Transformational and transactional leadership and innovative behavior: The moderating role of psychological empowerment

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Summary
Innovative behavior is increasingly important for organizations’ survival. Transformational leadership, in contrast to transactional leadership, has been argued to be particularly effective in engendering follower innovative behavior. However, empirical evidence for this relationship is scarce and inconsistent. Addressing this issue, we propose that follower psychological empowerment moderates the relationship of transformational and transactional leadership with follower innovative behavior. In a field study with 230 employees of a government agency in the Netherlands combining multisource ratings, we show that transformational leadership is positively related to innovative behavior only when psychological empowerment is high, whereas transactional leadership has a negative relationship with innovative behavior only under these conditions. Copyright © 2009 John Wiley & Sons, Ltd.

Introduction
Innovative behavior of employees is of great significance to organizational effectiveness and survival (Oldham & Cummings, 1996; Scott & Bruce, 1994; Shalley, 1995; West, Hirst, Richter, & Shipton, 2004; Woodman, Sawyer, & Griffin, 1993). Especially in today’s rapidly changing business environment it is more and more important to be able to achieve a competitive advantage. Because employees think of and implement innovative endeavors (Amabile, 1996), identifying how management can affect the innovative behaviors of these employees holds the promise of gaining a competitive edge. Therefore, not surprisingly, an important question for leadership research and practice is how leadership may stimulate employee innovative behavior.

The question of how leadership may affect innovative behavior of employees, however, has not received the attention of researchers it deserves (e.g., Basu & Green, 1997; Mumford, Scott, Gaddis, &
Theories of transformational leadership have emphasized stimulating innovation as a core leadership function (e.g., Bass, 1985; Conger, 1999; Tichy & Ulrich, 1984) and transformational leadership, in contrast to transactional leadership, has been argued to be a particularly effective way to engender innovative behavior (Basu & Green, 1997). However, the empirical evidence for the roles of transformational and transactional leadership in engendering follower innovative behavior is scarce and inconsistent (e.g., Basu & Green, 1997; cf. Kahai, Sosik, & Avolio, 2003; Shin & Zhou, 2003), with some studies finding positive effects and others finding negative effects. These contradictory findings suggest that our understanding of the relationship between transformational and transactional leadership and innovative behavior may benefit from the identification of a moderator variable on which these relationships are contingent and that helps to predict and understand when these relationships would be positive or negative. Such focus on the moderation in the leadership–innovation relationship is also consistent with the contingency approaches in leadership research more generally, which hold that the effectiveness of leadership behavior is dependent on factors within the leadership context (e.g., Fiedler, 1964; House, 1971; van Knippenberg & Hogg, 2003; Yukl, 2002).

Addressing this issue, in the present study we argue that the relationship between transformational leadership and follower innovative behavior as well as the relationship between transactional leadership and follower innovative behavior are contingent on follower psychological empowerment (Thomas & Velthouse, 1990). More specifically, the inspiring and motivating nature of transformational leadership should be more effective in engendering innovative behavior when followers feel more able to proactively influence their work role and environment, that is, when psychological empowerment is high. At the same time, under these circumstances transactional leadership’s emphasis on clarifying in-role task requirements and performance monitoring may be more impeding of extra-role innovative efforts, resulting in decreased follower innovative behavior. Follower psychological empowerment should therefore moderate the effectiveness of transformational and transactional leadership in engendering follower innovative behavior.

Transformational and Transactional Leadership and Innovative Behavior

Transformational leadership is defined as a style of leadership that transforms followers to rise above their self-interest by altering their morale, ideals, interests, and values, motivating them to perform better than initially expected (Bass, 1985; Yukl, 1999). It is contrasted with transactional leadership, which is based on an exchange relationship in which the leader makes clear what is expected of followers (Bass, 1999; Yukl, 1999). Transformational leadership is a higher-order construct comprising several components. The component idealized influence entails serving as a role model and sacrificing self-gain for collective gain, thereby stimulating followers to do the same. Inspirational motivation involves expressing an energizing vision. Intellectual stimulation is expressed by encouraging followers to question the status quo and the final component individualized consideration entails providing support for the individual development needs of followers.

Innovative behavior is a multi-stage process of problem recognition, generation of ideas or solutions, building support for ideas, and idea implementation (cf. Kanter, 1988; Scott & Bruce, 1994). Creativity (i.e., the production of novel and useful ideas; Amabile, 1988) is thus an important part of innovative behavior. Besides being influenced by knowledge, skills, and abilities (Amabile, 1983b; Barron & Harrington, 1981), innovative behavior has been argued to be largely a motivational issue (Amabile,
Innovation is central to the thinking about transformational leadership. The concept of transformational leadership was developed around leaders that transform the existing state of affairs (Bass, 1985, 1998; Burns, 1978; Tichy & Devanna, 1986; Tichy & Ulrich, 1984). Bass (1985) theorized that transformational leaders, in contrast to transactional leaders, are more innovative, have more novel ideas, and can bring about major changes. Transformational leadership has been argued to center on the processes of transformation and change (Bass & Riggio, 2006). Transformational leaders are proposed to stimulate follower innovative behavior through expressing an inspiring vision, stimulating followers to question the status quo, and allowing individual development and growth (Basu & Green, 1997). Moreover, transformational leadership has been argued to entail aligning followers’ needs and desires with the interests of the organization (Bass, 1999), which may also promote going the extra mile needed for innovative behavior. However, as will be discussed below, empirical findings for the relationship of transformational leadership with innovative behavior are less clear cut implying that this relationship is more complex.

Transformational leadership is seen as a positive addition to transactional leadership, which is an exchange relationship in which expectations are clarified and the immediate self-interests of leaders and followers are addressed (Bass, 1999; Yukl, 1999). Transactional leadership is also a higher-order construct comprising the components contingent reward (i.e., clarifying what the follower should do in order to be rewarded) and management-by-exception (i.e., monitoring performance and taking corrective action when problems arise; Avolio, Bass, & Jung, 1999; Bass, 1985, 1999; Yukl, 1999). As transformational leadership is contrasted with transactional leadership it is important to incorporate transactional leadership in our analysis. Moreover, this contrast allows us to show that it is not simply leader behavior that is more beneficial with high psychological empowerment, but transformational leadership per se.

Transactional leadership can be argued to be negatively related to innovative behavior because it is focused more on in-role performance and less on the stimulation of novel activities (which may be particularly detrimental for jobs where innovation is not an explicit part of the job description). Additionally, as transactional leadership clarifies expectations and gives feedback about meeting these expectations, it will indicate the leader’s predilections. The perception of these leader preferences is likely to have some bearing on followers, diverting them from their own innovative endeavors. Moreover, transactional leadership may be perceived as controlling and demotivating, causing less innovative behavior (Deci & Ryan, 1987).

In the following we address empirical evidence for the relationships of both transformational and transactional leadership with follower innovative behavior. Research shows that transformational leaders put greater emphasis on innovation than transactional leaders (Church & Waclawski, 1998; Howell & Higgins, 1990). In addition, recent research found a positive relationship between transformational leadership and organizational innovation (Gumusluoglu & Ilsev, 2009; Jung, Chow, & Wu, 2003; Jung, Wu, & Chow, 2008). However, as these results concern organizational innovation, they do not provide evidence that transformational leaders are more effective in stimulating innovative behavior among followers—organizational innovation could also flow from strategic decisions such as greater investments in research and development. As the essence of leadership is the influence in mobilizing and motivating followers (Yukl, 2002), specific attention to whether transformational leadership is effective in engendering follower innovative behavior, and more effective than transactional leadership, is essential. Studies indirectly pointing to a positive relationship between transformational leadership and follower innovative behavior have found transformational leadership to be related to increased performance quality of R&D teams (Keller, 1992; Waldman & Atwater, 1994), which can be argued to be largely dependent on (but not equivalent to) innovative behavior. In
contrast, the few studies directly examining the relationship between transformational leadership and follower innovative behavior have found very mixed results. One study found a negative relationship (Basu & Green, 1997), whereas a second study found a positive effect (Boerner, Eisenbeiss, & Griesse, 2007), and a third study did not find any effects (Moss & Ritossa, 2007). Transactional leadership has not been related to follower innovative behavior in previous research (Boerner et al., 2007; Moss & Ritossa, 2007).

Follower creativity, an aspect of innovative behavior, has received slightly more attention as an outcome variable of transformational and transactional leadership. In comparison to followers of transactional leaders, followers of transformational leaders have been found to have higher creative performance on idea generation tasks in experimental studies (Jung, 2001; Jung & Avolio, 2000). In addition, an increase in transformational leadership has been related to improved idea generation in laboratory studies (directly; Sosik, Kahai, & Avolio, 1998; and indirectly; Sosik, Kahai, & Avolio, 1999) and to ratings of follower creativity in field studies (Gumusluoglu & Ilsev, 2009; Shin & Zhou, 2003; cf. Shin & Zhou, 2007 in diverse teams). On the other hand, other studies in laboratory settings found no relationship between transformational leadership and follower creativity (Jaussi & Dionne, 2003) or found followers with transformational leaders to generate less original ideas than followers with transactional leaders (Kahai et al., 2003). These latter results are in line with Mumford and colleagues’ (Mumford & Licuanan, 2004; Mumford et al., 2002) recent questioning of the value of transformational leadership in stimulating creativity.

The scarcity of empirical evidence directly speaking to the relationships between transformational and transactional leadership and follower innovative behavior make it valuable to extend the body of evidence. Moreover, in view of the inconsistent findings it also seems important to identify possible causes of these inconsistencies. Leader effectiveness is a dynamic process, where leader behaviors need to fit followers and circumstances in order to be effective (e.g., Reicher, Haslam, & Hopkins, 2005; Shamir, 2007). Such a focus on moderation of the impact of leadership is consistent with the contingency approach in leadership more generally, which provides compelling evidence that leader effectiveness is often dependent on other factors (e.g., task context, follower characteristics; e.g., Fiedler, 1964; House, 1971; van Knippenberg & Hogg, 2003; Yukl, 2002). Thus, one explanation for the mixed results could be the presence of moderator variables. Indeed too little is known about the impact of moderator variables on the effects of transformational and transactional leadership (Bass, 1998; Yukl, 1999).

Accordingly, we argue that a straightforward main effect of transformational and transactional leadership on innovative behavior in fact is quite unlikely (i.e., as it depends on the circumstances). More specifically, we propose that the stimulation to innovate coming from the inspiring nature of transformational leadership assumes a high level of follower psychological empowerment, which makes transformational leadership less effective for followers with low psychological empowerment. Moreover, for transactional leadership to have an effect on follower innovative behavior high levels of psychological empowerment may also be a prerequisite, as only these individuals may perceive transactional leadership as restrictive and controlling. Therefore, we propose that follower psychological empowerment (cf. Kirkman & Rosen, 1997; Thomas & Velthouse, 1990) moderates the relationships of transformational and transactional leadership with innovative behavior.

The Role of Psychological Empowerment

Psychological empowerment is a psychological state residing within individuals, reflecting an active orientation towards a work role (Thomas & Velthouse, 1990). It is thus distinct from the conception of
empowerment as a set of managerial practices focused on the delegation of responsibilities (e.g., Leach, Wall, & Jackson, 2003). Psychological empowerment is a motivational construct originating in an employee’s perception of having choice in initiating and regulating actions, having the ability to perform the job well (i.e., self-efficacy), being able to have an impact on the environment, and the meaningfulness of the job (Spreitzer, 1995; Thomas & Velthouse, 1990). Psychological empowerment has received a considerable amount of attention over recent years (e.g., Carless, 2004; Ergeneli, Saglam, & Metin, 2007; Liden, Wayne, & Sparrowe, 2000). Psychological empowerment has multiple antecedents, such as the organization, peers, and numerous other sources in the person or the environment (Spreitzer, 1995; Thomas & Velthouse, 1990). Although leaders can have a substantial impact on the work environment of their followers they are bound by many factors within organizations, for example, the rules and regulations of the organization, HRM policies, and organizational and social settings. These can all to a great extent influence a follower’s sense of psychological empowerment independent of leadership. In the present study we therefore focus on empowerment as a psychological state that may be relatively independent of transformational leadership and argue that psychological empowerment is an important moderator of the influence of transactional and transformational leadership.

Psychologically empowered individuals see themselves as competent and able to influence their jobs and work environments in meaningful ways, facilitating proactive behavior, showing initiative, and acting independently (Spreitzer, 1995; Thomas & Velthouse, 1990). We argue that followers need to feel psychologically empowered to believe they have the ability to act on the inspiration of transformational leadership. In other words, transformational leadership can make them willing to be innovative, but they also need to feel able to be innovative (via psychological empowerment) in order to move into action and behave innovatively. Therefore, we posit that transformational leadership inspires followers high in psychological empowerment to actually make use of the possibility to take initiative. This leads to more innovative behavior on the part of these followers. In contrast, inspiring followers with low psychological empowerment is less effective, because these followers do not believe they have the possibility to take initiative. This might cause followers to become demotivated, which in turn could even hinder innovative behavior.

As previously stated, transactional leadership can be argued to be negatively related to innovative behavior. We argue that the strength of this relationship will depend on the level of psychological empowerment. Transactional leadership communicates what is expected of the follower in terms of in-role performance and monitors whether these expectations are met, and thereby provides direction and emphasizes in-role task performance more than innovation. We argue that highly empowered followers in particular might view this as controlling and demotivating causing less innovative behavior (Deci & Ryan, 1987).

In short, we propose that transformational leadership is more effective in engendering innovative behavior under conditions of high psychological empowerment than under conditions of low psychological empowerment, whereas transactional leadership is more likely to be detrimental to innovative behavior under conditions of high psychological empowerment.

**Hypothesis 1:** The relationship between transformational leadership and follower innovative behavior is moderated by psychological empowerment, such that the relationship is positive with high psychological empowerment and weaker with low psychological empowerment.

**Hypothesis 2:** The relationship between transactional leadership and follower innovative behavior is moderated by psychological empowerment, such that the relationship is negative with high psychological empowerment and weaker with low psychological empowerment.
Method

Research context

Respondents in this study were employees of a government agency in the Netherlands. The agency’s main responsibility was to monitor environmental conditions in the Netherlands. In addition, the organization was to inform the public on this issue. As government agencies in the Netherlands require individual accountability, employees did not work in teams but had their own individual responsibilities. No major events took place during the collection of data in the organization. The jobs of the employees varied from administrative work to microbiological research.

Sample and procedure

Surveys were sent by internal mail to 425 employees. Only employees who had worked with their supervisor for over 3 months were approached. Respondents varied in hierarchical position and educational background. Subordinates were asked to rate their own level of psychological empowerment and the level of transformational and transactional leadership of their primary leader. Two hundred thirty one of the employees returned the questionnaire (54 per cent). Sixty-six per cent was male, thirty-four per cent was female. Mean age was 39.9 (SD = 9.7). On average these individuals had been working for this organization for 8 years (SD = 6.67). Twenty-one per cent had a lower level of education (vocational degree). Thirty-six per cent had a bachelors degree and forty-three per cent had a masters degree or higher. To avoid common source bias, direct daily supervisors were approached to rate the employees on their level of innovative behavior. Eighty-six per cent (198) of the participating employees were also rated by their supervisor.

Measures

Transformational and transactional leadership

To measure transformational and transactional leadership the Multifactor Leadership Questionnaire Form 5X was used (Bass & Avolio, 1995). The questionnaire was translated using the translation-back-translation procedure (in collaboration with Bruce Avolio, one of the authors of the MLQ). Transformational leadership was measured with 20 items (4 items per subcomponent) and transactional leadership was measured with 8 items (4 items per subcomponent). Sample items are “My leader articulates a compelling vision of the future” (transformational leadership) and “My leader provides assistance in exchange for your effort” (transactional leadership) rated on a five-point scale ranging from 1 (not at all) to 5 (frequently, if not always).

Follower psychological empowerment

A translation (Janssen, Schoonenbeek, & van Looy, 1997) of the entire 12-item questionnaire of Spreitzer (1995) was used to measure follower psychological empowerment. The scale consisted of four three-item subscales measuring meaning, competence, self-determination, and impact. Sample items are “The work I do is meaningful to me” (meaning), “I am confident about my ability to do my job” (competence), “I have significant autonomy in determining how I do my job” (self-determination), and “My impact on what happens in my department is large” (impact), varying from 1 (completely disagree) to 5 (completely agree).
Follower innovative behavior
Innovative behavior was measured by ratings from the supervisors of the participating employees on a scale used by Janssen et al. (1997; cf. Janssen, 2001). The scale consisted of 16 items measuring the subscales problem recognition, generation of ideas or solutions, building support for ideas, and idea implementation with four items each. Sample items include “signals problem areas” (problem recognition), “generates original solutions” (generation of ideas or solutions), “seeks support for innovations behind the scenes” (building support for ideas), and “translates innovative ideas into feasible applications” (idea implementation) 1 (to a small extent) to 5 (to a large extent).

Control variables
Past research has consistently related level of education and tenure to innovative behaviors (e.g., Baer, Oldham, & Cummings, 2003; West & Anderson, 1996, Wiersema & Bantel, 1992). To make sure our findings hold irrespective of these individual attribute variables, we incorporated these variables as control variables. Level of education was divided into three levels: (1) “Lower vocational degree or less”; (2) “bachelor degree”; and (3) “master degree or more”. Even though we did not expect effects for gender, we examined it as a control variable to make sure this demographic variable did not affect our results. Consistent with prior research (cf. Jung, 2001), gender was not related to innovative behavior ($b = .10, \beta = .07, p = .33$). Therefore, we did not incorporate it in our final model. Excluding gender did not affect our findings.

Results
Table 1 displays means, standard deviations, reliabilities, and correlations among all variables. The reliability of most scales was high; only transactional leadership had moderate reliability.

Regression analyses
To test the hypotheses, hierarchical regression analysis was performed using centered variables and pairwise deletion (Aiken & West, 1991). In the first step the control variables were entered. In the

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Table 1. Descriptive statistics and correlations among the variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Gender</td>
<td>.34</td>
<td>.48</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Age</td>
<td>39.86</td>
<td>9.67</td>
<td>-.28**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Level of education</td>
<td>2.22</td>
<td>.78</td>
<td>-.08</td>
<td>-.24**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Tenure</td>
<td>8.88</td>
<td>4.08</td>
<td>-.20**</td>
<td>.68**</td>
<td>-.29**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Transformational leadership</td>
<td>3.55</td>
<td>.59</td>
<td>-.03</td>
<td>-.03</td>
<td>.06</td>
<td>.01</td>
<td>(.90)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Transactional leadership</td>
<td>2.70</td>
<td>.51</td>
<td>.00</td>
<td>.08</td>
<td>-.13</td>
<td>.12</td>
<td>.56**</td>
<td>(.63)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Psychological empowerment</td>
<td>3.77</td>
<td>.51</td>
<td>.07</td>
<td>.08</td>
<td>-.06</td>
<td>.09</td>
<td>.33**</td>
<td>.17*</td>
<td>(.85)</td>
<td></td>
</tr>
<tr>
<td>8 Innovative behavior</td>
<td>3.15</td>
<td>.68</td>
<td>.12</td>
<td>-.24**</td>
<td>.38**</td>
<td>-.28**</td>
<td>.04</td>
<td>-.19*</td>
<td>.15*</td>
<td>(.93)</td>
</tr>
</tbody>
</table>

Note: Cronbach $\alpha$s are reported on the diagonal between brackets. $N = 230$, with pairwise deletion of missing values, which means that some correlations are based on lower $N$.

*p < .05; **p < .01.
second step transactional leadership and transformational leadership were added. Subsequently, in the third step we added psychological empowerment. In the final step the interaction terms of psychological empowerment with transformational and transactional leadership were added to test our hypotheses. One outlier was removed from analyses based on an extreme score on transactional leadership (z score > 3.29). As the distribution of tenure was skewed towards short-term employees, the square root was taken to transform the variable into a normal distribution (using the transformed or original variable in our model does not alter our findings). Table 2 shows the results of the hierarchical analyses.

Results showed that before taking the interactions into account, level of education was positively related to innovative behavior and tenure was negatively related to innovative behavior. In addition, transactional leadership was negatively related to innovative behavior. Transformational leadership was not related to innovative behavior, lending support to our argument that the relationship between transformational leadership and innovative behavior should not be seen as a straightforward main effect. Psychological empowerment was positively related to innovative behavior. The model containing psychological empowerment as a moderator of transformational leadership had significant added value over the model with only the main effects and the interaction between transactional leadership and innovative behavior.

In line with Hypothesis 1, we found an interaction between transformational leadership and psychological empowerment, as can be seen in Figure 1. To determine the nature of this interaction, we performed simple slopes analysis (Aiken & West, 1991). For individuals high on psychological empowerment (one standard deviation above the mean) a positive relationship between transformational leadership and innovative behavior was found (b = .29, β = .25, p = .03). For low empowered individuals (one standard deviation below the mean) transformational leadership had no relationship with innovative behavior (b = −.10, β = −.09, ns.). As expected (Hypothesis 2) we found moderation by psychological empowerment of the relationship between transactional leadership and innovative behavior (Figure 2). Simple slopes analysis showed that for high psychological empowerment a negative relationship between transactional leadership and innovative behavior was found (b = −.58, β = −.43, p = .001). For lower levels of psychological empowerment no relationship was found (b = .03, β = .03, ns.).

Table 2. Hierarchical regressions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
<th>Step 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of education</td>
<td>.29</td>
<td>.29**</td>
<td>.27</td>
<td>.26</td>
</tr>
<tr>
<td>Tenure</td>
<td>−.03</td>
<td>−.18†</td>
<td>−.03</td>
<td>−.17†</td>
</tr>
<tr>
<td>Transactional leadership</td>
<td>−.29</td>
<td>−.22*</td>
<td>−.28</td>
<td>−.21*</td>
</tr>
<tr>
<td>Transformational leadership</td>
<td>.17</td>
<td>.14</td>
<td>.07</td>
<td>.08</td>
</tr>
<tr>
<td>Psychological empowerment</td>
<td></td>
<td></td>
<td>.26</td>
<td>.20**</td>
</tr>
<tr>
<td>Transactional leadership x psychological empowerment</td>
<td></td>
<td></td>
<td></td>
<td>−.58</td>
</tr>
<tr>
<td>Transformational leadership x psychological empowerment</td>
<td></td>
<td></td>
<td>.37</td>
<td>.17*</td>
</tr>
</tbody>
</table>

Note: R² = .14** for Step 1; ΔR² = .03* for Step 2; ΔR² = .03* for Step 3; ΔR² = .03** for Step 4. N = 230, with pairwise deletion. Note that pairwise deletion of missing values implies that N varies for each pair of variables in the equation as a function of the number of missing values for each variable involved.

*p < .05; **p < .01.
Discussion

Evidence for the relationships of transformational and transactional leadership with follower innovative behavior is scarce and inconsistent. The goal of the present study was to shed more light on these relationships by examining follower psychological empowerment as a moderator. Psychological empowerment was found to moderate the relationship with innovative behavior of both transformational and transactional leadership. Transformational leadership was positively related to
follower innovative behavior only with higher psychological empowerment, whereas transactional leadership was negatively related to follower innovative behavior only under these conditions. Moreover, we found support for a more refined augmentation hypothesis for follower innovative behavior, showing that the interaction between transformational leadership and psychological empowerment significantly added to the impact of transactional leadership. The present study thus shows that a more refined model of transformational and transactional leadership may be a stronger predictor of follower innovative behavior, indicating the importance of incorporating psychological empowerment in research in transformational and transactional leadership.

**Theoretical implications**

The findings of the present study establish a boundary condition (i.e., psychological empowerment) to the effectiveness of transformational leadership in engendering innovative behavior. Results supported our argument that followers need to feel empowered to act on the inspirational appeal of transformational leadership. Thus, whereas the present study confirms the proposition that transformational leadership may engender innovative behavior—a proposition that is a cornerstone in transformational leadership theory—it also shows that psychological empowerment plays an important role in determining whether this positive relationship materializes.

Transactional leadership was shown to be detrimental to innovative behavior with higher levels of follower psychological empowerment, corroborating our argument that followers with high psychological empowerment may view transactional leadership as controlling and demotivating at the expense of innovative behavior. With lower psychological empowerment transactional leadership was less strongly related to innovative behavior. Results underline the notion that transactional leadership does not necessarily have detrimental effects on followers, in accordance with arguments of previous researchers (e.g., Bass, 1999)—although we should add that no positive influence on innovative behavior was obtained either.

Results of the present study show that both transformational and transactional leadership seem to be influential only with high psychological empowerment. Indeed psychological empowerment seems to be a precondition for innovative behavior. With low psychological empowerment innovative behavior was low irrespective of leadership behavior. With high psychological empowerment leadership influenced the extent to which this translated into innovative behavior. These results are in line with previous research that highlighted the importance of psychological empowerment for innovative behavior (e.g., Jung et al., 2003; Spreitzer, 1995; Thomas & Velthouse, 1990), but also qualify these findings by demonstrating the influence of leadership on the innovative behavior of psychologically empowered individuals.

The present study also points to the role of other potential moderator variables that may be precursors to psychological empowerment. Of specific interest may be creativity-relevant knowledge, skills, and abilities (i.e., KSAs; Amabile, 1983a, 1983b). These variables have received a large amount of attention over the years and have been shown to be important for creative performance (Amabile, 1983a, 1983b; Barron & Harrington, 1981). Because the focus of the present study was on the motivational aspects of innovative behavior, we did not examine KSAs directly. However, one might argue that creativity-relevant KSAs affect creative self-efficacy (Tierny & Farmer, 2002). In turn, creative self-efficacy can be reasoned to be quite strongly related to psychological empowerment, because perceived competence is an important part of psychological empowerment as well as of creative self-efficacy. Therefore, creativity-relevant KSAs may also moderate the relationships of transformational and transactional leadership with innovative behavior. This is a promising avenue for future studies.

Given the importance of psychological empowerment for the relationships of transformational and transactional leadership with follower innovative behavior, psychological empowerment can also be
expected to be important for the effects of both leadership styles on other follower behaviors. That is, our arguments are not necessarily restricted to innovative behavior. Based on the influence processes underlying the effects of transformational and transactional leadership, we expect that psychological empowerment may be especially important for effects on more complex and less routine task-performance (e.g., in knowledge-intensive work) and on more complex instances of extra-role behavior. Examples are complex instances of organizational citizenship behavior (Organ, 1988), certain kinds of prosocial behavior (Brief & Motowidlo, 1986), and personal initiative (Frese, Kring, Soose, & Zempel, 1996). Indeed, we predict that the more complex and non-routine the targeted behavior in question, the more important psychological empowerment is as a moderator of the effects of transformational (and transactional) leadership.

An additional implication of the present study may be that only with higher psychological empowerment transformational leadership can be seen as more beneficial to innovative behavior than transactional leadership. As theoretical and empirical research frequently contrast the (positive) effects of transformational with the (less beneficial) effects of transactional leadership, the present study suggests this is only warranted with elevated levels of psychological empowerment—at least where innovative behavior is concerned. As indicated in the preceding paragraph, however, this may also hold for other outcomes (e.g., personal initiative; Frese et al., 1996).

**Managerial implications**

The results of the present study imply that transformational leadership can be instrumental in increasing in employee innovative behavior. However, organizations should not simply promote transformational or discourage transactional leadership, but should take follower psychological empowerment into account. Through management development programs leaders could be made aware of the level of psychological empowerment of followers, indicating when more attention should be paid to stimulating psychological empowerment versus stimulating transformational leadership. In general, it seems most beneficial to stimulate both followers’ psychological empowerment and transformational leadership. Through empowerment programs organizations may set the stage for the more effective use of transformational leadership in engendering innovative behavior. Furthermore, research has shown that transformational and transactional leadership can be learned and training programs have been developed (Barling, Weber, & Kelloway, 1996; Dvir, Eden, Avolio, & Shamir, 2002), suggesting that efforts to increase follower psychological empowerment can be complemented by leadership development efforts to increase transformational leadership.

**Limitations and suggestions for future research**

Some limitations of the present study must be considered. One limitation is that our study makes use of a cross-sectional survey which does not allow conclusions regarding causality nor does it fully capture the dynamic nature of the relationship between leader and follower behavior. Replication of our findings in studies using different methods, for instance laboratory or field experiments, as well as longitudinal designs would be highly valuable.

The sample of the study might be another limitation. The organization was a governmental agency, which might have restricted psychological empowerment by limiting the amount of autonomy for followers and the impact they could have on their surroundings. However, this would more likely have attenuated the relationships under investigation, rendering the current tests relatively conservative. Nevertheless, it would be interesting to replicate the present results in a different environment.
In addition, the constructs in the present study were measured with subjective ratings. Common source bias was avoided by using both leader and follower ratings. However, replicating the findings with more objective measures would add to our confidence in our findings.

Also, we need to mention that the aim of the study was not to provide a comprehensive model of all antecedents of innovative behavior of employees. Our aim was to clarify the relationship between transactional and transformational leadership with follower innovative behavior in particular. In addition, we need to stress that also other moderators may affect the relationship between transformational and transactional leadership and innovative behavior. Our specific focus should by no means be interpreted as arguing against or downplaying the influence of other moderators or antecedents of innovative behavior, such as a climate supportive of innovation (West & Anderson, 1996).

Finally, the present study did not focus on the underlying influence processes. Therefore, based on the present data we cannot conclude that the current findings were obtained through the underlying processes we assumed. Future studies might for instance examine perceptions of transactional leadership to verify that it is indeed perceived as overly controlling and demotivating by employees high in psychological empowerment.

**Conclusion**

As innovation is more and more important for organizations, the study of what affects innovative behavior of employees is increasingly important. Especially the study of antecedents that are under managerial control are of substantial value for organizations. The rise in research on transformational and transactional leadership over the past decades held the promise of uncovering transformational leadership as an important determinant of follower innovative behavior. However, evidence to this effect has been scarce and inconsistent. The present study aspired to uncover a possible reason for the inconsistent findings of research into this relationship, identifying psychological empowerment as a prerequisite for the effectiveness of transformational leadership: Transformational leadership is only associated with increased follower innovative behavior when psychological empowerment of followers is high.

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