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Transformational Leadership and Performance Across Criteria and Levels: A Meta-Analytic Review of 25 Years of Research

Gang Wang1, In-Sue Oh2, Stephen H. Courtright1, and Amy E. Colbert1

Abstract
Although transformational leadership has been studied extensively, the magnitude of the relationship between transformational leadership and follower performance across criterion types and levels of analysis remains unclear. Based on 117 independent samples over 113 primary studies, the current meta-analytic study showed that transformational leadership was positively related to individual-level follower performance across criterion types, with a stronger relationship for contextual performance than for task performance across most study settings. In addition, transformational leadership was positively related to performance at the team and organization levels. Moreover, both meta-analytic regression and relative importance analyses consistently showed that transformational leadership had an augmentation effect over transactional leadership (contingent reward) in predicting individual-level contextual performance and team-level performance. Contrary to our expectation, however, no augmentation effect of transformational leadership over contingent reward was found in predicting individual-level task performance. Instead,

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Contingent reward explained incremental variance in individual-level task performance beyond that explained by transformational leadership.

**Keywords**
transformational leadership, meta-analysis, performance

The title of Bass’s (1985) seminal book on transformational leadership, *Leadership and Performance Beyond Expectations*, has garnered much attention over the past quarter century. In his book, Bass contrasts transactional or exchange-based forms of leadership, in which leaders clarify expectations and reward followers for fulfilling them, with transformational leadership, in which leaders motivate their followers to move beyond self-interest and work for the collective good (Avolio & Yammarino, 2002; Bass, 1985; Burns, 1978). Using examples like Mahatma Gandhi and John F. Kennedy, Bass proposed that transformational leaders increase followers’ confidence and the intrinsic value of performance, resulting in higher levels of motivation (Seibert, Wang, & Courtright, in press). Thus, while transactional leadership may lead to expected performance, transformational leadership has the potential to result in performance beyond expectations. As our understanding of different types and levels of performance has become more precise (e.g., Borman & Motowidlo, 1993; Klein, Dansereau, & Hall, 1994; Organ, 1988; Yammarino, Dionne, Chun, & Dansereau, 2005), a growing body of research has investigated the range of potential performance implications of transformational leadership.

However, despite the abundance of primary studies linking transformational leadership and performance, the current transformational leadership literature does not provide a clear understanding of the generalizability of the “beyond expectation” role of transformational leadership in performance across criterion types and levels of analysis. Meta-analysis can be used to estimate the true magnitude of the role of transformational leadership in performance and its generalizability across studies in several ways. First, at the most basic level, meta-analysis allows us to estimate the more precise magnitude of the relationship between transformational leadership and follower individual performance than any of the primary studies included in the meta-analysis. While theory suggests that transformational leadership is associated with higher levels of performance from followers, prior meta-analyses have provided limited information about the size of this relationship. Indeed, among the five meta-analyses conducted on transformational leadership (summarized in Table 1), only DeGroot, Kiker, and Cross (2000) attempted to estimate the
Table 1. Summary of Previous and Present Meta-Analytic Findings on Outcomes of Transformational Leadership

<table>
<thead>
<tr>
<th>Variable</th>
<th>k</th>
<th>N</th>
<th>$r$</th>
<th>$\hat{\rho}$</th>
<th>Source</th>
<th>Comparison between previous meta-analyses and the present study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follower attitudinal and motivational outcomes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Follower job satisfaction</td>
<td>14</td>
<td>3,832</td>
<td>.70</td>
<td>.77</td>
<td>DeGroot, Kiker, and Cross (2000)</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>2,175</td>
<td>.27</td>
<td>.30</td>
<td>Dumdum, Low, and Avolio (2002)</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>5,279</td>
<td>—</td>
<td>.58</td>
<td>Judge and Piccolo (2004)</td>
<td>NA</td>
</tr>
<tr>
<td>Follower satisfaction with leader</td>
<td>9</td>
<td>2,457</td>
<td>.49</td>
<td>.57</td>
<td>Dumdum et al. (2002)</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>4,349</td>
<td>—</td>
<td>.71</td>
<td>Judge and Piccolo (2004)</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>2,680</td>
<td>.71</td>
<td>.80</td>
<td>Fuller, Patterson, Hester, and Stringer (1996)</td>
<td>NA</td>
</tr>
<tr>
<td>Follower motivation</td>
<td>16</td>
<td>4,773</td>
<td>—</td>
<td>.53</td>
<td>Judge and Piccolo (2004)</td>
<td>NA</td>
</tr>
<tr>
<td>Follower organizational</td>
<td>3</td>
<td>2,040</td>
<td>.39</td>
<td>.43</td>
<td>DeGroot et al. (2000)</td>
<td>NA</td>
</tr>
<tr>
<td>commitment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Follower effort</td>
<td>12</td>
<td>3,807</td>
<td>.65</td>
<td>.73</td>
<td>DeGroot et al. (2000)</td>
<td>NA</td>
</tr>
<tr>
<td>Follower behavioral outcome</td>
<td>4</td>
<td>715</td>
<td>.19</td>
<td>.21</td>
<td>DeGroot et al. (2000)</td>
<td>This estimate was based on a limited number of studies. The authors did not estimate the relationship between transformational leadership and any specific types of subordinate individual performance. Furthermore, the sources of performance measures were unclear.</td>
</tr>
</tbody>
</table>

(continued)
Table 1. (continued)

<table>
<thead>
<tr>
<th>Variable</th>
<th>k</th>
<th>N</th>
<th>( \bar{r} )</th>
<th>( \hat{\rho} )</th>
<th>Source</th>
<th>Comparison between previous meta-analyses and the present study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follower behavioral outcome</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Follower individual-level performance</td>
<td>62</td>
<td>16,809</td>
<td>.22</td>
<td>.25</td>
<td>Present study</td>
<td>Present estimate of the meta-analytic correlation between transformational leadership and follower individual-level performance is based on a much larger number of primary studies in which performance measures were non-self-reported.</td>
</tr>
<tr>
<td>Follower task performance</td>
<td>31</td>
<td>7,016</td>
<td>.19</td>
<td>.21</td>
<td>Present study</td>
<td>NA</td>
</tr>
<tr>
<td>Follower contextual performance</td>
<td>28</td>
<td>7,970</td>
<td>.26</td>
<td>.30</td>
<td>Present study</td>
<td>NA</td>
</tr>
<tr>
<td>Follower creative performance</td>
<td>14</td>
<td>3,728</td>
<td>.19</td>
<td>.21</td>
<td>Present study</td>
<td>NA</td>
</tr>
<tr>
<td>Leader outcomes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leader effectiveness</td>
<td>23</td>
<td>5,577</td>
<td>.68</td>
<td>.74</td>
<td>DeGroot et al. (2000)</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>7,262</td>
<td>.43</td>
<td>.50</td>
<td>Dumdum et al. (2002)</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>27</td>
<td>5,415</td>
<td>—</td>
<td>.64</td>
<td>Judge and Piccolo (2004)</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>1,524</td>
<td>.68</td>
<td>.78</td>
<td>Fuller et al. (1996)</td>
<td>NA</td>
</tr>
<tr>
<td>Leader job performance</td>
<td>13</td>
<td>2,126</td>
<td>—</td>
<td>.27</td>
<td>Judge and Piccolo (2004)</td>
<td>NA</td>
</tr>
<tr>
<td>Supraindividual-level outcomes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall performance</td>
<td>27</td>
<td>4,611</td>
<td>0.39</td>
<td>0.45</td>
<td>Fuller et al. (1996)</td>
<td>No distinction between follower, team, and organization performance ratings; No distinction among specific job performance dimension at each level.</td>
</tr>
</tbody>
</table>

(continued)
Table 1. (continued)

<table>
<thead>
<tr>
<th>Variable</th>
<th>k</th>
<th>N</th>
<th>( \bar{r} )</th>
<th>( \hat{\rho} )</th>
<th>Source</th>
<th>Comparison between previous meta-analyses and the present study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group or organizational performance</td>
<td>41</td>
<td>6,197</td>
<td>—</td>
<td>.26</td>
<td>Judge and Piccolo (2004)</td>
<td>Group and organization performance were lumped together as the same criterion.</td>
</tr>
<tr>
<td>Team performance</td>
<td>7</td>
<td>432</td>
<td>.42</td>
<td>.49</td>
<td>DeGroot et al. (2000)</td>
<td>This estimate was based on a limited number of primary studies, and the sources of performance measure were unclear.</td>
</tr>
<tr>
<td>Team-level performance</td>
<td>34</td>
<td>2,830</td>
<td>.24</td>
<td>.33</td>
<td>Present study</td>
<td>Present study distinguishes group performance from organizational performance and is based on sufficient number of primary studies in which all performance measures are either non-self-reported or objective.</td>
</tr>
<tr>
<td>Organizational-level performance</td>
<td>27</td>
<td>2,408</td>
<td>.19</td>
<td>.27</td>
<td>Present study</td>
<td></td>
</tr>
</tbody>
</table>

Note: \( k = \) number of correlations; \( N = \) combined sample size; \( \bar{r} = \) sample-size weighted mean uncorrected correlation; \( \hat{\rho} = \) estimated corrected mean correlation; NA = not applicable.
relationship of the charismatic component of transformational leadership with follower individual performance. However, the small number of studies that were used to estimate this relationship \((k = 4)\) suggests the potential for second-order sampling error (Hunter & Schmidt, 2004). Thus, the first purpose of our article is to provide a more precise estimate of the relationship between transformational leadership and follower individual performance and to examine the generalizability of this relationship across settings.

Second, when Bass (1985) initially suggested that transformational leadership motivates followers to perform “beyond expectations,” researchers were only beginning to differentiate between various types of performance criteria (Austin & Villanova, 1992). Thus, the exact meaning of “performance beyond expectations” was not clearly specified. On one hand, transformational leadership may motivate followers to work harder, exerting more effort than would be expected from transactional leadership and resulting in higher levels of task performance. On the other hand, Podsakoff, MacKenzie, and Bommer (1996) have proposed that transformational leadership motivates followers to go beyond the minimum requirements of their job descriptions, resulting in higher levels of contextual performance. Finally, the focus of transformational leaders on challenging the status quo suggests that performance beyond expectations may result in higher levels of creativity and innovation among followers. Despite the fact that primary studies have examined the relationship of transformational leadership with task, contextual, and creative performance, none of the prior meta-analyses on transformational leadership have estimated the magnitude of these relationships. Thus, the second purpose of our meta-analysis is to investigate the relative impact of transformational leadership on follower task, contextual, and creative performance.

Third, transformational leadership theory suggests that transformational leadership is related not only to individual follower performance but also to performance at the group and organization levels (Bass, 1985; Conger & Kanungo, 1998; Shamir, House, & Arthur, 1993). However, no previous meta-analysis has provided a comparison of the relationship of transformational leadership with performance at all three levels. DeGroot et al. (2000) provided initial evidence that transformational leadership is positively related to team performance, but this analysis was based on a limited number of primary studies on team performance \((k = 7)\). Judge and Piccolo (2004) identified a larger number of primary studies examining the relationship between transformational leadership and performance at the group and organizational levels \((k = 41)\), but they combined these studies in
their meta-analysis, reporting the relationship between transformational leadership and group/organization performance. However, individual, group, and organization performance is likely influenced by different factors and through different mechanisms (Dansereau, Cho, & Yammarino, 2006). As a result, the magnitude of the relationships of transformational leadership with performance at the three levels of analysis may differ (Yammarino et al., 2005). Thus, a third purpose of our study is to estimate and compare the relationship of transformational leadership with individual, group, and organization performance.

Finally, one of the most interesting theoretical claims of Bass (1997) is that transformational leadership has one-way augmentation effects over transactional leadership. That is, transformational leadership is hypothesized to predict follower performance beyond the effects of transactional leadership. Yet this proposition has not been systematically examined in predicting follower performance across performance criteria and levels of analysis. A small number of primary studies by Bass and his colleagues (Bass, Avolio, Jung, & Berson, 2003; Howell & Avolio, 1993) examined and found support for the augmentation effects at the group and organizational levels. Furthermore, Judge and Piccolo (2004) showed that transformational leadership had an augmentation effect on employee attitudes over contingent reward but no effect on leader job performance, suggesting the existence of possible boundary conditions of the augmentation hypothesis. Judge and Piccolo did not test the augmentation hypothesis for follower performance. Accordingly, the generalizability of the augmentation effect remains unclear across levels of analysis and across various performance criteria (task and contextual performance). Thus, the fourth purpose of our research, testing the generalizability of the augmentation effect, will allow us to not only test the overall validity of transformational leadership but also potentially make critical refinements to the theory.

In sum, after decades of research on transformational leadership, the number of primary studies that link transformational leadership and performance is sufficient to allow us to better understand this relationship across criterion type and levels of analysis. This research has the potential to clarify the precise ways in which transformational leadership impacts performance and may increase the practical utility of transformational leadership theory (Corley & Gioia, 2011). Moreover, by comparing the relative effects of transformational and transactional leadership on different types and levels of performance, we can learn more about how these two types of leadership may work together to facilitate both effective performance across types and levels.
Hypotheses

Transformational Leadership and Follower Performance at the Individual Level

According to Bass (1985), transformational leaders exhibit four primary behaviors. First, through the behavior of inspirational motivation, transformational leaders develop and articulate a shared vision and high expectations that are motivating, inspiring, and challenging. Second, transformational leaders exhibit the behavior of idealized influence, serving as a role model by acting in ways that are consistent with the articulated vision. Third, transformational leaders intellectually stimulate their followers to challenge existing assumptions and solicit followers’ suggestions and ideas. Finally, through the behavior of individualized consideration, transformational leaders attend to the needs of their followers and treat each follower as a unique individual, thereby fostering feelings of trust in and satisfaction with the leader (Podsakoff, MacKenzie, Moorman, & Fetter, 1990). Taken together, these transformational leadership behaviors are expected to motivate followers to perform at higher levels. Although theory suggests that transformational leaders motivate individuals to achieve higher levels of performance (Bass, 1985), this relationship may differ across specific performance criteria. Transformational leadership has been theoretically and empirically linked with task performance (i.e., in-role performance, focal performance), contextual performance (i.e., extrarole performance, organizational citizenship behavior), and creative performance (e.g., Gong, Huang, & Farh, 2008; Shin & Zhou, 2007). Therefore, the present study investigates transformational leadership as it relates to these three performance criteria.

Task performance refers to work behaviors that are stipulated by a formal job description (Borman & Motowidlo, 1993; Harrison, Newman, & Roth, 2006). Transformational leaders enable and motivate their followers to fulfill their assigned job duties in a number of ways. First, transformational leaders link followers’ work roles to a compelling vision of the future of the organization, causing followers of transformational leaders to view their work as more meaningful and significant and thus increasing its intrinsic motivating potential (Bono & Judge, 2003; Zhu, Avolio, & Walumbwa, 2009). In addition, transformational leaders instill in their followers a belief that they can achieve the goals that are set for them (Shamir et al., 1993), and these increased levels of self-efficacy positively affect performance (Bandura, 1986). Finally, transformational leaders serve as effective coaches and mentors to their followers, providing them with the support and tools that they need to accomplish their jobs (e.g., Howell & Hall-Merenda, 1999). For these reasons, research studies
have consistently found positive relationships between transformational leadership and task performance (e.g., Liao & Chuang, 2007; MacKenzie, Podsakoff, & Rich, 2001).

Contextual performance, however, refers to voluntarily motivated work behaviors that go beyond prescribed job roles but contribute to the psychological and social contexts around the job (Borman & Motowidlo, 1993; Harrison et al., 2006). As Bass (1985) noted, transformational leaders motivate followers to work for the good of the group by increasing social identification, thereby inspiring followers to engage in altruistic behaviors (e.g., helping coworkers in need of help) and to dedicate themselves to their jobs and organizations (e.g., working extra hours and promoting organizational public images; Bass & Avolio, 1993; Kouzes & Posner, 2002; Pillai, Schreisheim, & Williams, 1999; Sosik, 2005). As followers of transformational leaders internalize the goals of the collective, they likely view actions that support the psychological and social context of their work as meaningful and consistent with their own self-concept. Furthermore, transformational leaders influence their followers to engage in contextual performance by serving as role models who are willing to sacrifice their own interests for the collective good and by bolstering a sense of group belongingness and cohesion (Podsakoff et al., 1990; van Knippenberg & van Knippenberg, 2005). Thus, we expect that transformational leadership is also positively related to contextual performance.

In addition, transformational leaders encourage and intellectually stimulate followers to challenge the status quo, question assumptions, take risks, suggest innovative ideas, and engage in divergent thinking (Bass, 1985). Transformational leaders empower their followers to be problem solvers, such that employees grow in their creativity by learning from their failures and experimenting with various options without fear of failure (e.g., Jung, 2001; Jung, Chow, & Wu, 2003; Shin & Zhou, 2003). Thus, we expect that transformational leadership is positively related to creative performance. In sum, we posit the following hypotheses:

**Hypothesis 1:** Transformational leadership is positively related to individual follower (a) task, (b) contextual, and (c) creative performance.

Although transformational leadership theory suggests a link between transformational leadership and multiple types of individual follower performance, we know little about the relative magnitude of these relationships. Drawing from research on the determinants of task and contextual performance, we expect that transformational leadership has a stronger relationship with contextual performance as compared to task performance. As noted above, the
exercise of contextual performance is voluntary and volitional in nature whereas the exercise of task performance is heavily constrained by the learning and mastery of task-related ability, knowledge, and skills. In other words, task performance is mainly determined by “can-do” factors (e.g., ability, knowledge, skills), whereas contextual performance is mainly determined by “will-do” factors (e.g., motivation; Borman & Motowidlo, 1993). As such, we expect that followers’ responses to transformational leadership are more strongly reflected in their contextual performance than their task performance because transformational leaders affect their followers more by raising their levels of positive emotion and motivation than their levels of task-related skills and ability. In fact, Podsakoff et al. (1990; see also Pillai et al., 1999) argued that the true essence of transformational leadership is in enabling followers to engage in extrarole behaviors. Thus, it is expected that transformational leadership, operating through its motivational effects, has a stronger relationship with contextual performance than with task performance.

Hypothesis 2: Transformational leadership has a stronger positive relationship with individual follower contextual performance than with individual follower task performance.

Transformational Leadership and Performance at the Team and Organizational Levels

Transformational leadership theory emphasizes the critical role of transformational leaders in improving performance across all levels of organizations (House & Aditya, 1997; Yammarino et al., 2005). Although more empirical work has focused on testing the relationship between transformational leadership and follower performance at the individual level (Lim & Ployhart, 2004), transformational leadership theory suggests a number of ways in which transformational leaders may impact team and organizational performance as well. At the team level, transformational leaders communicate a vision for the group and motivate team members to work toward the collective vision (Bass, 1985). Motivation to achieve team-level goals is enhanced by the increased levels of social identification that are characteristic of followers of transformational leaders (Kark, Shamir, & Chen, 2003). Transformational leaders also express their confidence that teams will achieve their goals, leading to higher levels of team potency (Bass et al., 2003; Schaubroeck, Lam, & Cha, 2007). Furthermore, transformational leaders encourage higher levels of team cohesion (Bass et al., 2003), which facilitates coordination and cooperation among group members. Thus, we propose the following hypotheses:
Hypothesis 3: Transformational leadership is positively related to team-level performance.

At the organizational level, transformational leaders once again positively influence performance through the communication of a vision that serves to motivate employees and align their efforts (Bass, 1985). Transformational leaders may also positively affect organizational performance through their direct leadership of the top management team. By increasing team cohesion, motivation, and goal congruence within the top management team, transformational leaders facilitate higher levels of organizational performance (Colbert, Kristof-Brown, Bradley, & Barrick, 2008; Waldman & Yammarino, 1999). Furthermore, transformational leaders at the top of organizations may serve as role models for leaders at lower levels, encouraging (cascading down) transformational leadership throughout the organization (Waldman & Yammarino, 1999). Finally, transformational leaders may influence organizational performance through their impact on organizational climates, systems, and strategies, resulting in work environments more conducive to transformational leadership (Jung et al., 2003; Liao & Chuang, 2007).

Hypothesis 4: Transformational leadership is positively related to organizational-level performance.

The Augmentation Effect of Transformational and Transactional Leadership on Performance

In addition to proposing links between transformational leadership and performance across levels, transformational leadership theory also suggests that transformational leadership influences performance beyond the effect of transactional leadership (Bass, 1985; Bass & Avolio, 1993). This augmentation effect refers to the extent to which “transformational leadership styles build on the transactional base in contributing to the extra effort and performance of followers” (Bass, 1998, p. 5). According to Bass (1985), true transformational leaders display both transformational and transactional leadership behaviors, and transformational leadership should explain variance in performance beyond the effects of transactional leadership. Results of early studies of the augmentation effect of transformational leadership over transactional leadership were generally supportive. For example, Hater and Bass (1988) and Waldman, Bass, and Yammarino (1990) found that transformational leadership was significantly related to individual follower performance, controlling for transactional leadership.
The augmentation hypothesis has been interpreted by some (e.g., Bycio, Hackett, & Allen, 1995) as suggesting not only that transformational leadership explains unique variance in outcomes beyond transactional leadership but also that the reverse is not true. If transactional leadership does not predict performance beyond the effects of transformational leadership, this suggests that the predictive power of transactional leadership is solely due to its overlap with transformational leadership. However, two recent studies question this interpretation of the augmentation hypothesis. Both Schriesheim, Castro, Zhou, and DeChurch (2006) and Vecchio, Justin, and Pearce (2008) found that contingent reward, the most important indicator of transactional leadership, was significantly related to individual follower performance after controlling for transformational leadership. Furthermore, when contingent reward and a transformational leadership dimension (e.g., vision, modeling, high expectations) were entered together as predictors of individual performance, the transformational leadership dimensions were not significantly related to performance. Thus, these studies question the augmentation effect of transformational leadership and instead provide support for an augmentation effect of the most important dimension of transactional leadership: contingent reward. The conflicting results in the literature may be due to sampling error that cannot be corrected for in a single study. Hence, it is beneficial to examine the augmentation effect using meta-analytic methods.

Specifically, to account for these conflicting findings, we suggest that both the type and level of performance need to be considered to fully understand the augmentation effects of transformational and transactional leadership. For example, with regard to individual follower task performance, we propose that transformational leadership augments transactional leadership and that transactional leadership augments transformational leadership primarily because these two types of leadership work through different motivational mechanisms. Transactional leaders (especially those using contingent reward behaviors) clearly specify performance expectations and provide rewards for the achievement of these expectations (Bass, 1985). Thus, the task performance of followers is expected to be higher when they work with transactional leaders because of the motivational effects of performance goals (Locke & Latham, 1990) and because of the clear link between performance and rewards (Vroom, 1964). Transformational leadership may further enhance individual task performance through such mechanisms as increased effort-accomplishment expectancies and enhanced meaningfulness of goal accomplishment (Shamir et al., 1993). Thus, we expect that both transactional leadership and transformational leadership explain unique variance in individual follower task performance.
However, in predicting individual follower contextual performance, we expect that the augmentation effect of transformational leadership over transactional leadership is stronger than the augmentation effect of transactional leadership over transformational leadership. As noted earlier, followers of transformational leaders are likely to exhibit higher levels of contextual performance due to their identification with the organization, their internalization of group goals, and the presence of transformational leaders as role models. In contrast, transactional leaders motivate employees by clarifying goals and rewarding goal achievement. Given that contextual performance is defined as voluntarily motivated behaviors that go beyond work roles, it is less likely to be a part of formal goal setting and reward systems. Thus, it is likely that the intrinsic motivation engendered by transformational leadership will predict contextual performance above and beyond the more extrinsic motivation of transactional leadership.

Hypothesis 5a: Transformational leadership explains unique variance in individual follower task performance beyond the effects of transactional leadership.

Hypothesis 5b: Transactional leadership explains unique variance in individual follower task performance beyond the effects of transformational leadership.

Hypothesis 6: Transformational leadership explains unique variance in individual follower contextual performance beyond the effects of transactional leadership.

Although most research has examined the unique relationships of transformational and transactional leadership with individual-level outcomes, augmentation effects can be proposed for unit-level performance as well. However, the small number of studies that examine the relationship between transactional leadership and organizational performance prevented us from meta-analytically examining augmentation effects at the organizational level. Therefore, we focus our discussion on augmentation effects on team performance.

As discussed above, prior research has established a number of mechanisms by which transformational leadership may influence team performance. Transformational leaders provide direction for the team through their vision, enhance motivation to work toward team objectives, and encourage team potency and cohesion (Bass et al., 2003; Schaubroeck et al., 2007). At the same time, it has been argued that transactional leadership (in particular, contingent reward) may also be associated with higher levels of team performance (Howell & Avolio, 1993). For example, transactional
leaders may motivate higher levels of team performance by clarifying team goals and rewarding the team for the achievement of those goals. Thus, because the effects of transformational and transactional leadership on team performance occur through different mechanisms, it is possible that each type of leadership may explain unique variance in team performance.

However, while results of empirical research have generally supported the augmentation effect of transformational leadership over and above transactional leadership at the team level, they have not supported the augmentation effect of transactional leadership over and above transformational leadership. For example, Bass and colleagues (2003) found that transformational leadership affected platoon unit performance beyond the effects of contingent reward behaviors (although only after some items were removed). In a study of business-unit performance in a financial institution, Howell and Avolio (1993) found that transformational leadership predicted business unit performance 1 year later, controlling for transactional leadership. Similarly, Rowold and Heinitz (2007) found that transformational leadership augmented the effects of transactional leadership on branch profit in a study of a large public transport company. Interestingly, in two of these studies (Howell & Avolio, 1993; Rowold & Heinitz, 2007), transactional leadership was negatively related to unit performance after controlling for transformational leadership. In sum, these results seem to suggest that the relationship of transactional leadership and team performance is primarily due to the overlap between transactional and transformational leadership and that transactional leadership explains little unique variance in team performance. Thus, we hypothesize as follows:

Hypothesis 7: Transformational leadership explains unique variance in team performance beyond transactional leadership.

Method

Literature Search

We conducted an extensive electronic and manual search for both published and unpublished transformational leadership studies to minimize publication bias (Cooper, 2003). For the electronic search, we searched electronic databases such as EBSCO, PsycINFO, Web of Science, ABI/Inform, Dissertation Abstracts, and Google Scholar using combinations of the following
keywords: transformational leadership, charismatic leadership, transformational leadership, contingental leadership, contingent reward, management by exception, performance, citizenship behavior, productivity, profit, creativity, and innovation. For the manual search, we consulted the reference lists of existing narrative and meta-analytic reviews, all issues of major journals published as of August 2010 to account for articles that were not yet included in the electronic databases, and the Society for Industrial and Organizational Psychology and the Academy of Management conference programs for 2007, 2008, 2009, and 2010. Finally, we also searched for possible unpublished and in-press studies by sending email solicitations to members of the Academy of Management listservs.

Inclusion Criteria

Primary studies had to meet the following criteria to be included in the meta-analysis. First, we focused on samples of adults working in organizational settings. Second, we only included studies in which study participants were direct leader–follower dyads and leadership was naturally occurring under field conditions (i.e., not experimentally manipulated). Third, we included studies measuring transformational or transactional leadership and one or more of the following non-self-report performance criteria: task, contextual, and creative performance at individual, team, or organizational levels. Studies based on self-report performance measures were not included because of concerns about common source bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) as well as potential self-enhancement biases in self-report performance measures. Finally, studies without the statistical information needed to calculate the correlations among the variables were excluded. It is noteworthy that we did not focus on transformational leadership that was measured by any particular scale, such as The Multifactor Leadership Questionnaire (MLQ; Bass & Avolio, 1995). We think it is methodologically and theoretically important to include transformational leadership measured with different scales to triangulate the generalizability of findings in this study. We did not discriminate against either survey or experimental design. However, as few experimental studies were conducted using field samples (working adults), our second inclusion criterion may have unintentionally excluded studies based on experimental designs using undergrads. As a result, a total of 113 primary studies with 117 independent samples, including 78 published articles and 35 unpublished doctoral dissertations and working papers, met the inclusion criteria and were included in the meta-analysis.
Coding of Information

Information needed to test our hypotheses and potential moderators was coded from each study. Effect sizes (e.g., Pearson correlations), sample sizes, reliability coefficients, and moderator information (e.g., study setting, leader level) were coded. It should be noted that for individual-level outcomes, the sample size referred to the number of followers; for team or organizational level outcomes, the sample size referred to the number of teams or organizations.

For moderator analyses, study setting was coded as private if studies were conducted in for-profit organizations (e.g., *Fortune 500* companies) or as public if studies were conducted in not-for-profit organizations (e.g., government agencies, colleges, military). Leader level (position) was coded as supervisory level (e.g., first-line managers) and mid- or upper level (e.g., CEOs, executives) according to the information provided in the method section. Geographic regions or countries where studies were conducted were recorded. Studies were coded as cross-sectional if variables of interest were measured at the same period. Studies were coded as longitudinal when criteria were measured after leadership variables. Published and in press studies were coded as published, whereas unpublished dissertations, conference papers, and working papers were coded as unpublished. Finally, survey instruments that were used to measure leadership variables were also coded into two categories: Bass and his associates’ (e.g., MLQ-Form 5X short; Bass & Avolio, 1995) and all the others’ (e.g., Transformational Leadership Inventory [TLI]; Podsakoff et al., 1990).

The coding process was very straightforward and needed a few subjective judgments. Nevertheless, to maximize coding accuracy, the first two authors independently coded included studies and compared their coding results. The agreement rate was 93%. Most of the discrepancies revolved around subjective judgments and were resolved through discussion. The remaining discrepancies were clerical errors, which were corrected with reference to original studies.

Measurements of Variable

*Independent variables.* The majority of leadership variables (i.e., transformational leadership, charismatic leadership, contingent reward, management-by-exception [MBE]-active, MBE-passive) were measured with various forms of MLQ by Bass and his associates (e.g., Bass & Avolio, 1995) across levels of analysis. Specifically, for individual-level relationships, 48 (or 77%)
studies used Bass and his associates’ scales to measure transformational or charismatic leadership. 11 (or 18%) studies used the TLI (Podsakoff et al., 1990), and the remaining 3 studies (or 5%) used scales developed by Conger and Kanungo (1994), Pearce and Sims (2002), and Wang and Howell (2010), respectively. For team-level relationships, 29 (or 85%) studies used Bass and his associates’ scales to measure transformational or charismatic leadership, 3 (or 9%) used Podsakoff et al.’s (1990) TLI, and the remaining 2 studies (or 6%) used scales developed by Pearce and Sims (2002) and Wang and Howell (2010), respectively. For organizational-level relationships, 20 (or 74%) studies used Bass and his associates’ scales to measure transformational or charismatic leadership, 3 (or 11%) studies used Podsakoff and colleagues’ TLI, the remaining 4 studies (or 15%) used scales developed by other researchers (e.g., Cox, 1994; Pearce & Sims, 2002). At the individual level of analysis, all but one study asked direct reports to assess their supervisors’ transformational or charismatic leadership. At the team level of analysis, all but one study aggregated team members’ reports of team leaders’ transformational or charismatic leadership behavior. At the organizational level of analysis, the majority of studies (23 or 85%) aggregated top management team members’ or employees’ reports of their organizational leaders’ (e.g., CEO) transformational or charismatic leadership. Most of these studies provided acceptable justifications for aggregation. The remaining four studies asked either a HR manager or a senior executive to report the CEO’s transformational leadership or a CEO to assess his top management team’s transformational leadership.

Dependent variables. Reliable scales and objective measures were used to assess the performance criteria of interest in most studies. At the individual level of analysis, task performance includes role-based performance (Borman & Motowidlo, 1993), such as in-role performance, sales performance, and service performance. Among the 30 studies, objective measures (mainly sales performance) of follower task performance were used in 7 studies. Nonself (mainly supervisor) ratings were used in the remaining 23 studies. William and colleagues’ scales (e.g., William, 1989; Williams & Anderson, 1991) were most frequently used (nine studies), followed by scales measuring followers’ quality and quantity of work (six studies), and Liao and Chuang’s (2004) scale measuring service performance (two studies). Contextual performance consists of explicit OCB and extrarole behavior. No studies used implicit measures of contextual performance such as prosocial behaviors. Followers’ contextual performance was assessed by their supervisors in all studies. Podsakoff and associates’ (e.g., Podsakoff et al., 1990) scales were most frequently used (nine studies), followed by Organ and colleagues’ (e.g., Organ, 1988; Smith, Organ, & Near, 1983) scales (five
studies), Williams and Anderson’s (1991) scale (four studies), and Lee and Allen’s (2002) scale (two studies). Supervisors assessed their direct reports’ creative behavior in all but one study. Scales by George and Zhou (2001) and Welbourne, Johnson, and Erez (1998) were most frequently used (three studies each), followed by Oldham and Cummings’ (1996) scale (two studies) and Tierney, Farmer, and Graen’s (1999) scale (two studies). Team performance was objectively measured in 15 out of the 34 studies. External leaders, team leaders, or external experts (Bass et al., 2003) assessed team performance in the remaining 19 studies. No any particular scale was used more than twice. Organizational performance was objectively evaluated in all studies. Performance indices such as productivity, return of asset, and outputs of patents were used as indicators of organizational performance.

Meta-Analytic Techniques

We estimated the true-score correlations of transformational leadership and follower performance using Hunter and Schmidt’s (2004) psychometric random-effects meta-analysis methods. We corrected each effect size (correlation) for measurement error in both variables using reliability coefficients reported in the original study to be comparable with prior meta-analyses. For meta-analytic calculations, we used the Hunter-Schmidt meta-analysis package program (VG6 Module–individual correction methods for correlations; Schmidt & Le, 2004).

Psychometric corrections for measurement error are very important because this study attempt to estimate “true-score” (construct-level) relationships across levels of analysis. Internal consistency reliability (alpha) coefficients for both variables were used for individual-level relationships and in few cases where a selected score model was used for team- and organizational-level relationships (e.g., CEO perceptions of transformational leadership at the organizational level; Garcia-Morales, Matias-Reche, & Hurtado-Torres, 2008; Rogers, 2001). Since alpha coefficients do not capture transient error and scale-specific (rater-specific) error, they overestimate reliability and thus cause underestimates of true score relationships (Le, Schmidt, & Putka, 2009). Nonetheless, we used alpha coefficients to be directly comparable with previous meta-analyses (e.g., Judge & Piccolo, 2004). ICC(2) as a reliability estimate for the aggregate group or organizational mean scores (when a direct-consensus composition model [Chan, 1998] used for either transformational leadership or performance for team and organizational level relationships) were used. Relatedly, Whitman, Van Rooy, and Viswesvaran (2010) wrote that “ICC(2)
indicates the reliability of the unit-level means . . . Therefore, correcting for ICC(2) should provide a meta-analytic estimate based on ‘true’ mean scores” (p. 56). The reliability of objective performance measures was not reported in all but one primary study. Reliability estimates of objective performance measures reported in previous meta-analyses were used. Specifically, .92 (Barrick & Mount, 1991) was used to correct for measurement error in individual-level objective performance measures and .82 (Combs, Liu, Hall, & Ketchen, 2006) was used to correct for measurement error in team and organizational levels of performance measures; even when the reliability of objective performance measures was set to one to be conservative, we found that results changed by less than or equal to .02 in all cases. For those studies that did not report estimated reliabilities, we used an imputation procedure based on the average reliability estimated from the other original studies that examined the same relationship at the same level (e.g., Judge & Piccolo, 2004, p. 758).

Subgroup comparison method was used for moderator analyses (Hunter & Schmidt, 2004). With reference to the moderator information coded, we grouped studies into two categories and performed separate meta-analysis for each of the subgroup. Prior research shows that this method has higher statistical power to detect the presence of moderator than other methods (Hunter & Schmidt, 2004, pp. 423-424; Schmidt, 2008).

To ensure that effect sizes included in our meta-analysis were statistically independent, we computed a composite correlation when original studies reported multiple estimates of the correlations within a single sample (e.g., correlations between several facets of transformational leadership and performance); otherwise, the average of the correlations was used to be compared with prior meta-analyses (e.g., Judge & Piccolo, 2004). This ensured that a sample contributed only once in each meta-analytic estimate.

To test the augmentation hypotheses, usefulness analysis (Darlington, 1968) was conducted. This technique employs hierarchical regression analysis to examine the incremental validity of one predictor over the other predictor(s) with respect to a particular criterion. We also used general dominance analysis (Budescu, 1993) to show the relative importance (weight) of transformational and transactional leadership in the prediction of performance criteria. Dominance analysis is an alternative method to test relative importance of predictors when the predictors of interest are highly correlated; in the presence of multicollinearity, regression coefficients as an index of relative importance cause interpretation problems (see Budescu, 1993 for more details).
Results

As shown in Table 2, transformational leadership is positively related to individual follower performance across job performance criterion types ($\hat{\rho} = .25$). The 95% confidence interval (CI) and 80% credibility interval (CV) do not include zero, which suggests that the overall validity estimate of transformational leadership for follower individual-level performance is distinguishable from zero and is generalizable in most situations, respectively. More specifically, it was found that transformational leadership has positive relationships with follower task ($\hat{\rho} = .21$), contextual ($\hat{\rho} = .30$), and creative performance ($\hat{\rho} = .21$). Similarly, the 95% CIs and the 80% CVs for these performance criteria do not include zero. These results are consistent with Hypothesis 1. Apart from the three specific performance criteria tested as part of Hypothesis 1, some studies did not distinguish individual-level performance criteria from each other but focused on the relationship between transformational leadership and follower overall or general job performance. Not surprisingly, Table 2 shows that transformational leadership was also positively related to follower general job performance ($\hat{\rho} = .18$), with the 95% CI and 80% CV excluding zero. Finally, as shown in Table 3, transformational leadership was positively related to individual follower job performance and its two major dimensions—task and contextual performance—across moderators, including study setting, leader level, geographical region, research design, publication status, and leadership scale. None of the 95% CIs for these moderators includes zero. Furthermore, given that the 95% CIs of the mean effect sizes under each prescribed moderator overlap substantially with each other, the relationships of transformational leadership with individual follower performance were not moderated by these situational and methodological variables.

Findings in Table 2 also support Hypothesis 2, in which we posited that transformational leadership is more strongly related to follower contextual performance than to follower task performance. The corrected mean correlation for follower contextual performance ($\hat{\rho} = .30$; 95% CI = .26, .34; 80% CV = .18, .42) is 34% greater than that for follower task performance ($\hat{\rho} = .21$; 95% CI = .16, .26; 80% CV = .03, .38). We note that there is a very slight overlap between the 95% CIs for these two performance criteria, indicating that the two corrected mean correlations are considerably, though not fully, different. However, because the two corrected mean correlations for task and contextual performance were not based on completely independent samples, we conducted the Hotelling-Williams Test, which compares two dependent correlations (Judge & Piccolo, 2004, p. 759; Steiger, 1980). To use this test,
Table 2. Relationships of Transformational Leadership and Transactional Leadership With Individual-Level Follower Performance

<table>
<thead>
<tr>
<th>Criterion</th>
<th>$k$</th>
<th>$N$</th>
<th>$\bar{r}$</th>
<th>$\hat{\rho}$</th>
<th>$SD_\rho$</th>
<th>$80%$ CV</th>
<th>$95%$ CI $\hat{\rho}$</th>
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<td>.25</td>
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<td>.10</td>
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<td>9,108</td>
<td>.20</td>
<td>.22</td>
<td>.09</td>
<td>.10</td>
<td>.34 .19 .25</td>
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<td>525</td>
<td>-.11</td>
<td>-.13</td>
<td>.29</td>
<td>-.50</td>
<td>.25 -.40 .14</td>
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<tr>
<td>Management by exception-passive</td>
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<td>-.05</td>
<td>-.06</td>
<td>.13</td>
<td>-.23</td>
<td>.11 -.20 .07</td>
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<tr>
<td><strong>Task performance</strong></td>
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<tr>
<td>Transformational leadership</td>
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<td>.19</td>
<td>.21</td>
<td>.14</td>
<td>.03</td>
<td>.38 .16 .26</td>
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<td>.26</td>
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<td>.06</td>
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<td>.36 .25 .31</td>
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<td>-.12</td>
<td>.30</td>
<td>-.51</td>
<td>.27 -.40 .16</td>
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<td>555</td>
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<td>-.08</td>
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<td>-.22</td>
<td>.05 -.20 .03</td>
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<td>.26</td>
<td>.30</td>
<td>.09</td>
<td>.18</td>
<td>.42 .26 .34</td>
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<td>Contingent reward$^b$</td>
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<td>-.22</td>
<td>-.29</td>
<td>.16</td>
<td>-.49</td>
<td>-.09 -.53 -.05</td>
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<tr>
<td>Management by exception-passive</td>
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<td>356</td>
<td>-.01</td>
<td>-.03</td>
<td>.19</td>
<td>-.27</td>
<td>.22 -.31 .26</td>
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<td><strong>Creative performance</strong></td>
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<td>.16</td>
<td>.18</td>
<td>.07</td>
<td>.09</td>
<td>.27 .13 .23</td>
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</tbody>
</table>

Note: $k$ = number of correlations; $N$ = combined sample size; $\bar{r}$ = sample-size weighted mean uncorrected correlation; $\hat{\rho}$ = estimated corrected mean correlation; $SD_\rho$ = estimated standard deviation of true-score correlations; $CV$ = credibility interval; $CI$ = confidence interval.

$^a$ Taken from Podsakoff, Bommer, Podsakoff, and MacKenzie (2006, table 4).

$^b$ True-score correlation of contingent reward with the composite of the five facets of citizenship behavior: altruism, courtesy, conscientiousness, sportsmanship, and civic virtue in Podsakoff et al. (2006, table 4).

We first calculated the corrected mean correlation between task and contextual performance among the dependent samples, which was found to be .69 ($\bar{r} = .60; k = 19$). The results of the Hotelling-Williams Test revealed that the corrected mean correlation of transformational leadership with contextual performance, when controlled for statistical dependence, would be higher than that of transformational leadership with task performance as hypothesized in a
<table>
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<tr>
<th>Study moderator</th>
<th>k</th>
<th>N</th>
<th>$r$</th>
<th>$\hat{\rho}$</th>
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<th>80% CV</th>
<th>95% CI</th>
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Table 3. (continued)

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Note: \(k\) = number of correlations; \(N\) = combined sample size; \(\bar{r}\) = sample-size weighted mean uncorrected correlation; \(\hat{\rho}\) = estimated corrected mean correlation; SD\(\rho\) = estimated standard deviation of true-score correlations; CV = credibility interval; CI = confidence interval.
“typical primary” study setting (t = 2.00, p < .05). Finally, as recommended by Hunter and Schmidt (2004), we tested this moderating effect of type of criterion across various conditions in a hierarchical manner to ensure that the observed difference between the relationship of transformational leadership with follower task and contextual performance was not confounded by situational and methodological variables. Table 3 shows that transformational leadership was more strongly related to contextual than task performance in all conditions, except public sector (possibly due to second-order sampling error, as the number of studies ranges from 2 to 4). Taken together, these analyses provide support for Hypothesis 2.

The relationships of transformational leadership with team- and organizational-level performance are reported in Table 4. Transformational leadership was found to be positively related to overall team performance (\( \hat{\beta} = .33 \)), with the 95% CI and 80% CV excluding zero. Thus, Hypothesis 3 was supported. Furthermore, while the overall relationship of transformational leadership with organizational-level performance was somewhat smaller (\( \hat{\beta} = .27 \)) than for team-level performance but greater than for individual-level performance, the 95% CI excluded zero, signifying that transformational leadership has a positive relationship with organizational performance. However, the 80% CV included zero, which indicates that there is a large variance in the corrected correlations included in the analysis at the organizational level. Nevertheless, these results provide support for Hypothesis 4, which predicted that transformational leadership is significantly associated with organizational performance. We should note that we did not examine the effects of transformational leadership on different types of team- or organizational-level performance because most studies focused on team task performance and organizational financial performance and only a very limited number of studies examined team- and organizational-level contextual and creative performance (\( k = 3, 4 \) for team-level contextual and creative performance, respectively; \( k = 1, 4 \) for organizational contextual and creative performance, respectively). This may be due to the fact that theory and research on the multidimensionality of performance at the unit level is not as abundant or robust as it is at the individual-level of analysis (Mathieu, Maynard, Rapp, & Gilson, 2008).

Interestingly, results in Tables 2 and 4 demonstrate that transformational leadership generally shows the highest relationship with team performance (\( \hat{\beta} = .33 \) for team performance vs. \( \hat{\beta} = .25 \) and \( .27 \) for individual and organizational performance, respectively). However, we were not able to directly compare the observed differences across levels of analysis, given that data points are not comparable across levels of analysis; specifically, for individual-, team-, and
organizational-level studies, one data point is one person, one team (work-unit, group), and one organization, respectively.

Finally, to meta-analytically test the augmentation effect of transformational leadership (Viswesvaran & Ones, 1995), the meta-analytic relationships of transactional leadership behaviors, including contingent reward, active management-by-exception, and passive management-by-exception, with individual, team and organizational performance were needed. Meta-analytic estimates of the relationships of leader contingent reward behavior with follower individual- and team-level performance criteria were taken from Podsakoff, Bommer, Podsakoff, and MacKenzie (2006). However, no previous meta-analyses have examined the relationships of active management-by-exception and passive management-by-exception leadership behaviors with follower individual-, team-, and organizational-level performance. In fact, as shown in Tables 2 and 4, only a small number of primary studies have examined these relationships. Therefore, to avoid second-order sampling error (Hunter & Schmidt, 2004) and to be more conservative (as noted, the effects of management by exception on performance are negative), we excluded these active and passive management-by-exception from the subsequent analyses. Thus, we tested the augmentation effect of transformational leadership over contingent reward transactional leadership behavior.

### Table 4. Relationships of Transformational Leadership and Transactional Leadership With Team- and Organizational-Level Performance

<table>
<thead>
<tr>
<th>Criterion</th>
<th>k</th>
<th>N</th>
<th>( \bar{r} )</th>
<th>( \hat{\rho} )</th>
<th>( SD_{\rho} )</th>
<th>80% CV</th>
<th>95% CI</th>
<th>95% CI</th>
<th>95% CI</th>
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<td>.33</td>
<td>.07</td>
<td>.24</td>
<td>.42</td>
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<td>.37</td>
</tr>
<tr>
<td>Contingent reward(^a)</td>
<td>19</td>
<td>1,361</td>
<td>.21</td>
<td>.24</td>
<td>.24</td>
<td>-.07</td>
<td>.55</td>
<td>.15</td>
<td>.33</td>
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<td>Management by exception-active</td>
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<td>254</td>
<td>-.16</td>
<td>-.18</td>
<td>.15</td>
<td>-.37</td>
<td>.00</td>
<td>-.36</td>
<td>-.01</td>
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<tr>
<td>Management by exception-passive</td>
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<td>254</td>
<td>.10</td>
<td>.13</td>
<td>.17</td>
<td>-.09</td>
<td>.34</td>
<td>-.07</td>
<td>.32</td>
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<td>Organizational-level performance</td>
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<tr>
<td>Transformational leadership</td>
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<td>2,408</td>
<td>.19</td>
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<td>.24</td>
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<tr>
<td>Contingent reward(^a)</td>
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<td>243</td>
<td>.13</td>
<td>.15</td>
<td>.05</td>
<td>.09</td>
<td>.21</td>
<td>.01</td>
<td>.28</td>
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<tr>
<td>Management by exception-passive</td>
<td>2</td>
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<td>-.19</td>
<td>-.25</td>
<td>.00</td>
<td>-.25</td>
<td>-.25</td>
<td>-.38</td>
<td>-.12</td>
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</table>

Note: \( k \) = number of correlations; \( N \) = combined sample size; \( \bar{r} \) = sample-size weighted mean uncorrected correlation; \( \hat{\rho} \) = estimated corrected mean correlation; \( SD_\rho \) = estimated standard deviation of true-score correlations; CV = credibility interval; CI = confidence interval.

\(^a\) Taken from Podsakoff, Bommer, Podsakoff, and MacKenzie (2006, table 4).
Table 5. Relative Importance of Transformational and Transactional Leadership in the Prediction of Follower Performance

<table>
<thead>
<tr>
<th>Leadership dimension</th>
<th>Individual-level task performance ($\hat{\rho}/\beta$/dominance)</th>
<th>Individual-level contextual performance ($\hat{\rho}/\beta$/dominance)</th>
<th>Team-level performance ($\hat{\rho}/\beta$/dominance)</th>
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<td>.30/.32/71%</td>
<td>.33/.38/72%</td>
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<tr>
<td>Contingent reward</td>
<td>.28a/.31/72%</td>
<td>.23b/-.03/29%</td>
<td>.24b/-.07/28%</td>
</tr>
<tr>
<td>Overall $R$</td>
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<td>.33</td>
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<tr>
<td>$\Delta R$ over</td>
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<td>.07</td>
<td>.09</td>
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<tr>
<td>Contingent reward</td>
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<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Transformational leadership</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b. True-score correlation of contingent reward with the composite of the five facets of citizenship behavior: altruism, courtesy, conscientiousness, sportsmanship, and civic virtue in Podsakoff et al. (2006, table 4).

Results of usefulness analysis in Table 5 showed that transformational leadership did not explain unique variance beyond contingent reward in predicting follower individual-level task performance ($\Delta R = .00$), whereas contingent reward explained unique variance beyond transformational leadership in predicting follower individual-level task performance ($\Delta R = .07$). These results failed to support Hypothesis 5a but are consistent with Hypothesis 5b. In contrast, consistent with Hypothesis 6, for individual-level contextual performance, transformational leadership augmented the effect of contingent reward ($\Delta R = .07$), but contingent reward did not explain incremental variance beyond that explained by transformational leadership ($\Delta R = .00$). The overall $R$s for both analyses were similar: .28 for task performance and .30 for contextual performance.

For team- and organizational-level performance, we were only able to test the augmentation effect for team-level performance given the availability of primary studies. As shown in Table 5, transformational leadership augmented the effect of contingent reward in predicting team-level performance ($\Delta R = .09$). However, when transformational leadership was entered first, contingent reward did not predict incremental variance in team-level performance ($\Delta R = .00$). The overall $R$ was .33. Thus, Hypothesis 7 was supported.

Given the high meta-analytic correlation between transformational leadership and contingent reward (.80; Judge & Piccolo, 2004), we also conducted
dominance analyses to show the relative importance of transformational leadership and contingent reward in the prediction of performance outcomes (see Table 5). Consistent with the usefulness analysis, contingent reward accounted for more explained variance in individual-level task performance than did transformational leadership (72% vs. 28%), while transformational leadership accounted for more explained variance in individual-level contextual performance (71% vs. 29%) and team performance (72% vs. 28%) than did contingent reward.

**Discussion**

As implied by the title of his seminal book on transformational leadership, Bass (1985) contended that transformational leaders motivate their followers to “perform beyond expectations.” However, until now this hypothesized link between transformational leadership and performance across individual-level criterion types and levels of analysis had not been fully examined from a meta-analytic perspective. Based on a large number of empirical studies from the past quarter century, we thus sought to critically review the transformational leadership literature in relation to performance and meta-analytically estimate the magnitude of influence of transformational leadership on performance in organizations. In general, our results show that transformational leadership exhibits a positive relationship with performance across several individual performance criteria, including task, contextual, and creative performance; the influence of transformational leadership is stronger for contextual performance than for task performance across most study settings examined. The positive relationship between transformational leadership and individual performance holds across organizational type, leader level, and geographic region. Moreover, transformational leadership has positive effects on performance across levels of analysis (i.e., individual, team, and organizational levels) with the relationship being higher at the team level and augments the effect of transactional leadership on individual-level contextual performance and team-level performance (but not individual-level task performance).

At this point, it seems informative to briefly compare the current findings with prior meta-analytic findings as shown in Table 1. The effect sizes on performance reported in this study are generally smaller than those on follower attitudinal and motivational outcomes reported in previous meta-analyses (e.g., DeGroot et al., 2000; Dumdum, Low, & Avolio, 2002; Fuller, Patterson, Hester, & Stringer, 1996; Judge & Piccolo, 2004). That is, transformational leadership has a stronger effect on employee attitudes and motivation than on employee performance; theoretically, this makes sense. The correlation
between transformational leadership and follower individual-level performance that we estimated in this article ($\hat{\rho} = .25$, $k = 62$, $N = 16,809$) was slightly higher than the correlation between charisma and follower individual-level performance ($\hat{\rho} = .21$, $k = 4$, $N = 715$) reported by DeGroot et al. (2000). This was likely due to the stronger relationship between transformational leadership and contextual performance ($\hat{\rho} = .30$). However, transformational leadership had a smaller relationship with team performance ($\hat{\rho} = .33$, $k = 34$, $N = 2,830$) than its charismatic component in DeGroot et al. (2000; $\hat{\rho} = .49$, $k = 7$, $N = 432$). Transformational leadership had a larger relationship with team and organizational performance ($\hat{\rho} = .27$, $k = 27$, $N = 2,408$) than with Judge and Piccolo’s (2004) combined team and organizational performance ($\hat{\rho} = .26$, $k = 41$, $N = 6,197$). These complex differences notwithstanding, we believe that our estimates are more accurate given that our results clearly distinguished team and organizational performance.

The results of our meta-analysis help clear the aforementioned ambiguities (represented as research hypotheses) in transformational leadership theory and thus contribute to the increased precision of transformational leadership theory and practice. First, our results indicate that transformational leadership is positively related to individual follower performance, but perhaps more interestingly, that transformational leadership is more strongly related to contextual performance than task performance across most conditions. Given the increasingly interdependent nature of contemporary work systems and processes, contextual performance is becoming more critical than ever before for achieving collective goals (Podsakoff, Whiting, Podsakoff, & Blume, 2009). As our results indicate, transformational leadership serves as a crucial component in encouraging contextual performance. However, our findings also suggest potential moderators of the outcomes of transformational leadership that should be addressed in future research given the nonnegligible true variation across studies ($SD_\rho$) found. For example, given that transformational leadership has stronger effects on contextual performance than task performance, transformational leadership may be less effective in environments with low degrees of interdependence where interpersonal cooperation among employees is less critical. Similarly, for contexts in which task performance is the predominant outcome of interest, transformational leadership may be less effective than transactional leadership (Keller, 2006). These and other research questions stemming from our meta-analysis provide an interesting and useful guide for future research endeavors.
Second, our results show that transformational leadership has positive relationships with performance not only at the individual level of analysis but also at team and organizational levels (Dansereau et al., 2006), supporting Klein and House’s (1995) argument that transformational leadership theory “is truly a meso theory, a theory that cuts across organizational levels” (p. 197). Interestingly, the strongest relationship between transformational leadership and performance occurred at the team level. Although the lack of comparability of data units across levels of analysis prevents us from conducting direct comparisons of these relationships, the result that the relationship between transformational leadership and performance is strongest at the team level is consistent with several aspects of transformational leadership theory. To begin, transformational leaders motivate followers by emphasizing the followers’ ties to the collective group, fostering team identity and team potency and efficacy (Gully, Incalcaterra, Joshi, & Beaubien, 2002; Kirkman, Chen, Farh, Chen, & Lowe, 2009; Shamir et al., 1993). Transformational leaders also function as role models that their followers desire to emulate, thereby eliciting higher team commitment, cooperation, and performance. Furthermore, transformational leaders care about their followers and appeal to them on an emotional level. For example, when followers work together in a team led by a transformational leader, “they have many opportunities to reinforce (vs. douse) each other’s commitment to their common cause” through a process of social influence and emotional contagion (Klein & House, 1995, p. 192; see also Barsade, 2002). Taken together, it seems possible that transformational leaders boost up team performance by generating synergy among team members. Relatedly, Chun, Yammarino, Dionne, Sosik, and Moon (2009) found an empirical support for Kark and Shamir’s (2002) “dual effects of transformational leadership not only utilizing idealized influence and inspirational motivation for collective purpose but also demonstrating intellectual stimulation and individually considerate behaviors for individual team members” (Chun et al., 2009, p. 704). That is, the stronger effect of transformational leadership at the team level may piggyback on its individual-level effect.

Our examination of performance across levels suggests two important directions for future research. The first is to further investigate the mediators of transformational leadership at all levels of analysis. We argue that transformational leadership may affect performance at different levels through different mechanisms. For example, transformational leadership may increase individual-level performance through its effects on follower motivation and attitudes (Bono & Judge, 2003; Piccolo & Colquitt, 2006). However, at the
team level, transformational leaders may affect team processes and emergent states (e.g., team cohesion and potency), leading to higher team performance (Bass et al., 2003). Finally, transformational leaders may influence organizational performance not only through affecting individual-level and team-level processes and performance but also through affecting organizational cultures, systems, and strategies (Jung et al., 2003; Liao & Chuang, 2007). Second, we suggest that future research should examine the effect of transformational leadership on performance across levels of analysis using hierarchically nested data to examine trickle-down effects from the organizational level to team and individual levels. Although our meta-analysis provides a preliminary step in this endeavor by reporting and discussing the differential effects of transformational leadership on performance across levels of analysis, multilevel research incorporating nested data will truly enable researchers and organizations to understand the multilevel effects of transformational leadership in organizations. Third, the greater magnitudes of relationships (.33 and .27 for the team and organizational levels vs. .25 at the individual level) between transformational leadership and performance at supraindividual level are once again noteworthy. As noted by Harter, Schmidt, and Hayes (2002), “unit-level research also provides opportunities to establish linkages to outcomes that are directly relevant to most businesses . . . item-level measurement error is less of a concern” and has direct implications for “issues on which managers can develop specific action plans” (pp. 268-269). That is, the supraindividual relationships better represent unit-level validity, which is a more direct and accurate estimate of business performance than individual-level validity; furthermore, they provide more direct implications for organizational interventions.

Finally, our results suggest boundary conditions of the augmentation hypothesis that transformational leadership explains variance in performance outcomes beyond the effects of transactional leadership. Although Bass (1985, 1998) argued that transformational leadership augments the effect of transactional leadership, he and other theorists did not specify boundary conditions for the augmentation effect, such as the criteria on which the augmentation effect exists. The usefulness analyses (Table 5) suggest that the augmentation effect of transformational leadership may be contingent on the type of performance criteria and the level of analysis. Transformational leadership does add to the effects of contingent reward when predicting individual-level contextual performance and team-level performance. These results are consistent with the idea that transactional leadership is a foundation for transformational leadership (Bass, 1998). However, transformational leadership did not
incrementally predict follower task performance beyond the effects of contingent reward leadership. Instead, contingent reward predicted follower-individual-level task performance beyond transformational leadership. This unexpected reverse augmentation effect indicates that contingent reward leadership is needed to clarify goals and provide rewards to motivate followers to perform the tasks that are expected of them. Thus, while contingent reward alone is sufficient for motivating task performance, it is not enough to solicit extrarole behaviors and team-level performance. Transformational leadership, with its emphasis on achieving significant goals that challenge the status quo as a team, is needed for these purposes.

Managerial Implications

In addition to providing guidance for future theory and research, our findings also have several implications for practitioners. First, the moderately positive meta-analytic relationships of transformational leadership with various performance criteria across follower individual-, team-, and organizational- levels and various situations (e.g., study setting, leader level, geographic region) indicate that transformational leadership tends to be a robust predictor of desirable performance outcomes across situations (Bass, 1997). Thus, organizations need to pay particular attention to intervention programs that enhance their managers’ leadership style. Fortunately, prior research shows that transformational leadership style is trainable, with the results of such training being quite substantial (Barling, Weber, & Kelloway, 1996). However, even with the benefits of training, transformational leadership can also be predicted from some individual differences such as extraversion and emotional stability (Bono & Judge, 2004). Hence, we suggest that organizations should focus on selecting and promoting individuals on such traits for upper-level managerial positions as such individuals are more likely to become transformational leaders.

Furthermore, although it is important for organizations to promote transformational leadership through selection practices and training interventions, organizations should also bear in mind that they are likely to derive the most value from transformational leadership in settings involving teamwork and collaboration among employees (Podsakoff, Ahearne, & MacKenzie, 1997). Indeed, given that transactional leadership by itself is effective at raising task performance, there may be some settings in which transactional styles of leadership are most desired, particularly when jobs involve little interdependence or collaboration.
Contributions Beyond Previous Meta-Analyses

Compared with prior meta-analyses on transformational leadership, this meta-analysis makes several unique contributions to transformational leadership research. To begin, our meta-analysis is the first to estimate the relationships between transformational leadership and three individual-level follower performance criteria—task, contextual, and creative performance. As noted earlier, prior meta-analyses (e.g., Judge & Piccolo, 2004) shed light on the motivational and attitudinal outcomes of transformational leadership, but they did not examine behavioral outcomes of transformational leadership in terms of follower performance. In addition, an early meta-analysis by Lowe, Kroeck, and Sivasubramaniam (1996) on the MLQ showed a moderate relationship between transformational leadership and self-reported extra effort. In contrast, we only included non-self-report performance measures in examining the relationship between transformational leadership and performance, thereby yielding a less biased (by removing common method bias) estimate of the magnitude of this relationship.

Second, our estimates of the overall transformational leadership–individual performance relationship are based on a larger number of primary studies than a previous meta-analytic study on charismatic leadership that examined this relationship (DeGroot et al., 2000). Thus, our results are less subject to second-order sampling error and thus are more credible. Third, our study is the first to separately examine relationships of transformational leadership with team and organizational levels of performance. Prior meta-analyses investigating these relationships combined performance criteria that differed in level of analysis and content (Fuller et al., 1996; Judge & Piccolo, 2004). Finally, our study is the first to meta-analytically examine the augmentation effect of transformational-transactional leadership on various follower performance outcomes, including individual-level task and contextual performance, and team-level performance.

Limitations and Directions for Future Research

This study also has some limitations. First, although our meta-analysis includes both cross-sectional and longitudinal studies, the relationships are correlational in nature. Thus, conclusions cannot be drawn regarding the causal direction of the relationship between transformational leadership and performance. Second, although we examined the relationship between transformational leadership with three individual performance criteria, we were unable to investigate the relationship of transformational leadership and counterproductive
performance because of a limited number of primary studies (see Brown & Treviño, 2000, for an exception). Given the important role of counterproductive work behaviors in influencing managers’ overall job performance ratings (Rotundo & Sackett, 2002) and the ethical/moral implications of transformational leadership theory (e.g., Howell & Avolio, 1992), we suggest that more studies should examine the effect of transformational leadership on various follower counterproductive behaviors so that we can have a better understanding of the relationship between transformational leadership and the whole spectrum of individual performance.

Finally, the issue of differential effects of transformational leadership on performance across levels of analysis should ideally be examined using the same sample following multilevel analysis principles (Kozlowski & Klein, 2000) to ensure that differences in effect sizes across levels of analysis are attributable to differences in levels of analysis alone.

**Conclusion**

In summary, the current study shows that transformational leadership is positively related to performance across criterion types and levels of analysis. Moreover, transformational leadership has a stronger relationship with individual-level contextual performance than with individual-level task performance. Transformational leadership is also positively related to team- and organization-level performance. Finally, transformational leadership has an augmentation effect over contingent reward leadership in predicting follower individual-level contextual and team-level performance. Overall, our results support that transformational leaders lead not only their individual followers but also their teams and organizations to achieve higher levels of performance.

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Notes

1. Although transformational and charismatic leadership developed from distinct traditions, many scholars have noted the overlap among the behaviors included in these two constructs (Conger & Kanungo, 1998). In addition, Judge and Piccolo (2004) found that the validities for studies of transformational and charismatic leadership were similar. In the current study, there are only four, five, and eight primary studies in which charismatic leadership was measured at the individual, team, and organizational levels of analysis, respectively. Given these small numbers, we have reported the results of meta-analyses that combine transformational and charismatic leadership studies; results with and without primary studies using charismatic leadership were found to be virtually the same at the individual and team levels. We also conducted separate meta-analyses for primary studies assessing transformational and charismatic leadership at the organizational level of analysis where there were relatively enough number of studies for charismatic leadership, and the 95% confidence intervals for the two results were found to substantially overlap; the difference between the two meta-analytic estimate does not statistically differ from zero (for transformational leadership, $\hat{\rho} = .25$, $k = 19$, $N = 1,785$, 95% CI = .12, .37, 80% CV = -.09, .58; for charismatic leadership, $\hat{\rho} = .36$, $k = 8$, $N = 623$, 95% CI = .24, .48, 80% CV = .19, .53).

2. We thank an anonymous reviewer who recommended two relevant review studies.

3. Separate meta-analyses show that the relationship of transformational leadership with follower task performance did not significantly differ regardless of whether follower task performance was objectively or subjectively measured.

4. Separate meta-analyses show that the relationship of transformational leadership with team performance did not significantly differ regardless of whether team performance was objectively or subjectively measured.

References

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


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