its higher average alpha,

Summary of Results

Arguably, one of the most provocative findings from these analyses concerns leader-member agreement on ratings of LMX quality—or lack of it. The average sample-weighted correlation was estimated to be .29, which is only slightly higher than the correlation noted between self- and supervisor performance ratings (mean \( r = .22 \)), corrected for measurement error only (Harris & Schaubroeck, 1988). Our finding regarding leader-member agreement suggests a couple of directions for future research. First, as suggested by other researchers (e.g., Scandura & Schriesheim, 1994), LMX should always be measured from both leader and member perspectives. Second, leader-member agreement should be examined as a relevant independent or dependent variable. Finally, leader-member agreement should be assessed using longitudinal designs. Graen and Scandura (1987) argued that range restriction in leader LMX may attenuate agreement between perspectives; however, leader reports should become less restricted over time and therefore demonstrate higher levels of agreement with member reports.

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5 Two notable exceptions are the LMX intervention studies reported by Scandura and Graen (1984) and Graen, Scandura, and Graen (1986) in which LMX was significantly related to objective performance. Bivariate correlations between LMX and performance could not be calculated from the results reported in these studies; therefore, it was not possible to include them in the present analysis.

6 We also conducted an exploratory analysis to examine publication status as a source of heterogeneity in study results. This analysis did not result in overall homogeneity; however, we found that effect sizes were generally larger in unpublished studies (as compared with those published in refereed journals). Although we cannot offer a compelling reason for this result, future research should consider both methodological and theoretical moderators of the relationships between LMX and outcomes.
studies using the LMX7 measure also tended to obtain higher correlations with outcomes than those using other measures (see Table 4). This difference may be partly due to smaller estimated measurement error for LMX7. Thus, one implication of these findings is that LMX7 appears to provide the soundest psychometric properties of all available LMX measures. As such, the LMX7 measure is recommended to researchers interested in assessing an overall (i.e., unidimensional) exchange quality.

Second, our results suggest that LMX is more reliably assessed from a member's perspective than from a leader's perspective. An implication of this finding is that leaders may have a somewhat more complex, multidimensional construction of exchange quality than members, as indicated by the lower overall LMX alpha estimate from a leader's perspective. Future attempts to revise and develop alternative LMX measures should examine this notion of exchange quality separately from leaders' and members' perspectives. In addition to better measurement properties, separate leader and member LMX measures might also be able to improve overall agreement. It is conceivable that if leaders' LMX is multidimensional whereas members' LMX is unidimensional, then correlating the facet of leader LMX that best matches member LMX would likely improve resulting agreement correlations.

Agreement

It is unlikely that problems of low agreement between leaders and members will be completely eliminated with the development of new measures. Instead, we believe that leader–member LMX agreement is an interesting and potentially valuable outcome variable in its own right. Although they did not explicitly address agreement on LMX perceptions, Graen and Schiemann (1978) found that agreement between leaders and members on mutually experienced events (e.g., member job problems, leader support to member) varied as a function of LMX quality. More specifically, agreement with leaders was stronger for members reporting higher LMX. More research is needed to understand the complexities of leader–member agreement.

Interventions directed at improving agreement could be developed and tested. Fahr and Dobbins (1989) found that self-evaluations tended to be more strongly correlated with supervisor ratings when comparative performance information was made available prior to the self-evaluations. Correspondingly, Mabe and West (1982) found in a meta-analysis of 55 studies that self-ratings were more highly correlated with performance when self-evaluation scale anchors used social comparison terminology such as "better than average" or "as compared with fellow workers" than when phrased in absolute terms. Thus, encouraging both leaders and members to think of exchange quality in relative terms might enhance rating agreement. Although such agreement may not be expected to translate directly into performance and affective outcomes, it could serve to open a dialogue on how to build a better working relationship, thus providing a catalyst for developing a stronger partnership, and moving to a more mature stage of the leadership relationship (Graen & Uhl-Bien, 1995).

Antecedents of LMX Quality

Researchers have only recently begun to devote attention to the development of LMX. Therefore, there is very little cumulative knowledge currently available regarding the antecedents of LMX. Of those relationships we reviewed, only member competence was examined as an antecedent of LMX in the literature. Although some studies have examined demographic variables as antecedents of LMX (e.g., Duchon et al., 1986), there appears to be little theoretical or empirical justification for the development of LMX based on simple demographics. Theoretically, it makes more sense to consider demographic similarity (i.e., relational demography) as an antecedent of LMX, but empirical support for the role of relational demography in predicting LMX quality has been mixed (cf. Bauer & Green, 1996; Green, Anderson, & Shivers, 1996; Liden et al., 1993). More research is needed in order to clarify the contributions of relational demography, as well as other variables that have been examined as antecedents of LMX, such as leader and member personality traits, upward influence behavior, leader delegation, and leader–member similarity (see Liden et al., 1997, for a review of LMX antecedents).

Our results for the moderating effect of perspective on the relationship between LMX and competence show preliminary evidence for differential weighting of predictors for leaders and members. In other words, the antecedents of LMX may be different (or at least differentially important) for leaders and members. Further examination of the antecedents of LMX is clearly an area of opportunity for future empirical research.

Development Over Time

Another way to better understand the full range of LMX, and possibly isolate LMX antecedents, is to carefully examine its longitudinal development. According to...
Integration With Transformational Leadership

In addition to addressing criticisms regarding the nature of LMX and its relationships with other variables, a goal of our synthesis was to clarify the role of LMX in the larger context of leadership theory and to provide direction for future research. One of the more popular emerging frameworks for studying organizational leadership has been the transactional–transformational distinction proposed by Burns (1978), and further refined by Bass and his colleagues (Bass, 1985; Bass & Avolio, 1994). Transactional leaders exchange highly valued rewards (e.g., promotions, good assignments) for greater quality or quantity of work, or higher levels of loyalty and commitment from members. They are motivated primarily to satisfy their own self-interests rather than to develop members or bring about meaningful change. In contrast, transformational leaders have been described as “self-defining” (Kuhnert, 1994) in that they are motivated by higher order values and beliefs and strive to develop followers. Transformational leaders are other directed to the extent that they “continually adjust their behavior to the level to which the follower has been developed” (Avolio & Bass, 1995, p. 207), which seems conceptually similar to the process of developing a unique exchange relationship that is central to LMX.

If the transactional–transformational framework proposed by Bass and Avolio (1994) encompasses the full range of leadership behaviors, then where does LMX fit in the model? Our review supports the suggestion made by others (Graen & Uhl-Bien, 1995; Scandura & Schriesheim, 1994) that LMX should incorporate both transactional and transformational processes. We identified several factors that support this suggestion, including measurement issues, the content of LMX training interventions, and the effects on followers. LMX is conceptually described as an exchange process, but it is not usually measured this way (Liden et al., 1997; Sparrowe & Liden, 1997). Members are seldom asked what is expected in return for the rewards they are given as part of a high-quality exchange. Therefore, the exchange process is inferred but not directly measured. If leaders do not make explicit demands on members in the form of harder work or greater commitment for these rewards, then the relationship might be better characterized as transformational (Kuhnert, 1994). To the extent that most LMX measures tap mutual respect, trust, and the overall quality of the working relationship, LMX is more oriented toward transformational leadership.

Another indication of the transformational potential of LMX can be found in the content of a training intervention designed by Graen, Novak, and Sommerkamp (1982). In this field experiment, leaders were taught to maintain high-quality LMX with all members by (a) spending time...
talking about each person's problems, concerns, and expectations; (b) using "active" listening skills and being sensitive to the particular issues raised by each member; (c) refraining from imposing the leader's or management's frame of reference on issues discussed; and (d) sharing some of the leader's expectations about his or her own job, the member's job, and their working relationship. These training directives were aimed at producing high-quality exchanges, a purportedly transactional process; however, such efforts might be better conceptualized as transformational in nature in that they encourage leaders to adopt the viewpoints of their subordinates. The ability to adopt and appreciate multiple points of view—referred to as perspective taking—is a recently introduced construct to the transformational leadership literature (Kuhnert, 1994; Kuhnert & Lewis, 1987; Russell & Kuhnert, 1992). To the extent that leaders with high perspective-taking abilities initiate high LMX relationships with all members, the predictive power of LMX may expand to outcomes beyond the individual or dyad level, such as work group and organizational performance.

In terms of the effects on members, the results of the present meta-analyses highlight a number of positive outcomes for members associated with high-quality LMX. These outcomes (e.g., job performance, organizational commitment, satisfaction with supervision) are also those traditionally associated with transformational and charismatic leadership (e.g., Bass, 1985; House, 1977). In addition, LMX has been linked to outcomes associated with member development, such as increased delegation (Leana, 1986), empowerment (Keller & Dansereau, 1995), mentoring (Scandura & Schriesheim, 1994), and career progression (Wakabayashi et al., 1988).

Deluga (1992) explicitly tested the hypothesis that high LMX was associated with transformational leadership. He found support for individualized consideration and charisma as predictors of LMX quality. Basu (1992) also found a strong positive correlation between LMX and transformational leadership ($r = .87$). In addition, Basu factor analyzed LMX and the four transformational leadership scales and found no support for the distinction between LMX and transformational leadership. Thus, there is emerging support for the notion that LMX may be transformational, at least at certain times and under certain conditions.

**A Comprehensive LMX Model**

In order to continue to expand the nomological network of LMX and demonstrate empirical support for the integrated theoretical model proposed by Uhl-Bien et al. (1997), additional antecedents and consequences should be investigated. We have discussed some possible future research directions in terms of antecedents. Researchers have also begun to study additional consequences of LMX, including climate perceptions (e.g., Graen et al., 1973; Kozlowski & Doherty, 1989), organizational citizenship behaviors (e.g., Manogran & Conlon, 1993; Wayne & Green, 1993), decision influence (e.g., Scandura et al., 1986), leader effectiveness (e.g., Graen et al., 1973; Deluga & Perry, 1991), member empowerment (Keller & Dansereau, 1995), and creativity (Tierney, 1992). These outcomes could not be included in the present analyses because of an insufficient number of studies but are important to the continued development of a comprehensive LMX model.

Researchers should also continue to examine the role of organizational context in the LMX model. In their complete model of relationship-based leadership, Uhl-Bien et al. (1997) illustrated how situational moderators can affect both the development of the dyadic leadership relationship and the linkage between LMX and organizational outcomes. Finally, much empirical research is needed to understand how the LMX model operates at different levels of analysis (Graen & Uhl-Bien, 1995). One promising avenue for increasing our understanding of levels issues is to examine the patterns of LMX and the relationship between LMX and relevant outcomes in work groups and teams. Many organizations have adopted team-based structures, yet we know very little about the dynamics of leadership relationships within teams and their impact on team and organizational level outcomes.

**Toward a Prescriptive Model of LMX**

One of the most interesting challenges for future research on LMX is to move beyond a descriptive leadership approach to a more prescriptive foundation (Yukl, 1989). Given that high-quality exchanges are consistently related to favorable individual outcomes, it may prove beneficial to devote greater attention to developing and evaluating LMX training models. Using an organizational case study, Graen (1989) described a model for conducting leadership training that focuses on the dyadic relationship. Howell and Frost (1989) have also shown that it is possible to train individuals to exhibit aspects of transformational leadership. Focusing on the development of high-quality dyadic relationships may be valuable both as an addition to current models of leadership training and as an alternative to these methods. More work is needed to specify the content of such training programs and the boundary conditions for their effectiveness.

The demonstrated efficacy of Graen, Novak, and Sommerkamp's (1982) intervention makes that approach worth considering as a prototype in moving toward a prescriptive model of LMX. This is an important study in demonstrating that the underlying perspective-taking ability addressed in their intervention can be trained. Such
efforts are especially important under present economic pressures to cut organizational costs while maximizing human-resource potential. In light of the demonstrated benefits of transformational leadership in organizations (e.g., Hater & Bass, 1988; Howell & Avolio, 1993), this is a promising area for future research.

On the basis of our review of the literature, we view the relationship with one’s supervisor as a lens through which the entire work experience is viewed. LMX is consistently linked to favorable outcomes for members and should continue to play a major role in models of dyadic perceptions and individual performance. Building from these results, we propose that LMX has the potential to play an even larger role in the context of organization theory if expanded and refined in several recommended ways. Construct specification is crucial. Researchers must agree on the meaning of LMX, the proper unit of measurement (i.e., dyad), and how it should be measured. Additional longitudinal field research is needed to explore the dynamics of leader–member relationships over time and their consequences for individuals, groups, and organizations. Aspects of transformational leadership should be formally integrated into LMX so that a comprehensive model of dyadic leadership may be developed and tested. Finally, LMX should be incorporated into leadership training programs and the success of these programs evaluated in terms of leader effectiveness, acceptance, and member development. These suggestions will enhance both the descriptive and prescriptive value of LMX as a theory of leadership.

References
References marked with an asterisk indicate studies included in the meta-analysis.


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